Decreasing the Road Toll in Saudi Arabia:
A Quantitative and Qualitative Examination of
Campaign Effectiveness within a Culture of Reckless
Bravado
Dedication

This work is dedicated to my family and my friends in Saudi Arabia and Australia for their support, advice and prayers that sustained me throughout. I would also like to remember the grief and suffering of families and friends of those who have lost their lives in car accidents in KSA and all over the world.
Acknowledgments

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Statement of Authentication

I, Sultan Almuammar declare that this thesis, submitted in fulfilment of requirements for the degree of Doctor of Philosophy at the University of Western Sydney, is entirely my own original work unless otherwise referenced and acknowledged. This document has never been submitted to any other educational establishment for receiving any other degree or qualifications.

Sultan Almuammar

16/02/2017
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<td>ELM</td>
<td>Elaboration likelihood model</td>
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<td>Ecological model</td>
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<td>IFRC</td>
<td>International Federation of the Red Cross</td>
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<td>KSA</td>
<td>The Kingdom of Saudi Arabia</td>
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<td>LCTEM</td>
<td>Low cost traffic engineering measure</td>
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<td>NSW</td>
<td>New South Wales</td>
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<td>NTSC</td>
<td>National Traffic Safety Committee</td>
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<td>Risk assessment framework</td>
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<td>Road Safety Advisory Council</td>
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<td>RSC</td>
<td>Road safety campaign</td>
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<td>RTA</td>
<td>Road traffic accident</td>
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<td>SAF</td>
<td>Saudi Automobile Federation</td>
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<td>SCT</td>
<td>Social learning cognitive theory</td>
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<td>TAC</td>
<td>Transport Accident Commission</td>
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<td>TAI</td>
<td>Traffic accident impact</td>
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<td>TPB</td>
<td>Theory of planned behaviour</td>
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<td>TRA</td>
<td>Theory of reasoned action</td>
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Abstract

This dissertation assesses the effectiveness of road safety campaigns (RSC) in Saudi Arabia and develops recommendations for their improvement. Statistics on Saudi road traffic accidents (RTAs) have been unpromising to date, with mounting numbers of RTA mortalities and rates of morbidity. Saudi authorities invest heavily in road safety infrastructure, but RSCs have proved to be ineffective in their outreach to the Saudi population, and ineffective in improving Saudi driving behaviours. Such proven ineffectiveness has highlighted the need for comparative research into successful Western RSCs that have achieved significant reductions in RTA rates. In this thesis, Australian, UK and Swedish RSCs are analysed and compared with Saudi RSCs in a search for weaknesses and gaps in Saudi RSC planning, implementation and evaluation. Based on this comparative analysis, weaknesses of Saudi RSCs are revealed, including the messages of campaigns, their appeal and their segmentation. These basic features were analysed in alignment with Shklovsky’s defamiliarisation theory, theories of planned action and reasoned behaviour and Aristotelian rhetoric. Case study data are complemented with a nationwide survey of Saudi drivers and an analysis of interviews with Saudi road traffic and safety authorities. The survey analysis revealed that risky driving is a complex phenomenon encompassing attitudes to risks on the roads and actual behaviours. Speeding was found to be the most frequent and pervasive high-risk behaviour, but it was also strongly correlated with the failure to wear a seat belt and the use of mobile phones when driving. Qualitative analysis with Leximancer also helped reveal the most problematic areas in Saudi RSC design, such as a lack of collaboration between different parties, a dominant racing culture, a disregard for road safety rules and the poor state of Saudi roads. Interview analysis also stressed the absence of a theoretical understanding of the ways in which planned behaviour changes may be achieved among Saudi drivers. As a result of the analysis for this study, the highest-risk driving behaviours in Saudi Arabia are identified, success factors for RSC design are ascertained and recommendations for RSC improvements are developed. The findings and implications of this research are discussed in the final sections of the thesis.
Chapter 1: Introduction

1.1 (Eid ul-Fitr, festival of breaking of the fast)

High in Saudi Arabia’s Al Hada mountains, almost two thousand metres above sea level and an hour’s comfortable drive from the holy city of Mecca, sits the historical city of Ta’if. In the hour before dusk in late August 2010, on the 24th day of Ramadan, the Islamic month of fasting, and less than a week before Eid ul-Fitr, the three days of family celebration and communal festivity that mark the end of Ramadan, all eight members of the Aziz family left their home in Ta’if, to travel to Mecca. Required to fast from sunrise to sunset until Eid ul-Fitr, all six occupants of the heavy GMC four-wheel drive vehicle, with father Ali at the wheel, were keen to see their destination. They planned to arrive at the house of Ali’s brother, Faiz, just after sunset. Then the two families would be together, to swap stories and share a hearty evening meal.

Just as they had for the first twenty kilometres of their journey (a highway descent from the cool mountain air of Ta’if to the heat of the Arabian Desert) the eldest sons, Mohammed and Sami, continued to trail their father at a respectful distance. Driving the family’s second car, a Toyota Camry, eighteen-year-old Mohammed was constantly chatting; excited about his upcoming enrolment at King Abdulalaziz University, in the port city of Jeddah. There, as he had always dreamed, Mohammed would follow in his father’s footsteps, and study engineering. There’s no rush, thought the sixteen-year-old Sami, even as his older brother had earlier pressed harder on the accelerator to match their father’s increased speed, as the zigzag descent from Ta’if became six lanes of open freeway, leading safely to Mecca. They were travelling at the speed limit, an easy 120km/hr on a high-quality road, and Mecca was 30 uneventful minutes away. Then, everything changed.

Mohammad and Sami’s attention was caught by a bright red Toyota Celica, as it flashed past and rapidly closed in on the GMC. Instinctively, Mohammed sensed danger. The Celica was well over the speed limit and continued to accelerate. It was not in full control, drifting from side-to-side in its lane.

Inside the speeding car, twenty-one-year-old Abdulrahman Omar was not focused on his driving. With no food for the past fourteen hours and late for a meeting with friends in Mecca to break the day’s fasting, he was scanning about for an exit that promised an even quicker ride to Mecca; he wanted to travel on unpolicing back-roads, where he could drive as fast as he dared.
With his iPhone held to his ear talking to friends ahead, and one hand on the steering wheel, he spotted an exit ramp immediately ahead. All he had to do was make use of the Celica’s power-band, pass the Toyota Camry and the GMC, and dart across two lanes. It would be a bit close, but Abdulrahman fancied himself as a skilled driver. He had made far riskier manoeuvres on the freeway to Mecca, many times. Besides, it would look good to any potential spectators who would see his bravado on the road.

Mohammad and Sami watched as Abdulrahman Omar misjudged. When the back of the speeding car clipped the front of the GMC, a bad outcome was assured. The less stable GMC’s tyre exploded and a wheel rim dug into the Mecca Freeway. With nowhere else to go, the top-heavy vehicle flipped, end-on-end, crashed to the pavement on its roof and eventually slid to a halt 150 metres down the road. Rushing to the scene, the brothers feared for the worst. Their father, Ali, was indeed dead, as well as a two-year-old Nora and three-and-a-half-year-old Abdulla; each was killed, with no understanding of how their short lives had ended. Though badly injured, both middle children, girls of ten and twelve, would physically mend, but their happy family life would never return. Their father was dead, and their mother, Shada, had suffered devastating spinal injuries when crushed with terrible force as the GMC slammed down on its roof.

Because of high speed and Abdulrahman’s recklessness, it is certain that Mrs. Shada Aziz will spend the rest of her life in bed as a complete quadriplegic. Shada requires twenty-four-hour nursing care. Forced to discontinue their education and find work to provide for their shattered family, both Mohammed and Sami suddenly find themselves with uncertain futures. It is almost certain that their plans of following their father and qualifying as well paid engineers are beyond reach.

As for Abdulrahman Omar, travelling at 180km/hr as he clipped the GMC, he was unable to control the powerful but light Celica as it speared back across the freeway and destroyed itself on a guard rail. Cut from the wreckage an hour or so later, internal injuries and major fractures kept him in hospital for the next few months. On discharge, Abdulrahman was arrested, tried, convicted and imprisoned for reckless homicide. In mid–2012 he walked free. But he is unlikely to achieve his personal ambition of rising through the ranks of Saudi business. Abdulrahman’s criminal record has almost certainly put paid to any chance of that happening.

***
This was an actual incident with names and unimportant details changed. Devastating and seemingly senseless traffic accidents such as this are disturbingly commonplace in the Kingdom of Saudi Arabia. The cost of the high rate of traffic accidents in KSA is well illustrated by the story of the Aziz family: loss of human capital through death, injury and the disruption of family life; destruction of property; emergency service and medical system responses, including the costs of ongoing rehabilitation or life-support services; emotional and psychological impacts; and criminal justice and other legal system responses. The list goes on. As is the case in all nations, the immediate headline effect (the destruction of motor vehicles) is a relatively minor part of the total economic and social cost of traffic accidents in KSA. This is certainly true in all cases of serious accidents leading to significant injury, and the natural question arises of what can be done about this.

What is clear from the international traffic safety literature is that remarkable efforts have been made, over the past three decades or so, to reduce the rate of traffic accidents and so limit the attendant social and economic costs. Most of this effort, which has ushered in a true paradigm shift in road safety culture, has occurred in the ‘developed world’. So far, the great benefits which have accrued from this systematic rethinking of road safety culture are yet to spread much beyond the developed world, to nations such as KSA. It is an objective of this thesis to uncover how these advances in road safety culture can be best, and most speedily, reproduced in KSA, with the aim of radically and quickly reducing the unacceptably high frequency of serious and avoidable road accidents, such as the one which devastated the Aziz family.

1.2. Background of the Study

Forty years of concerted effort in developed countries has reduced the overall road traffic accident impact (TAI) by 80%, or a factor of 5 (WHO, 2009). The importance of these reductions is easily demonstrated. For example, in 2013, the total number of deaths on the roads of the United States of America (USA) was 32,719 (US Department of Transportation, 2014). Without great advances in road safety, over the past four decades, the USA toll for 2009 would have been in the order of 160,000 deaths. At the same time, the KSA road accident statistics are steadily on the rise; KSA continues to top the list of countries with the highest annual road traffic accident-related deaths. In 2015, the figure reached 49 deaths per 100,000 people (Al-Shayea, 2015). The enormous road traffic accident (RTA) toll is not only a tragedy of death and injury; it also imposes on the country a huge economic burden of $3.4
billion annually. This is the cost of addressing the needs of 17 people killed every day on Saudi roads, hundreds of others injured, and thousands of their relatives and family members (Toumi, 2014).

Identifying the reasons for such a high level of RTAs is a perplexing problem in the Saudi context, considering its high level of road safety and an effective legal framework for road safety. Although still classified as a developing country, KSA has a road safety matrix that is comparable to best practice in the developed world. Furthermore, Saudi Arabia is a wealthy nation investing heavily in modern roads and high quality health facilities (OSAC, 2013). Most of the Kingdom's vehicles are also modern, and incorporate decades of international, best practice safety improvements. Notably, the KSA has comprehensive traffic laws, identical to those applying in any developed nation. Important advances have been made in recent years to improve enforcement of these laws (Mansuri et al., 2015). The issue of drink-driving, which remains a substantial problem in many developed countries, is of negligible consequence in KSA, where the consumption of alcohol is generally prohibited (Alcohol in Saudi Arabia, 2015). However, despite such advantages, the KSA experiences a great burden of RTAs leading to thousands of deaths and permanent injuries among Saudi nationals and visitors.

Such a dramatic situation with road safety has escaped attention; there have been a number of efforts to increase public awareness of rules of behaviour on Saudi roads, and of the importance of respecting the safety of other road users. In 2006, a targeted safety campaign, called Enough, was well received by drivers, and may reasonably be considered to have been a factor in the small drop in fatalities recorded in that year. During an interview conducted with Mr Algammas (2010), Director of the Awareness Division in the Public Relations and Media Department in the Directorate of Public Security, Enough was the first KSA campaign to explicitly focus on road safety, with all previous national advertising campaigns directed at general security (terrorism, criminality) with traffic issues touched upon in this general context. By contrast, the Enough campaign focused on increasing road safety awareness (Algammas, 2010).

Upon the termination of Enough, investment in traffic safety awareness campaigns has continued, but without rigorous application of new methods for impacting on driving behaviour, so road safety awareness has decreased. Indeed, a variety of rather old-style and top-down techniques (previously shown to be ineffective) reappeared in the form of public
lectures, seminars and the conventional tactic of law enforcement blitzes. All of these elements can be seen in a new road safety campaign, launched in 2010 and called Salamati. The Salamati campaign was applied across the KSA, including Riyadh. However, it was ineffective because of the absence of a structured and comprehensive approach to, and knowledge of, the entire complex of road safety problems in the country. The disaster that befell the Aziz family, discussed at the outset of this chapter, obviously fits within the overall scenario described by Sambridge (2010); the matter of concern in this context is the way in which Salamati addressed critical challenges like this one. On one level, there was the idea of engaging separate issues as parts of a staged campaign, and of repeating certain elements on an alternating basis over a 12-month period (ended in May 2011).

Though this is generally a useful tactic for addressing many issues, it fell prey to the well-established psychological principle of habituation, which points to a reduced psychological or behavioural impact of messages that are simply repeated (Sambridge, 2010). It had certain positive aspects, such as being the first nationwide road safety program containing clear and highly publicised road safety messages. However, it followed the old ways of thinking about human behaviour modification, and failed to make a strong impact on the KSA drivers. Its basic concept was entirely top-down; police and the authorities lectured about the need for everyone to behave more responsibly, and additional officers were on patrol, enforcing laws and catching offenders. Thus, the campaign managed only to achieve a predictable and modest fall in traffic accidents during the scheduled periods of heightened law enforcement, during which many of the key risk group, young men, simply slowed down and waited for the enforcement blitz to pass (Jiffry, 2013).

Analysis of the Salamati campaign’s failure has prompted KSA authorities to think over the reasons for the public’s apparent unwillingness to change driving behaviours, and to look for the underlying reasons for driving decisions. Analysis of best worldwide road safety campaign practices has shown that they continue to rely upon rational persuasion that aims to elicit voluntary behavioural change, while at the same time moving beyond simple appeals to common sense, civic virtue and personal responsibility. A distinctive feature of campaigns in mature traffic safety cultures is the use of tactics that do not assume drivers will voluntarily modify their behaviour. Such campaigns aim to drive involuntary behavioural change. They do so by seeking to manipulate the culture in ways that make it difficult for the target audience to ignore the message, or to refuse to change their behaviour. Thus, it is an
imperative for KSA road safety authorities to take a closer look at other dimensions of driver behaviour analysis and change to reduce the death and injury toll in the country.

1.3. Problem Statement

Despite having road safety policies that would support a much lower road toll, KSA continues to suffer from a very high TAI. On a per capita basis, four times as many deaths occur on KSA roads than, for instance, on roads in the USA or Australia (WHO, 2009). As matters currently stand, Saudi Arabia has almost the same TAI as countries in the developed world had four decades ago. Nevertheless, given its modern road safety matrix, this thesis argues that KSA is well positioned to aggressively reduce its TAI. Specifically, it is argued that it is both rational and reasonable to propose that the KSA can achieve an 80% reduction in TAI within a decade by using the best practices of developed nations.

This thesis argues that the key to bridging the gap between a developed road safety matrix and the poor TAI in KSA lies in identifiable and achievable cultural, attitudinal, and behavioural changes that may be achieved by well-designed and precisely targeted RSCs. Such changes in traffic safety culture can be driven primarily through road safety campaigns that apply important lessons learned across 40 years of improved safety outcomes in developed countries. Those lessons must be adapted to the cultural context of the Kingdom of Saudi Arabia. If the KSA authorities can reduce the Saudi TAI to a level comparable to those found in developed nations within 10 years. This would, in round figures, reduce the current annual death toll from 6,000 to 1,500 persons per annum, thus saving numerous lives of potential RTA victims in the KSA. Even using the most conservative calculations, the application of the advances in traffic safety culture proposed in this thesis must rank as a matter of high national priority in the KSA.

1.4. Purpose of the Study

This thesis undertakes a comparative investigation of how road safety campaigns may be employed to modify the behaviour and attitudes of road users, with the aim of reducing the rates of traffic accidents in KSA. Throughout this dissertation, I refer to the overall impact of traffic accidents (direct, indirect, human and socio-economic) as the Traffic Accident Impact (TAI). This thesis also adopts a comparative research focus, contrasting the policies and practices of traffic authorities in the Kingdom of Saudi Arabia, Australia, Sweden and the UK. The comparison study areas are chosen because of analytically relevant similarities and
differences that are important to understanding the factors that drive changes in road safety culture and which are exemplified in these countries.

For instance, Riyadh and NSW/Sydney are both representative examples of urban conditions in their respective national contexts. In recent decades, both have experienced relatively high rates of population growth and significant migrant inflows; as such, traffic safety authorities in both places must respond to ongoing demographic changes. Both places possess a well-developed transport infrastructure and comparable road conditions. They have similar population levels and high per capita rates of vehicle use. Commonalities such as these begin to build a suitable base for comparison. However, this study also benefits from some significant differences between the compared jurisdictions. The most obvious such difference is the strikingly higher TAI in KSA. Other important differences critical to this thesis are the contrasting styles and histories of traffic safety programs in Australia, Sweden, the UK and KSA.

1.5. Significance of the Study

RTAs are a serious public health problem in the KSA. Per estimates of Mansuri et al. (2015), six million cars are now in use in the KSA, 20% of Saudi hospital beds are occupied by RTA victims, and 81% of deaths in Saudi hospitals occur because of RTA injuries. In 2013, according to Jawhar’s (2014) report, the KSA government suffered SR13 billion in losses¹, 6,458 people were killed and there were 485,931 traffic accidents on Saudi roads. These statistics are much higher than those of Egypt (12,000 RTA-related deaths in 2009–2012) and Jordan (694 deaths in 2011) (Jawhar, 2014). Hence, the problem of the high incidence RTAs, and the absence of a strong road safety culture are a significant burden on the KSA authorities and nation. This burden takes the form of death, disability, property loss, healthcare costs, and other costs. Occasional law enforcement blitzes appear to be useless in reducing high-risk road behaviours, so this thesis seeks an alternative solution – a reduction in the incidence of RTAs through behaviour change. This is a highly significant shift in focus and a major innovation for the KSA’s approach to road safety.

¹ SR stands for the Saudi currency – Saudi real. The approximate exchange rate for 1 SR is 0.35 AUD or 0.27 USD
Thus, the significance of this thesis is fivefold. First, it will contribute to the improvement of the integrity and long-term effectiveness of road safety campaigns in developing countries, especially the KSA.

Second, this study provides an opportunity to suggest some benchmarks regarding stages of traffic safety culture development for further application in developing nations generally. In this regard, the well-documented experience of Australia and other developed countries (such as the UK and Sweden) over the past few decades provides a rich basis upon which to propose a basic set of supportive norms that may be pursued by any developing culture. Such recommendations will be especially useful for countries that have either recently become motorised or which have, for whatever reason, failed to develop a deep, sophisticated and multi-layered approach to traffic safety like the one Australia has adopted.

In pursuit of this second outcome, a ‘generic supporting norms’ framework emerges in this thesis. It is based on a detailed consideration of changes in social-institutional alignments through (for instance) the co-option of major sporting codes such as cricket and football, by Australian safety authorities. This co-option worked to re-align general community attitudes and opened a fresh cultural space in which campaigns designed to socially stigmatise high-risk behaviour (speeding, reckless or drunk driving, etc.) gained traction. A further manifestation of a deepening road-safety culture, typified in the Australian experience, is the introduction of structured road safety lessons throughout the school system. Due to these particular changes, as young people reach eligible driving age, they are equipped with a solid base of authoritative knowledge, against which to reject less rational views that may otherwise fill the information vacuum. Without reinforcing cultural change of this sort, general media campaigns that specifically target novice drivers are much less likely to be effective.

Third, just as this thesis suggests a framework for understanding the efficacy of road-safety campaigns in terms of the presence, or absence, of generic norms in the cultures of audience nations, it also proposes how such a framework can be employed to better plan and implement specific safety campaigns, in a sequenced manner and over time, to sharply reduce the TAI in KSA and (at a more general level) in other developing nations.

Fourth, the relevance of this thesis is reinforced by the fact that there presently exists no literature, in relation to KSA or developing nations generally, that proposes a model for the
staged implementation of road safety campaigns, calibrated against a developmental classification of the indigenous safety culture. In part, the significance of this thesis is therefore that it opens a new field of inquiry, intended to equip policy makers in KSA and other nations with a framework which will enable them to make better decisions, and plan allocations of road safety budgets in an ordered fashion, rather than simply experimenting with (say) advertising campaigns designed to bring about behavioural change, for which the underlying culture has not been prepared, and is therefore unresponsive.

Fifth, the absence of any significant literature within KSA dealing with any of the issues addressed in this thesis represents a significant gap in public policy knowledge that a newly motorised nation, such as KSA, must urgently fill. The focus upon Australia and other European countries, the drawing out of an analytical framework for the improved administration of road-safety campaigns, and the demonstration of how such a framework will apply to KSA, represent unique and useful contributions to the public policy literature in KSA.

1.6. Scope of the Study

At this stage, it is important to note that there is very little by way of background studies that focus on efforts to improve traffic safety culture in KSA. Indeed, this is a gap in the knowledge that the arguments presented in this thesis seek to address, both directly and by way of proposals regarding the future administration of road safety policy in KSA. Later sections will examine the details of road safety campaigns in NSW/Sydney and in other jurisdictions in developed nations. They will focus on the range of specific issues that have been targeted, the modification of campaigns to suit local cultural characteristics, and the ways in which road safety programs have been used to drive cultural change, both in official management and community perspectives. Before turning to these parts of the analysis, it is necessary to further establish the underlying scope of this study.

The primary focus of this study is a comparison between Riyadh and Sydney through case studies – hence, the scope of the research covers these two cities. The demographics of Riyadh and Sydney have important similarities. Riyadh has witnessed a rapid population growth from 4,137,000 in 2001 to 6,540,000 in 2008. The population of Riyadh was projected to reach 7,000,000 by late 2010, (KSA: Ministry of Planning, Central Department of Statistics, 2010). NSW has seen similar rates of recent growth. After passing the 2,000,000 mark in 1962, Sydney’s population moved to 3,366,542 in 2001 and 4,504,469 in 2010, and
is projected to reach 5,487,200, by 2026 (Australian Bureau of Statistics, 2011). Both cities are, in their respective national contexts, dominant centres of commerce, education and culture. Both have substantial immigrant populations, with almost the same proportions or residents who were not born in their country of residence; Riyadh (32%); Sydney (31.7%) (Australian Bureau of Statistics, 2011). Both cities are highly motorised with high quality road systems. They are both serviced by modern health care systems.

However, despite obvious and important parallels between Riyadh and Sydney, they have very different social and historical contexts. Australia is a secular nation state, with a liberal democratic system of government. Although religious beliefs and observance are significant aspects of social life, a plurality of religions is observed and religion does not have a direct role in the formation of public policy. In contrast, the Kingdom of Saudi Arabia is a Muslim nation, deeply rooted in tradition; the Saudi King is formally bound to apply Islamic, or Sharia, law. These radical differences in social and political context have obvious consequences for the ideas advanced in this thesis. They have implications for the efficiency of policymakers’ cooperation on RSC design and promotion. Moreover, Saudi motorists’ driving culture will influence the levels of acceptance of RSC projects and behaviour changes.

Another key difference between Australia and the KSA is Saudi drivers’ wilful disregard for traffic laws, with high numbers of accidents attributed to excessive speed and a failure to abide by basic rules, such as compliance with intersection signs or signals. Startlingly, as Orlove (2012) observed, behaviour of this type appears to account for more than 50% of RTAs in the KSA, demonstrating an unacceptable level of recklessness and disregard for the law. Studies such Orlove’s are supported by anecdotal accounts of what may be described as a ‘gung-ho’ driving culture for which the KSA and several the Gulf states have become notorious. Fossett (2013) also claimed that this culture of recklessness is a decisive factor in the high TAI of a few Arabian Gulf states, including the KSA, even when numbers of vehicles and kilometres travelled are considered.

The existence of such a reckless culture in the KSA suggests that for a serious reform of traffic safety culture to succeed, national decision-makers must be convinced of the need to introduce measures that increase compliance with traffic laws. In the case of KSA, the opportunity to save many lives, and the avoid the massive associated economic costs and strain upon social fabric, presents both a compelling case for the necessary policy decisions
to be made, and the basis of a powerful narrative that key leaders can deploy to justify strong
and decisive action. In connection with this, the thesis draws from the claim that the Saudi
Government should resolve to support a reformed communications strategy with a robust and
persistent campaign of continuing improvement in the enforcement of traffic laws.
Furthermore, there are important lessons to be learnt from the experiences of developed
countries regarding the need for a partnership between law enforcement and communication
strategies in order to improve road safety culture.

Another aspect of the scope of this study is the high-risk young driver group; as explained in
this thesis, young drivers are most frequently involved in RTAs because of their recklessness
and neglect for road safety rules and laws on the Saudi roads. Because of the failure of KSA
authorities to utilise more refined communication strategies, many sections of the public,
especially key target groups such as younger males, are not effectively ‘reached’ and are left
alienated from safety messages, largely because their motivating values are not engaged. As a
result many Saudis remain passive observers rather than active participants in road safety
campaign efforts.

Australia, on the other hand, is an example of a nation in which determined steps have been
taken to develop broad social awareness and community engagement in road safety policies
(Road Safety Commission, 2015), with comprehensive programs and the multi-layered
institutional involvement of all levels of government and a wide range of community,
sporting and cultural organisations. It is, for example, routine for Australian television news
and other media to report, in an ongoing fashion, up-to-date TAI statistics. It is also usual for
the efficacy of safety campaigns to be openly debated. Australia has a governmental system
in which access to public information may be enforced through freedom of information (FOI)
legislation, and governments are held to account through parliamentary procedures and
regular elections. This greater access to information in Australia is no surprise. Hence, it is
clearly preferable that authorities in KSA take steps to bring the general public into their
confidence and promote greater transparency; this will promote community engagement with
the aims of this important area of public policy. There is much evidence, from the Australian
experience, that the success of road safety campaigns is to a significant extent due to the
engagement of community groups with government programs.
1.7. Organisation of the Remainder of the Study

This thesis is organised into ten chapters; the first chapter is introductory and contains information on the purpose and significance of the research, as well as the research problem and background. The next chapter is dedicated to a detailed literature review exploring various aspects of the identified problem. First, the international road safety situation is examined, with a specific focus on RTA epidemiology. The epidemiology of road traffic accidents in the KSA is then analysed, stressing the high-risk driving behaviours in this country. Cultural specifics, age and gender are explored as factors of significance in terms of risky driving. Separate sections are dedicated to urban risky driving behaviours and risk assessment strategies in this regard. Other sections of the literature review lay out the scholarly research findings on the application of road safety campaigns (RSCs) as ways of reducing RTA incidence, RSC incidence in the KSA, best practice RSC worldwide, and research findings on the evaluation of RSC success and effectiveness in different countries. The researcher’s major contribution in this chapter is organising prior research findings on RSCs to further inform the design and evaluation of Saudi RSCs. The chapter ends with a reiteration of the research questions and objectives confirmed by literature review findings.

The third chapter of this thesis is dedicated to a detailed exploration of the theoretical framework underlying this study. It encompasses behaviour modification theories, persuasive social marketing advertising, and socio-cultural diversity theories. The first category of theories includes the Social Ecological Model, social learning/cognitive theory, the theory of reasoned action and planned behaviour, positive reinforcement and stimulus-response theory and carrot-and-stick theory. The second category contains Greek rhetorical theory, defamiliarisation theory and the elaboration likelihood model. In terms of socio-cultural diversity, the researcher has included the audience selection and targeting theory, cultural theories and theories of mediation to develop the theoretical framework for the study.

The discussion of the theoretical framework is followed by the methodology chapter which outlines the key methodological details of this thesis. It contains a concise and detailed rationale for the selection of mixed methods research and outlines details of each stage of the inquiry undertaken within this thesis – case studies, survey research and interviews. Rationales for selection of specific countries, cities and respondents for this study is given and details about data collection instruments and procedures, as well as data analysis
specifics, are laid out. The chapter ends with an account of the limitations of the research and ethical considerations that arose during the research process, data analysis and reporting.

The fifth chapter is a case study chapter dedicated to developed countries. Four RSCs implemented in the UK (Live with It), Sweden (No Extra Life) and Australia (Pinkie and Everybody Hurts) are discussed. All aspects of these campaigns are analysed in detail, including their target audiences, target communication channels, the theories on which their designs were based and their core messages. The same structure is maintained in chapter six which is dedicated to case studies of two Saudi RSCs – Salamati and Enough, which are used to uncover basic features of RSCs, including their segmentation, target audiences and effectiveness. This assists in the identification of their success factors and vital components.

Chapter Seven is the survey analysis chapter. It includes the socio-demographic data of survey respondents and a frequency analysis of the most common road safety violations and high-risk behaviours. A range of hypotheses are tested to determine socio-demographic, behavioural and attitudinal differences between various groups of Saudi drivers in terms of their involvement in road safety violations. The final portion of the chapter explores a qualitative hypothesis related to drivers’ knowledge about Saudi RSCs and their perceived effectiveness in changing and improving road behaviours of Saudi drivers.

Chapter Eight is dedicated to an analysis of qualitative study results. By means of qualitative Leximancer analysis, the researcher explores interview findings collected from representatives of road traffic authorities, NTSC employees, employees of advertising agencies working on Saudi RSCs and academics participating in the planning and design of campaigns. In this chapter, interviewees share their views on the present-day state of road safety standards, reflect on strong and weak sides of Saudi RSCs and recommend ways of improving the Saudi campaigns’ outreach to the public so that they increase road safety awareness and reach the highest-risk category of reckless young drivers.

Chapter Nine is the discussion chapter. It includes the entire set of findings from the three data collection sources and triangulates them for further comparison with the findings of prior research. The discussion focuses on how the findings of this study fit the research perspectives of other Saudi researchers and what new insights they give into the mechanisms of risky road behaviour and its correction. This chapter summarises evidence in response to each of the research objectives and gives a comprehensive summative answer to the central
research question of this study. This is followed by Chapter Ten – the concluding chapter. It contains a concise summary of what this research has achieved and proposes further directions for research and policy change in terms of improving Saudi driver behaviours and attitudes through targeted influence of well-designed, evidence-based and academically informed RSCs.
Chapter 2: Literature Review

2.1. Introduction
The core objective governing this research is to identify ways of improving road safety campaigns in the KSA to make them effective in addressing the risk-taking behaviour of young Saudi drivers. In line with this purpose, the research undertakes an in-depth analysis of road-safety campaign practices in Australia, Sweden and the UK to identify their success factors and to determine those applicable to Saudi Arabia. To fulfil these goals, the researcher uses a set of valid and academically approved theories relevant to the problem of changing driving behaviour to investigate RSCs (road safety public campaigns) in three developed countries and in Saudi Arabia. Hence, analysis of RSCs is conducted on a solid theoretical basis using theories of behaviour modification, persuasive social marketing advertising and socio-cultural peculiarities.

In support of the theoretical frameworks used, this chapter presents a literature review dedicated to the analysis of the causes and incidence of RTAs worldwide and in Saudi Arabia in particular. It introduces the current situation regarding road safety in the KSA and delineates problems and gaps in policies and practices that currently need to be addressed in the country. In addition, the review discusses the causes of RTAs as identified in prior research findings. It contains a discussion of high-risk driving behaviours and their causes, including the impact of age and gender on high-risk behaviours on the roads, and the types of risky driving behaviour. This chapter also deals with the analysis of road safety campaigns (RSCs) as approaches to the reduction of RTA rates, and it examines the various efforts made worldwide (with proper regard to the causes most frequently identified as leading to accidents on the roads) to curb the number of RTAs. This chapter also includes an analysis of Australian road safety campaigns and their benefits as worldwide best practice examples of campaigns designed for various communication channels. The last section of the chapter is dedicated to the identification of research gaps and the formulation of research questions that target gaps in RSC research and practice in the KSA.

2.2. Theoretical Frameworks

2.2.1. Behaviour Modification Theories
Before discussing behaviour modification theories, one should clarify the issue of driving behaviour. In general, the term refers to everything done by a driver on the road. Tactical
driving behaviour is regarded as desirable, since it entails thoughtful planning based on evaluating the temporal horizon to predict what will happen in a spatial horizon beyond direct neighbouring vehicles (Barcelo, 2011, p. 80). The concept of dangerous driving behaviour implies risky driving and violations of road rules. The key manifestations of dangerous driving are speeding, tailgating, driving while intoxicated, unlicensed driving and disobeying traffic light signals (Knipling & Bergoffen, 2011, p. 35). An individual’s driving behaviour is a product of his or her personality developed under certain social and cultural influences (Barcelo, 2011). Hence, when designing a behaviour-change initiative, it is crucial to consider all contributing factors. In accounting for the complexity and multidimensional nature of a behavioural change, the research examines various theories relevant to the ability to integrate behaviour change motivations into RSCs.

2.2.1.1. The Social Ecological Model

Most of behaviour change theories and frameworks focus on personality traits as the key predictors and drivers of individual behaviour. However, when aiming to modify individual behaviour, it is vital to consider the entire scope of factors influencing the beliefs, attitudes and perceptions of a single person. It is commonly accepted that a person is a product of the community that shapes his or her personality. To explain the links between audiences and their surrounding environments, the present subsection takes account of the ecological model (EM). Though it is merely a theoretical framework, it is worth considering because of its insights into the interrelationships between people and their environments (Lee & Kotler, 2011).

Initiated by Hawley (1950), the EM received much academic attention due to its core theme of the existence of a continuous evolutionary association between people and environments around them (Rayner & Lang, 2013). Multiple scholars, such as Bronfenbrenner and Robert Park, have studied the concept of human ecology, arguing for an evolutionary dynamic of humankind grounded on the three pillars of population, environment and organisation. Hence, the ecosystem combines notions of human ecology and bioecology, which indicates the inescapable connection between people and their environments (Rayner & Lang, 2013).

Per the EM, various environmental and personal factors influence relationships between people and their environments. Thus, human personalities depend on the environmental conditions present in relevant settings, such as homes, workplaces, neighbourhoods and the like (Lee & Kotler, 2011). Individuals’ generic traits complement societal factors in shaping
their personalities. In addition, future expectations and earlier experiences, in conjunction with environmental conditions and personal characteristics, guide individuals’ decision-making processes in terms of adopting specific behaviours (Lindridge et al., 2013). Therefore, behavioural modifications occur only after an individual’s personal and environmental factors interact with each other.

Today, the greatest interest the EM is evident in the health care industry in the use of social-ecological thinking to understand social challenges to public health and to identify the environmental factors contributing to human decision-making (Rayner & Lang, 2013). The issue of road safety may be viewed using a health care perspective, since RSCs aim at reducing the injuries and deaths caused by road accidents through promoting safer driving practices. In the context of Saudi social advertising, the EM seems appropriate for analysing the specific ecology of the Saudi population. The identification of the social, cultural and environmental influences that contribute to driving behaviours is likely to assist planners and designers of road safety campaigns to reach their target audiences. Thus, the EM is an essential framework for this thesis, since it focuses on the determining factors that should be addressed in designing campaign messages which aim to modify driver behaviour.

2.2.1.2. Social Learning/Cognitive Theory

Another theory exploring the relationship between people and their environments is social learning (cognitive) theory (SCT). In contrast to the ecological model, the SCT makes a deeper analysis of the relationships between people and their environments. The SCT focuses on the impact produced by these relationships on human behaviour. The framework defines factors that are most likely to lead to certain behavioural effects (Akers & Jensen, 2011). The central idea of the SCT is that an individual’s behaviour depends on three factors: the behaviour of others, personal issues and the surrounding environment (Eagle et al., 2013). Thus, each factor produces a specific effect on behaviour being different from the effect of the other two factors. In fact, human ecology affects behaviour in two ways – directly and indirectly. While social interactions with the community and family serve as direct influences, the cultural and economic domains create a wider social context that influences behaviour indirectly (Estes, 2014).

According to SCT, learning depends on the processes of observation and imitation, which explains the role of the social context on human behaviour. Different behavioural types and patterns are the result of social reinforcement. A person observes a new behaviour performed
by others and tries to imitate it (Eagle et al., 2013). Hence, the community provides the role models for individual’s behaviour that is learnt through observing and imitating others. However, it is essential to point out that the adoption and rejection of observed behaviours relies on social factors. In other words, so-called social learning may occur or not in reference to the existing social environment (Eagle et al., 2013).

The availability of the required conditions is one of the key predictors of the intended behaviour adoption (Estes, 2014). Other factors affecting the adoption or rejection of particular behaviours are personal characteristics, individual abilities and emotions associated with the promoted behaviour. In addition to the influence of personal and environmental factors on behaviour adoption, the SCT stresses notions individuals’ capacities and self-confidence in relation to performing the desired behaviour (Estes, 2014). To sum up, the cognitive model claims that a behavioural change is achievable when the entire range of personal, social and environmental factors are considered in terms of their interactions and effects on the personality.

The SCT is popular and widespread within the media industry. Regarded as a useful theoretical framework, the SCT assists in evaluating the effectiveness of communication media and new communication technologies. Thus, the content of communication technologies sets up symbolic behavioural model to promote observational or social learning. The advertising industry uses the principles of SCT to create media content which will achieve its objectives (Grant & Meadows, 2013). Despite its remarkable advantages, the SCT has its weaknesses. First, it is not always the case that a behavioural change occurs because of the acquired knowledge. Sometimes, it is the result of the influence of other factors. Hence, evaluations of a public campaign’s effectiveness should consider all social, cultural, economic and personal factors that might have driven the adopted of the desired behaviour (Estes, 2014). Second, the model does not clarify how the behavioural change actually takes place.

Nonetheless, this theoretical framework is a comprehensive one that provides an extensive explanation of individuals’ behaviour under various personal, social and environmental conditions (Eagle et al., 2013). In the context of the KSA’s social marketing focused on promoting safer driving practices, the SCT seems relevant and valuable. The theory is likely to provide an understanding of social learning’s effect on Saudi drivers and their choices of the driving behaviours. In line with the principles of SCT, road safety campaigns in Saudi
Arabia should create positive models of responsible driving behaviour utilising celebrities as role models to prevent the target audience from imitating risky driving observed in films and other media. In addition, the SCT might be applicable to evaluating the compliance of the existing traffic culture with the traffic law and desired driving behaviour in terms of whether it reflects safe driving provisions.

2.2.1.3. Theory of Reasoned Action and Theory of Planned Behaviour

The earliest, and one of the most influential of all behavioural change models, is the theory of reasoned action (TRA). TRA was put forward by Marin Fishbein and Icek Ajzen (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980) and was later expanded into the theory of planned behaviour (TPB) (Ajzen, 1985). The TRA is based on the belief that human behaviour is the result of the behavioural intention which arises from an individual’s attitudes towards a matter, and of the norms adopted in society. Per TRA, any attitude is grounded in the combination of two interdependent factors: an individual’s beliefs about the outcomes of a behaviour and the individual’s personal evaluation of the behaviour outcomes (Abraham, Norman, & Conner, 2013). In addition to their personal judgements, individuals base their decisions about whether to undertake behaviours on the beliefs and attitudes of surrounding people, such as family, friends and colleagues. Hence, individuals choose to adopt particular behaviours after considering their consequences as anticipated by themselves, general knowledge, and social provisions (Abraham, Norman, & Conner, 2013).

In support of the argument that behaviour is not ultimately voluntary, the concept of perceived behavioural control was added to TRA to create TPB (Russell & Cohn, 2012). The TPB sees human action as a product of three considerations: behavioural beliefs, normative beliefs and control beliefs. The two first are those notions, which comprise the TRA and refer to personal beliefs about the consequences of a particular behaviour, and beliefs and attitudes that others have about that behaviour. Control beliefs introduced by TPB are beliefs about factors that in a certain situation might impede or facilitate behavioural performance (Russell & Cohn, 2012). Therefore, both TRA and TPB assist behavioural change implementers in choosing the most suitable method of predicting the strength of an individual’s intent to adopt a desired behaviour. These theories are applicable to behavioural changes of any type from consumer spending to the adoption of public health messages. The TRA analysis follows several steps to investigate the personal beliefs and social norms possessed by people to
predict their behavioural intentions. The practical implementation and effectiveness of TRA is demonstrated using a fictional case.

Though every individual’s behaviour and attitudes form and develop under the influence of subjective social norms expressed by peers, family members and colleagues, people are susceptible to adhering to group expectations to differing extents (Xenitidou & Edmonds, 2014). In other words, while some people refer more to social norms in making decisions, others rely mostly on their personal beliefs and perceptions. In the context of the present research dedicated to road safety campaigns promoting safe driving practices, the TRA insight in behavioural change is valid and powerful. In the field of traffic safety campaigns, it is unreasonable to expect to change individual attitudes through behavioural change initiatives at the personal level. Hence, it is essential that any road safety campaign undertakes a precise consideration of how, and in which social spaces, to seek to influence attitudes and behaviours (Russell & Cohn, 2012).

Therefore, the persuasive efforts of social advertising campaigns should address the attitudes of the target group as a whole. As one may see from the subsequent analysis of RSCs in Australia, Sweden and the UK, all campaigns involved a careful selection and segmentation of target audiences to determine homogenous populations to make them reachable through a unified message. Hence, it is essential that the KSA applies the insights of the TRA to improve the appeal of its social advertising to young road racers. As indicated above, the TPB rests on the same two pillars as the TRA – personal beliefs and social beliefs. The additional TPB component concerns the perceived behavioural control.

Responding to the ideas of Ajzen and Fishbein, Canadian psychologist Albert Bandura (1977) assessed the TRA and TPB in the context of self-efficacy focused on the relationship between a person’s belief in his or her abilities (competence) and the selection of a particular behaviour. The major theme of this theoretical framework is that the actual behaviour of a person is conditioned by his or her responses to social factors, such as the presence of group norms and the actual conduct of the people with whom they relate. The concept of perceived behavioural control suggests that when assessing the likelihood of bringing about behavioural change, it is not enough to examine behavioural intentions alone. This is so because nobody is entirely free to determine their behaviour, which is always (in part) conditioned by perceived needs to meet (and perhaps defy) social norms.
This expansion of the TRA to include perceived behavioural control when applied to the case of Salman cited above indicates the need to appeal to the interests and attitudes of the whole group of young Saudi drivers. For an RSC to be successful, it needs to bring about a change in the attitudes towards driving of the entire target group. The change results in a new understanding that risky and reckless driving is immature, pointless behavior. Thus, the Pinkie campaign in New South Wales was built around such an idea to illustrate to boy racers engaging in dangerous driving in their search for their peer recognition how stupid and immature their behaviour was.

2.2.2. Persuasive Social Marketing Advertising

The role of the media is pervasive in the contemporary world, which explains the widespread use of its channels by policy makers and social activists to promote certain public beliefs and attitudes (Voorverd & van Nort, 2014). It is not just public road safety campaigns that utilise the advantages of media to create and deliver messages to target audiences (Hoekstra & Wegman, 2011). Any social intervention requires a solid theoretical foundation to structure the campaign in a way which will reach the target population. Thus, this subsection reviews the key persuasion theories to assess their applicability to road safety campaigns in the KSA.

2.2.2.1. Greek Rhetorical Theory

When speaking about modern theories of persuasion and attitude change, it is crucial to start from the origins of those theories. One of the earliest philosophers to ponder the power of persuasion was Aristotle (384–322 BC), who laid down a basis for the study of rhetoric which has remained influential to this day. Aristotle defined rhetoric as ‘the faculty of observing in any given case the available means of persuasion’ (Evrigenis, 2014, p. 54). In the context of such a persuasive communication, an orator or speaker should take into account three concepts named by Aristotle, namely ethos, pathos and logos.

The notion of ethos refers to the speaker’s credibility or image. Thus, people are likely to believe those who embody persuasive power. Otherwise, the audience will not give credit to a speaker’s arguments (Fletcher, 2015). The notion of pathos implies an appeal to emotion. Aristotle argued that human emotions such as anger, envy, calmness, indignation, fear, kindness, shame, confidence and unkindness produced an effect on individuals’ judgements and actions. Hence, the persuasive power of an argument relies on the use of emotions to influence the feelings of the audience (Fletcher, 2015). Finally, the notion of logos refers to
logic, the reasoning of the argument. Any act of persuasion requires a credible proof of the claims being made (Fletcher, 2015).

Therefore, according to Aristotle, persuasion rests on three pillars – ethos, pathos and logos. The first relates to the speaker’s personal character, the second, to putting the audience into a particular frame of mind and the third to the apparent proof of the argument itself (Aristotle, 2015). As explained by Aristotle:

> Persuasion is achieved by the speaker's personal character when the speech is so spoken as to make us think him credible. We believe good men more fully and more readily than others: this is true generally whatever the question is, and absolutely true where exact certainty is impossible and opinions are divided. This kind of persuasion, like the others, should be achieved by what the speaker says, not by what people think of his character before he begins to speak. It is not true, as some writers assume in their treatises on rhetoric, that the personal goodness revealed by the speaker contributes nothing to his power of persuasion; on the contrary, his character may almost be called the most effective means of persuasion he possesses (Aristotle, 2015, s1356a).

Therefore, the key argument presented by Aristotle is that the expression of the speaker’s personality largely achieves persuasion. In this sense, the personality of the speaker may be recognised as the most effective means of persuasion. In the modern world, Aristotle’s concept of ethos equates to charisma and credibility (Evrigenis, 2014). Non-verbal signals, physical appearance, the personal reputation of the speaker, and style of delivery contribute to a sense of the speaker’s moral competence, expertise, and knowledge. In its turn, pathos, which is conveyed through the mood or tone of speech of the speaker, underpins the emotive appeal of the argument’s delivery. Pathos manifests in the use of various figures of speech, such as metaphors and similes, and the presentation style. The key objective of the use of pathos is to engage the audience by tapping into its underlying values and assumptions (Evrigenis, 2014). The major rhetorical devices used to reach the target population involve appeals to basic human virtues, such as justice, generosity, courage, gentleness and wisdom.

Aristotle’s third pillar of persuasion, logos, is the actual argument advanced by a speaker. This pillar refers to appeals to the intellect or reason of listeners. The acceptance or rejection of the argument rationale depends on the capacity of the audience to process information in a logical way, and on the speaker’s ability to appeal the audience’s reason (Evrigenis, 2014). The theory of rhetoric developed by Aristotle made a significant impact on the formation of postulates of the elaboration likelihood model (ELM) centuries later. Details of this impact are discussed below in the subsection dedicated to ELM and its role in social advertising.
the context of creating road safety campaigns in the KSA, it is possible to affirm the relevance of Aristotle’s insights. In terms of the three fundamental pillars of persuasion, Saudi public campaigns should utilise a credible source of information to deliver the message, multiple peripheral cues to clarify the argument, and evidence to support the promoted idea. An overview of the Salamati campaign revealed that the police served as the main source of information and means of law enforcement, which aroused public resistance to the message. It would have been more effective to select another carrier for the information, one whose charisma and reputation added validity to the argument.

2.2.2.2. Defamiliarisation Theory

The concept of defamiliarisation originated from the theory of prose developed by the Russian formalist Victor Shklovsky (1893–1984). His notion of defamiliarisation or ‘making strange’ arose from the argument that it is impossible to maintain the freshness of human perceptions of objects. According to this view, the demands of human life and existence require to a certain extent the automatisation of such perceptions (Burke, 2014). In other words, Shklovsky claimed it was utopian to believe that nature retains its freshness and glory for the human mind despite the passage of time. Human consciousness operates another way; to comprehend phenomena, the human mind makes them clear and well-developed concepts. In contrast to Romanticism and Symbolism, Shklovsky’s Formalism recognised the purpose and role of works of art in changing the mode of perception from the ‘automatised’ to the artistic (Burke, 2014). The following lines clarify this viewpoint:

The purpose of art is to impact the sensation of things as they are perceived, and not as they are known. The technique of art is to make objects ‘unfamiliar’, to make forms difficult, to increase the difficulty and length of perception, because the process of perception is an aesthetic end in itself and must be prolonged. Art is a way of experiencing the artfulness of an object; the object is not important (Shklovsky, 1917, p. 2).

This concept of defamiliarisation is valuable for creating road safety campaigns. In contrast to traditional messages that the target audience has become used to, defamiliarisation in the context of social advertising allows the generation of innovative appeals that are able to reach the target (Shklovsky, 1917). The core purpose of the Formalist theory, which was formulated by Shklovsky is to represent reality in a way that allows people to observe that reality at a newer, much deeper level while accepting the impact of this observation on human emotions and imagination (Goulimari, 2014).
In support of his idea, Shklovsky pointed to the great disparity between perceptions of a newly introduced object or matter and perceptions of the same object or matter after a proper examination. ‘If one remembers the sensations of holding a pen or of speaking in a foreign language for the first time and compares that with his feeling at performing the action’ numerously, a person is likely to admit the difference in perceptions (Selden, 2014, p. 274).

In line with this postulate, Shklovsky claimed that such an automatic life was worth little. Habitualisation devours work, clothes, furniture, one's wife, and the fear of war. ‘If the whole complex lives of many people go on unconsciously, then such lives are as if they had never been’. And art exists that one may recover the sensation of life; it exists to make one feel things, to make the stone stony. The purpose of art is to impart the sensation of things as they are perceived and not as they are known. The technique of art is to make objects ‘unfamiliar’, to make forms difficult, to increase the difficulty and length of perception because the process of perception is an aesthetic end in itself and must be prolonged. Art is a way of experiencing the artfulness of an object: the object is not important (Selden, 2014, p. 274).

As developed by Shklovsky, ‘habitualisation’ entails a process by which the human mind becomes immune to the force of certain ideas or images, through repetition. Thus, things that become too ‘familiar’ lose their power to move the mind. Being rendered cognitively stale, human mind fails to dwell upon or interrogate such a matter in any useful way (Goulimari, 2014). In his explanation of how to apply the defamiliarisation concept to the real art, Shklovsky (1893–1984) referred to works of Russian novelist, Leo Tolstoy (1828–1910) as an excellent example of describing well-known phenomena in a new way. The scholar argued that a precise investigation of general laws of human perception revealed the habitual, automatic, nature of the process. Shklovsky (1893–1984) praised Tolstoy for his ability to represent traditional things in their entirety without any alteration.

Tolstoy makes the familiar seem strange by not naming the familiar object. He describes an object as if he were seeing it for the first time, an event as if it were happening for the first time. In describing something, he avoids the accepted names of its parts and instead names corresponding parts of other objects. For example, in Shame Tolstoy ‘defamiliarizes’ the idea of flogging in this way: ‘to strip people who have broken the law, to hurl them to the floor’, and ‘to rap on their bottoms with switches’, and, after a few lines, ‘to lash about on the naked buttocks’ (Selden, 2014, p. 275).

Therefore, in order to make familiar things strange, techniques of defamiliarisation are employed to re-energise the material and to force the unconscious human mind to take notice of a known thing as strange or edgy, thus disrupting normalised and customary modes of perception (Goulimari, 2014; Burke, 2014). Today, the most common techniques employed
to achieve a defamiliarised perception include the use of metaphor or the presentation of a subject action as a dreamscape in slow motion or as hyper-reality. Whether consciously or not, these defamiliarisation techniques are widely used in Australia in social advertising. Visual metaphors or switched perspectives (external observers, interior monologues) are common in all creative endeavours, and particularly in affective advertising (Giles, 2014).

For instance, NSW had a long campaign against sober driving based around a popular song *Betta Get a Lawyer, Son*. The popular motif accompanied the narrative as a confused and paranoid interior observation; every interaction between a drunk driver and the outside world (hotel staff, friends, taxi drivers, and others) is experienced as a series of delusions about suspicious police officers until the driver is eventually pulled over by the police, thus returning the reality (Campaign Brief, 2012b). Other campaigns targeting the fatal risks of high-speed collisions, portrayed moments of a deadly impact as a hyper-real experience, combining close-up images of massive collisions with equally frightening slow-motion shots of unfolding carnage and destruction (NSW Government, 2015e).

To most people, campaigns like those described above serve as a jolt to their consciousness. Defamiliarisation techniques used to represent well-known consequences of dangerous driving become stark reminders of the frightening nature of risk-taking on the road. In contrast to traditional media appeals focused on the constant reporting of road tragedies, social advertising based on defamiliarisation allows the breaching of an extremely familiar staple of the culture. In response to the prevalence of a risk-taking behaviour on Saudi roads, this thesis argues that there is a need for campaigns the employ these techniques. Road safety campaigns based on the defamiliarisation approach are a critical element of the overall traffic safety strategy in all mature safety cultures, and they complement and underpin campaigns based upon the insights of TRA and TPB.

2.2.2.3. Elaboration Likelihood Model

Unlike defamiliarisation theory, which seeks to shake audiences up and to refocus attention on some important issues, the so-called elaboration likelihood model (ELM) is a theory of persuasion developed by Petty and Cacioppo (1986). It is a popular persuasion model for attitude-change interventions because of its focus on attitude formation and modification (Woodward & Denton, 2013). The model is based on the idea that there are two ways of changing attitudes. Central to ELM is the notion of the elaboration continuum, a classification scheme to represent presentation styles ranging from high elaboration (central
route) and low elaboration (peripheral route). The former refers to logical thought processes and the weighing up of evidences, and the latter entails instinctive decision-making based on assumptions or prior experience (Woodward & Denton, 2013).

Hence, the model presupposes two distinct routes to persuasion. The central persuasion route implies a change in attitude resulting from thoughtful elaboration processes. In other words, elaboration reflects the extent of an individual’s motivation to consider arguments contained in a persuasive communication. Hence, a range of mental processes is activated during the information processing or argument evaluation, and this is called elaboration (Hewstone, Stroebe, & Jonas, 2012). The peripheral route leads to an attitude change because of non-rational processes, such as heuristic, associative, and inference approaches. Thus, in the second type of a persuasive communication a person is driven to adopt a certain idea through the presentation of familiar ideas or superficial forms of ‘argument’ and exhortation (Hewstone, Stroebe, & Jonas, 2012). It is evident from the ELM that high elaboration requires engagement of higher-order cognitive processes, whereas low elaboration requires simply structured thoughts, relying mostly on so-called common sense.

Per ELM, attitude changes brought about through the central route last longer and are more resistant to persuasion in comparison to attitude changes brought about by the peripheral route. ELM has been frequently used in social studies. Furthermore, ELM has been used in developing persuasive messages for public campaign strategies (Woodward & Denton, 2013). Complemented by the theory of planned behaviour, ELM underpins social efforts dedicated to encouraging and promoting desired beliefs and behaviours. ELM helps public advertising campaigns bring about attitude change by communicating to target populations in an accessible manner. Scholars who recognise the connection between the theory of planned behaviour and ELM claim that while the former facilitates identification of accessible beliefs, the latter assists in structuring and delivering arguments based on accessible beliefs to achieve the maximum impact and to ensure that the impact is a lasting one (Rodgers & Thorson, 2012).

The impact of social advertising takes place through a combination of two routes of persuasion. Thus, an individual’s ability to comprehend the message conveyed by the central route and the messages conveyed by peripheral cues constitute the extent of the media effect achieved (Rodgers & Thorson, 2012). While high elaboration requires the activation of higher cognition to analyse the argument presented, low elaboration implies the use of
Peripheral cues that help activate cognition and message comprehension. Various iconic references, testimonials, and framing devices that establish special and time boundaries serve as peripheral cues to appeal to the target audience. It has been found that it is easier to convince people to change their views using low elaboration techniques, but the resulting changes are less long lasting than the changes brought about through high elaboration (Woodward & Denton, 2013).

In studies of ELM-based public campaigns, scholars have identified three basic features, which are needed for effective message delivery. Peripheral cues, argument quality, and attitude shape a media presentation and predict its effectiveness (Hewstone, Stroebe, & Joans, 2012). The likelihood of a public campaign being successful depends on the individual’s cognitive ability, distraction, and subject knowledge. These characteristics of ELM make it a valid instrument for defining processes to generate influential and persuasive media presentations (Rodgers & Thorson, 2012).

In the context of utilising ELM for the creation of RSCs in Saudi Arabia, it is essential to take account of the low literacy level of the populace (Al-Rasheed, 2013) which means that it is unreasonable to design public campaigns targeting the Saudi population which rely on high elaboration. Poor reading and writing skills mean that most of the Saudi population has a limited ability to exercise higher-cognition skills (Woodward & Denton, 2013). Thus, road safety advertising in the KSA should predominantly use the low elaboration approaches prescribed by ELM. The use of various peripheral cues is likely to improve the effectiveness of social advertising and promote safer driving practices among Saudis. High elaboration strategies that require much time and effort for the analysis of information/argument introduced are ineffective in contrast to simple and concise low elaboration presentations. Keeping with the socio-cultural context, one may conclude that public campaigns in Saudi Arabia should concentrate on low-elaboration processes.

As it has already been indicated above, ELM developed in reference to rhetorical principles determined by Aristotle. A comparison between ELM and Aristotle’s rhetoric shows a clear continuity of ideas between the great ancient philosopher and the modern age. In particular, the concept of logos can be linked to high elaboration or the central route to persuasion in ELM. The concepts of ethos and pathos closely resemble the low elaboration or peripheral route. As stated in the discussion of Aristotle’s rhetoric, the concept of logos is applicable to RSC strategy, but requires a careful consideration. Because of low literacy of many Saudi
drivers, the notion of logos or high elaboration may only apply to their consideration of certain elements of traffic safety policy, such as formal driver training. It is useless to stress higher cognitive skills in message delivery, since it is unlikely to be received by most of the Saudi population.

Instead, the focus of road safety campaigns should be on the concepts of ethos and pathos and low elaboration approaches to increase the public’s engagement and comprehension of the message. It becomes evident when analysing Saudi public campaigns that the communication style used in the argument presentation is inadequate and unable to reach the target audience, which explains the failure of Saudi attempts to improve safety on the nation’s roads. In the context of utilising a credible source of information and an attractive means of information delivery, it is essential for Saudi campaign designers to refer to the experience of developed countries. In particular, successful campaigns in Australia, the UK, and Sweden demonstrate ways of constructing messages to produce creative campaigns which will have an emotional and cultural impact. In contrast to the rational appeals used in the KSA, campaigns in developed countries use emotion-based strategies. However, to translate the successful approaches of others to the cultural context of Saudi Arabia, it is vital to analyse the social and cultural features that determine the effectiveness of campaigns.

2.2.3. Audience Selection and Targeting

The audience is the recipient and target of any social marketing campaign, and the audience is the core element which determines the campaign’s design and development. As a broad term, audience implies a complex and diversified group of people addressed by a speaker or message (Griffin, 2014, p. 59). Communication literature uses the concept of target audience in reference to social marketing and advertising. According to Potter and Stapleton (2011), a target audience is a population group that ‘practitioners want to reach through their bystander prevention and intervention strategies’ (p. 802). Typically, the effectiveness of a social marketing campaign is evaluated through its impact on the target audience. The target audience is identified through the process of audience segmentation which emerged along with the development of the marketing industry. Coined by Smith (1956), the term ‘segmentation’ implies the identification of promising consumer subgroups, the investigation of their needs and preferences, and the development of products tailored to those needs and preferences. Thus, market segmentation pursues the aim of increasing the product market share (Slater, 2015).
In the context of road safety campaigns, audience segmentation should be based on official statistics and reports on the incidence of road accidents, as well as their causes and contributing factors (Alsamrany, 2011). These variables are critical points in segmenting and audience and defining the target segment. In order to create an effective message which will be received and recognised by the target population, designers need to explore specific behaviours of the audience and to define channels mostly consumed by the public. Thus, effective marketing communication occurs when a public campaign reaches the audience through the most frequently used media channels and when it considers the personal, social and environmental factors affecting the behaviour of the group (Jackson, 2013). Hence, the processes of audience segmentation and targeting require proper consideration of cultural influences and the principles of mediation.

2.2.3.1. Cultural Theories

Culture as a multidimensional concept encompasses various behaviours, attitudes, policies, understandings, institutions, laws and approaches demonstrated by groups of people (Pace & Schumacher, 2013). Obviously, understanding the local culture, whether in the KSA or any other jurisdiction, is important to the arguments in this thesis. For instance, elements of the social psychology of road users, such as a risk-taking attitudes or disregard for the law, may present a significant cultural obstacle to TAI reduction. Hence, development of any road safety campaign requires careful consideration of the social and cultural characteristics of the target population to understand how advertising may change behaviour (Wang, 2012).

Although the cultural characteristics of the target audience pose a challenge to advertising in terms of making the message clear and reachable, these cultural barriers are surmountable (Pace & Schumacher, 2013). As one may see from the Pinkie campaign of NSW, it is possible to create a unified message to engage different population groups possessing different social attitudes and beliefs. Thus, properly conceived advertising campaigns grounded on reasonable timeframes can overcome socio-cultural challenges (Monaghan, 2014).

Since any public campaign seeks to reach the target audience, it is critical to touch upon the issue of cross-cultural reception disparities. The key factor in this field concerns the cultural contexts of societies. The populations of societies with a high cultural context tend to practise non-verbal communication (gestures, body language, or facial expressions) and appreciate implicit messages. Populations of low cultural context societies focus on explicit messages
and non-verbal texts. In other words, communication in high-context societies is affected by the context and by the interactions between the parties involved, while low-context societal communication concerns the actual content (Bardhan & Weaver, 2011). Saudi Arabia is recognised as a high-context society, where daily communication is governed by traditional customs and non-verbal means of communication (Chon & Yu, 2012). In terms of effective public advertising, designers of road safety campaigns should concentrate on non-verbal message delivery rather than on a simple text.

Since most road safety campaigns concern the issue of speeding, it is vital to investigate the impact of socio-cultural traits on risk taking. In the context of cultural disparities, societal perceptions of risk influence people’s attitudes towards risk-taking behaviours, such as dangerous or reckless driving. Hence, risk perception in relation to drivers’ behaviour must be understood in the context of local cultures (Wills & Lee, 2014). The latter (local cultures) is primarily transmitted through the primary (family) socialisation of children that takes place during the earlier stages of their development when they cannot be the target of mass-media safety campaigns. To address this problem, it has become a standard practice in developed nations to leverage traffic safety culture by introducing formal road safety instruction into the general education system (Hung & Huyen, 2011). Unlike developed countries, the KSA introduces traffic-related instruction only as part of driver training courses. This gap in Saudi road safety marketing requires the integration of education on basic traffic regulations and requirements into school curriculums to reach a young audience. Per recent statistics, young drivers are at the highest risk of engaging in speeding and of being involved road accidents (Mansuri et al., 2015). Thus, complementing media campaigns with school-based instruction would be a useful strategy for Saudi social marketing.

2.2.3.2. Theories of Mediation

The term ‘mediation’ is multidimensional and possesses different connotations in legal, social, cultural, and media communication contexts. In general, the term serves to reflect the third element in the triadic structure that mediates the relationship between two states of reality (consciousness versus unconsciousness). Another use of the term refers to the technical means of transmitting messages, such as mass media or social media (Mertz, 2013). In addition, the concept of mediation implies the general dominance of the media in contemporary constructions of knowledge. Finally, mediation describes the process of linking
nodal points in a network or an assembled structure, which produce or perform the ‘reality’ (Mertz, 2013).

These perspectives on the issue of mediation are relevant to this thesis which is focused on mass-media road safety campaigns. Pursuing the aim of identifying the influence of different communication media, this study seeks to determine the manner in which the ‘needs’ of the medium influence or even determine the types of messages that can be communicated. The issue of the message delivery has already been discussed in the context Aristotle’s logos and the low elaboration concept in the ELM framework. The overview of road safety campaigns in the KSA demonstrated an almost complete ignorance of this issue. Saudi public campaigns focus on law enforcement and repetition rather than on the creation of an influential message and the identification of the most effective media channels for its delivery.

The central issue for all mediation theories in communications or media studies is to investigate what is possible and what is not possible within the confines of a given communication medium. In other words, it is essential to examine the impact of a communication medium on both the message and the work of social actors, such as RSC designers, police officers, the government, and the mass media campaigners (Ismail & Zhuang, 2013). The Canadian philosopher and media theorist Marshall McLuhan (1911–1980), who claimed that the medium is the message, originally raised the issue. Relying on the sociological provisions of the mediation construct formulated by Marx (1818–1883), McLuhan saw the form taken by media because of society’s impact on the communication media (Editorial UOC, 2011).

Importantly, McLuhan argued that the introduction of new media forms into a given culture could radically alter how members of that culture mediated between the material world and the world of ideas and values (McLuhan, 1964, p. 7). The ideas of McLuhan about the possibility of bringing about behavioural change by introducing new media found further expansion in the works of the British-American cultural theorist, John Fiske. Fiske proposed the existence of the space for innovation and change, even within the communications-technology landscape (Tester, 2013).

According to Fiske, the idea of the audience as the key focus and determinant of message recognition was too simplistic. He argued that the assumption that the public comprised a passive and undifferentiated mass should be replaced with a view of the public as a
composite of many audiences bringing their own diverse ‘readings’ to the consumption of any given communication (Tester, 2013). Fiske’s post-modernist version of cultural mediation has been criticised as too utopian. His position contrasts with multiple socio-cultural theories built around the significance of the audience in social marketing and other campaigns dedicated to behavioural modification. Though the insights of McLuhan and Fiske seem outdated, they are important for this thesis because they highlight the limitations of persuasive messages distributed through traditional media.

A preview of road safety campaigns in developed countries, in contrast to similar attempts in Saudi Arabia, highlights the importance of adopting a multidimensional approach to addressing the dangerous driving behaviour (Mansuri et al., 2015). Hence, social advertising about responsible driving should engage other cultural institutions, such as the education system, in addition to media channels. Moreover, it is critical for Saudi producers to monitor the media market for the emergence of new communication channels to adjust to the latest trends and thus, to reach the young people as the most technologically advanced audience. The power of new social media in surmounting hegemonic idea-systems has been illustrated vividly in the recent so-called ‘Arab Spring’. Appeals made through social media channels, such as Facebook and Twitter, reached target audiences and encouraged them to unite against autocratic regimes in Egypt, Syria, Tunisia, Bahrain and elsewhere (Adi, 2014).

Hence, new social media are not only the means of communication, but effective channels for the distribution of persuasive messages concerning the adoption of new forms of behaviour. As demonstrated by social movements, Arab societies which stick to their traditions are vulnerable to the persuasive power of new social media (Adi, 2014). Thus, Saudi public advertising which promotes safer driving practices should utilise social media channels to reach its major consumers – young drivers – who appear to be the most at-risk population on the nation’s roads (Mansuri et al., 2015). Social media channels, such as Facebook, Twitter, and YouTube, have been shown to have the power to shape attitudes and beliefs of young populations, thus, modifying their behaviour (Guttman, 2014). Developed countries have already realised the benefits of modern media and have utilised them in road safety campaigns that appear to have been highly effective in reaching young drivers. Hence, Saudi designers should focus their campaigns on these media channels instead of traditional billboards and television to reduce the risky driving behaviours of its population.
2.3. The International Road Safety Situation

The road safety situation worldwide is complex and continues to worsen every year. According to recent statistics, more than 1.24 million people are killed annually in RTAs. Moreover, another 20 to 50 million receive non-fatal injuries as a result of road crashes (WHO, 2013). The most notable feature of high RTA rates is their alarming concentration (90% of total RTAs) in middle- and low-income countries (WHO, 2013). The WHO and the UN, as well as other international organisations, have recognised an urgent need to identify the causes of RTAs and develop effective strategies to improve road safety and establish a culture of safety on the world’s roads. World Health Organisation (WHO) (2011) research findings also suggest that about 50% of RTA-related deaths occur among vulnerable road user categories, such as motorcyclists, pedestrians and cyclists, while 15% of contemporary countries even do not have comprehensive legislation that would establish stringent road safety standards and litigation for their violation (WHO, 2011).

UN (2015) experts also point out that RTAs are associated with considerable economic, social, and health losses and expenditure in most modern countries, and observe that this burden continues to increase. International research (WHO, 2011; UN, 2015, and others) indicates that the most valuable contribution to the improvement of the road safety situation in any particular country is the creation of a well-funded lead agency that addresses road safety issues, and the performance of regular research and risk assessment of the national road safety situation (UN, 2015). The International Federation of Red Cross and Red Crescent Societies (IFRC) (2015) is also actively engaged in research into road safety gaps and problems worldwide, and IFRC reports have already made an invaluable contribution to the understanding of the causes of high RTAs, and of ways of combating the incidence RTA worldwide. Unfortunately, however, according to IFRC (2015) estimates, the road safety situation in developing and low-income countries is expected to deteriorate further, which may cause more human suffering and increase the financial, social and healthcare burden associated with RTA morbidity and mortality. This has ominous implications for the KSA.

Risky driving behaviour is the main cause of road accidents worldwide (WHO, 2015). Hence, the keys to addressing the high mortality and morbidity associated with road accidents are thorough research, evaluation, risk assessment and the development of evidence-based responses. The studies of Beanland et al. (2013), Castaniera, Derochea and Woodmanb (2013), Chorltona, Conner and Jamson (2011), Desapriya et al. (2011), IFRC (2015), Palat
and Delhomme (2012), and WHO (2013) strongly suggest that such a conclusion is reasonable, especially because these studies are dedicated to examining why RTAs occur, what percentages of RTAs are fatal, which types of vehicles are most vulnerable in terms of road safety, and so on. These studies also support some of the central contentions of my own work.

One of the most extensive and thorough research projects on the topic was conducted by DEKRA (2015). Its report is dedicated to enhancing road safety in the face of the ongoing technological progress. The paper thoroughly investigates traffic psychology and vehicle technology to highlight the areas with the greatest potential for further safety improvement. DEKRA (2015) experts also describe the challenges that efforts to bring about this improvement may create for people, technology and infrastructure. Furthermore, the report stresses the need to promote responsible and safety-conscious behaviour by all road users. According to DEKRA (2015), future interventions should focus on ways to ensure road safety in the context of electronically assisted driving and autonomous driving, which are expected to become a technical reality in the near future.

Many studies have investigated road safety from the perspective of young drivers and many have done so in the context of driver training. Thus, Beanland et al. (2013), for example, studied the effectiveness of driver training for improving young novice drivers’ on-road safety and hazard perception. It has been found that focusing more on improving young drivers’ attitudes towards safety may be even more important than teaching traditional procedural skill acquisition. Papakosmas and Noble (2011) provide further evidence on this issue by considering the high rates of RTA-related injury and death among young novice drivers, and by making connections between the experiences of novice drivers, their confidence and competence on the road, and their involvement in RTAs. Papakosmas and Noble (2011) establish a direct link between parental impact on young novice drivers and their exposure to risk-taking behaviours on the road and frequency of RTAs. This work also has obvious, and quite crucial, relevance to my own study.

The WHO (2015a) provides very comprehensive general data on the worldwide distribution of the RTA health and life burden, and on RTA-related legislation and statistics for different countries. Studies by Castaniera, Derochea and Woodmanb (2013), Chorltona, Conner and Jamson (2011), and Palat and Delhomme (2012) deal with the theory of planned behaviour and its potential to identify the psychological determinants of risky driving. Desapriya et al.
(2011) present a different perspective on RTAs. They explore the risks associated with old age, focusing primarily on how declines in sensory, physical and cognitive functions affect the involvement of older people in RTAs (as both pedestrians and drivers).

As one can see from the evidence presented in this section, RTAs are a global burden — and almost every country in the world tries to do its best to develop effective tools for addressing the tragic situation on the roads. Thousands of people die or are permanently disabled because of risky driving behaviour. The situation must be addressed not only by improving vehicles, developing and refining safety-checking regimes, ameliorating deficiencies in road infrastructure, and so on, but also through well-planned and well-targeted national and international strategies and campaigns. Some countries have already moved forward in improving driving behaviour and road safety culture; however, this work is of an embryonic and fragile nature in developing countries. Therefore, together with a clear image of the RTA-related situation worldwide, the present dissertation targets an identification of the RTA situation and the epidemiology of the KSA. The next section is dedicated to the assessment of the RTA rates and trends in the Kingdom of Saudi Arabia.

2.4. RTA Epidemiology in the KSA

Road traffic accidents occupy the leading place in worldwide mortality causes, and in the KSA, RTA fatalities top the list with more than 13 deaths occurring per 1,000 RTAs. Aldalbhi (2014) pointed out that in the Kingdom of Saudi Arabia, one person dies every hour, and four get injured on KSA roads, and RSAs cause 7% of all deaths in the KSA. The WHO (2013) report also estimates the RTA rates in Saudi Arabia to be the highest in the Gulf Cooperation Council (GCC) region, which requires additional attention to the issue. The RTA situation in Saudi Arabia is indeed highly challenging. Per estimates of Toumi (2014), 17 deaths per day occur in the territory of the KSA because of severe, fatal RTAs. This situation is alarming to the Saudi authorities. It has been estimated that the annual cost of road traffic accidents in KSA exceeds six billion US dollars, in addition to other health, economic, and social impacts, such as disability, rehabilitation and unemployment (Al-Atawi, Kumar, & Saleh, 2014). However, with the introduction and establishment of comprehensive road safety laws, especially the mandatory seat-belt use law in 2000, the situation seems to be gradually improving. The level of awareness about the need for road safety is, however, very low, and research on the causes of RTAs and ways of reducing the number of RTAs is very scarce. As demonstrated by Brebbia (2014), among the factors responsible for accidents in
the KSA are a high dependence on vehicles, drivers’ neglect of road traffic signals and laws, as well as weather conditions. Based on their findings, the researcher recommends enhanced risk identification and assessment of accident data. Ongoing research could potentially help authorities develop an effective policy framework that would work well on KSA roads.

In part, such a dangerous and alarming RTA situation in the KSA has come about because of rapid improvements in the socio-economic status of Saudis within the past 50 years. Since the 1970s, Saudi Arabia has become one of the largest oil exporters in the world, and the country has been experiencing dynamic population growth and a rapid increase in socio-economic wellbeing. Inevitably, these improvements and changes have been associated with a sharp increase in the number of motor vehicles used in the country (Ageli & Zaidan, 2013).

While there are a variety of educational campaigns and courses for the improvement of road users’ behaviour on Saudi roads, the death toll and a variety of socio-economic and medical consequences of RTAs are still incomparably high in the KSA (Ministry of Interior, 2012). There are many human, environmental and vehicle-specific factors that contribute to the high rates RTAs. Nevertheless, the major causes of RTAs in the KSA include speeding, recklessness and the inexperience of young drivers (Altwajri, Quddus, & Bristow, 2012; Wali & Mercado, 2012). The problem is that there is scant research in the KSA related to identifying the causes of RTAs specific to the Kingdom. Therefore, it is important to search for effective, workable ways of improving road safety culture and behaviour on the Kingdom’s roads.

As the present thesis argues, strategies for KSA authorities include the targeted improvement of road safety standards and raising public awareness of the perils of risky driving behaviour via well-planned and focused road safety campaigns (RSCs) (Aldalbhi, 2014). Even though the KSA authorities launched massive educational programs related to road safety several decades ago, few of them proved effective in terms of providing a long-term change in drivers’ attitudes and behaviours. This is evident in the current statistics on RTAs (Hassan & Al-Faleh, 2013). A more efficient and effective approach to designing road safety campaigns (and to achieving a considerable improvement in road use behaviour) is to examine the world’s best practices in RTA reduction, and to transfer as many aspects as possible of these practices into the KSA context.
One of the positive examples that the KSA might follow is that of Australia. According to the NSW Roads and Traffic Authority (2011), the Australian state of New South Wales (NSW) managed to reduce the number of RTAs per 100,000 persons from 28.9 in 1970 to just 5.9 in 2010. This statistic includes both men and women, which makes it difficult to apply in KSA, where almost all drivers are men. This outstanding achievement in NSW was possible partly due to the road safety campaign ‘Safe System Partnership’ and many other subsequent road safety educational campaigns and courses that targeted specific population groups with specific messages (Lewis, Rowland, & Wishart, 2012; Phillips, Ulleberg, & Vaa, 2011). Such a planned and comprehensive approach to road safety improvement in NSW and other regions of Australia achieved the goal desired by all RSC planners: a sustained, long-term cultural change to behaviour on the road. Hence, the success story of the Australian struggle against risky driving behaviour and high levels of fatal and non-fatal RTAs may be investigated, and many culturally suitable and relevant principles could be transferred to the KSA environment for the achievement of feasible outcomes.

As the research presented in this chapter suggests, the KSA is a country suffering from alarmingly high RTA rates. Studies reveal that the driving culture is rather poor and undeveloped in Saudi Arabia, and many drivers execute risky actions and yield to aggression on the roads, which results in high rates of mortality and morbidity. Speeding, ignoring red lights, unlicensed driving, talking on the phone while driving, breaking seat belt use rules, and other forms of risky behaviour are highly prevalent in the KSA, and it seems that Saudi drivers are not afraid of road safety legislation. Yet, as RTAs impose tremendous financial, healthcare, social and psychological burdens on both the state and on victims of RTAs, the situation is clearly deleterious for the country. Once again, so that this may be ameliorated, types of high-risk driving and the causes of such behaviours have to be better understood. It is only through such an understanding that the Kingdom’s authorities can develop efficient and effective strategies to address a situation that may now be described as grim.

2.5. High-Risk Driving in the KSA

High-risk driving is as common in the KSA as it is diverse in character. This causes major challenges regarding the adoption of an effective and functional system of road safety regulations. Roads in the KSA are mostly of high quality while the cars that ride upon them are generally powerful and advanced models, and so it follows that road safety is mostly determined by driving behaviour and adherence to road safety rules and standards. Many
scholars and laypersons advise taking a closer look at the causes of RTAs specifically in the KSA and recommend the development of individual solutions based on the specifics of the road safety situation in this country. The following section is therefore dedicated to an analysis of the most common causes of RTAs in the KSA, the characteristics of the highest-risk categories of drivers, and the impact of age, gender, and cultural specifics on the ignorance of road safety rules that is all too commonly exhibited by Saudi drivers.

2.5.1. Causes of RTAs

Multiple reports demonstrate that during the past two decades, there has been a tremendous increase in the number of RTAs in KSA (Aldalbhi, 2014; WHO, 2013). Experts explain this as being due to the intensifying tempo of the country’s modernisation, increases in the number of motor vehicles and the influx of large numbers of powerful motor vehicles which end up in the hands of inexperienced, young road users (Mansuri et al., 2015). Clearly, there is a growing need to establish effective road safety measures in the Kingdom to address negative tendencies. However, it seems that there is not sufficient evidence to inform effective interventions.

Barrimah, Midhet and Sharaf (2012) focused on the issue of unreported RTAs and the lack of auditing and monitoring procedures. The authors stress that police reports and health system data do not allow a clear picture of the causes and consequences of risky driving. Moreover, unreported RTAs cause serious distortions of KSA statistics and data on RTA epidemiology, while unreported expenditures on post-accident vehicle repairs and RTA-related injuries also have a negative impact on the economics and healthcare of the KSA. People cover their expenses through private insurance and their personal expenditure, which causes an increased economic burden. Barrimah, Midhet, and Sharaf (2012) conclude that the discrepancy between the actual and the reported costs strongly suggests that increased efforts to review and monitor data quality are required in KSA to reduce the incidence of RTAs.

Several studies have investigated the risk factors and causes of road traffic accidents in Saudi Arabia. Their results can be generalised to a wider population, including Australians, as drivers seem to exhibit the same behavioural patterns. El Bcheraoui et al. (2014), for example, researched the causes of RTAs in the KSA. They found that the factors that might endanger drivers and pedestrians include using a handheld cell phone while driving, unlicensed driving, and not wearing a seat belt. Interestingly, this study’s findings are contrary to the common misconception, as El Bcheraoui et al. (2014) note, that older drivers
exhibit riskier behaviour on the road than their younger counterparts. The authors recommend aggressive monitoring and strict enforcement of traffic laws in the KSA to eliminate these risks.

However, the introduction of such monitoring is not likely to solve the problems of poor road safety and non-compliance with the Kingdom’s road traffic rules. As identified by Aldalbhi (2014), KSA authorities have been relying almost exclusively on punitive law enforcement strategies for a long time, and have resorted to road safety campaigns only recently. Therefore, the country still lacks data and theories on how road safety campaigns might be effectively engaged in the KSA.

AngloInfo (2015) supports the findings of Al-Matawah and Jadaaan (2009) regarding the major causes of RTAs in Saudi Arabia. In line with AngloInfo estimates, the most frequent causes of RTAs in Saudi Arabia are speeding, aggressive driving, and ignoring red lights. Moreover, unofficial races are quite popular among young Saudi drivers, and an overwhelming majority of Saudis are prone to swapping lanes on highways in a dangerous manner, including passing on the inside and on hard shoulders (AngloInfo, 2015). A risky driving behaviour called ‘stunt driving’ is also quite common on Saudi roads (defined as driving so that some or all tyres of the vehicle leave the road surface). The totality of these violations of road traffic rules and safety standards creates additional challenges to the creation of a safe driving culture in the KSA (Highway Traffic Act, 2011).

AngloInfo (2015) also mentions road rage as one of the key contributors to Saudis’ violations of road safety rules and standards. Road rage often manifests in violent confrontations between drivers while they are driving and at the scenes of road traffic accidents. The most frequent participants in such violent confrontations are young Saudi drivers and foreign nationals. Finally, the use of mobile phones is also a form of disregard for road safety which endangers all road users (AngloInfo, 2015). KSA authorities are currently attempting to solve the problem of unruly road behaviour with the help of automatic speeding monitors called ‘Saher’, the use of which is planned to be expanded throughout the KSA despite the resistance to, and disapproval of, this system voiced by Saudi drivers (Toumi, 2014).

To address the problem of the mounting number of RTAs in the KSA, researchers advise paying attention to the potential of driver education programs (Aldalbhi, 2014). However, besides formal education, the concept of road safety campaigns communicated through mass
media channels has also acquired popularity in the KSA, even though this has only occurred within the past decade (Aldalbhi, 2014). The only problem is that despite the growing pace of modernisation and Westernisation of the Saudi lifestyle, conservative Saudis still hold assumptions about the negative, corrupting, and degrading impact of mass media content (Ayub, Kassim, & Zain, 2014). This thesis takes the position that although this is a social issue that the designers of mass media campaigns cannot solve, they could at least reduce its impact on citizens’ attitudes and perceptions by using creative and culturally sensitive approaches to road safety promotion. In particular, it is necessary to express their intended messages in a manner consistent with the socio-cultural norms of the country and its legal requirements regarding media content. This is a crucial point to which I later return.

Another challenge faced by mass media campaigns, especially those launched through TV, radio, newspapers, or the internet, is the longstanding scepticism of Saudi to media content. The reason for such scepticism is the tight control of mass media channels and the internet by Saudi authorities, which is considered to limit access, and to let only desirable content pass into the public media channels (BuMetea, 2013). Therefore, this thesis proposes that addressing the public through traditional media channels should be thoughtfully planned and thoroughly implemented to reach the intended target. It is also necessary to keep in mind that the Saudi culture is unique and has a strong impact on Saudi people’s behaviour. It follows that the impact of culture should also be perceived as a significant variable affecting road safety behaviours. The role of culture in the RTA epidemiology of the KSA is discussed in the following section.

2.5.2. Cultural Characteristics

There are both individual and larger cultural traits related to proneness to risk-taking behaviours on the roads. An important study was conducted by Yang et al. (2013), which shows that personality traits are significantly correlated with involvement in accidents and with risky driving behaviour. Yang et al. (2013) argue that sensation seeking, anger, normlessness (ignoring traffic rules) and altruism are among the reasons for traffic rules violations. Ge et al. (2014) analysed the impact of emotional distress and personal problems on risk-taking behaviours on the road. They found that stress is one of the key factors that can affect drivers’ behaviour, and that that personality traits can mediate the effect of stress on driving behaviour. In line with these findings, Useche, Serge and Alonso (2015) found significant associations between safe driving behaviours, social desirability, and perceived
stress. They also point that stress indicators demonstrate a positive association with risky
driving and violations of traffic rules.

Many studies have attempted to investigate how the cultural traits of different nationalities
can influence the situation on the roads. Nordfjærna, Jørgensena and Rundmo (2011)
conducted a cross-cultural comparison of drivers in Norway, Russia, India, Ghana, Tanzania
and Uganda in terms of compliance with standards of traffic safety, risk perception, attitudes
on the roads, and behaviour. They found that differences in driving culture and road traffic
attitudes in high- and low-income countries. Similar Nordfjærna, Şimşekoğlu, and Rundmo
(2012) identified risk assessment, road traffic culture, and speeding predictors in Norway and
Turkey. Nordfjærn et al. (2014) studied personality traits and road traffic culture in terms of
traffic safety in Turkey and Iran. Finally, Magableh, Grzebieta, and Job (2013) researched the
impact of culture on road behaviour and safety in Jordan.

Nævestada and Bjørnskaua (2011) analysed the concept of safety culture as a central notion
possessing immense potential for improving traffic safety. The authors note that although the
safety culture concept is usually applied to organisations and employees, it may successfully
be used in the road traffic context to develop effective traffic safety interventions. Thus,
safety culture in this context means a commitment to public health and responsible safety
management exhibited by all road users (Nævestada & Bjørnskaua, 2011). One can suggest
that safety culture differs depending on the country and community, and the introduction of a
safety culture in certain states may be hindered by established road behaviour and attitudes.

According to Girasek (2012), factors contributing to vibrant safety culture include strict
monitoring and control of drink driving, increased government attention to traffic safety, as
well as disapproval of speeding and aggressive driving. Girasek stresses that local
engagement in building a safety culture, increased accountability, education, and seatbelt use
regulations also play an important role in establishing a safe environment on the roads
(Girasek, 2012). Interestingly, research conducted by Rundmo, Granskaya, and Klempe
(2012) emphasises that traffic safety culture is not important for risk perception, but it
certainly affects drivers’ risk behaviour. Therefore, one can conclude that traffic safety
culture is extremely relevant as a topic for research, as well as an issue that needs attention
from the public and authorities.
Besides their cultural origins, risky behaviours are also strongly associated with the age and gender of drivers. Therefore, age and gender as RTA determinants are discussed in the following section.

### 2.5.3. Impact of Age and Gender on Risk Taking

Since most researchers recognise young drivers as the highest-risk group of the driving population in the KSA and worldwide, age and gender are highly relevant to the subject of risky driving (Constantinou et al., 2011; Gwyther & Holland, 2012; Papakosmas & Noble, 2011; Rhodes & Pivik, 2011). Gwyther and Holland (2012) investigated how age may influence self-regulation during driving. Interestingly, they argue that younger and senior drivers are more successful in self-regulation than middle-aged drivers. In addition, they find that female drivers are more likely than male drivers to regulate their actions, and to be negatively influenced by their feelings and emotions. More importantly, Gwyther and Holland (2012) conclude that all age cohorts and genders may exhibit self-regulation behaviours, and that ageing cannot be considered a predictor of low self-regulation, as low self-regulation occurs because of low confidence or driving anxiety. A study by Bélanger, Gagnon and Stinchcombe (2015) indicates that older drivers tend to demonstrate higher crash risk when events require multiple synchronised reactions, such as simultaneous use of steering and braking. They found that middle-aged drivers react more rapidly and appropriately, but they are more likely to exceed speed limits (Bélanger, Gagnon, & Stinchcombe, 2015).

Rhodes and Pivik (2011) also emphasise that risk perception and risky driving are greatly influenced by age. Researchers point out that teen and male drivers tend to take more risks on the road than adult female drivers. These findings suggest that cognitive and affective mediators of decision-making during driving differ depending on age and gender. In other words, different age cohorts use rational analysis and judgments differently. Constantinou et al. (2011) also argue that young male drivers are more prone to risky behaviour on the road. Sensation seeking and impulsiveness among these drivers are the major predictors of negative driving outcomes. Constantinou et al. (2011) underline that despite being in their physical and cognitive prime, young drivers are less experienced than their older counterparts, and it is often difficult for them to make quick decisions.

A later study conducted by Papakosmas and Noble (2011) also focuses on the incidence of RTAs and RTA-related death and injury rates, and points out the alarmingly high (and
increasing) rates of crashes among young novice drivers. They also provide some valuable insights into the role of parents in shaping the youth driving culture (Papakosmas & Noble, 2011). Carpentier et al. (2014) also point to the importance of family environment in relation to the risky driving behaviour of young novice drivers. They find that stressful family environments and unfavourable socio-cognitive determinants are significant predictors of road traffic accidents involving young adults. Swedler, Bowman and Baker (2012) emphasise that the gender and age differences observed in young novice drivers suggest opportunities for targeted driver training and education, such as, simulator training modules specifically tailored to female or young male adults.

Statistics demonstrates that youths are extremely overrepresented in RTAs all over the world (Al-Reesi et al., 2015; Weiss, Kaplan, & Prato, 2015). One study tackles an intriguing question in modern RTA-related research: Why are so many young drivers involved in car crashes? That study was undertaken by Trivedi and Rawal (2011), who performed an extensive analysis of global RTA statistics and provided their valuable insights into the specifics of young drivers’ vulnerability and frequent exposure to RTAs. They conclude that RTAs are so high among young novice drivers because they frequently exceed speed limits, use mobiles while driving, and fail to follow safety rules (Trivedi & Rawal, 2011). All these behavioural patterns are characteristic for young drivers in both developed and developing countries, so it would be logical to assume that Australian experiences in tackling the issue of RTAs among young adults may also be used in KSA.

This thesis proposes a multitude of strategies on protecting young road users in KSA. The author analyzes effective strategies employed in other countries and emphasizes the significance of effective emergency services’ provision. However, besides clear-cut age, gender, or culture variables, there is a variety of risky behaviours in which drivers are involved. These types of risky behaviours are analysed in the following section.

2.5.4. Urban Risky Driving Behaviours

High-risk behaviours are heavily associated with whether one is considering a rural or an urban area. Numerous researchers have found much higher levels of risk-taking, and, consequently RTAs among urban drivers, which may be explained by the density of urban traffic and the more aggressive driving patterns in big cities (Hsiao, 2013; Buchanan, 2015). Because much of the KSA population lives and drives in urban environments with heavy traffic, urban safety should be the focus of Saudi authorities and policymakers. Urban RTAs
are an issue of urgent concern, and they need to be reduced through strategies limiting high-risk behaviours on urban roads, where many people besides drivers can be hurt. This problem of urban driving and issues associated with high-risk driving in cities have been investigated by an impressive array of experts including Al-Atawi (2014), Dinh and Kubota (2013), Dorn and Sullman (2012), Gouy et al. (2014), McCartt and Eichelberger (2011), Nordfjærna, Simsekoglu, and Rundmo (2014), Nordfjærn and Şimşekoğlu (2014), Schmitz (2014), Tan et al. (2015) and others.

Many researchers focus on issues specifically related to urban road safety problems, such as distracted driving, red light running, keeping distance between vehicles and exceeding speed limits. Urban driving may be risky because of the large number of vehicles on the roads. Gouy et al. (2014) believe that driving in line may alter the driver’s perception of the situation because of many cars in front. Dinh and Kubota (2013) approach the issue of speed limits from the viewpoint of the theory of planned behaviour. They investigate the ways in which compliance with speed limits in cities could be achieved by means of applying interventions for high-risk drivers based on that theory. Nordfjærn and Şimşekoğlu (2014) studied aberrant driving behaviour in Turkish cities. They argue that city drivers often exert psychological pressure upon slower drivers by sounding their horns or driving very close to induce them to drive faster.

Red light running is another problem that contributes to high RTA rates in cities. McCartt and Eichelberger (2011) studied the attitudes and experiences of drivers concerning red light camera monitoring in big cities. They note that urban drivers favour the establishment of red light camera programs and recognise their safety benefits in a highly dangerous traffic environment. Tan et al. (2015) propose a discrete choice model to analyse drivers’ behaviours when the signal changes from green to red. According to researchers, interventions aimed at improving road safety need to be based on accurate analyses of drivers’ risky attitudes and behaviours. Al-Atawi (2014) assessed the characteristics of red light violations in the city of Tabuk in KSA. Al-Atawi notes that moving during the red-light phase, red-light running, and speeding up to pass through during the yellow phase are extremely widespread behaviours in urban Saudi Arabia. Al-Atawi (2014) indicates that the average level of red light running in Tabuk is about ten times higher than in the urban areas in the USA or Australia. Al-Atawi argues that because traffic signals are an ineffective way of ensuring safety on the roads, education measures should be introduced to raise public awareness concerning the issue.
Some studies suggest that drivers in rural areas tend to indulge in more risky behaviour than drivers in urban areas do (Nordfjærna, Simsekoglu, & Rundmo, 2014). Lopez (2012) believes that people in rural areas are more at risk than those in urban areas, mainly because city travel speeds are lower and because more city streets have appropriate protective infrastructures. Schmitz (2014) argues that rural drivers exceed speed limits more often, drive while impaired more often, and are less likely to wear their seat belts than city drivers. However, they stress that it is not so much that rural drivers are more inclined to take risks; it is more that rural roads are far more dangerous than urban ones. Dorn and Sullman (2012) note that it is inaccurate to consider rural drivers as more problematic and dangerous than their urban counterparts, and that the differences between these two groups need further research. Authors also emphasise that urban drivers are more prone to sensation seeking, and they often deny risk and consequences of their driving behaviour. In general, many sources maintain that urban drivers tend to be more indiscreet and take more risks.

A variety of measures has been taken to address the problem of risky driving and poor road safety in the urban settings. Yannis, Kondyli and Georgopoulou (2014) investigated the impact of low-cost traffic engineering measures (LCTEMs), such as wooners, speed humps and raised intersections, on the improvement of road safety in urban areas. They argue that the number of crashes significantly decreased after the introduction of these measures, as they limited drivers’ risky behaviour. Carnisa and Blais (2013) underline that speed camera programs are effective in addressing risky behaviour in cities, as they were found to decrease both fatal and non-fatal traffic injuries. Loo et al. (2013) describe a public health approach to address road safety problems. The multidisciplinary team involved in the intervention described by these authors included an engineer, a geographer, medical professionals and community leaders, all of them performing different duties. They were responsible for the identification of hazardous road locations, crash analysis, data integration, engineering studies and knowledge exchange in the local community (Loo et al., 2013). Despite its obvious benefits, the program needs further application and assessment to determine its usefulness in different urban areas.

As one may conclude from the evidence presented, urban driving is more dangerous than rural driving, mostly because of the density of population, heavy traffic, the greater number of pedestrians and the much denser traffic on the roads. Moreover, urban drivers may face traffic jams, which increases their overall level of aggression and prevents them from driving
safely. The region in which driving takes place should therefore be considered in the risk assessment process used to clarify the real-life road safety risks and to design appropriate strategies to deal with them. More information on risk assessment is provided in the following section.

2.5.5. Risk Assessment

Risk assessment is a starting point for any viable national policy directed at reducing the risks of RTAs and establishing a healthier road safety culture. Dahlen et al. (2012) studied aggression as one of the main risk factors that should be considered during risk assessment. They demonstrate that aggressive driving as a result of instable driver personality predicts crashes and violations of traffic rules (Dahlen et al., 2012). Driver aggression was also researched as a vital aspect of risk assessment by Page, Jones and King (2013) in their study of moral judgments in driving situations and their consequences for overall road safety. The authors assume that besides official laws and regulations governing drivers’ behaviours on the roads, drivers in any corner of the world inevitably experience the strong influence of their perceptions and beliefs about driving on their driving behaviours and decisions. Therefore, each individual driver’s ideas about safety and courtesy on the roads, coupled with personally biased interpretations of state legislation, often determine their behaviours and shape the road safety situation even more strongly than objective legislation does.

The moral judgments of drivers about what is right or wrong on the road are often associated with the expression of driver aggression, caused by a desire to punish other drivers for their careless and negligent behaviours on the roads. Therefore, as noted by Page, Jones and King (2013), understanding the mechanisms of drivers’ moral judgment formation is often a vital aspect of risk assessment, since it has a strong individual impact on each person’s driving behaviour and the initiation of driver aggression. Because the latter is very closely linked to the RTA rates and causes in the KSA, one should clearly not ignore its significance in the risk assessment process and in the design of road safety interventions.

In terms of risk assessment, researchers recommend the use of psychometric tests for measuring driver aggression, drug abuse and sleep deprivation, which may help the formulation of proactive techniques for aggression reduction on the roads (Jongen et al., 2015; Li et al., 2014; Verster & Roth, 2012). Among other aspects of risk assessment, Pompili et al. (2012) also point out the need for assessing the potential use of motor vehicles as a means of committing suicide, as unconscious suicidal motivations have already proved to
play a role in some single-car accidents. One may suggest that such a comprehensive risk assessment, which considers all factors, may help Saudi authorities to get a better idea of the road safety situation in the country. It may also help in the formulation of more effective, specifically tailored strategies for reducing the impact of aggressive and high-risk behaviours on road safety in Saudi Arabia.

Al-Atawi and Saleh (2014) also emphasise the need to create sustainable conditions for continuous risk assessment when speaking specifically about the road safety situation in the KSA. According to the authors, the magnitude of the road safety problem may be quantified properly only when case data on RTAs occurring in the KSA is available and easily accessible. For now, information about the full extent of the road safety situation and RTA rates in the KSA may be fragmented and incomplete, which complicates risk assessment. Al-Atawi and Saleh (2014) claim that data should come from a variety of sources, including police, insurance and hospital records. These authors suggest a risk assessment framework (RAF) for collecting and sharing information about the risks associated with risky driving. Areas that need to be assessed by RAF include vehicles, pedestrians, city roads and highways. Organised in a comprehensive manner, this framework may provide valuable information to road users and authorities, which would be useful for introducing relevant safety measures (Al-Atawi & Saleh, 2014).

Risk assessment should be the core of road safety campaigns and policies, and it should always precede any decisions and measures targeted at changing the road safety situation in a particular country. In the opinion of Helman et al. (2011), many interventions directed at road safety improvement have been designed based on intuition and enthusiastic drivers only, which contributed to their ultimate failure and ineffectiveness. For road safety campaigns to be effective, they should be based on evidence, which guarantees better intervention design and evaluation. Moreover, upon the implementation of any road safety schemes in certain locations, Saudi authorities need to apply more thorough risk assessment procedures to determine whether these schemes accomplish their intended objectives.

To make risk assessment more effective in practice, Helman et al. (2011) recommend measuring driver behaviours strongly associated with collision risks. The authors recommend measuring observable behaviours such as speed, speed profile, overtaking, gap acceptance and lateral position, which is quite easy. Moreover, Helman et al. (2011) advise measuring some behaviours that are not so easily observable, for instance, unlicensed and uninsured
driving, mobile phone use (and exposure to other distractions), seat belt use and fatigue/impairment of drivers. Finally, they also note the need to design metrics for evaluating non-observable driver behaviours such as attitudes to specific behaviours (road traffic rule violations in particular), attitudes to interventions related to the likelihood of the detection of violations and collision risk, and other factors. For the risk assessment to have a legitimate power, and for it to provide sufficient evidence for design of effective road safety interventions, it should seek information about what types of drivers use specific routes, it should contain correctly and simply structured questions, it should cover a sufficient, representative sample of participants, and it should use appropriate control groups so that the evidence has a high level of statistical validity, reliability and accuracy (Helman et al., 2011).

Several researchers also support the view that asking drivers to measure their own behaviour on the roads may serve as a viable tool in risk assessment in any country. By means of involving drivers in risk assessment, Saudi authorities may create a sense of ownership in the overall process of change, and may thus bring about greater commitment and engagement of Saudi drivers in the improvement of the road safety situation. Moreover, drivers may provide highly valuable data on the overall road safety situation in the country by means of sharing their attitudes, perceptions and opinions about certain driving regulations and violations thereof. Such an approach to risk assessment may be considered even more appropriate because of the challenges associated with objectively measuring road behaviours. Due to privacy laws, state authorities rarely have access to the medical data of drivers, while the direct observation of driving behaviours is challenging, time-consuming and costly, especially when a large sample of drivers should be covered.

Martinussen, Møller and Prato (2014) propose the use of driver behaviour questionnaires and driver attitude questionnaires as useful sources of data for risk assessment and the formulation of at least preliminary conclusions on the road safety situation. They note that there is a need to continuously assess drivers’ attitudes towards safety, and to devise differential strategies targeting specific problem groups to improve road safety (Martinussen, Møller, & Prato, 2014). Gueho, Granie and Abricto (2014) agree that questionnaires may be a valuable assessment tool that could help in the implementation of effective prevention campaigns adapted to the intended groups of drivers. They argue that studying the behaviours and attitudes of a particular group of drivers (young adults, teenagers, the elderly, females and males) may help in the development of evidence-based interventions that would ensure
the safety of all drivers. Similarly, Wåhlberg, Dorn and Kline (2011) believe that the simplest way to measure behaviour is to ask drivers how they typically behave, thus using individuals as their own monitoring devices. Educational campaigns, therefore, need to encourage drivers to take part in questionnaire assessment, as it can potentially benefit all road users.

Too few studies have investigated the effectiveness of questionnaires as risk assessment tools. Some studies like those of Amado et al. (2014), Cardamone, Eboli and Mazzulla (2014) and Martinussen et al. (2013) attempt to fill this gap and throw light on how truthful and accurate self-monitoring can be. Amado et al. (2014) note that questionnaires are useful for drivers, who can take effective compensatory action to moderate assessed risk and to ensure safety in hazardous traffic environments. However, the authors found that drivers with high error rates and violation scores tend to provide an over-positive assessment of their behaviour. Therefore, Amado et al. (2014) suggest improving drivers’ self-awareness by training and feedback sessions, which could reduce the probability of risk.

Risk assessment creates a basis for reductions in RTA rates and the creation of a road safety culture. More importantly, risk assessment usually serves as the starting point for designing relevant interventions, which often take the form of road safety campaigns. The history and effectiveness of RCSs in the KSA will be analysed in the following section.

2.6. Road Safety Campaigns as a Way of Reducing RTAs

The concept of road safety campaigns emerged as a way of reducing RTA rates and improving road safety standards nationally and internationally. Before going into details, however, it is necessary to define this concept. According to Hoekstraa and Wegman (2011), road safety campaigns are “purposeful attempts to inform, persuade, and motivate a population (or sub-group of a population) to change its attitudes and/or behaviours to improve road safety, using organised communications involving specific media channels within a given time period” (p. 80). These attempts imply using specific media channels within a limited period, often supported by enhanced legislation. Together with training, law enforcement and road infrastructure, road safety campaigns contribute to creating a safe environment on the roads and ensure that the public behaves safely in traffic (Hoekstraa & Wegman, 2011). According to Nathanail and Adamos (2013), the main aims of road safety campaigns are to provide information regarding existing legislation; increase knowledge and awareness concerning risky behaviour on the road; encourage drivers to change dangerous behaviour that endangers all road users; and contribute to the overall reduction of RTAs.
There has been an inconclusive debate about whether road safety campaigns are effective in reducing RTAs. Several studies have been conducted recently, examining the implementation of road safety campaigns and assessing their long-term impact on road safety. Phillips, Ulleberg and Vaa (2011), for example, conducted the meta-analysis of more than 60 different studies examining the effect of RSCs on reported accidents. They found a positive association between accident reduction and campaigns. Phillips, Ulleberg and Vaa (2011) stress that campaigns of short duration, especially when accompanied by law enforcement and when they target a specific population, are the most beneficial. Hernik and Dziadas (2013) agree that road safety campaigns have a positive effect on driver behaviour, but mostly in cases when they are accompanied by effective laws and more intensive actions by police. They conclude that the effectiveness of campaigns does not depend exclusively on creative messages, slogans and laws, but is also connected with demographic changes and drivers’ lifestyles. Hoekstra and Wegman (2011) maintain that without law enforcement and education, road safety campaigns have almost no effect on the occurrence of RTAs. Yadav and Kobayashi (2015) are even more sceptical as to the effectiveness of campaigns, and found no evidence of media campaigns reducing the number of alcohol-related injuries and accidents on the roads.

Cable (2013) argues that road safety campaigns can positively influence road user behaviour and should therefore be incorporated into any nation’s road safety strategy. However, the author emphasises that to obtain the maximum benefit from campaigning, it is necessary to understand the differences between target audiences and address them properly. Nathanail and Adams (2013) believe that the effectiveness of road safety campaigns is difficult to assess because it is problematic to isolate changes in driving behaviour as being the result result of a campaign. Therefore, a comprehensive evaluation methodology is required that can accurately measure the behavioural patterns and attitudes of drivers after they are educated by a campaign. It is important to develop road safety campaigns carefully, so that their impact can be measured and evaluated through the proper research design (Nathanail & Adams, 2013). Therefore, one can conclude that despite the inconclusive evidence, road safety campaigns can be a valuable tool for reducing RTAs, but only if developed properly and only if they are accompanied by relevant legislation and education.

Road safety campaigns are widely discussed in the modern literature, and many studies exist that examine the prevalence and impact of these campaigns in different countries. Luoma and
Sivak (2012), for example, thoroughly investigated road safety management in Brazil, Russia, India and China, focusing on governmental agencies in charge of road safety, road-safety campaigns, research institutes and major barriers to improvement. They found that although in all four countries, campaigning is quite widespread, it does not bring the expected outcomes because these actions are often not coordinated as parts of a larger program or they are not supported by relevant laws (Luoma & Sivak, 2012). UAE Government News (2013, 2014) points to the increased attention of UAE authorities on public campaigning. These campaigns are targeting different groups of the population, ranging from drivers fasting during Ramadan to schoolchildren pedestrians. This approach allows the UAE to address the needs of all road users effectively.

Davies (2015) describes a UK winter road safety campaign that targets people who overtake gritters. It warns drivers their lives could be put at risk if they do not follow the traffic rules in winter and exhibit risky behaviour by trying to overtake gritters. Although this campaign is certainly not applicable in KSA due to its completely different climate, it vividly demonstrates that campaigning can be aimed at addressing not road safety in general but issues arising in particular conditions and with a specific population. WHO (2015b) examines a selection of road safety mass media campaigns from all over the world to inform and encourage countries and organisations about developing their own campaigns. As one can see from the WHO website, campaigns cover a wide variety of issues, including driving while impaired, distracted driving, seat belts, speeding and others. This diversity of topics clearly demonstrates the differentiated approach that countries use to increase road safety.

This literature review on road safety campaigns highlights the importance, as well as the limited application, of a well-structured theoretical background when designing and implementing a road safety campaign. It demonstrates that campaigns are much more effective when accompanied by additional measures such as education and legislation. Moreover, the literature provides clear evidence that to accurately evaluate the effectiveness of interventions, comprehensive assessment measures should be designed; otherwise, it is practically impossible to know whether a road safety campaign has made a change and how it could be improved in future.

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2A gritter is a winter service vehicle, which is used to clear roads and pavements of ice and snow or spread salt or sand to prevent crashes.
2.6.1. Road Safety Campaigns in the KSA

According to statistics, KSA has a high number of deaths from RTAs compared to other high-income states and RTAs are considered to be the country’s main cause of death for young adult males (Mansuri et al., 2015). The high incidence of accidents on the roads may be explained by the fact that for the past decade, motor vehicles have become the most popular means of transportation within the country. Recent estimates indicate that more than six million cars are driving today on the KSA roads, and this number continues to increase quickly due to the country’s unprecedented economic growth (Mansuri et al., 2015). In recent years, Saudis have developed a taste for powerful expensive cars and an increasing number of young people are cruising the streets in Ferraris, Maseratis and Porsches (Al-Atawi, Kumar, & Saleh, 2014). However, increased wealth is not always a benefit for the KSA population, as one person is killed and four injured every hour because of risky driving and disobeying traffic rules (Al Turki, 2013).

Ghafour (2013) indicated that an average of 17 people die on Saudi roads each day, and this number is expected to increase with the rapid growth in the number of motor vehicles. Moreover, 97% of accident victims require transfer to hospitals, where the average cost of treatment reaches SR 4,123 and SR 20,186 for those staying in the hospital for a long time (Ghafour, 2013). Statistics provided by the General Directorate of Traffic indicates that KSA may have four million traffic accidents a year by 2030 if appropriate changes are not introduced (Arab News, 2015). Given the high social and economic cost of RTAs in KSA, the author discusses several interventions that could be used to improve the situation on the roads. First, it is necessary to take tough punitive action against drivers violating traffic rules and threatening the lives of other road users. Second, traffic police should employ strict controls on the issuing of licenses, as many accidents occur because of unlicensed driving. Third, strict implementation of the law should be ensured among all road users. However, as Ghafour (2013) points out, KSA authorities are aware that the most important thing is to educate the population through public campaigning and training, as many RTAs happen simply because people are unaware of the possible consequences of their behaviour, or because they do not know traffic rules well. Therefore, the introduction of more effective road safety control devices, increased investment in road safety educational campaigns and the establishment of law enforcement strategies for targeting reckless behaviour and road safety violations on KSA roads should be complemented by public campaigns.
In the early 2000s, the Public Relations Department of the Public Security Directorate initiated the first organised attempts to reduce RTA through public campaigning. These yielded mixed results. In 2001, the first campaign was held with the key message of ‘your security is our goal’, while in 2002, the second campaign was held to achieve greater awareness among Saudis about making their driving safe. Two more campaigns were held in 2003–2004, while there was no campaign in 2005. The popular Enough public safety campaign was launched in 2006, and since then, a variety of public safety campaigns have been launched in a more comprehensive, wide-reaching manner. Gradually, the number and quality of road safety campaigns has increased in KSA, and greater attention is currently paid to international campaigns. Thus, for example, Saudi Arabia joined the global Federation Internationale de l'Automobile (FIA) ‘Action for Road Safety’ campaign, initiated in support of the UN Decade of Action for Road Safety. The Saudi Automobile Federation (SAF) is responsible for spreading the messages of the FIA throughout KSA, focusing on such pressing issues as awareness raising, education and training, policy, social responsibility, traffic risks and drivers’ attitudes (FIA, 2014). Public campaigns are also communicated through social media like Facebook, mainly to attract the attention of the younger population (Nofal, 2013).

Many commercial market players also assist in the implementation of road safety campaigns, such as the road safety campaign launched by the global energy producer Total (2015). This campaign focused on the young Saudis, promoting awareness among schoolchildren of all ages. Similarly, LG Electronics Saudi Arabia recently launched a massive campaign throughout major KSA cities urging drivers to follow traffic rules and protect themselves and others against the hazards of the road (Arab News, 2015). Notably, this campaign was designed in accordance with the Traffic General Directorate’s strategic plan aimed to promote road safety and decrease the number of traffic incidents in KSA. However, despite obvious improvements, there is still much to be done in the field of creating and implementing proper, effective, science-based campaigns, since research on road safety campaigns and theories guiding planned behavioural change is still missing in KSA.

At present, there are still many road traffic challenges and problems that Saudi authorities should address, and these issues may well be solved with the help of properly developed road safety campaigns. These issues include:
• numerous violations of road traffic signals; low awareness of the need to comply with road traffic rules; recklessness, braking without reason, impatience in traffic jams (Mansuri et al., 2015)
• using mobile phones (Mansuri et al., 2015)
• exceeding speed limits; improper turning; violation of regulations (Mansuri et al., 2015)
• inexperience and ignorance of young drivers (Altwaijri, Quddus, & Bristow, 2012; Wali & Mercado, 2012).

These problems may be addressed by effectively designed road safety campaigns with messages and distribution channels selected specifically for the targeted audiences. Additional research and turning to more advanced countries in terms of road traffic safety are also advisable to fill the gap in KSA knowledge about improving road safety and managing the situation on the roads (Aldalbhi, 2014). All this evidence suggests the need for obtaining a proper understanding of risky behaviours and ways to modify them.

As the presented facts and data suggest, and as my own study confirms, the reasons for RTAs are diverse – and they are concealed in the driver and his car, and in the inability of the state to properly educate its drivers on the dangers of high-risk driving and the consequences of breaking the road safety laws. The increasing number of RTAs proves that the present-day KSA campaigns have been largely ineffective, and that they have failed to address the highest-risk elements of the road safety situation, mainly because they have not been based on evidence derived from proper research and risk assessment (Al-Atawi, Kumar, & Saleh, 2014). Therefore, there is a need to search for more effective strategies of RSC design for these campaigns to target high-risk drivers, to educate them, and to create a higher level of awareness about the legal and cultural standards of safe driving in the KSA. Moreover, a comprehensive assessment of these campaigns is required to evaluate their effectiveness and modify certain aspects if needed.

2.6.2. Best RSC Practices Worldwide – Assessment of Australian Experience

Road safety campaigns are becoming an increasingly popular and widely accepted method of improving the observance of road safety rules and regulations, and of improving overall road safety in virtually all countries of the world (WHO, 2015b). To date, there have been numerous national and international campaigns targeting various aspects of road safety and
working toward making roads safer. For instance, in 2014, the United Nations launched a global campaign #SaveKidsLives to generate action to make streets safe for children (UN News Centre, 2014). Furthermore, in 2011, WHO launched the Decade of Action for Road Safety, encouraging governments and communities to take an active role in increasing safety on the roads (WHO, 2015c). The WHO also created a global library and search tool to assist countries struggling with devastating road safety situations in research and evaluation of RTAs, as well as in the design of effective road safety interventions based on worldwide best practice (WHO, 2014). Besides global campaigns conducted by NGOs and large companies, governments and authorities all over the world have committed to decreasing the number of RTAs.

Australia is one of the leaders in establishing comprehensive anti-RTA policies and campaigns (Cockfield, 2011). Australian authorities take much effort to intensify and disseminate educational initiatives and efforts to improve road safety knowledge and behaviours among Australians. For example, the Road Safety Advisory Council (RSAC) supported by the government has recently developed the Third Action Plan 2014–2016 under the current Tasmanian Road Safety Strategy 2007–2016 (MENA Report, 2014). Among its commitments is the development of the Share the Road public education campaign to better protect Australian road users.

Furthermore, the Transport Accident Commission of Victoria (TAC) launched several eye-catching public education campaigns aimed at reducing the incidence of transport accidents (Cockfield, 2011). Interestingly, TAC experts have used catchy slogans for these campaigns to attract the attention of the wider population. Among the most attention-grabbing names of TAC campaigns are ‘If you drink then drive –you’re a bloody idiot’ and ‘Don't fool yourself – speed kills’. Most of these campaigns involved television, social media, radio and supporting outdoor placements and included both instructive and emotive elements (Cockfield, 2011).

TAC communication programs are among the most massive and comprehensive in the world (Cockfield, 2011). The TAC normally designs from five to ten communication programs annually, which are supported by well-produced TV advertisements, online messages, the radio advertisements, billboards and some print media. Among the main objectives of TAC campaigns are fostering public awareness concerning risky driving and deterring drivers from unsafe behaviour. One needs to note that TAC programs are always integrated with other
governmental initiatives, ensuring a coordinated, system-wide approach to reducing risky driver behaviour (Cockfield, 2011). In addition, TAC uses research findings to ensure that the key messages are communicated effectively and embraced by the targeted audiences. Finally, TAC experts use comprehensive intervention approaches. As one can see, the level of detail and the multitude of issues to which TAC research and practice on RTAs are dedicated are outstanding. In this respect, TAC campaigns are exemplary, as they consider all the factors necessary for the development and communication of effective programs.

There is much research in Australia dedicated specifically to ways of integrating road safety knowledge into educational programs. Lewis (2014), for example, investigated the best ways to develop the content and test the persuasive effects of anti-speeding messages targeting young male drivers. This research, partnered by TAC, revealed the feasibility of a theoretical framework as a basis for road safety campaigning. The Motor Accident Commission seems to incorporate these findings into its practices, as it has been continuously using the trans theoretical model of behaviour change as the theoretical basis for campaign design in relation to road safety in South Australia (Davidson et al., 2013). In addition, a plethora of studies is dedicated to discouraging schools and community groups from using ineffective and inappropriate programs that are not supported by research (Harris, Waller, & Wishart, 2013). It is also notable that Australian authorities continuously research and identify the country’s RTA epidemiology, and work extensively on the promotion of various educational policies and campaigns directed at increasing awareness and urging a positive behaviour change.

The key measure used for understanding whether a road safety campaign is effective is its thorough evaluation. Ways of evaluating road safety campaign effectiveness are presented in the next section.

2.6.3. Research and Evaluation of Road Safety Campaigns

There has been much research conducted on road safety campaign effectiveness in Australia in the past decade. Terer and Brown (2014) discuss multiple evaluation efforts in Australia aimed at identifying the effectiveness of communication campaigns. Thus, they note that one of the evaluation studies in Victoria assessed the relationship between anti-drink driving television advertising and serious casualty crashes. Statistical data allowed researchers to conclude that the campaign, along with enforcement measures, had led to a significant reduction in serious casualty crashes (Terer & Brown, 2014). Another study discussed by the authors was conducted in New South Wales and aimed to compare drink driving court data
before and after the introduction of a road safety campaign. Numerous evaluations have also been performed in Queensland, Western Australia and many other parts of the country (Terer & Brown, 2014). Phillips, Ulleberg and Vaa (2011) conducted an extensive meta-analysis of 67 studies evaluating the effectiveness of media campaigns for reducing accidents in Australia. Notably, researchers underline that there is still a problem with effective evaluation, as different studies often use different measures and design. This implies a need to develop a coherent general system that could be used in various contexts.

According to Cable (2013), several types of evaluation can be conducted for road safety communication campaigns. In particular, there are formative, process, outcome and economic evaluations. As explained by WHO (n.d.), formative evaluation implies carrying out the investigation of data to provide information to guide campaign improvement. For example, researchers may explore whether online anti-speeding adverts adequately address the issue or whether the behaviour portrayed reflects drivers’ attitudes in a particular region. Process evaluation is conducted during the campaign, which gives the opportunity to adjust and modify the media plan (Cable, 2013). Furthermore, outcome (impact) evaluation, when applied to long-term campaigns, often involves crash or casualty statistics. In the shorter term, this evaluation involves assessment tools other than crash data alone. For example, if the campaign involves spreading online advertisements on speeding among young people, the impact assessment might examine whether novice drivers who had seen the advertisements changed their attitudes towards exceeding speed limits (WHO, n.d.). Finally, economic evaluation relates specifically to the total direct costs of the campaign, which are then used in the cost effectiveness analysis (CEA) (Cable, 2013).

As emphasised by Glendon et al. (2014), evaluations are crucial in enhancing the benefits of road safety campaigns. They are useful for investigating RSCs’ impacts on driving behaviour, identifying areas requiring particular focus, and encouraging the use of resources to convert research into practice. However, the growing gap between road safety research and practical interventions in developing countries like KSA impedes progress in preventing RTAs. All these research findings imply that there should be a comprehensive approach to managing high-risk driver categories, especially young drivers. The key to effective RTA reduction is not in intimidation by high fines for violation of road traffic rules, but in the coherent and informed model of educating drivers about proper rules of conduct and driving behaviours. The propriety of certain behaviours in cultural and social terms may also be used as an
additional argument for raising young drivers’ awareness and making them comply with standards of conduct on the roads. The best practices for RSC design all over the world, including Australia, have proven that media campaigns may serve as effective behaviour modification tools for drivers. Hence, there is a need for KSA authorities to investigate thoroughly the RTA-related issues requiring the most attention; to develop more evidence-based RSCs for the identified high-risk groups of drivers that address their behaviour changes through well-planned and comprehensive approaches; and to design clear and applicable evaluation methods that could inform future interventions.

2.7. Formulation of Research Questions and Objectives

As the evidence presented in the literature review suggests, there is a comprehensive body of research about RTA causes and types of risky driving behaviours. The multiplicity of data available in this respect is a highly positive aspect of the modern RTA-related research, especially given the problem of high rates of RTAs creating a huge death toll and disability burden on people in both developing and developed countries. The most common types of RTA causes and risky behaviours include mobile phone use when driving, not using a seat belt, speeding, driver aggression, unofficial races with other drivers, and overall disregard for road safety rules and regulations. The data analysis also showed the need to consider age and gender as essential elements contributing to risky behaviours, and to modify risky behaviours by means of targeting them with the help of well-designed road safety campaigns.

One should point out that the need for risk assessment as a preliminary step of RSC design and implementation was discussed in detail in this literature review. Extensive data provided on this topic suggests a need for undertaking risk assessment in the KSA to make Saudi RSCs more effective. Since aggression on the roads has been identified as one of the major causes of RTAs, and since young Saudi drivers are considered the highest-risk driver category in the KSA, a more detailed understanding of how this high-risk group may be targeted through RSCs may be acquired through risk assessment initiatives. Moreover, risk assessment may help to identify the subjective beliefs, judgments, perceptions and opinions of young Saudi drivers which cause them to become involved in unruly road behaviours. This may provide additional data for the design of effective Saudi RSCs with a strong appeal to the most risky drivers.

Another piece of evidence discussed in this literature review is that the road safety campaigns of developed countries (with Australia and some European countries taken as case study
examples) are well-designed, are based on accepted theories of communication and behaviour modification and are evidence-based. This contributes to their beneficial impact on drivers’ behaviour. In contrast, analysis of Saudi Arabian RSCs has shown that they still lack a systematic and data-led approach. The much lower frequency of items such as metaphors, emotional appeal, theory-based content, creative content, the targeting of specific population groups and other features shows that Saudi Arabian RSCs still lag behind Western experience in improving road safety culture.

Based on these findings and observations drawn from the literature review, the researcher has formulated the key research question that guides this research. This question must be researched for the sake of helping Saudi authorities to design more effective RSCs for the most dangerous groups of Saudi drivers. This research question considers the identification of the features of high-risk groups and an evidence-based design of proper interventions for this group, which makes it a very topical and important research field. The central research question is:

*How can enhanced KSA road safety campaigns mitigate disastrous driver behaviour and prevent injuries and deaths?*

The analysed research suggests that there may be two reasons for road safety campaigns’ ineffectiveness in the KSA. The first one is the poor design and implementation of road safety campaigns because of a lack of thorough, evidence-based risk assessment. The second one is the absence of receptiveness among young KSA drivers because of their unique cultural and/or psychological characteristics. The reasons may be either of the two, or a combination of both. Hence, to clarify the reasons for the ineffectiveness of KSA road safety campaigns, the researcher has formulated the following set of research objectives:

1. To analyse driving behaviours of Saudi drivers in terms of risk-taking and disregard for road traffic rules. This is expected to provide evidence to inform the development of effective road safety campaigns
2. To determine the perceived significance and effectiveness of Saudi road safety campaigns in improving driving behaviours, which in turn will show the advantages and disadvantages of current measures
3. To recommend best practice protocols from developed countries for application in road safety campaigns in the KSA and other developing countries. This will provide a fresh insight into the issue and help make KSA road safety campaigns more effective.

Clearly, the present section contains a detailed literature review of prior research on road safety and causes of RTAs, as well as the basics of road safety campaigns and education design in the KSA and Australia. The epidemiology of RTAs worldwide and in the KSA is evaluated, and data on the causes and types of high-risk driving behaviours are discussed to provide a sound basis for further research. Once this research is completed and the answer to the formulated research question is obtained, Saudi researchers and road safety authorities will be able to use the evidence provided to create more individually tailored and effective road safety campaigns to target specific high-risk road behaviours typical of Saudi drivers. Moreover, the Saudi road safety campaign designers will receive practical recommendations for designing evidence-based RSCs based on best practice in Australia and other developed countries. The effectiveness of these campaigns has been proven by significant RTA rate reductions within the past decade, so the principles of their design and data they use for to tailor their messages to the highest-risk groups may become a very effective framework for Saudi campaign design.

The next chapter will provide a detailed description of the study’s theoretical framework.
Chapter 3: Methodology

3.1. Introduction

This chapter is dedicated to the description and detailed discussion of the methodology used in this study. Details are provided on the mixed-methods research and relevant information on all qualitative and quantitative methods and tools used for data collection. The rationale for the selection of these tools is provided, with a specific focus on selection criteria for the RSCs analysed in the case studies for a comparison of Australian, UK and Swedish RSC efforts (as exemplar success stories with empirically proven effectiveness) with those of the KSA. The rationale for selecting specific Saudi cities, RSCs, and respondents is also provided. The chapter contains details regarding the design of the interview and survey questions, and it outlines the pilot testing, fieldwork, validation and translation procedures and other practical issues related to data collection and presentation. The data analysis software utilised and the processes chosen are also discussed separately for the qualitative and quantitative phases of the study, and ethical considerations and limitations are discussed in the final sections of the chapter. The chapter ends with a concise conclusion summing up the key points of the methodology.
The above diagram illustrates the structure of this chapter and visually presents all its components in order.

3.2. Research Methodology

This study deals with the examination of a complex social phenomenon: the impact of road safety campaigns in Saudi Arabia in terms of changing driver behaviour. It provides a comparative evaluation of other countries’ road safety campaigns, identifies flaws and weaknesses of present-day road safety measures used in the KSA, and develops recommendations for the improvement of those measures. Hence, the researcher selected a mixed methods research strategy for analysing the entire spectrum of data necessary for the evaluation of such a complex social phenomenon as road safety behaviour and behaviour changes of drivers under the influence of targeted RSC efforts. Watkins and Gioia (2015, p. 15) define mixed methods research as the ‘rigorous and epistemological application and integration of qualitative and quantitative approaches to draw interpretations based on the combined strengths of both approaches for influencing such research, practice, and policy’. Hesse-Biber and Johnson (2015) also acknowledge that using multi-method and mixed methods research (MMMR) requires working on the borders of disciplines and navigating across a large body of epistemic, theoretical and methodological issues. However, this triangulatory method seems the most convenient for this study involving case study research of secondary data for the evaluation of Saudi and other countries’ RSCs, quantitative surveys, qualitative interviews and other data for producing a complete image of road safety campaigns and issues.

The benefit of mixed methods research effectively used in this study is its ability to combine qualitative and quantitative data collection and analysis methods into a coherent research perspective (Newman, 2008). This methodology was selected because of its enormous potential for triangulating data of various kinds and from various sources. Since this study used three data collection methods – case study, interviews and a survey – it required effective triangulation of data findings to produce a coherent set of conclusions. Moreover, mixed methods research is considered suitable for studying the same dimension of a research problem from several angles, with findings of each of the methods verifying the other two. This is highly important for the present research because it looks at the problem of risky driving – a very complex and multi-dimensional issue involving the decisions of individual drivers, the availability of RSCs nationwide, theory underlying the creation of effective safety
messages and the overall safe driving culture of the nation. The strengths and weaknesses of each research method used in this study will be discussed in the following section.

3.3. Research Design

This section is dedicated to the presentation of the major methodological issues of this study. It provides data about the mixed methods research design used here, and details of the methods used for answering each of the research questions. It examines each research phase separately. The section about qualitative methods of research contains information about instruments used for data collection, criteria for the selection of countries, campaigns and respondents. The quantitative methods section also provides data on the quantitative instruments used, and the quantitative research process details.

Considering the broad focus of the present study and the research objectives, questions and hypotheses formulated for this study, the researcher has selected a few research methods that constitute the present study’s mixed methods design. The analysis of road safety campaign success and comparisons with Australian, UK and Swedish road safety efforts was performed with the help of case studies and the current perceived success of RSCs in Saudi Arabia. Ways of evaluating and improving Saudi RSCs were identified with the help of case study data, surveys of drivers, and interviews with parties involved in road safety control, regulation and policy-making, following a previously used approach of Aldalbhi (2014) but extending the scope of that design. First, this study used many other countries apart from NSW comparison to the KSA only, to present a broader intercultural and international perspective on RSCs. Second, the researcher surveyed the drivers across the KSA to identify their driving attitudes and behaviors, while Aldalbhi’s (2014) thesis is mostly focused on surveys with RSC producers. Third, this work used the SPSS analysis of quantitative data on driver behaviors and the risky driver profile, as well as Leximancer – for qualitative analysis of interviews with road traffic authorities and RSC designers.

The driving behaviours of Saudi drivers were evaluated based on driver attitude and behaviour surveys. Each research method selected for this study was linked to the sample of participants and data, and to the following formulated research objectives:

1. To analyse the driving behaviours of Saudi drivers in terms of risk-taking and disregard for road traffic rules. This is expected to provide evidence to inform the development of effective road safety campaigns
2. To determine the perceived significance and effectiveness of Saudi road safety campaigns in improving driving behaviours. This will show the advantages and disadvantages of current measures.

3. To recommend best practice protocols in developed countries for application in road safety campaigns in the KSA and other developing countries. This will provide fresh insights into the issue and help make KSA road safety campaigns more effective.

A more detailed overview of the ways in which each research objective was achieved is given in Table 3.1:

Table 3.1
Overview: research methods, sample and research objectives

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Research Method</th>
<th>Data and Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To analyse the driving behaviours of Saudi drivers in terms of risk-taking and disregard for road traffic rules</td>
<td>Survey data; interviews</td>
<td>Semi-structured interviews with 37 respondents from organisations responsible for RSCs, road safety enforcement and lawmaking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surveys with drivers in four Saudi cities: Riyadh, Taif, Jeddah and Qunfudah</td>
</tr>
<tr>
<td>2. To determine the perceived significance and effectiveness of Saudi road safety campaigns in improving driving behaviours</td>
<td>Interviews and surveys</td>
<td>Semi-structured interviews with 37 respondents from organisations responsible for RSCs, road safety enforcement and lawmaking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surveys with drivers in four Saudi cities: Riyadh, Taif, Jeddah and Qunfudah</td>
</tr>
<tr>
<td>3. To recommend best practice protocols</td>
<td>Integrated</td>
<td>Relevant data from case</td>
</tr>
</tbody>
</table>
in developed countries for application in road safety campaigns in the KSA and other developing countries

| analysis of data from case studies, interviews and surveys | studies (regarding Australian and European RSC designers’ approaches to message formulation, appeals, targeting specific categories, etc.), interviews (recommendations from respondents on how road safety can be enhanced) and from surveys (data on what would make them change their risky behaviours) will be compiled for producing a coherent set of recommendations and policy suggestions. |

3.3.1. Qualitative Methods

Qualitative research is defined by Boxill, Chambers and Wint (1997) as a technique of data collection allowing access to in-depth feedback from and about subjects and situations. The benefit of qualitative research relates to enabling a personal and meaningful engagement with practitioners in a certain field of interest, thus providing access to primary data about the researched concept. This type of research uses thick descriptions instead of generalisable statistical analysis for reaching conclusions, which involves intensive observation, notation and interpretation (Luton, 2015). Thus, qualitative research gives deep insights into the attitudes, behaviours and motivations of respondents – this degree of detail is hard to achieve through other research methodologies (Boxill et al., 1997).

The most widely used qualitative methods include content and narrative analysis, document and material analysis, evaluation research, field research, in-depth interviewing, focus group discussions, case studies and the visual capture of data (via photography) (Boxillet al., 1997; Nykiel, 2007). To meet the research objectives of this study, two qualitative methods were selected for data collection: case studies and semi-structured interviews. The case study method proved very effective for presenting a detailed discussion of RSCs in Australia, including the Australian approach to designing, implementing and evaluating RSCs. Semi-
structured interviews, in their turn, served as a rich source of data on the Saudi RSCs in their current state. This data was used for the evaluation of their effectiveness, for the identification of their weaknesses and gaps and for the analysis of recommendations given by various stakeholders involved in road safety control and policymaking in the KSA. Each of these methods will now be discussed in more detail.

3.3.1.1. Case Studies

The case study as a form of qualitative research is considered highly effective for presenting contextual factors and the interplay of individuals and collective institutions within the research process (Luton, 2015). Merriam (2009) defined a qualitative case study as an in-depth description and analysis of a bounded system, that is, a case, over time and by means of detailed data collection from multiple sources of information. The main features of case studies are their particularistic, descriptive and heuristic qualities. They are particularistic because the focus on a particular situation, event, or phenomenon; they are descriptive because they provide a complete and detailed description of the entity or phenomenon under investigation; and they are heuristic because they illuminate the reader’s understanding of the studied phenomenon (Merriam, 2009). Thus, the present study’s case study section was specifically dedicated to a comparative analysis of Saudi Arabian RSCs Salamati and Enough RSCs, and of the Australian and European RSCs, Pinkie, Everybody Hurts, Live with It and No Extra Life. Case study analysis focused on approaches to campaign design and execution, the messages delivered by the campaigns, their objectives and the use of emotional appeals, with the major purpose being to identify strengths and weaknesses in the approaches of these RSCs based on their impact on driver behaviour changes.

As recognised by Yin (2013), the case study as a qualitative research methodology satisfies three major criteria of qualitative research: description, understanding and explanation. However, case studies are frequently criticised for their dependence on a single case and the inability to generalise findings to larger populations and phenomena. This limitation was addressed following the advice of Yin (2013) – not to regard sample size as a necessarily degrading factor, but to treat it as the establishment of parameters. Thus, in this study, the aim was to present an international comparison of RSCs to define best practice and determine the degree to which Saudi RSCs comply with the globally established standards of RSC design, implementation and evaluation. Moreover, by researching the Saudi, Australian, UK and
Swedish RSCs, the researcher has managed to create a multiple case studies, thus also reducing the negative impact of case study methodology’s narrow focus.

Matsuo (2005) also points out that case study possesses the typical weakness of qualitative research – their time-consuming and resource-intense nature. This makes the process of data collection lengthy. However, the researcher had enough time available for the completion of a thorough and detailed process of data collection and focused on several RSCs instead of looking at the entire set of global RSC samples to save time and to present detailed data-rich case studies of six RSCs. Finally, a weakness of the case study approach is the difficulty of analysis and interpretation. This was addressed by means of thorough data selection. The researcher selected only the most trustworthy and the most recent sources of data on RSCs and double-checked all data before using it in the case study presentation, so analysis and interpretation of data may be considered objective and reliable.

3.3.1.2. Semi-Structured Interviews

Semi-structured interviews are the most common method of data collection in qualitative research (Willig, 2013). Their major benefit is compatibility with several methods of data analysis including discourse analysis, grounded theory and interpretive phenomenology. Moreover, they are easy to arrange. To conduct semi-structured interviews properly, the researcher develops an interview protocol including a list of questions and topics to be discussed with respondents. However, this protocol may be changed in the process of interviews in case a new theme unexpectedly emerges; hence, the topic area traditionally guides the researcher in the interview process (Klenke, 2008).

Despite their advantages, interviews have also been subject to criticism because of a lack of attention to the contextual features of the interview material, and a lack of consideration for the interviewer’s experience (Willig, 2013). To avoid these limitations, the researcher undertook careful preparation and planning for the interviewing process. A preliminary assessment of the researcher’s interviewing skills was conducted by the researcher’s supervisor with whom a mock interview session was conducted. Hence, the real-life interviewing was undertaken only after receiving the approval of the supervisor related to the assessment of the researcher’s interviewing skills. Moreover, the researcher made a careful selection of respondents based on their awareness of Saudi RSCs and their overall awareness of safety on Saudi roads. He presented the interview analysis with his voice and position evident in the structure of the findings and provided respondent information Interviews were
selected as one of the methods for this study because of their ability to provide a personalised, individual perspective of Saudi authorities regarding why RSCs have failed to achieve a significant behavioural improvement in Saudi Arabia. So far, many studies have provided dramatic epidemiological data, but there few studies have adopted a qualitative perspective, and have not attempted to identify what key stakeholders think about RSC design and how they believe RSCs can be improved to achieve a more effective population outreach. Thus, the present study involved the use of interviews designed personally by the researcher based on prior literature review findings showing which aspects and issues are typically of interest in KSA road safety discussions. The interview questions included 15 related to road safety issues and two identifying the role and experience of the respondent (interview form is in Appendix A.1). The respondents were asked about the status of road safety standards and the compliance of drivers with those standards, the perceived significance of the road safety messages in the KSA, the perceived reasons for road traffic accidents and the barriers that Saudi RSCs should overcome to become more effective in their appeals to Saudi drivers. The interview outline was originally written and administered in Arabic; it took the researcher one month to translate the interview responses into English to present the data and data analysis in English.

3.3.1.3. Criteria for Selection of Countries and Campaigns

In the process of conducting the qualitative stage of the research, the researcher needed to select countries and campaigns for a comparative case study of RSCs, the cities in which the survey and interviews would be held, and the sample of respondents for the survey and interview questions. Australia was selected as the primary country of focus in the comparative case study of RSCs because it is globally credited with having the best RSC practices. Notably, the Pinkie campaign was selected for this case study because in its theme and message it was similar to the Salamati and Enough campaigns in the KSA, but had a notably stronger appeal to the Australian audience because of its strong audience segmentation approach. The UK and Sweden were also included in the RSC case study because of their globally recognised successes with RSCs and their dramatic reductions in RTA rates along with measurable, stable and continuing reductions in risky driving behaviours. Hence, these countries were selected to provide best practice examples for Saudi RSCs to be compared with, and to provide examples from which practices could be selected for adaptation to KSA conditions.
3.3.1.4. Criteria for Selection of Saudi Cities

The selection of Saudi cities in which the surveys and interviews were conducted was also part of the sample and setting selection process. The researcher selected the cities of Riyadh, Jeddah, Taif and Qunfudah. Riyadh was selected because it is the capital of Saudi Arabia, a quickly growing and developing city, with a population equalling that of Sydney. Moreover, it is vital to note that Riyadh does not have any system of public transportation, with the public train network being under construction in 2015, which means there are many drivers on Riyadh’s roads. Finally, Riyadh is very hot and dry, which is very similar to Sydney and determines specific weather conditions under which road safety threats of natural causes are similar. Jeddah was selected for this study because it is also a large, heavily populated city, and is more multi-cultural than Riyadh. Therefore, it is expected that many more non-nationals drive cars in Jeddah, which causes additional tensions on the roads and contributes to higher levels of RTAs in that city. Jeddah is a seasonal city visited mostly during the Hajj and Omra seasons. It has a developed road network and a sea port with coastal weather, which suggests that conditions for driving are quite different and require specific driving skills even for Saudi nationals. The city of Taif was included in the sample because it is a typical middle-sized KSA city, meaning that the data on Taif may be generalised to other Saudi locales. It has a mostly middle-class population and has distinct climatic and landscape conditions for driving; it is also notable that it is a mountainous region, so many Taif roads are on mountains. Finally, Qunfudah was also visited for survey completion because it is representative of the lower-class population of the KSA, with low education levels and low socio-economic status. Therefore, the inclusion of all these cities made the sample a representative snapshot of the KSA population.

3.3.1.5. Criteria for Selection of Respondents

Respondent selection for surveys was purposive; people were personally selected by the researcher from visitors to the local traffic department’s office, and were approached with the survey for completion. The initial selection of the sampling strategy was made between random and purposive sampling, but random sampling did not fit the researcher’s needs because of a lack of participants’ knowledge and experience with road traffic. The use of random sampling involves assigning numbers to the population of interest and then randomly selecting among those numbers and contacting the selected random sample (Narayanan, 2015). Therefore, this method appeared non-feasible for this study because it increased the
risk of selecting people not driving cars, which would increase the time of sample collection and would complicate the data collection process. Therefore, given the inherent constraints of the random sampling strategy, the researcher selected purposive sampling as a method allowing to select participants based on the researcher’s knowledge of their features and characteristics fitting the purpose of the study (Ray, 2012).

Returning the filled survey to the researcher was regarded as automatic informed consent to participate in the research. As for interview respondents, they were selected from official Saudi institutions dealing with road safety issues. They included members of the RTSC, RSC designers, and road traffic safety officials. The total number of contacted people was 37; interviews were conducted personally by the researcher, and the core aim of interviewing policymakers and media planners was to canvass their opinions about the effectiveness of Saudi campaigns and to obtain their perceptions about gaps and ways of improving the approach to RSCs and road safety. Representatives of academia, police officers and other law enforcement officials were also interviewed, with the major focus being on their opinions about how well Saudi RSCs reach their target audiences and the strength of their impact on drivers’ behaviour.

3.3.2. Quantitative Methods

Quantitative research is an approach used for researching the quantifiable relationships between variables. It involves the formulation of hypotheses, data collection, analysis and interpretation of obtained findings. This type of research uses deductive reasoning by establishing facts, making predictions and testing the formulated hypotheses. The advantages of the quantitative approach include statistical reliability of analysis and findings, and easy generalisability of statistical results to a wider population (Nykiel, 2007). However, it is also necessary to keep in mind that quantitative research is narrowly focused on testing relationships that are identified before the study, so it is suitable for research that has clearly identified issues for testing (Nykiel, 2007).

Quantitative research methods are typically selected in cases where the description or explanation of different phenomena is the research aim. Hence, they are employed when systemic observations of properties and the relationships between the objects under study are of interest. Quantitative research is traditionally subdivided into descriptive and experimental research; descriptive research methods relate to those applied when the researcher has no control over researched variables, while experimental methods presuppose a certain degree of
control on the part of the researcher (Gramatikov & Barendrecht, 2010). In this study, the researcher had no control over the sample, so the analytical method of a quantitative survey was selected for testing the relationships between the riskiness of driving behaviours and a set of socio-demographic variables such as age, years of driving experience and nationality. In addition, questions about the perceived effectiveness of Saudi RSCs were asked of survey respondents to find out whether they felt about the impact of RSCs on their attitudes to road safety and behaviour on the roads. In line with these purposes of the quantitative component, the following hypotheses were formulated:

1. Less experienced drivers are more often involved in risky driving.
2. The acceptability of speeding as a normal behaviour on the roads leads to frequent speeding.
3. Speeding is strongly correlated with mobile phone use during driving.
4. Speeding is strongly correlated with non-use of seatbelts when driving.

3.3.2.1. Questionnaire Design and Pilot Study

The term ‘questionnaire’ is broadly used to denote any printed set of questions used to survey participants, who either mark one choice out of several alternatives, or write out an answer. Questionnaires are typically used for collecting facts or opinions. An essential strength of questionnaires as a data collection method is that they provide a convenient and quick way of collecting a large quantity of data. Moreover, data in the survey form is usually standardised, which makes it much easier to systematise and analyse it (Thomas, 2003). A good survey should have a logical structure and include only well-thought-out questions, since respondents usually have only a limited set of options from which to choose their responses, so ambiguity in a question may result in wrong answers which do not reflect the real facts or opinions of respondents (Curwin & Slater, 2007).

A new survey was designed by combining the most appropriate items from the Driver Attitude Questionnaire (DAQ) and the Driver Behaviour Questionnaire (DBQ) derived from studies of Helman et al. (2011) and Wahlberg, Dorn and Kline (2011) and the researcher’s own experience in the field of evaluating road behaviours – see Appendix A.2. Since the two questionnaires based on which the survey of this study was formulated contain some overlapping questions measuring the same attitudes and behaviours, the researcher conducted extensive work on shortening the DBQ and DAQ questions to ensure the survey was not too lengthy. As a result, the survey comprised 49 questions, 31 of which related to DAQ and
The first seven questions asked about socio-demographic data such as age, number of years of driving experience, nationality, city of residence and level of Arabic language proficiency, and the final set of questions (11 questions) tested respondents’ knowledge about the *Enough* and *Salamati* campaigns and their own driving behaviours that they considered were affected by those RSCs.

According to Curwin and Slater (2007), once a survey is drafted, it should be pilot-tested with a small number of respondents to check whether it really measures the variables of interest. Moreover, pilot testing is needed to address one of the potential limitations of surveys. Completion of questionnaires is quite error-prone because respondents may either misunderstand questions, or give the answers that the researcher wants to hear because of self-representation bias (McCormack & Hill, 1997). In such cases, when respondents’ self-reports are inaccurate or subjectively adjusted to suit the researcher’s assumed expectations, the survey data may possess low construct validity, which undermines survey findings (Mitchell & Jolley, 2012). Hence, the researcher conducted the pilot test with 20 Saudi students in Sydney, and improved the survey by removing some redundant questions and clarifying some ambiguous ones (see Appendix A.3). After that, the survey was disseminated to Saudi drivers. To mitigate the impact of self-representation bias, the surveys were e-mailed to participants for independent completion, and the surveys were confidential, which may guarantee higher truthfulness of responses. Ethics approval H9750 was received from Western Sydney University, and the letter of approval may be found in Appendix A.4.

### 3.3.2.2. Questionnaire Translation

Considering the researcher’s location in Sydney and the presentation of research results in English, the researcher designed the questionnaire in English first. In this form, the questionnaire underwent a check by the supervisor and received his approval. Pilot testing was then conducted in English with Saudi students in Sydney. After approval of the final adjustments that the questionnaire underwent after the pilot test, the researcher translated it into Arabic to disseminate to Saudi respondents (see Appendix A.5). Upon completion of data collection in October 2012, the researcher translated the survey results back into English for analysis of data using the SPSS software package. The process took approximately one week. The researcher did not turn to any professional translator for assistance because the researcher is fluent in both English and Arabic.

### 3.3.3. Data Collection
Case study research took three months, in May–August 2012. The researcher compiled and sorted out all relevant information on the selected Saudi, Australian, and European RSCs, filtered the most important and valuable data, and composed the case study portion of the thesis. After that, in August–October 2012, the process of data collection took place in the KSA, including both survey and interview research. Questionnaires for drivers in Riyadh were disseminated from 1–19 September 2012; drivers in Jeddah were contacted from 20–30 September 2012; drivers in Taif were contacted from 1–10 October; and drivers in Qunfudah were contacted from 10–15 October. After the process of data collection, the researcher spent one week on data sorting and compilation, and one week on translating data from Arabic into English for further SPSS analysis.

Interviews with 37 participants also took place in relevant cities during the process of survey data collection. The researcher selected participants from the visitors to Traffic Department offices and met with them face to face for completing the survey. Every meeting with the interviewees was scheduled and held in some a place. Each interview took 30–60 minutes and was recorded with the help of the digital voice recorder SONY ICBDX140 – a portable and high-quality dictaphone guaranteeing 43 hours of recording time and possessing a microphone jack. After the interviews, all responses were transcribed into a Word document by the researcher.

3.3.4. Data Analysis

3.3.4.1. Quantitative Data Analysis with SPSS

Survey data was analysed quantitatively to test the hypotheses; software used for statistical analysis was the SPSS version 22 software package. The initial stage of quantitative data presentation was done using descriptive statistics; it outlined the socio-demographic characteristics of the sample and clarified the quantitative (with the help of means, medians, and frequencies) distribution of survey responses. Frequency tables and frequency histograms were used to present the percentages of participants who were aware and unaware of RSCs. Self-reported behaviours on the roads and violations of road safety rules were analysed in order of frequency to identify the most commonly committed and reported violations, as well as most socially acceptable behaviours and road safety attitudes.

Before proceeding to analytical statistical tests, the researcher tested data for normalcy and homogeneity with the help of Shapiro-Wilks testing. The assumptions of normalcy and
Homogeneity were violated, which required either conducting non-parametric testing or lowering the significance level of consideration. Thus, for the purposes of the present analysis, and to meet the requirements for analysing non-normally distributed data, the researcher reduced the significance level to 0.01 in t-test, ANOVA, and correlation interpretations. The first hypothesis was tested with the help of ANOVA testing, with the significance level reduced to 0.01. After detecting a statistically significant difference, the statistically relevant items from the questionnaire were compared with the help of cross-tabulation to see which groups scored higher, and to draw final conclusions on the validation of the hypothesis. Hypotheses 2–4 were tested with the help of correlation – Spearman’s rho was used as a non-parametric correlation test for non-normally distributed data, and the significance level was retained at 0.01 to increase the accuracy of the analysis. The final stage of statistical analysis involved cross-tabulation analysis of socio-demographic characteristics of the Saudi drivers most frequently reporting road safety violations.

3.3.4.2. Qualitative Data Analysis with Leximancer

Qualitative data analysis was performed with the help of Leximancer software. This software generates a collection of concept seeds reflecting what is important for the authors of the texts based on their word usage. Based on Leximancer’s analysis of data, thesaurus-based concepts are extracted from the data and mapped to show direct and indirect relationships between them. As a result, a concept map is produced to show the relationships between major concepts. These concepts are grouped in clusters referred to as ‘themes’ in analysis. Highly connected clusters are unified as parents of a thematic cluster, and are further applied for cluster characterisation. However, it is also notable that Leximancer analysis mainly provides a macro-level snapshot of major themes across all documents, while a more detailed analytical process takes analysis further by referring to extracts from documents and substantiating claims and inferences from data based on those extracts (Billet et al., 2012).

The major benefit of using Leximancer is its ability to objectively process vast blocks of qualitative data quickly and efficiently, without the need to employ skilled staff members for initial theme identification. Thus, Leximancer is frequently credited with being the most cost-effective and efficient concept analysis and data mining software currently available for researchers (Mena, 2012). Data on Leximancer’s weaknesses is scarce, since it is mostly recognised as a highly valuable program and one of its advantages is said to be that it
includes all themes that may be overlooked and missed during manual data coding (Skinner, Edwards & Corbett, 2014).

3.3.6. Ethical Considerations

Considering that this is a doctoral dissertation, the researcher obtained ethics clearance for conducting the study from Western Sydney University. All stages of the present study were conducted in compliance with the approved guidelines on human subject research to the degree that it relates to survey and interview research. Since the case studies involved the collection of secondary data only, they did not involve any ethical considerations. Even Yin (2013) and Merriam (2009), the most renowned case study methodologists, do not include a section on ethics in their works on case studies, which suggests that there is a very low probability of ethical breaches in case study research. Nevertheless, since this study involved the extraction of data from human subjects by means of surveys and interviews, there were certain ethical guidelines that the researcher had to comply with in the framework of the academic research process. These guidelines related mostly to obtaining informed consent, conducting the data collection procedure ethically, and ethical data storage and reporting with proper regard to the requirement of participant privacy and confidentiality (Ashcroft, Dawson & Draper, 2007).

Informed consent is a vital step in guaranteeing that the research is ethical. It ensures that participants are given the choice of whether to participate in the research, that they know all the research stages and purposes, and that they know they are free to withdraw from the study at any moment (Ashcroft et al., 2007). Thus, getting informed consent is considered to have been given only after the researcher familiarises the respondent with the purpose of the research, the procedures involved, the anticipated risks and benefits, and any inconveniences and discomfort that the respondents may experience in the research process. In this study, the researcher made sure that all respondents for both the survey and interview research were given full information about the study, comprehended their voluntary participation, and gave explicit informed consent before proceeding to data collection.

Privacy and protection of confidentiality involves not only the ethical obligation of a researcher and the moral right of respondents; it is a right protected by national law, so breaching the privacy and confidentiality conditions may cause litigation against the researcher and would mean irreparable damage to his or her academic reputation (Cardwell & Flanagan, 2003). Thus, all survey and interview records collected in this research were stored
on a secure, password-protected personal computer owned by the researcher. All personal data (if it was present) was deleted from records that could potentially be made public and included in the final report, with the only copy of coding remaining in the researcher’s personal possession.
4.1. Introduction

This chapter is dedicated to an in-depth analysis of road safety publicity campaigns (RSC) adopted in developed countries. The scope of selected RSCs encompasses four campaigns: New South Wales’ Pinkie Campaign, Victoria’s Everybody Hurts Campaign, UK’s Live with It, and Sweden’s No Extra Life. Analysis of these campaigns follows the key principles integral to the conduct of such campaigns. When designing an RSC, it is crucial to consider two factors: the target population and the message. The designers also need to choose appropriate means of communication to deliver that message in a clear and understandable manner (CARRS-Q, 2013). In line with these aims, it is necessary to define the individual features of the targeted behaviour that is addressed in the campaign. These characteristics are essential for the success of the campaign since each behavioural type requires a different approach. It is also important to analyse various employment measures and their effects on the targeted behaviour (Hoekstra & Wegman, 2011).

After considering a diversity of road user behaviours and road safety interventions, it is possible to define the RSC methodology. The existing pool of theoretical models for behavioural change allow the designers to select the theoretical framework that is the most appropriate on for the targeted behaviour (Davidson et al., 2013). When analysing the effectiveness of RSCs, scholars examine the alignment of the targeted population with the message design, the chosen theoretical model, the identification of targeted population characteristics, and selected media channels. Hence, an RSC is effective when the target population accepts its message, leading to the adoption of the desired behaviour (CARRS-Q, 2013). Therefore, this analysis of RSCs in developed countries adheres to the following structure: the reasoning behind the campaign selection, identifying the targeted behaviour and the targeted population, analysing message design, defining the theoretical models applied, discussing audience segmentation and targeting, reviewing the chosen medial channels, and evaluating campaign effectiveness.

4.2. New South Wales: ‘No One Thinks Big of You’ / the Pinkie Campaign

The Pinkie campaign is one of the most memorable road safety campaigns carried out in New South Wales, and one of the most effective in reducing speeding. After its launch in 2007, it
managed to save the lives of 27 young drivers in 2007 and 27 drivers in 2008 (Clemenger BBDO, 2009).


The campaign was aired during June 2007 and involved the use of a wiggly little finger gesture to ridicule Australian boy racers and shame them into compliance with road safety rules. Prior to the establishment of the NSW Centre for Road Safety in 2011, the road safety agenda in New South Wales was the responsibility of the now restructured Roads and Traffic Authority (RTA). The RTA had been set-up in 1989 with a brief of maintaining road networks in New South Wales. The RTA was also responsible for drivers’ licenses and motor vehicle registration, and was funded to upgrade and maintain local and regional roads through local councils located in relevant cities or regions.

In addition to the scope of duties above, the RTA’s top priority was to design and launch road safety campaigns. Since its inception, the RTA had carried out several road safety advertising campaigns with the most famous ones being: The *Microsleep and Circadian Rhythms* campaign (2001 and 2003), the *Speeding. No One Thinks Big of You (Pinkie)* campaign (2007), the *Dragon’s Teeth* campaign (2010), the *Clip Every Trip* campaign (2011), and the *Paranoia* campaign (2014). Among these RTA’s campaigns, the choice was made in favour of the *Pinkie* campaign, carried out in New South Wales, Australia, from June 2007.

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3 The Pinkie commercial is available at: [http://www.youtube.com/watch?v=JqWO7fzwSLM](http://www.youtube.com/watch?v=JqWO7fzwSLM)
It is essential to point out that the Government of NSW has a strong commitment and a proactive approach to promoting safe driving practices. Significant investment is dedicated to the design and implementation of programmes and policies aimed at reducing crashes and associated deaths on Australian roads. In a recent speech, representatives of the NSW Ministry of Roads and the cabinet announced they had assigned $307 million to enhancing road safety in the year 2016 (NSW Government, 2015a). In addition to media campaigns promoting safer driving behaviours, the NSW 2015–2016 budget on transport covers new zebra crossings, drug and alcohol testing, safety measures in high-risk locations, and the like. Furthermore, the NSW government announced its readiness to fund community programmes and road safety projects to encourage public engagement in discouraging speeding. In order to increase the public awareness of the high incidence of fatalities caused by dangerous driving, the government allocated $400,000 to local community projects (NSW Government, 2015b).

4.2.1. Reasons for the Choice of the Pinkie Campaign

A range of factors informed the choice of the Pinkie campaign as a case study for evaluating potential responses to road safety awareness strategies in Saudi Arabia. In the context of road accidents, Saudi Arabia and New South Wales share many similarities. In both jurisdictions, speeding is the major cause of fatal car crashes. Significantly, the speeding problem in both countries is driven by a ‘boy racer’ mentality per which speeding is viewed as a means, not only of achieving recognition and approval, but also of asserting or demonstrating one’s power or manhood (Lumsden, 2013; Yusuf, 2012). In both Saudi Arabia and New South Wales, this attitude is predominantly entrenched among young males.

Through the Pinkie campaign, New South Wales has managed to effectively challenge this attitude. Hence, the campaign provides instructive lessons for Saudi Arabia on using a culturally relevant symbol to depict disapproval and contempt for the boy racer attitude. Furthermore, this campaign is applicable to Saudi Arabia in terms of using shame to compel youthful Saudi males with a habit of speeding to conform to the desired social norms. Since the two jurisdictions face a common problem driven by common factors, the success of the Pinkie campaign implies that the adoption of the same campaign in Saudi Arabia might meet with similar success if adjusted to cultural peculiarities.

In line with Hofstede’s (1997) framework of national cultures, Saudi Arabia has been associated with a large power distance, high collectivism, and high uncertainty avoidance
(Cassell & Blake, 2012). In contrast, Australian culture has been associated with a small power distance, high individualism, and low uncertainty avoidance. These disparities in the two cultures suggest that what works for one culture might not work for another. Focused on one of these cultural dimensions, Carey and Sarma (2011) found a positive correlation between authoritarianism and the proximal defence mechanisms of the terror management theory. Since Saudis are very different to Australians, the use of shock tactics in road safety campaigns that proved to be effective in the Australian context may not work well in the Saudi context.

However, the car cultures of Saudi and Australian youth are similar in that dangerous driving among male youth reflects the boy-racer attitude. This point of convergence between two countries indicates the applicability of the strategy used in the Pinkie campaign to deliver a message to the target audience in Saudi Arabia. This underpins the relevance of studying the Pinkie campaign in relation to Saudi Arabia’s speeding problem.

4.2.2. Identification of Target Behaviour and Target Audience for the Pinkie Campaign

The major causes of fatal road crashes in Australia have been identified as the following: drink driving, speeding, fatigue, loss of concentration, and reluctance to wear seatbelts (AAA, 2013). On its own, speeding is a causative factor in at least four out of ten road crashes that occur in New South Wales (AEW, 2011). The highest incidence of road crash casualties occurs in the 17 to 25 age group. Data for the period 2000–2011 reveals that young drivers comprise one-third of drivers whose speeding results in fatal crashes (Ferguson, 2013). Young drivers comprise two-thirds of drivers involved in crashes after falling asleep (CARRS-Q, 2015). Furthermore, youth aged between 17 and 25 are associated with a high incidence of speed limits violations. Male drivers are more prone to speeding in the presence of young passengers. As pointed out by Ferguson (2013), half of fatal speed-related crashes involve young drivers with same-age passengers.

4.2.3. Message Design

Advertising agency Clemenger BBDO developed the creative concept of the Pinkie campaign. The message was designed to strike at the very foundation of the ‘boy-racer’ ego. It asserted that rather than being ‘cool’, those who speed to impress are, in fact, foolish (AEW, 2011, p.1). The message was condensed into the slogan: ‘Speeding. No One Thinks Big Of You.’ It revolved around a symbol – the pinkie (small finger) – used to challenge boy
racers’ perceptions of themselves as cool. Hence, the message is delivered in a youthful and informal manner to reach this particular audience of young drivers.

During the campaign’s development, the concept and message were tested for suitability and effectiveness. This was achieved using focus groups comprising males aged between 17 and 25 (who represented the target audience) and females aged between 30 and 50 (who represented the public) (RTA factsheet). Since the targeted audience had two major characteristics – young age and male gender, young females were not involved in the general public group to avoid bias. The television advertisement lasted for 45 seconds and used three analogous stories with young men as the main characters.

The first shot of the commercial showed a slow-moving vehicle pulling to a halt in front of a red traffic light, which is beside a pub. Two pretty girls, whose ages are approximately the same as those of the two young men in the vehicle, stand outside the pub. As the girls exchange flirting looks with the young men, a romantic soundtrack fades in and the lights change to green. Sensing an opportunity to prove himself, the young male driver takes off in a burst of energy and speed. Pleased at his performance, he smiles, but the girls exchange disapproving glances and disparagingly flash the pinkie symbol (NSW Government, 2015c).

The second shot involves a professional woman stepping onto a pedestrian crossing. She is forced to retreat as an oncoming car driven by a young male denies her the right of the way. The close-up shot shows the young male’s sneer. He is obviously pleased with his display of power and control, while the woman (together with another senior woman in a bus close by) displays expressions of disapproval and exasperation. The senior woman then flashes the pinkie (NSW Government, 2015c).

The last shot involves four young men, driving a P-plated vehicle. In slow motion, they are captured negotiating a bend close to the pub shown in the first shot. The driver turns the car around the corner so sharply that the vehicle throws the passengers to one side, and then follows the turn with several impressive skids before bringing the car back to its normal course. Pleased with himself – and clearly relieved that he has completed the manoeuvre successfully – the driver smiles and looks through the rear mirror for signs of approval from his recovering passengers. Instead, he catches furtive pinkies being flashed by male occupants in the backseat (NSW Government, 2015c).
4.2.4. The Use of Theoretical Models in Underpinning the Conceptual Design of the Pinkie Campaign Messages

Prior to the creation, execution, and delivery of the Pinkie campaign, RSCs (road safety campaigns) in New South Wales (and indeed in most of Australia) had used a fear or shock tactics. The overuse of shock tactics (using images of twisted metal and blood) and the appeal to fear had led to a numbing effect that, in line with Shklovsky’s habituation theory, deadened the perceptions of most audiences, making them all immune to the ideas or images contained in subsequent road safety advertisements (Diepeveen, 2013, p. 118). Such advertisements became stale, or lost their sting, and most of the target audience could simply not recall them.

As Shklovsky’s theory states, the habituation of the human mind can be addressed through defamiliarisation techniques, whereby the ordinary is ‘repackaged’ in such a way that habitualised patterns of perception are disrupted (Diepeveen, 2013). The Pinkie campaign made a successful attempt to break this habituation using slow motion, visual metaphor, and symbolism accompanied by a deliberate avoidance of the familiar shock tactics and appeal to fears. There is no evidence on the intentional use of the habituation approach by designers of the Pinkie campaign (Goulimari, 2014, pp. 154–156). However, the unconscious engagement of defamiliarisation techniques contributed to the success of the Pinkie campaign. Hence, it is possible to suggest that the harmonisation theory of Shklovsky underpinned the planning, design, and execution of the Pinkie campaign.

Within the context of theoretical models used in the design and delivery of the Pinkie campaign, it is essential to discuss the extended parallel processing model (EPPM). It consists of two components – the danger control process and the fear control process. While the former ensures acceptance of the message, the latter concerns rejection of the message (Witte, 2015). Threat-based appeals contain components of both threat – which includes the severity of the threat and susceptibility of an individual to that threat – complemented by self-efficacy and response efficacy. When the targeted message incorporates a fear appeal, a person is likely to evaluate the threat associated with the message (Witte, 2015).

If an individual perceives the threat faced as moderate or high, fear is triggered, and the individual engages in evaluating the efficacy of the alternative presented in the message. When the perceived efficacy is considered high, the danger control process impels an individual to take measures to prevent or forestall the imminent danger (Witte, 2015). In this
respect, an individual responds to the danger, not to their fears, which makes their response an adaptive outcome. In the case of moderate or high threat accompanied by low efficacy, the fear control process is triggered instead (Witte, 2015). As a result, an individual responds to his fears, not to the danger, which is a maladaptive response that denies the threat. Another possibility is that the threat will be evaluated as low by an individual, which prevents further analysis and response to a fear.

According to the EPPM, threat and efficacy evaluation are affected by multiple factors, including the culture and personality of a person. Hence, the same fear appeal is likely to produce different impacts on different people (Popova, 2012). As it has been indicated above, the *Pinkie* campaign was different from its predecessors in that it addressed the egos and social identities of young men instead of provoking fear. However, the EPPM underpinned development of the campaign message. Rather than appealing to the sense of fear and physical danger, the use of the pinkie finger appealed to the fear of being seen as ridiculous and laughed at. Hence, the EPPM is among the theoretical frameworks for the *Pinkie* campaign.

Thus, the use of the pinkie finger became the most powerful and enduring symbol of the campaign. In many cultures, the phallus is viewed as a symbol of natural generative power, and men with small phalluses are perceived as ‘not men enough’ (Winer & Anderson, 2013, p. 52). In a figurative sense, individuals who are ‘not men enough’ usually attempt to compensate for their shortcomings or weaknesses by undertaking certain, usually aggressive, activities in public (Winer & Anderson, 2013). This is what has been referred to as the ‘Napoleon Complex’ or informally as the ‘short man syndrome’, which is a good example of the Freudian concept of the ego-defence mechanism where an individual behaves aggressively as a way of overcompensating for a real or perceived weakness (Winer & Anderson, 2013).

In the context of dangerous driving, such a response manifests as the Lacanian hole known as the ‘beance’ (Maccannell, 2014, p. 9). Hence, dangerous driving habits constitute conscious manifestations which aim to fill this hole. Accordingly, the pinkie symbol acts as a phallic signifier superintended by the Symbolic Order (or Freudian’s paternal superego) to suppress the instinctual desire among these individuals to speed or engage in other dangerous driving behaviours (MacCannell, 2014). Using Freudian terminology, it may also be explained as reaction formation resulting from libidinal shortages. These feelings of sexual inadequacy
result from the libido’s overuse at one of the five stages of the individual’s development – the oral, anal, phallic, latency and genital stages (Winer & Anderson, 2013).

It is in this sense that most people understand the action of wiggling a pinkie finger at somebody (Jackson & Moshin, 2013). Therefore, the Pinkie campaign used the pinkie symbol to deride actions of boy racers as being the compensatory actions of men who are not masculine enough. This concept of the pinkie finger is embedded in the Australian culture, making it clear that the targeted population accepted the intended message of the symbol in the desired way. Hence, the campaign effectively exploited a symbol and concept to ensure acceptance of its message.

In terms of the applicability of the Pinkie campaign strategy to Saudi Arabia, it is crucial to consider different connotations of the pinkie gesture in different cultures. Thus, this culture-specific symbol serves to denote a thin person or thing in South America, a loose woman in Japan, or a bad thing in Indonesia (Pease & Pease, 2012). In France, the pinkie gesture is a warning against foolish actions. In Saudi Arabia as well as in the Mediterranean, this gesture has a similar connotation to the one adopted in Australia. Thus, the Saudis understand the pinkie gesture as a reference to a small penis (Pease & Pease, 2012). However, the use of the pinkie symbol in an RSPC in Saudi Arabia would not be appropriate since the state’s cultural and religious provisions do not allow sexual concepts to intrude into public affairs. In the Saudi context, the Pinkie campaign should be executed using another symbol relevant and appropriate to the targeted population of this Arabian country.

With the replacement of the pinkie gesture with another one, the Saudis could utilise the 2007 campaign used in New South Wales, the major advantage of which was the use of an effective symbol. Because it is unique and leaves no space for ambiguity or equivocation, the symbol makes the use of words unnecessary. In the Pinkie campaign, the pinkie gesture forced the campaign producer to reinforce the process of defamiliarisation by replacing the use of words using operating, editing and sound techniques. The camera movements and non-diegetic soundtrack collectively injected the requisite emotional and psychological cues (what Aristotle, in his theory of rhetoric, calls pathos) into the message (Winer & Anderson, 2013). Simultaneously, the absence of speech allowed the advertisement to transmit its message (using symbols appropriate to the youth subculture) without necessarily being sexually explicit and therefore offensive to some viewers (NSW Government, 2015c). If a viewer was not familiar with the pinkie symbol, the advertisement was redolent with cues, such as raised
eyebrows, smirks, and looks of aggravation among those supposed to be impressed by the dangerous driving stunts. These additional cues enabled viewers to understand and accept the message.

Placing the symbolism aside, it is possible to distinguish elements of the theory of planned behaviour in the *Pinkie* campaign. This psychological theory relies on the ‘subjective norms’ of the targeted behaviour. The theory concentrates on normative conceptions possessed by an important population group in relation to the performed behaviour (Guttman, 2014, p. 168). In the context of the *Pinkie* campaign, ‘important people’ expressed their disapproval of dangerous driving through the pinkie finger. Similar to the EPPM, the theory of planned behaviour addressed young drivers’ sense of shame and their fear of appearing ridiculous.

Boy racers has certain neurological characteristics, such as an excessive production of the hormone dopamine, that makes them easily excitable, impulsive, rash and willing to jump headlong into risky behaviour. Young men are full of rampant sexual energy and riotous hormones. Brought up in a culture of video games, racing cars and action movies underscoring the need for speed, boy racers tend to practise dangerous driving popularised by media. For them, speed is an act of positive reinforcement, which indicates the ineffectiveness of targeting this population with rational appeals (Lumsden, 2013). The pinkie symbol appeals to the emotions rather than to reason.

Though the pinkie gesture is the most enduring and powerful symbol of the advertisement, other symbols also reinforce the core message. For example, the pub is shown in two scenes as an indirect allusion to the role of alcohol. By introducing what has become a somewhat iconic gesture (the pinkie-finger sign) together with some simple but effective language (‘no one thinks big of you’) and close-up shots of faces expressing disapproval and contempt (refer to Figure 5.1 below), the campaign has gone far beyond motivating dangerous drivers to change their conduct on the road. Thus, the *Pinkie* campaign popularised a powerful framework (incorporating gesture, expression, and language), which the community can use to confidently deal with dangerous drivers. The campaigned empowered the target audience of young drivers with a set of gestures and expressions for use when encountering reckless road use behaviour.

It is crucial to point out that the *Pinkie* campaign went far beyond the boundaries of the TRA and TPB. By introducing a somewhat iconic gesture (the pinkie finger sign) accompanied by simple, but effective language (‘No one thinks big of you’) and close-up shots of faces
expressing disapproval and contempt for dangerous drivers, the campaign went further than a single attitude change. The *Pinkie* campaign created an overall representation scheme empowering community members by giving them an option for how to deal confidently (using gesture, expression and language) with dangerous drivers they might encounter. The practical effect was to encourage the target audience of young drivers by advocating a behavioural change they could easily agree with, and promote.

All elements of TRA and TPB are exemplified by the *Pinkie* campaign, making it an excellent case study for Saudi Arabia. Analysing the *Pinkie* campaign, Saudi policy makers are likely to design traffic campaigns aimed at informing and socially empowering Saudi citizens to develop a culture of intolerance to recklessness on the road. This practical example of the effectiveness of grounding road safety advertising on the provisions of TRA and TPB is consistent with multiple scholarly studies advocating the same approach (Guttman, 2014; Avineri, 2014; Forward, 2013; Hung & Huyen, 2011). This academic support suggests that it is possible to force Saudi drivers to change their behaviour by addressing the overall driving population. Since risk-taking behaviours and habits are built up over long periods, they require a concerted and staged effort over an extended period, such as the decade of improvement that this thesis argues for. Hence, the provisions of TRA and TPB seem to be useful tools for creating effective road safety campaigns.

In practice, the campaign produced millions of confident carriers of an unequivocal message: reckless driving is socially unacceptable and it is an activity for fools. Finally, the campaign illustrates a concerted and deliberate effort to bring everybody on board in the design and execution of the message, including boy racers and the public.

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*Figure 4.2. The Pinkie Campaign. Source: Grabbed from the ‘No One Thinks Big of You’ commercial ([http://www.youtube.com/watch?v=JqWO7fzwSLM](http://www.youtube.com/watch?v=JqWO7fzwSLM)](http://www.youtube.com/watch?v=JqWO7fzwSLM))*
4.2.5. Audience Segmentation and Targeting

Any public campaign will only be successful when it reflects particular concerns and cultural characteristics of the targeted audience. In its address, a public campaign should target a homogenous population group. Hence, careful and thoughtful audience segmentation is essential in order to identify a homogenous target population (Ratzan, 2014). The process of audience segmentation concerns identification of a group within a larger population, the members of which are homogenous in relation to critical attributes, such as behaviours and beliefs that are highly relevant to the intended public engagement campaign (Maibach et al., 2011). Therefore, audience segmentation is an effective communication strategy that contributes to public campaigns in terms of message acceptance. Through segmentation, designers of public campaigns seek to provoke and promote behaviour change (Barnett & Mahony, 2011).

The key subject of the Pinkie Campaign was excessive speed on the road, because violation of speed limits is the major contributory factor in fatal road crashes in New South Wales. Thus, the campaign brought speeding to public attention. Associated mostly with young male drivers, speed-related audience segmentation relied on demographic (age and gender) variables. On that basis, the ‘boy-racer’ category was identified as an extremely high-risk group in terms of speeding. According to the statistics on drivers breaching speed limits, they are predominantly young males attempting to impress others, which is a form of behaviour peculiar to their stage of personality development. Thus, the target was males aged 17 to 25.

4.2.6. Choice of Media Channels

The targeted population was young males aged from 17 to 25 years, who are the major consumers of TV, cinema, and the internet. In this regard, those three media channels were used to deliver the Pinkie message. TV and cinema broadcast the Pinkie campaign for a two-year period from 2007 to 2009, and afterwards sustained the message by means of roadside billboards. Print media were also used to deliver the Pinkie message.

4.2.7. Evaluation of Campaign Effectiveness

Among others, the TNS Social Research group evaluated the effectiveness of the Pinkie campaign. As a part of an international social research unit, TNS Australia seeks to make

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4On YouTube there are several videos of responses to the Pinkie adverts. Some are funny, but some take the message and distort it to suit the video blogger’s own goals.
objective assessments of government and non-government policies and programs launched to address the changing needs of Australians. Relying on behaviour change theory, TNS analysts examine social marketing and other public campaigns to gauge their success in educating and persuading along with the campaign’s influence on the design of traffic legislation (TNS, 2014). TNS’s first assessment report on the Pinkie campaign’s effectiveness was released nine weeks after the campaign media placement (RTA Factsheet). The evaluation addressed awareness of the message, its recognition, changes in behaviour, perceptions about it, and assessment of its practical effect on dangerous drivers. The evaluation established that (RTA Factsheet):

- The campaign had high awareness levels with a recall rate of 67% among the young males targeted and 77% among the general public.
- The campaign also had high recognition rates with message recognition rates for young males at 71% and for the public at 72%. Correspondingly, the recognition of the advertisement’s meaning stood at 54% for young males and at 59% for the general population.
- It triggered extensive debate and discussion on the issue of speeding among 60% of young males and 55% of the public. The campaign was also associated with a change in driving behaviour among 62% of the young males and 54% of the general population. It also raised consciousness about individual driving behaviour among 60% of young males and 50% of the general population.
- According to TNS findings, 70% of the public, and 70% of young males, believed the ad was effective in prompting drivers to adhere to speed limits. About 61% of the public and 58% of young males believed the ad would be effective in influencing young drivers to stick to speed limits.

Apart from the TNS evaluation, the NSW government provided its estimates on the effectiveness of the Pinkie campaign. The major positive change concerned the driving behaviour of P-Platers.\(^5\) The number of deaths resulting from fatal crashes fell by 46% in the year after the campaign launch. Thus, the 2007 statistics indicated 22 fewer deaths of P-

\(^5\)P-Platers refer to drivers holding a provisional license. This license is valid for a period of three years, and is only issued to applicants who have attained the age of seventeen, and who have held a learner’s licence for no less than six months and passed a driving test or successfully completed a logbook in the presence of a certified instructor. They are required to display the p-plate on their cars, a red-on-white plate reflecting their status (State Government of Victoria, 2012).
Platers in comparison to the 2006 data (NSW Government, 2015d). The campaign also spearheaded a reduction in the deaths of 17–25-year-old violators of speed limits by almost 50% within the first year of its implementation. The overall number of road fatalities also dropped due to the reduction in the number of speed-related deaths (NSW Government, 2015d).

The *Pinkie* campaign was apparently a success. It achieved a 97% recognition rate among young male drivers and a 95% recognition rate among the general public (Enth Degree, 2014). Today, the campaign is recognised as a perfect example of appealing to dangerous drivers through social stigma instead of stressing speeding fines or associated risks. As with any public campaign, the *Pinkie* campaign received its criticism as well. Those opposing the effectiveness and contribution of the campaign to promoting safety driving on Australian roads pointed to the abundance of short-term outcomes and a lack of long-term follow-up in such campaigns (Enth Degree, 2014). In addition, some critics pointed out various factors that affected the incidence of car crashes, such as weather conditions, the health of drivers, and the like. The provocative tactics of the *Pinkie* campaign aroused significant ethical concerns as well. Some questioned the morality of the campaign due to its associations with the phallus and the introduction of mocking and shaming into the public discourse. The most common response of advocates of the *Pinkie* campaign was that all means and strategies are justified when they support safer driving practices (Guttman, 2014).

Obviously, the *Pinkie* campaign is not entirely applicable to Saudi Arabia, where references to the phallus are not acceptable. However, it provides valuable lessons on how to reach young drivers who are prone to speeding. The core point of the *Pinkie* campaign is the uselessness of threatening youth with dramatic consequences of speeding. Instead, it is essential to try to change driving behaviour through changing youth culture. Relying on specific values and attitudes of Saudi youth, it is possible to identify a way in which young people might demonstrate their disapproval of speeding. Through integrating non-speeding attitudes into youth culture, RSDCs in Saudi Arabia are likely to discourage speeding among young drivers.

### 4.3. Victoria: ‘Everybody Hurts When You Speed’

Road safety in Victoria is within the purview of the Victorian Transport Accident Commission (TAC). Since the TAC embarked upon its road safety program towards the end
of the 1980s, it has made many gains (Table 4.1). Victorian road safety campaigns have become regular events due to the increased TAC funding. Although the increased funding has not translated into increased funding for road safety campaigns, as illustrated in the next paragraphs, it has improved the quality of road safety advertisements, raised the public profile of TAC, and supported road-safety enforcement (Terer & Brown, 2014; Hicks, 2012). Today, TAC spends most of its funding on the settlement of claims. Hence, 89.5% of TAC revenue covers gross claims incurred, while the rest is distributed between administration costs, road safety marketing, trauma projects, premium collection fees, and safer road infrastructure (TAC, 2012, p. 20). In other words, the total operating expenses constitute $3,186,853 and road safety marketing receives only $48,963 (or 1.5%) and safer infrastructure receives $94,481 (or 3.0%) (TAC, 2012, p. 20).

Table 4.1
Declines in Road Fatalities in Victoria

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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<tbody>
<tr>
<td></td>
<td>267</td>
<td>270</td>
<td>268</td>
<td>220</td>
<td>241</td>
</tr>
</tbody>
</table>


These data indicate that TAC devotes most of its resources to settling claims resulting from road safety accidents instead of preventing such accidents. Hence, TAC remains largely a reactive rather than a proactive organisation. Nonetheless, road safety publicity or advertising campaigns remain a central mechanism through which the TAC aims to achieve its mandate of ensuring safety on Victoria’s roads. The list of major TAC campaigns carried out since 1989 include: If you drink and drive, you’re a bloody idiot (1989, 1993, and 1998); Don’t fool yourself, speed kills (1995, 1998); Country people die on country roads (1991, 1997); If you drive then lose control, you’re stuck in your nightmares forever (1993); It's in your hands, concentrate or kill (1995); Belt up, or suffer the pain (1994); If you don't trust the driver, don't get in (1995); and Take a break, fatigue kills (1997) (AAA, 2013).

Other campaigns include The good driver (September 2007); Reconstruction (March 2006); The wife (February 2005); No accident (May 2004); Rachel (July 2003); Slo Mo (August 2002); Post mortem (February 2002); Spot (November 2001); Doubles (August 2001); and Past history (August 2001). Furthermore, there were the following campaigns: Everybody hurts (July 2010); On the team (September 2010); Christmas enforcement (December 2009); Gone (October 2008); and Pictures of you (February 2008) (AAA, 2013). The case
study road safety campaign for Victoria will be the *Everybody hurts*\textsuperscript{6} campaign carried out in July 2010.

\textbf{4.3.1. Reason for the Choice of the ‘Everybody Hurts’ Campaign}

The theory of reasoned action developed by Fishbein (1975) suggests that individual actions are not just the product of individuals’ intentions, but are also a reflection of normative beliefs (in Hennessy, 2012), since individual decision-making and behaviour are greatly affected by the beliefs and attitudes possessed by group members. At the same time, individual actions produce an impact on other members of the group (Hennessy, 2012). The *Everybody Hurts* campaign in Victoria utilised these theoretical insights in a campaign that successfully communicated that an individual action may hurt the overall group.

Since few (if any) advertising campaigns in Saudi Arabia have pitched their speeding messages on the effect of speed-related crashes on groups, the *Everybody Hurts* campaign provides an alternative approach that the Kingdom might adopt in its quest to promote safer driving practices. Victoria’s campaign is a textbook example of a campaign which shows how the impact of a car crash can hurt groups to which the individual belongs. It provides numerous lessons on how to structure such a campaign. In Arab cultures, the role of the family is of a great concern and value. Hence, the *Everybody Hurts* campaign is applicable to Saudi Arabia since it appeals to dangerous drivers, not through the fear of physical damage, but through the fear of causing emotional damage to their family members. In compliance with the Saudi culture, such a campaign is likely to succeed in reducing the depressing frequency of speed-related crashes in Saudi Arabia.

\textbf{4.3.2. Identification of Target Behaviour and Target Audience for the Everybody Hurts Campaign}

The major causes of road accidents in Victoria are the same as those in New South Wales. Speeding is the key cause of car crashes, and is responsible for at least three out of every ten road crashes. It is the number one killer on Victorian roads. Estimates for the period 2008–2010 report at least 121 drivers and 46 passengers perished in speed-related crashes in Victoria (AAA, 2013). In the context of drivers’ characteristics, men are more likely to be

\textsuperscript{6} The 3 minute montage of “Everybody Hurts” is available at: \url{http://www.youtube.com/watch?v=Ai25O1MW8dM}
involved in road accidents, with 2.66 times more males killed on Victorian roads than females (AAA, 2013). The largest percentage of road-crash casualties falls within the 18- to 25-year age bracket. Therefore, the car accident statistics in Victoria echo those of NSW where young males are the key actors in crashes and associated deaths.

The 2010 Everybody Hurts campaign targeted young male drivers who broke speed limits. The campaign relied on the latest data provided by the TAC on behalf of the government. The TAC field research revealed that:

1. Low level speeding, defined as a few kilometres (typically 5k/h) above the legal speed limit, was prevalent on Victorian roads, and across all age groups; this is although eight out of every ten residents of Victoria believed that speed was a major cause of road crashes. Seven out of ten drivers admitted to speeding ‘some of the time’ (TAC, 2010).
2. Most drivers exceeded the speed limit by less than 9 km/h, with most of them converging on the 5 km/h point (TAC, 2010).
3. Many drivers believed that anything less than 10 k/h over the speed limit did not qualify as speeding and was not dangerous (TAC, 2010).

The advertising campaign concept for Everybody Hurts was based on the crash statistics, traffic offence reports, and research by marketing company EY Sweeney.

4.3.3. Message Design

The core of the Everybody Hurts message was that road crashes cause trauma not just to people directly involved in the accident, but also to others. The list of people hurt by car crashes included parents, close family members, friends, passengers, workmates, police officers, eyewitnesses, girlfriends, siblings and the like (TAC, 2010). As the major cause of car crashes in Victoria, speeding is associated with drastic consequences and thus, requires a major response (TAC, 2015a). To increase public awareness and understanding of how speeding influences lives of drivers and people close to them, the TAC used the testimonials of friends, family members, and community members affected by traffic accidents. All people featured in Everybody Hurts uttered the words: ‘I wish I wasn’t in this ad’ (Squires, 2012, p.1).
The creation of the advertisement was based on a real-life story to produce an effect on dangerous drivers. Thus, it involved live interviews with friends and family members of 19-year-old Luke Robinson, who died in a car crash that year. Luke Robinson was speeding along Anakie Road in Lovely Banks in the early hours of the morning when his car lost control and crashed, killing him and injuring his three passengers (one of them seriously). The accident occurred on March 28, 2010 (Dundas, 2015). Grief-stricken by the loss of his son, Norm Robinson stated his intention to ‘desperately [make] the community aware of the tragic ripple effect caused by every death from speeding’ (Open Roads, 2013). In her appeal, Luke’s mother expressed the hope that her son’s death would serve a lesson to deter other young drivers from speeding.

That one car crash resulted in 26 testimonials on the dangers of speeding, which were then aired. Hence, 26 people who had been affected by Luke’s death articulated the message of the Everybody Hurts campaign about the dramatic consequences of speeding (AMES 2016, 2015). In addition to the television advertisement, the campaign utilised other media channels, particularly newspapers, to outline Luke’s story and to explain his family’s engagement in the speed reduction campaign. Sixteen stories were aired on television over a two-week period. Concurrently, an online brief directed visitors to the Everybody Hurts website providing access to the 26 testimonials. Visitors to the site were encouraged to comment on stories and forward the videos to others. These stories were later put together to produce a three-minute mega commercial, formally launched and then aired on TV on 25 July 2010 (Macleod, 2011).

4.3.4. The Use of Theoretical Models in Underpinning the Conceptual Design of the Everybody Hurts Campaign Messages

The Everybody Hurts campaign used the concept of emotional contagion to illustrate the ripple effect that speed-related car crashes have (De Neve et al., 2013). Instead of focusing on the direct consequences for crash participants, Victoria’s campaign stressed the emotional scars of people close to them, such as family, friends, community, workmates, passengers and so on. Hence, the concept of emotional contagion underpinned the campaign (Ruz et al., 2014). Because car crash victims are members of groups, they both produce an effect on emotions of their group members, while simultaneously being exposed to emotions of fellow members. In line with the Circumplex Model of Affect, in which emotional contagion is viewed as being bi-directional and dependent on the strength of valence
(attractiveness/adversiveness of events) and activation levels, *Everybody Hurts* successfully uses the trick of valence and activation level enhancement with an eye to creating the maxim possible impact (Ekkekakis, 2013). This is achieved using strong attentional processes described as portraying ‘raw emotions’ like grieving facial expressions and body language (Campaign Brief, 2012a). In this regard, facial expressions also act as effective and affective signs indicating group danger. As such, the use of the Aristotelian concept of pathos as a technique of persuasion is clearly discernible.

Among others, Kuperman et al. (2014) and Kuhne (2012) show that stimuli exhibiting high levels of negative valence typically elicit more rapid and stronger emotional, cognitive and behavioural reactions than do neutral or positive ones. States of unpleasant affect like grief tend to be self-perpetuating, and their rapid escalation creates the ground for the simultaneous emergence of automatic mimicry and social comparison (Suls & Wheeler, 2013). In *Everybody Hurts*, the use of grief achieved the maximum emotional contagion. Emotional contagion manifests in the outpouring of grief from the victim’s family and friends recalling their misery on learning of Luke’s death. The first grief stories were shown on TV to catch the public’s attention and to redirect viewers to the campaign’s website to create a strong negative response to speeding.

In its turn, the *Everybody Hurts* website redirected its visitors to its Facebook page to draw emotional connections between all campaign viewers. By making connections between Luke’s story and a website visitor, a high degree of personal relevance to everyone was created. By enabling visitors to upload videos or comments, the campaign facilitated the process of social comparison and thus, reinforced its message. It may also be argued that in the process, the technique of priming helped to promote the acceptance of the message. Scholars define priming as a technique which utilises the effect of a certain syntactic construction or word on the production or recognition of the subsequent syntactic construction or word (Jiang, 2013).

The *Everybody Hurts* campaign utilised the priming technique heavily, especially in terms of the final three-minute commercial fashioned later from the testimonialas of people affected by the tragedy and the responses of viewers. In addition to encouraging negative attitudes towards speeding, the emotional contagion succeeded in becoming a primary source of information for assessing group behaviour and attitudes towards speeding through triggering the transmission of socially relevant information between members of affected groups. Figure
4.3 below illustrates the ripple effect by showing how the ripples move from the centre (the initially affected people) to spread throughout the community.

![Figure 4.3. The ripple effect (Everybody Hurts website: http://www.everybodyhurts.com.au/)](Image)

By connecting the emotional impacts of speed-related crashes on a range of different groups to the impact on individual speeding behaviour, the campaign seems to utilise the basic principles of the theory of planned behaviour (Guttman, 2014). The theory is based on the
idea that an individual behaviour relies on the emotional assessment of consequences, perceived behavioural control, individual intentions, and social normative beliefs. Therefore, by encouraging the avoidance of speeding (a negative action) to achieve positive outcomes (happiness for the group), the Everybody Hurts campaign also locates its conceptual foundations within the health belief model. This is the major framework for behavioural change interventions because it simultaneously addresses perceived susceptibility, perceived benefits, and perceived barriers (Sharma & Romas, 2011). In this road safety campaign, the health belief model contributes by pointing out a driver’s initial susceptibility to safe driving, the potential to live a long and healthy life, and various life stressors that promote dangerous driving.

Another theory underpinning the Everybody Hurts campaign is Skinner’s theory of operant conditioning, which states that the positive consequences of an action or behaviour reinforce human response while ignorance or punishment of human voluntary responses weaken them (Snowman & McCown, 2014, p. 239). In other words, operant conditioning refers to human adjustment to the surrounding environment in order to acquire or avoid particular consequences. In the Everybody Hurts campaign, the emotional hurt to the group produced by traffic accidents acts as a ‘punisher’ to promote the avoidance of dangerous driving. Thus, Everybody Hurts utilised multiple persuasive techniques to promote the desired behaviour. Through introducing the grief stories of 26 people, the campaign elicited favourable reactions towards the anti-speeding message by utilising the ethos element of Aristotle’s work.

Speakers’ credibility is achieved by highlighting their close connection to Luke whose death affected their lives significantly. This connection makes them qualified to speak about the emotional impacts on the group. As such, those individuals become the messengers for the campaign, and due to low elaboration, persuasion is achieved via Kelman’s (1961) process of identification. Identification is a stage in the attitude change process that concerns the acceptance of the message while developing a self-defining relationship with the speaker (a controlling agent). This relationship facilitates the construction of self-defining images (Shaver, 2015). In the context of the road safety campaign, the grief testimonials of Luke’s family and friends produces a vision for advertisement viewers that they might cause similar damage to their close people if they drive dangerously.

As already indicated above, the campaign draws connections between the individual viewer and Luke’s story through multiple media channels, including TV and Facebook. In fact,
social networking is widely used to deliver the message to youth and relies on principles of mediation theory. The latter, in its turn, serves to define and utilise various means and techniques to deliver information from one group and to foster its acceptance and comprehension by another one (Haynes, Haynes, & Fong, 2012). Thus, the campaign uses novel forms of communication, such as Facebook and a website to transmit information. It acknowledges the dominance of digital media (more particularly the internet) in the construction of knowledge for its young, hard-to-reach, and technologically accomplished target audience. It also ‘mediates’ or arbitrates between the ‘boy racer’ attitudes espoused by youthful drivers and the desired behavioural outcomes, and links nodal points in the road safety awareness network in the production or performance of reality. In this way, it significantly enhances the delivery, reception and acceptance of the speeding message within youthful segments of the target audience. This explains its runaway success in influencing attitudes and behaviours towards the speeding problem.

4.3.5. Audience Segmentation and Targeting

Since the target population of Everybody Hurts was the same as the one in the Pinkie campaign, there is no need to dwell on the audience segmentation process again. Because of the extreme vulnerability of young (17 to 25 year-old) male drivers to speeding and its negative consequences, the Everybody Hurts campaign in Victoria addressed this particular population group. The overall campaign focused on the story of a 19-year-old boy who died in a fatal crash because of speeding. While Luke Robinson represented the young male driver population, his family and friends represented those affected by dangerous driving.

4.3.6. Choice of Media Channels

Modern youth are major users and consumers of digital media, which explains the use of digital media resources in the Everybody Hurts campaign. TV broadcasts, a website, Facebook postings and online advertising served to address the key target audience. The use of the internet was effective because it provided the opportunity for instantaneous feedback. The audience could forward their comments to the campaign executors. In addition, the Facebook application united all campaign viewers, drawing associations between them and making the message more personal and relevant to separate individuals (Macleod, 2011).

However, campaign designers did not ignore the supportive power of the press. Newspaper articles created the initial awareness about Luke’s death and his family’s intention to share
their grief from their loss to prevent speeding among young males. The press managed to
generate awareness about the impending three-minute TV commercial, thus, directing the
audience to their television screens (Macleod, 2011). The combination of digital media and
traditional media allowed the campaign to deliver its message using verbal, non-verbal, and
visual signals to enhance the valence and activation levels of the emotion contagion. In
addition, outdoor billboards warning about the danger of speeding appeared at high-risk
driver locations to promote safer driving practices. Radio also played an instrumental role due
to its wide mass appeal and its ability to convey crucial audio elements of the message.
Hence, the Everybody Hurts campaign utilised all possible media channels to deliver the
message through audial, visual and verbal communication.

4.3.7. Evaluation of Campaign Effectiveness

Overall, the TAC campaign appears to have been a great success. According to the TAC
2011 Annual Report, the number of road crash fatalities in Victoria dropped by over 50%
after the campaign launch. Statistics show that the number of fatalities fell annually with 267
reported in 2010 and 241 – in 2014 (Table 4.2). However, young male drivers remain at risk
of speeding and its consequences (TAC, 2015b). In the context of the Everybody Hurts
campaign’s impact on the incidence of speeding, very few studies have examined
effectiveness of this campaign.

Table 4.2
Declines in fatalities on Victorian roads

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<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tr>
<td></td>
<td>267</td>
<td>270</td>
<td>268</td>
<td>220</td>
<td>241</td>
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</table>


However, it is essential to recognise its value and relevance because of the strong appeal
based on trauma and the family theme. The reality of dramatic speeding outcomes displayed
on TV and other media channels had a significant influence on drivers’ attitudes and their
assessment of the potential consequences of speeding. At the same time, the campaign was
criticised for stressing guilt and for using a one-dimensional showcase of young male drivers
as speed addicts. However, the general population accepted provisions of Everybody Hurts to
an unprecedented extent (83%), which earned the advertisement the silver medal at the
Cannes and Platinum Awards (Campaign Brief, 2012a).
The campaign ‘generated more than A$1.5 million worth of earned media … and had a demonstrable, quantifiable impact on self-recorded speeding and contributed to a record low annual toll’ (Campaign Brief, 2012a, p. 1). In conclusion, Nieuwesteeg and Alavi (2014) reported that compliance with speed restrictions had increased significantly. While Victorian drivers demonstrate compliance with the law, the public supports the enforcement of speeding regimes and related programmes. This demonstrates the positive impact of Everybody Hurts on driving behaviours in Victoria.

4.4. UK’s Live with It Campaign

The drive towards the achievement of accident-free roads in the UK is encapsulated in the government’s road safety strategy making roads safe throughout the country. This strategy aims at achieving major reductions in road accident fatalities and injuries in the UK. In line with this goal, a mix of engineering, enforcement and education strategies has been adopted and this is expressed in the Think! road safety publicity motto (DfT, 2012a). The major objective of all Think! campaigns is to persuade drivers, passengers and pedestrians to undertake attitudinal and behavioural changes in order to either minimise or altogether eliminate the risk of car crashes. The statistics indicate the considerable success of these campaigns (Table 4.3).

<table>
<thead>
<tr>
<th>Year</th>
<th>Pedestrian</th>
<th>Pedal Cyclist</th>
<th>Motorcyclist rider/passenger</th>
<th>Car Occupant</th>
<th>Other road user</th>
<th>All Road User Groups</th>
<th>Percentage change from previous year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>857</td>
<td>127</td>
<td>605</td>
<td>1 665</td>
<td>155</td>
<td>3 409</td>
<td>-0.4</td>
</tr>
<tr>
<td>2001</td>
<td>828</td>
<td>136</td>
<td>593</td>
<td>1 749</td>
<td>154</td>
<td>3 450</td>
<td>1.2</td>
</tr>
<tr>
<td>2002</td>
<td>775</td>
<td>130</td>
<td>609</td>
<td>1 747</td>
<td>170</td>
<td>3 431</td>
<td>-0.6</td>
</tr>
<tr>
<td>2003</td>
<td>774</td>
<td>114</td>
<td>693</td>
<td>1 769</td>
<td>158</td>
<td>3 508</td>
<td>2.2</td>
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<td>671</td>
<td>134</td>
<td>595</td>
<td>1 671</td>
<td>160</td>
<td>3 221</td>
<td>-3.2</td>
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<td>671</td>
<td>148</td>
<td>599</td>
<td>1 675</td>
<td>138</td>
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<td>675</td>
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<td>599</td>
<td>1 612</td>
<td>140</td>
<td>3 172</td>
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<td>646</td>
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<td>598</td>
<td>1 432</td>
<td>144</td>
<td>2 946</td>
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<td>2008</td>
<td>572</td>
<td>115</td>
<td>493</td>
<td>1 257</td>
<td>101</td>
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<tr>
<td>2009</td>
<td>500</td>
<td>104</td>
<td>472</td>
<td>1 059</td>
<td>87</td>
<td>2 222</td>
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</tr>
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<td>2010</td>
<td>405</td>
<td>111</td>
<td>403</td>
<td>835</td>
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<tr>
<td>2011</td>
<td>453</td>
<td>107</td>
<td>362</td>
<td>863</td>
<td>96</td>
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<td>2012</td>
<td>420</td>
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<td>2013</td>
<td>398</td>
<td>109</td>
<td>331</td>
<td>765</td>
<td>90</td>
<td>1 713</td>
<td>-2.3</td>
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</tbody>
</table>

Source: DfT (2014).

The Think! campaigns started in 2000 and to date, they have included at least 16 publicity campaigns, including: Think! Slow Down (2001); Badjobs.uk.com (2001); Think! Wear a seatbelt … You don’t get a second chance (2003); Night Out (2003); Rights (2003); Crash
4.4.1. Reason for the Choice of the Live with It Campaign

Where the *Pinkie* campaign uses shame to promote compliance with speed limits, the *Live with It* campaign in the UK uses guilt to achieve the same purpose. Such a strategy has not been used in Saudi Arabia. The success of the UK appeal to a sense of guilt indicates an opportunity for Saudi Arabian road safety developers to learn what made the campaign work. Through the application of the *Live with It* framework, Saudis can take an advantage of effective safety road campaigns executed by developed countries. It provides a reference point on how the universal experience of guilt might be used to persuade Saudi Arabia drivers to observe speed limits.

4.4.2. Identification of Target Behaviour and Target Audience for the Live with It Campaign

Official road crash statistics and traffic offence reports show that speeding is one of the major causes of road crashes, along with drunk driving and failure to fasten seatbelts (DfT, 2012b). Estimates indicate that over 4,180 people of the total population are vulnerable to death or serious injuries due to road crashes, where speed is a contributory cause. Driving at 30 mph predisposes the driver and passengers to four times less risk of death than driving at 40 mph (DfT, 2012b). Consequently, speeding has been identified as a major problem that road safety campaigns in the UK should target. Despite multiple regulations and penalties enforced by the police, speeding remains a major problem in the UK. The UK police, decision-makers, and non-government agencies are promoting safer driving to reduce crash-related deaths and injuries on UK roads (Greed, 2014).

The public has shown strong disapproval of drivers breaching speed limits. In some locations, dangerous driving has even led to violence. For instance, in Ticknall, when drivers have broken speed limits, villagers have assisted police officers in catching those breaking the law. One police operation resulted in 22,000 drivers being booked for exceeding the speed limit within 16 days (Williams, 2015). Speeding drivers in the UK are a focus of severe public

7The “Live with It” commercial is available at: [http://www.youtube.com/watch?v=L7fhzDUOzsI](http://www.youtube.com/watch?v=L7fhzDUOzsI)
concern not only within the UK’s national boundaries, but also beyond. Neighbouring countries, for instance, France, have appealed to the UK government to impose strict penalties on British drivers who break speed limits on French motorways. Hence, the French police stress the importance of establishing and promoting safer driving practices in the UK (West, 2013). Hence, when initiating and designing the Live with It campaign, the focus was on speeding drivers as the target audience.

4.4.3. Message Design

In line with data showing that speeding is one of the major causes of road crashes in the UK, the Live with It campaign focused on speeding. In particular, it emphasises the life-long psychological trauma of living with the emotional consequences of a road crash. The Live with It TV commercial shows a man being haunted by images of a child he killed in a road crash that occurred because of his driving at over 30 mph. These images follow him in the bathroom, in the bus while he is travelling, and in the park while he is walking with his son, in a dream, in front of the TV while he is watching football match … everywhere. The Live with It campaign delivered its message not only through visual images and non-verbal signals, but also through sound on a radio advertisement. In the radio ad, one can hear chilling messages from the other world, where children’s voices narrate the man’s torment, producing a disquieting effect on listeners. In order to encourage the audience to stop speeding, the radio advertisement portrays the guilt that drivers who cause accidents are likely to feel.

These haunting voices and images of the Live with It campaign reflect the concept of archetypes, where unconscious aspects of the human mind collect associational material and thus become visible and able to be consciously realised (Jung, 2014). In his analysis of archetypes, Jung (2014) relied on the concept of collective unconsciousness that implied the state of forgotten or repressed contents. Hence, Jung claims that unconscious contents or knowledge form certain patterns of human behaviour that are ‘generic to the human species in the same way that nest-building [is] generic to birds’ (Brooke, 2015, p. 143). Hence, Jung (2014) defines his concept of archetypes as ‘sources of typical patterns of initiated action, reaction, and experience that characterise the human species’ (Brooke, 2015, p. 143).

These specific human propensities underpin the structure and organisation of human life and establish social limits intentionally imaged by mankind. In Live with It, the imaginative category or archetype is manifested in the ghosts of dead children killed in road accidents.
These crash victims are unaware of being spirits and tend to come back to life and achieve conscious expression and realisation. This ghost archetype recurs in the form of spirit voices or spirit images, but always follow a basic and consistent pattern that evokes guilt and misery because of actual or possible deaths resulting from speeding. Hence, the message is based on the archetype of the ghost, the role which is recognised as the most important one in classical Greek and Roman drama (Harrison, 2013). The message of the Live with It campaign addresses the entire anthropological nature of human beings to provoke desired emotions and safer driving.

4.4.4. The Use of Theoretical Models in Underpinning the Conceptual Design of the Live with It Campaign

The driving behaviours of individuals depend on their judgments about safety and other associated considerations. In other words, a driver assesses the probability of a car accident in a particular moment or location in order to choose the speed they travel at. This judgement process is called a heuristic and takes place in three forms as defined by Tversky and Kahneman (1973) (in Pennington, 2012). Scholars have claimed that UK drivers utilise the availability heuristic (Delaney, 2015; Health Affairs, 2011). People employ the availability heuristic each time when the probability of a certain event is estimated through an ease reach of the mind and recall of proper associations (Pennington, 2012, p. 24). It is possible to assert that the Live with It campaign relies on the availability heuristic, because it aims to encourage drivers to think carefully before exceeding speed limits. In other words, the campaign appeals to drivers to integrate the probability of a car crash and subsequent death of victims into their driving judgments.

Though Live with It was not the first campaign to address the availability heuristic, it was the first to do so successfully. Its success is due to its creative approach to the use of surprise to excite the road users’ limbic system and thereby trigger reticular formation. As a result, the campaign managed to achieve a very high degree of mental recall, which resulted in a rapid increase in the public’s recognition of the dangers of speeding (DfT, 2012c). Hence, the use of vivid encounters between speeding drivers and their potential victims represented by killed children produced a strong impact on drivers and made the message not only personally meaningful and relevant to the viewer, but also outré and engaging.

In its appeal to drivers’ minds, the Live with It campaign acknowledges emerging strains of thought from neuroscience and social psychology literature that regard emotion rather than
reasoned action as the major antecedent of behaviour (Perrig & Grob, 2013; Schwarz, 2013). According to this view, the individual’s rationalisation is only a follow-up justification. Hence, a public campaign should target the emotional processes behind an action, rather than appealing to reason (Perrig & Grob, 2013; Schwarz, 2013). The *Live with It* campaign successfully utilised the role of emotion in driving certain behaviours by promoting safe driving based on the grief, guilt and reminding people about the misery created by deaths resulting from car crashes.

Though *Live with It* aims at provoking safer driving practices, the campaign does not rely on the provisions of the theory of planned behaviour, because of its focus is on emotions. As already indicated above, emotions are aroused through both visual and aural means to strengthen the appeal to speeding drivers to cease this practice and save the lives of others. The use of emotionally charged images – a dead child lying on the road, for example – helps capture and hold the viewer’s attention. As a result, somatic markers – the reinforcement of the viewer’s awareness of the harmful emotional consequences associated with car crashes – motivate road users to avoid speeding. Whereas earlier UK advertisements highlighted connections between speeding and the risk of death and injury, *Live with It* linked speeding with a life-long guilty conscience. It is essential to point out that the emotional exposure achieved through the campaign required a regular repetition to maintain public awareness of the links between speeding and responsibility for someone’s life.

Another psychological and neurological feature of the campaign is empathy. Clinical studies provide evidence of individuals’ pain when watching others’ suffering (Todorov, Fiske, & Prentice, 2011). Studies of the human brain have revealed changes in its structure when a person experiences strong emotions. Images of dead children arouse strong emotions of guilt and misery, evoking empathy. According to scholars, it is in human nature to experience pain when watching others’ pain (Lewandowsky, 2015). Hence, though they are not responsible for the deaths shown in the advertisement, the target audience is likely to experience grief and guilt in relation to its own speeding.

This empathy is provoked by flashbacks and ‘hyper-real’ techniques including the dramatic use of images of a dead child popping up everywhere and surreal voices of dead children rising from the underworld to torment their killer. It is a recurrent motif weaved powerfully into the plot with dramatic effect (DfT, 2012a). A snapshot of this scene grabbed from the TV commercial is presented in Figure 4.4:
The snapshot focuses on the boy lying on the floor who has been killed in the road accident caused by the man brushing his teeth. His appearance reflects the Jungian archetype, where the dead boy’s spirit has united associational material to be currently consciously realised (Jink, 2014). In other words, the victim boy is a projection of the driver’s mind evoked by the sense of guilt. The man sees the dead boy spring to life through a mirror, which is symbolic as well, because in Lacan’s theory, an individual achieves mastery of the self through perceiving themselves as the ideal ego (the mirror stage) (Vanheule, 2011).

Demographic analysis of British drivers indicates that speeding is more prevalent among younger drivers. Furthermore, male drivers violate speeding laws more frequently than females (DfT, 2011). Consequently, Elliott (2011) claims that the Live with It campaign was created in alignment with the psychological underpinnings of male behaviour. Using functional MRI, studies assert that the prospect of a reward triggers different reactions in men and women. In the male brain, the prospect activates the ventral striatum (a region in the brain concerned with motivation), while in the female brain, it activates the amygdala-hippocampal region (the origin of emotional reactions) (Elliott, 2011).

The depiction of stressful experiences in this road safety advertisement triggers different responses in men and women. Men are expected to experience an increase in the blood flow to the ‘left orbitofrontal cortex’ activating the fight-or-flight response. Females are likely to activate the limbic system and to trigger an emotional response to the observed stressful experience (Elliott, 2011). Though avoiding the use of high-octane and vivid scenes of road carnage (splattered blood, twisted metal, anguished screams, and mutilated bodies), Live with
It deftly navigates between the female emotional responses (to secure emotions) and the male fight-or-flight response (to avoid emotions) (Elliott, 2011).

Affective responses, such as fear, have increasingly become a point of interest to cognitive and behavioural neuroscientists, spawning the relatively new discipline of affective neuroscience that interrogates the production of these responses in the human brain (Acton, 2012). In fact, motivation is a product of neuropeptides when now-discredited dedicated brain neurons and centres transform into specific physical substrates to provoke certain motivations. By isolating the neuropeptide that triggers specific motivations or responses, specific actions can be encouraged by targeting those motivations. This suggests that there is a particular area of the brain that is responsible for dangerous driving behaviour, and it may be isolated and targeted through specific messages. Behavioural neuroscience points out that the neuropeptide origins of motivation are responsible for individuals’ hierarchies of value (Acton, 2012). In the Live with It campaign, there was an attempt to convey the message that as individual’s desire for speed and excitement is not as important as someone’s life.

4.4.5. Audience Segmentation and Targeting

Based on the data from crash statistics, traffic offence reports, and attitudinal field research, the Live with It campaign developed detailed profiling to define two target groups. This first target audience was those who did not accept speed limits, but considered keeping up with traffic and road conditions, rather than speed limits, when determining their driving speed. That target group was at the highest risk of being involved in speed-related car crashes (DfT, 2011). Based on demographic data, a typical car crash victim was profiled as a male, aged between 16 and 29 (or over 55), without children, and belonging to the ABC1 socio-economic group (DfT, 2012b).

The second target audience was those who accepted speed limits, but believed that driving just a few miles above the speed limit was not dangerous. Representatives of that group came from all gender, socio-economic and age categories, resulting in a mass appeal, rather than a targeted appeal. Targeting the second group was more effective because of its larger size and

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8ABC1 is a socio-economic group which brings together the A (upper middle class, composed of those working in top managerial, professional and administrative positions), B (middle class, made up of those working in middle level managerial, professional, and administrative positions), and C1 (lower middle class, made up of those working in clerical, supervisory, or lower managerial, professional and administrative cadres) social classes. When grouped in this manner, ABC1 refers to the UK’s middle class (Griffith & Glennie, 2014).
smaller risk. According to the DfT (2012b), driving at 30 mph predisposes the driver or his passengers to four-times less risk of death than to driving at 40 mph. Since the second target group included the first one, it is possible to conclude that the Live with It campaign appealed to a wide variety of viewers. Focusing exclusively on the first group would have raised fundamental issues regarding accessibility and homogeneity, which would have hindered attempts to formulate an effective message that successfully communicated with these individuals. Through targeting the larger group, the campaign delivered the message to the first group as well.

4.4.6. Choice of Media Channels

The question of the target audience is inseparably connected with the choice of the medium to transmit the message. Since the Live with It advertisement addressed a mass audience, the aim was to reach as many people as possible. As the most widespread and popular medium, television was selected to deliver the campaign’s message to the public. In addition to its availability, television was advantageous in terms of its visual nature. The campaign aimed at stressing the emotional consequences of speed-related crashes through strong visual elements. Television was a powerful tool for displaying the haunting images of the advertisement.

Apart from television, the advertising campaign disseminated its message through the internet. The use of the internet was necessary because it was the key communication channel for the major subgroup addressed in the campaign. Hence, the campaign video was uploaded on the internet to reach the audience aged from 16 to 29 years, which is regarded as a high-risk cohort for speeding. Various internet resources like YouTube and Facebook were utilised to attract the attention of young drivers that tend to violate speed limits regularly. In addition to digital media, the campaign used other channels, such as the cinema to broadcast the advertisement before films, radio to broadcast the audio version, and indoor posters.

4.4.7. Evaluation of Campaign Effectiveness

Because of many RSCs launched in the UK annually, a few studies have investigated the effectiveness of Live with It. The campaign appeared to reach a large portion of the public in terms promoting a recognition of the importance of adhering to the 30 mph speed limit. The Live with It campaign was a large-scale project aimed at delivering the message of the dramatic outcomes of speeding and the subsequent emotional consequences of fatal crashes.
The use of various media channels ensured a wide coverage. However, the current statistics provided by Think! do not show significant changes to driving behaviours. Speeding remains the major cause of fatal car accidents on British roads. The 2013 data show that speeding killed 3,064 people through fatal crashes or injuries. Drivers on rural roads are four times more likely to be involved in fatal crashes than drivers on urban roads (Think!, 2013). The cited statistics indicate that a little has changed since the campaign launch, which leads to the conclusion that it has been ineffective in promoting safer driving practices.

4.5. Sweden: No Extra Life

The Vision Zero program to improve road safety was approved and passed by the Swedish parliament in 1997. This program brings together traffic law enforcers, road users, providers and other stakeholders in a collective effort geared towards the formulation of performance targets. The aim is to eradicate deaths on Swedish roads entirely (Vision Zero Initiative, n.d.). Today, Sweden has a very low car crash rate, and is considered to have the safest roads in the world (Figure 4.5). National legislation commits Sweden to eliminating the risk of dying in accidents on Swedish roads (Flegenheimer, 2014). Recent statistics indicate that a very small number of people are killed in car crashes in Sweden. In 2003, there were 500 deaths on Swedish roads, which is apparently low in comparison to other countries (S. N., 2014). For a state with a large population and heavy traffic, the signifies success in ensuring road safety.

![Figure 4.5. Decline of Road Deaths and Death Risk in Sweden (1995–2005) (Larsson, 2006)](image)

Notwithstanding this accomplishment, Sweden continues to use RSCs in its effort to achieve its aim of zero fatalities from road accidents. As explained in its Vision Zero strategy, Swedish RSCs and advertisements address speeding and drunk driving as the major
problems. Hence, campaigns focused on convincing road users to change their attitudes and behaviours and adopt safer driving practices. They appear to be successful (Figure 4.6).

Figure 4.6. Decline in Rates of Persons Killed in Car Crashes (2004–2005) (Larsson, 2006)

Although the establishment of Zero Vision is associated with the Swedish fight for safety on its roads, the nation has been using advertising campaigns for a long time. Thus, public campaigns of the 1970s and 1980s argued against speeding and drunk driving. The other issues raised included the need of wearing seatbelts or safety kits, such as helmets and child car seats, adhering to general traffic safety measures, and considering other road users (Kim, 2013). These messages were predominantly transmitted via television commercials, newspaper and magazine advertisements, leaflets and billboards.

The list of the major advertisement campaigns carried out in Sweden includes *No Extra Life; Traffic lights, are they necessary?; Would You Dare to Encounter Yourself?; Vägverket ‘Coola Killen’* (translated as ‘Swedish Road Administration “Cool Guy”’). The focus of this section is on the *No Extra Life*\(^9\) road safety advertising campaign. The creative concept for the campaign was created by Henrik Henrik Films on behalf of the MHF (Motorists against Drinking and Driving). This non-governmental organisation aims at enhancing the road safety of Sweden in general and Stockholm in particular. The campaign was launched in 2011.

\(^9\) “No Extra Life” is available at: [http://www.youtube.com/watch?v=K0NY9tfJtgA](http://www.youtube.com/watch?v=K0NY9tfJtgA)
4.5.1. Reasons for the Choice of the *No Extra Life* Campaign

The *No Extra Life* campaign addressed two problems: speeding and drunk driving. Although the latter is not a problem for Saudi Arabia, the campaign should be discussed in advance of this issue’s possible emergence. Due to globalisation Saudi Arabia’s involvement in the international economy, the youth of Saudi Arabia tend to adopt the habits of European and American youth. Thus, *No Extra Life* is a valuable case study from which Saudis can derive lessons for the future in case the need arises. Furthermore, this campaign touches upon speeding as a factor contributing to car crashes. The issue is relevant for Saudi Arabia, where young people are at the highest risk of car crash fatalities. Therefore, the *No Extra Life* campaign provides a solid framework for executing youth-targeted RSCs with a high level of acceptability in this group.

4.5.2. Identification of Target Behaviour and Target Audience for the Campaign

According to Luoma and Sivak (2013), behaviours leading to road accidents in Sweden include speeding, sober driving, failure to use seatbelts and driving while fatigued. Speeding seems to be the most serious problem because of high-quality Swedish roads combined with low levels of traffic density, which provides a fertile ground for drivers to violate speed limits. According to the experiences of other developed countries, such as the UK, the USA, and the Netherlands, Sweden has the lowest levels of drunk drivers, and the lowest rates of speeding (Luoma & Sivak, 2013, p. 14, 16). However, Sweden wants to reduce fatal road accidents to zero. A variety of public campaigns has already increased public awareness of the importance of safe driving and of understanding of dramatic consequences of dangerous driving practices (ETSC, 2011). While older drivers tend to obey traffic laws, young drivers aged from 16–24 years are a high-risk group. Young drivers practising drunk driving and speeding are the key contributors to the remaining car accidents on Swedish roads. Hence, young drivers were the target audience of *No Extra Life* campaign.

4.5.3. Message Design

*No Extra Life* is a 50-second TV commercial; its first scene opens with four youthful passengers – one female and three males – being driven in a red sedan by their friend. It is apparent that all occupants of the car are under the influence of alcohol, and the car is speeding along a narrow two-lane highway. It overtakes one car, and edges closer to a huge truck in the near horizon. Once again, the driver attempts to overtake the huge truck by pulling away into the next lane. However, there is another car coming from the opposite
direction on that lane, which the driver has not seen. To swerve away from that oncoming car and to avoid an accident, the driver loses control of the car, which leads to its careening off the road, eventually overturning, and becoming a mangled wreck. In the aftermath, nothing stirs. There is no movement, no scream, nothing. The only thing that moves is a swaying and blood-soaked pendant dangling near the driver’s seat. It is apparent that the car’s occupants have perished.

Source: The ‘No Extra Life’ commercial 
(http://www.youtube.com/watch?v=K0NY9tfJtgA)

Figures 4.7 - 4.8. Snapshots of the ‘No Extra Life’ Commercial

4.5.4. The Use of Theoretical Models in Underpinning the Conceptual Design of the Campaign

The beauty of sustained road safety advertising and publicity campaigns is that message repetition leads to reinforcement and increases the possibility of a greater action towards achieving the desired end states. However, the use of repetition also diminishes the impact and the contribution to the achievement of the ad’s objective. Contrary to Aristotle’s assertions, the use of the metaphor here is not merely a stylistic device aimed at ornamentally reinforcing the message; it serves a much deeper purpose. It greatly aids in the extension of the core idea beyond the realm of the experience; it fosters meaning creation by using imagination, in this way, it adds to the No Extra Life campaign’s persuasive punch as well.

The campaign utilises a wildly popular fad among Swedish youth – gaming – and makes connections between the car racing game and a real-life situation. In this rendering, the real life is the tenor, while the game is the vehicle. Central to the comprehension of this metaphor is the grasp of the concept of ‘permadeath’ understood by gamers as a permanent and
irreversible death of a character in the game (Bainbridge, 2013). Because of technological advances, gamers can restore their favourite characters to life whenever they get killed in action by simply reloading or restarting from the last ‘savepoint’ (Bainbridge, 2013). This capability is present in most of popular games. In the context of *No Extra Life*, the message stresses the fact that drunk driving is safe only in video games while in real life it has serious consequences. It is only possible to restore one’s life in the gaming world; real life provides no such opportunity.

Life is complex and unpredictable with no save-points for restoring one’s life in case of a fatal car crash. The use of this gaming concept serves to remind youth that it is not necessary to risk one’s life through alcohol-induced dangerous driving stunts. In the four-pronged classification of metaphorical renderings by Lakoff and Johnson (1980), this qualifies as a structural metaphor (in Coopmans et al., 2014). To the credit of *No Extra Life*’s creators, the structural metaphor accentuates differences between gamers’ virtual lives and real life to achieve a powerful effect.

In line with this use of metaphor, it is possible to flesh out the conceptual structure, grounding, and definition of the youthful Swedish audiences, making possible the development and categorisation of the schema (Coopmans et al., 2014). In other words, characteristics of young drivers’ population are fundamental for the design of a road safety campaign. Appealing to youth through media that are their main means of communication and consumption, *No Extra Life* succeeds in reaching the target audience with the message in the most effective way. The game-based focus narrows the message to the youth cohort, removing any adult audience colouring.

Though recognising the value of applying gaming linguistics and concepts to real life, the *No Extra Life* campaign also uses some other techniques of persuasion. The two-shot construction of the advertisement adds power to the message delivery and increases its acceptance. There is a rapid cut between two different scenarios; no transition between virtual life and real life is provided. The technique of rapid cutting is used throughout the advertisement and serves to produce an unexpected persuasive influence on viewers. The use of rapid cuts in the commercial not only offers the viewer a visual relief, but also helps in the construction of meaning. For example, a rapid cut to the speedometer lets the viewer know just how fast the car is moving.
Similar to rapid cuts, the use of close-up, medium-range, and reverse angle shots as well as screenshots of the driver and some passengers offers a visual relief. An additional contribution to relief is achieved through lighting. In some instances, low-key lighting is used to partially obscure passengers’ faces. This technique serves to presage imminent danger, suspense, and worry as the car cruises towards the truck, pulls away from it straight into an oncoming car, swerves to avoid the oncoming car, and ends up plunging into the road’s shoulders. The use of extra-bright lighting in the second scene enhances the excitement and thrill and reinforces the party atmosphere.

It is crucial to point out the symbolic use of gaming icons in the second scene, revealing that the former scene was only a game. At the top left corner of the game screenshot, one may observe car icons with the text above: ‘number of lives left.’ These car icons progressively disappear as the car hurtles towards the inevitable crash and destruction. This life indicator is a powerful use of visual symbolism that dramatically enacts a positive correlation between sober driving and risk of fatalities to connect the commercial’s images with its meaning.

4.5.5. Audience Segmentation and Targeting

It is an established fact that sober driving, typically accompanied by speeding, is the major problem among drivers aged between 16 and 24. Hence, this age cohort was the target audience.

4.5.6. Choice of Media Channels

Typically, members of the 16 to 24 age cohort are hardly reachable through conventional media channels, but digital media channels are popular ways of communication among young people. Hence, the internet was selected as the most suitable media channel to deliver the campaign’s message through computer-mediated technologies. The primary distributor was the video sharing site, YouTube. Additionally, the No Extra Life campaign utilised television because of its strong visual capabilities and the mass-appeal nature. Since the campaign relied on a powerful visual appeal, it was advantageous to use television to convey the message of the No Extra Life campaign. Hence, the campaign used only those media channels that were relevant in reaching the target audience.

4.5.7. Evaluation of Campaign Effectiveness
Studies evaluating the impact of the *No Extra Life* RSC are still in their seminal stages, and therefore, empirical conclusions on the campaign’s effectiveness cannot yet be drawn. However, various intermediate pointers point to the campaign’s runaway success. For example, the campaign has already been shortlisted for the European Film Awards in the section that recognises and rewards the best advertisements in various categories. This signified the campaign’s recognition by the public.

### 4.6. Summary of Findings and Lessons for Saudi RSCs

An overview of four RSCs launched in Australia, Great Britain, and Sweden allows us to conclude that public campaigns vary in the success they have in enhancing road safety. All the analysed advertising campaigns aimed at achieving the same objectives. The list includes: an increase in the public’s awareness of problem driving, the promotion of public debates on road issues, and the formation and acceptance of proper driving beliefs/attitudes. In addition, road safety campaigns seek to raise the profile of particular driving issues, and to encourage road users to undertake information searches with regards to particular road safety issues.

The achievement of these objectives depends on how well the road safety advertisement is designed. A major requirement concerns an evidence-based structure and organisation for the campaign. The reliance on data from official reports, analytics, and statistics is apparent in all four evaluated campaigns, (the *Pinkie* campaign in New South Wales, *Everybody Hurts* in Victoria, *Live with It* in the UK, and *No Extra Life* in Sweden). All these campaigns focus on problems identified from data collected through knowledge and attitude surveys as well as from crash statistics and casualty data. Apart from being data-led, all the campaigns were based on a strategic campaign planning process. A precise consideration of the target audience, their motivations and their behaviours provided the ground for the message content design and media selection undertaken considering the target audience.

In addition to being scientifically valid, these campaigns owe a large part of their success to their disruptive nature. In a world where people are bombarded with information to the point of saturation, road safety advertisements must be designed to stand out to produce an effect. In line with this, the message content and its delivery strategy should be creative and innovative to attract the attention of the public who are used to traditional appeals. As they are theoretically grounded, these campaigns managed to successfully utilise: the metaphor of gaming, the concept of emotional contagion, the symbolism of the pinkie finger, and the
lifelong emotional burden of those who cause fatal accidents. Therefore, these four campaigns make a clean break with the timeworn approaches of previous campaigns and reach their target audiences through effective, catching and understandable messages. They are valuable sources of knowledge for the future planning and execution of road safety campaigns in Saudi Arabia (Table 4.4).

**Table 4.4**
*Effective RSCs of Developed Countries and Their Lessons for Saudi Arabia*

<table>
<thead>
<tr>
<th>Title</th>
<th>The Key Strength</th>
<th>Application to KSA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pinkie</strong></td>
<td>Use of a symbolic gesture to indicate a negative attitude towards speeding</td>
<td>It is essential to determine a symbolic gesture or image, comprehensible to Saudis.</td>
</tr>
<tr>
<td><strong>Everybody Hurts</strong></td>
<td>Emphasis on numerous people hurt by a single fatal car crash</td>
<td>Family is one of the key values of the Saudi culture. Pictures of multiple relatives hurt by the loss of their family member because of speeding might be effective in reducing excessive speed.</td>
</tr>
<tr>
<td><strong>Live with It</strong></td>
<td>Highlights the emotional consequences for speeding drivers who cause fatal car crashes</td>
<td>Again, the family-oriented appeal is effective in emphasising the consequences of speeding. Pictures of dead victims and their mourning relatives are likely to reach the souls and minds of speeding drivers.</td>
</tr>
<tr>
<td><strong>No Extra Life</strong></td>
<td>Use of computer game philosophy to underline fragility of life</td>
<td>Young Saudi racers are adept with modern technologies. The depiction of car crashes in a computer game and the message that the consequences of real accidents are different might be an way of communicating with Saudi drivers.</td>
</tr>
</tbody>
</table>
Chapter 5: Case Studies: Developing Countries (Saudi Arabia)

5.1. Introduction

Since its rapid development and economic growth boosted by the oil and gas extraction and production that started in the 1980s, Saudi Arabia has been considered as having the highest incidence of road accidents in the world (Ageli & Zaidan, 2013) (Table 5.1). The rapid influx of international investment resulted in a significant increase to the car fleet and the number of drivers on Saudi roads. However, changes on the roads were not accompanied by corresponding policy changes, and this has made Saudi roads extremely dangerous for both pedestrians and drivers (Ageli & Zaidan, 2013). The large-scale study of Mansuri et al. (2015) indicated that during the period from 1984 to 1989, road traffic accidents constituted over 83% of all trauma admissions to hospitals.

Table 5.1
Types of Car Accidents and Causes

<table>
<thead>
<tr>
<th>Type of accident</th>
<th>KSA*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collision with</td>
<td></td>
</tr>
<tr>
<td>Other motor vehicles</td>
<td>73.7%</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>9.5%</td>
</tr>
<tr>
<td>Fixed object</td>
<td>7.1%</td>
</tr>
<tr>
<td>Animal</td>
<td>0.9%</td>
</tr>
<tr>
<td>Noncollision</td>
<td>7.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cause of accident</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>41.9%</td>
</tr>
<tr>
<td>Disregarded signal</td>
<td>15.4%</td>
</tr>
<tr>
<td>Improper turn</td>
<td>7.3%</td>
</tr>
<tr>
<td>Improper overtaking</td>
<td>10.7%</td>
</tr>
</tbody>
</table>

Source: Al-Ghamdi (1994).

Analysis of 2005–2010 trends revealed a disparity between data provided by the police and hospital statistics. While police reported a 27% reduction in road fatalities, hospital reports showed an 8% increase in mortalities from road accidents (Mansuri et al., 2015). As a result, road traffic accidents have been recognised as a serious threat to public health (Barrimah, Midhet, & Sharaf, 2012). Official statistics support the argument that the country’s roads are
the most dangerous in the world. They show that each year, road accidents cause the deaths of 23 out of every 100,000 people. On average, there are 19.1 road fatalities per day (Jiffry, 2013).

In a bid to address this situation, multiple players have undertaken various road safety initiatives, including government agencies such as the Ministry of Interior and Jeddah Traffic Management, and public organisations such as Aramco and Mobily. Among the campaigns which have been launched, only two campaigns, *Enough* and *Salamati*, and the implementation of traffic management systems like the ‘Saher System’ (Riyadh, 2012; Jan, 2014).

*Enough* was the first public road safety campaign in Saudi Arabia. It was launched in 2006. The next notable campaign, *Salamati*, was introduced in 2010 (Public Security Directorate, 2010). Prior to *Enough*, all previous national advertising addressed national security issues at large, mostly terrorism and criminality, while traffic issues were only touched upon within that general context (Algammas, 2010). Therefore, this chapter focuses on the attempts of the Saudi Government to improve road safety through *Enough* and *Salamati* campaigns.

### 5.2. The *Enough* Campaign

The *Enough* campaign was launched in 2006 and lasted for 30 days from April till May. Though a few informational sources even within the country broadcast that campaign, it was a breakthrough in the state’s strategy on road safety. It was the first campaign to address the issue of road safety with the primary goal of establishing and promoting the road safety awareness of the public (Algammas, 2010; Ministry of Interior, 2006; Public Security Directorate, 2010). As a pioneer in road safety advertising in Saudi Arabia, *Enough* targeted the general population, including a cohort of young drivers aged from 17 to 25 years who were considered the group most vulnerable to road accidents and associated mortalities (Mansuri et al., 2015; Transport in Saudi Arabia, 2015).

The core appeal of the campaign was ‘enough’ in terms of the importance of giving up speeding and other dangerous driving practices. In line with the objective of creating road safety awareness among the Saudi public, the campaign displayed numerous violations of traffic laws and speeding. Though breaches of speed limits and road regulations were the major causes of road accidents in Saudi Arabia, there were no official statistics on the issue at that time (Al-Saleh & Bendak, 2011). Therefore, *Enough* laid the groundwork for the
development of specific agencies and policies to exercise control over Saudi roads and drivers. The *Enough* campaign was the first stage in drawing attention to the dangerous status of Saudi roads and the urgency of finding solutions to the problem. Though driving behaviour has not changed significantly since then, the issue has become a serious public concern, and that is itself an accomplishment (El Bcheraoui et al., 2015).

5.2.1. Identification of Target Behaviour and Target Audience for the *Enough* Campaign

Scholars blame a range of driving behaviours for the runaway rates of road accidents in Saudi Arabia. The top causes of road accidents include speeding, breaches of traffic regulations such as jumping red lights or making illegal turns, failure to use seatbelts, and talking on the phone while driving (Ageli & Zaidan, 2013; Mansuri et al., 2015). Speeding is considered the most serious problem and is the cause of numerous deaths (Transport in Saudi Arabia, 2015). Global data from 2011 revealed that the Kingdom of Saudi Arabia occupied one of the top places in the list of countries with the most dangerous roads. The reported number of annual fatal car crashes on Saudi roads is 6358 (25.7 for each 100,000 people), while the estimated number of overall road mortalities (including later death from the crash injury) is even higher – 7166 persons (29.0 for each 100,000 people) (Provost, 2011).

Another significant cause of road accidents and associated deaths is violation of traffic rules. Barrimah, Midhet, and Sharaf (2012) report that speed limit infringements constituted 43.11% of traffic law violations. Other non-compliance behaviours included: incorrect turning (14.52%), incorrect stopping (13.69%), drug-affected driving (0.01%), violation of traffic signals (1.77%), and other breakages (12.21%). Therefore, speeding accompanied by other violations of traffic law provisions negatively affects the state of Saudi roads. As a result, Saudi traffic is a great threat to the public health and takes the lives of multiple Saudis annually (Ageli & Zaidan, 2013).

In the context of demographic characteristics of Saudi drivers engaging in road accident, it is valuable to refer to the study of Bahamman et al. (2014). They report that the average age of Saudi drivers is 34. As a rule, only 90% of drivers possess driving licenses. Saudi Arabia is a state which values strong family ties, and Saudi families have many children. Hence, car accidents on Saudi roads often involve large cohorts of children and adolescents travelling with their parents (Bahammam et al., 2014). According to the official data, people aged from 19 to 30 years are the most vulnerable population group in terms of deaths due to road
accidents. Two other high-risk cohorts are persons under 18 years old and those aged between 31 and 40 years (Hassan, 2013). Therefore, the target audience of the Enough campaign was young married drivers but it also appealed to the entire population to raise the awareness on the issue.

5.2.2. Message

As indicated above, Enough was the campaign in Saudi Arabia dedicated specifically to the issue of road safety. In contrast to earlier national public campaigns, Enough concentrated on the road safety and did not deal with other important issues like terrorism. The appeal was of a mass nature, rather than customised to specific audiences. Since the campaign was the first in its field, there was no common message produced. Instead, a variety of road safety messages were communicated to the audience over the course of the campaign. Most of them emphasised the dramatic consequences of inappropriate driving behaviours.

Stories, such as ‘I lost my childhood due to disobeying traffic lights’; ‘I lost all my family due to recklessness’, ‘Economic losses … disabilities … deaths due to road accidents’, ‘Twelve people die daily in KSA due to car accidents’, and ‘One person dies every two hours because of road accidents’, were told to promote safer driving practices (Ministry of Interior, 2006). Other messages were conveyed in the following ways: ‘Enough speed … enough disobeying traffic lights … enough recklessness’, ‘Dad, enough speeding’, “Enough”, what every driver said after he was involved in a car accident’, “Enough”, what the traffic regulations said’, and “Enough” disregarding traffic rules’ (Ministry of Interior, 2006).

One of the means used to deliver campaign’s messages was a TV commercial. Its first scene started with a shot of a young girl aged about ten years helping her father onto a wheelchair and wheeling him outside and into a park. In the park, she sees three girls playing and smiles at them in a wistful manner that suggests that she wishes she could play with them, but cannot because she is now responsible for taking care of her father. The commercial ends with the text: ‘Because of a reckless driver I lost my mother, and my father became handicapped. Enough reckless driving.’ A screen shot from this commercial is presented as Figure 5.1 below:
When assessing the strategy of the campaign, it is essential to account for at least ten messages delivered through various media channels and formats over a 30-day period. The overall scope included TV and radio commercials, newspaper advertisements, brochures and roadside signs. Though the campaign seems to use a multi-dimensional approach to raising public awareness, none of the messages was strong enough. While driving the audience in one direction, each message acted separately, which undermined the success and reinforcement power of the campaign.

In addition to its failure to promote safer driving practices, the campaign caused a great information overload which undermined the initial purpose. The absence of a single precise and concise message doomed the Enough campaign to failure from the very beginning. An integrated marketing concept, in which different aspects of communication are structured to work towards a unified goal (rather than each working in isolation), could have been useful for achieving the objectives of the Enough campaign (Percy, 2014).
5.2.3. The Use of Theoretical Models in Underpinning the Conceptual Design of the Campaign Messages

Redshaw (2011) argued that driving behaviour is influenced by the social and cultural context in which it occurs. In other words, media promote certain cultural and social values, concepts, attitudes and beliefs, producing an effect on the national perceptions of driving and behaviour. Thus, the social and cultural characteristics of a nation play a significant role in framing the driving experience, just as they shape other aspects of life such as gender roles. Therefore, ‘driving is a socially mediated practice and the framing of cars and driving is largely a social activity’ (Redshaw, 2011, p.1).

In this regard, cars are viewed, not just as objects without meaning, but symbols that come embedded with certain connotations. Some psychoanalysts claim that automobile symbolism refers mostly to sexual desires and meanings; thus, it is reasonable to analyse cars as powerful symbols. As argued by Charles Rycroft, the relationship between a driver and his or her car is the modern representation of the image of the rider and a horse that is the most recognised and widespread metaphor ‘for expressing the great variety of relationships that can exist between a person and his passions’ (Cohen-Mor, 2013, p. 113). Critics of this idea oppose the phallic meaning attributed to the automobile, arguing that a car’s structure and design presuppose more than a single occupant. However, these critics acknowledge the potency of the automobile as a symbol, asserting that a car represents the driver’s activity and power (Cohen-Mor, 2013).
In the associations with sexual desires or power, the type of the car driven is the key indicator of the symbolism involved. For instance, sports cars, which are coveted predominantly by young males, are directly associated with male power. When speaking about sports car driving, one immediately recalls images of speeding and other risky behaviours. Because of such beliefs and attitudes towards driving, owners of sports cars are the group of drivers most frequently involved in road accidents. In contrast to small but powerful sports cars, large trucks, SUVs and pick-ups are also associated with power and are thus frequently involved of road accidents (Redshaw, 2011). Youth is characterised by impulsive and risky behaviour that seems to issue a challenge to peers and the community at large. Thus, youth typically experience an extreme need for media portrayals which glorify risk-taking and the ‘image, lifestyle, and mobility’ of young drivers. In response to the cultural and social demands of youth, media provide the content which creates the so called ‘youth car culture’ (Redshaw, 2011, p. 1).

Hence, to attract the attention of a young audience, media override safety considerations by promoting a favourable image of drivers who exceed speed limits and violate other traffic regulations. The findings of Fischer et al. (2011), among others, indicate a positive correlation between the glorification of risk by the media and the propensity to take risks, the eventual outcomes of which are bloody and terrifying car crashes and fatalities. Media depictions of cars, for example, in advertisements, signify the need to demonstrate power through aggressive driving (Fisher et al., 2011). Such visual appeals to youth imply that dangerous driving behaviour is not only exciting, but also status enhancing.

In terms of the driving culture of young men, Saudi Arabia’s situation is like that described for New South Wales, where a boy-racer mentality dominates the driving population. Thus, most young Saudi drivers regard driving games, such as racing, power sliding around selected corners, and ‘drifting’, as a show of manly virtue. For such racers, the risk is worth taking to create the desired social image. Possessing a strong belief in their driving skills and little awareness of their limits, male racers assume there is little real chance that they can be personally injured or killed. Relying on this racing culture, the core of the Enough campaign was the use of threats and simplistic, condescending appeals to rationality to encourage the desired behaviour.

Within this specific context, threat and appeals drew links between dangerous driving practices and their consequences, such as the possibility of death, injury, disability and the
loss of a family member or a loved one. Designers of the Enough message presupposed that stressing the dramatic outcomes of dangerous driving would prevent young males from indulging in dangerous driving. The campaign addressed the boy-racer category, which is a significant risk group in Saudi Arabia. The campaign may be viewed, through the prism of terror management theory and the ‘third person effect’, as a highly sub-optimal strategy (Avraham & Ketter, 2012). The role of media coverage and security management are especially the case when considering gender restrictions within the Saudi, where only men are eligible for driving. Thus, the driving realm and the role of gender influences behaviour within certain specific contexts of the KSA (Al-Rasheed, 2013).

According to terror management theory, the ultimate fear in human life is the fear of death. People respond to any reminders of death by resorting to proximal defences, which include ignoring the threat, denying it, stifling it, or resorting to rational justifications for believing they are immune from it (Avraham & Ketter, 2012). For example, individuals may justify their behaviour by stating that nothing can happen to them because of they are aware of their personal limits (Carey & Sarma, 2011). Despite the creation of proximal defences to cope with the fear of death at the conscious level, the human unconscious lacks this awareness. At the subconscious level, people are deprived of the fear of death through social and cultural norms, values and concepts. Recognising oneself as a member of a group which shares a set of norms, a person may create for themselves a sense of security and protection against death (Kail & Cavanaugh, 2015). Another way of combating the fear of death is to boost one’s self-esteem through taking risks and facing the anxiety that accompanies such behaviour. Taking such risks can help a person to cope with the fear of death (Kail & Cavanaugh, 2015).

In reference to the idea of Redshaw (2011) that individuals, especially youth embedded in the youth car culture, derive their self-esteem from their driving habits, it is possible to ascertain that dangerous driving is a reflection of youths’ strategies for coping with stress and fear. Therefore, the use of threats to force young people to adopt more desirable driving behaviour is likely to force boy racers to even greater speeds and more extreme risks. In other words, when media issue a threat-based appeals to risky drivers, their coping mechanisms boost their self-esteem so that they can manage the anxiety associated with the fear of death and encourage them to deny their mortality (Carey & Sarma, 2011).

When speaking about a response to the fear of death, it is relevant to point out that it is gender specific. Whereas women try to avoid risky situations to ensure their security and
safety, men are likely to take the challenge and face their anxiety instead (Espinoza & Sanhueza, 2012; Lamia, 2011). According to Bahamman et al. (2014), men are the main drivers on Saudi roads because of the national culture. Since most drivers are male, it is unreasonable and useless to use threat-based appeals to promote safer driving practices due to gender-specific responses. The use of the ‘third person effect’ in response to the risks involved in dangerous driving is also ineffective for dealing with male drivers in Saudi Arabia (Al-Rasheed, 2013).

To sum up, threat-based media appeals are applicable only to the female population, and in Saudi Arabia there are very few female drivers. Therefore, stressing the drastic outcomes of dangerous driving is likely to increase the desire of male drivers to engage in risky behaviour. Consequently, the use of threats in Enough to encourage sensible driving behaviours seems to be ill-advised and out of place. Another effective means of attracting the audience’s attention is the use of humour and positive emotions. Recent studies have shown that positive emotional appeals are more effective when targeting a male audience rather than threat-based appeals (Eisend, Plagemann, & Sollwedel, 2014; Berkovsky & Freyne, 2013). Thus, it would have been more effective if Enough sought to evoke positive emotions instead of dwelling on dangerous driving outcomes.

In the context of individual inclinations to take risks, it is crucial to point out the relationship between the individual’s personality and morality rates (Palmer et al., 2013). In addition, situational factors play a significant role on the individual’s decision-making and the likelihood of their responding to threats via risk-taking (Byrnes, 2013; Webb & Shu, 2013). In analysing Enough, it is essential to take account of the traits of impulsiveness and sensation seeking. Kail and Canavaugh (2015) claim that there is a strong and positive relationship between authoritarianism and the use of proximal defence mechanisms to cope with the threat of death. This link is evident through Geert Hofstede's cultural framework, which views national cultures as being a function of five factors: masculinity versus femininity, long-term versus short-term orientation, power distance, individualism versus collectivism, and uncertainty avoidance (Cassell & Blake, 2012).

In this framework, Saudi Arabia is associated with a large power distance that suggests accepting and expecting the large inequalities in power. In other words, a high-power score manifests in the country’s authoritarian rule and implies there is a high degree of authoritarianism inherent in the Saudi culture (Hofstede, 2012). The association between
authoritarianism and the proximal defence mechanisms of the terror management theory enables one to make predictions about the overall response of a population to threat messages (such as those contained in the *Enough* campaign). Because of the high degree of power distance in Saudi culture, it is likely that the entire Saudi culture and nation will respond to threats through proximal defences. Hence, the campaign was doomed to failure from the very beginning because of its failure to take account of Saudi culture. The impulsive and sensation-seeking nature of Saudi youth is described in numerous publications. This further underscores the inappropriateness of using threat messages to elicit desired behavioural changes. Appeals to common sense and rationality supported by casualty and injury statistics were inappropriate, in the light of this exposition (Carey & Sarma, 2011).

Though the delivery of the campaign message was poorly planned and poorly considered, it is crucial to point out its strengths as well. The major accomplishment of the *Enough* campaign concerns its placement of campaign messages on the 2006 World Cup timetable. Using pictures of national team players, the campaign managed to target a young audience. As pointed out by Elliott (2011), the likelihood of a campaign’s message achieving its desired impact rests not just on its ability to be recognised, but also on its ability to be cognised. In the case of *Enough*, the use of the national football team’s image contributed to the comprehension and acceptance of its message. Whether this strategy was selected deliberately or not, national athletic celebrities managed to attract the attention of young people to the message and to foster their identification with that message. Through Kelman’s (1961) process of identification, the campaign promoted strong positive associations between safe driving behaviours and stardom (Shaver, 2015). This technique was effective in persuading youth to change their attitudes towards risky driving behaviour.

While analysing RSCs in developed countries, this study revealed the relevance of using symbolism to reach the target audience. The *Pinkie* campaign of NSW promoted behavioural changes in young drivers by highlighting their social group’s disapproval of speeding. Saudi public campaigns use symbols to pursue another goal which is simply to deliver the message to a population which has low literacy skills (Al-Rasheed, 2013). Hence, the symbols embedded in road safety messages in Saudi Arabia serve the distinctly different purpose of clarifying the message to those Saudis who lack reading skills. Therefore, in contrast to the pinkie symbol used to mock dangerous drivers, the symbols used in Saudi Arabia should be relevant and inoffensive to the target population. In other words, since symbols in Saudi
public advertising serve to deliver the message to those unable to read, these symbols should clearly reflect the message content. Mocking symbols are likely to arouse opposition and dissatisfaction among those whose only source of the information is symbols.

5.2.4. Audience Segmentation and Targeting

The campaign targeted the general population, although some elements of the campaign were tailored precisely to the high-risk youthful segment of the audience (Ministry of Interior, 2006). Drivers aged under 40 years were the main concern of the campaign. No consideration was given to marital status, nationality or gender.

5.2.5. Choice of Media Channels

Various media served to convey the campaign’s message, including newspapers, radio, television, brochures and roadside signs (Ministry of Interior, 2006). Newspaper advertisements in the form of 10 by 8 centimetre strips were placed in major Saudi newspapers regularly during the 30-day campaign. Thus, *Alriyadh* published *Enough* advertisement nine times, *Okas* – eight times, *Aljazeera, Alriyadiyah*, and *Alwatan* – seven times each, and *Alyawm* – five times (Ministry of Interior, 2006). The main radio channel used was MBC, a commercial radio channel, with a total of 74 advertisements run on this channel (Ministry of Interior, 2006).

With respect to television, three channels were used to deliver the campaign’s message. Almajd broadcast the advertisement 94 times, while Saudi TV Channel 1 and Saudi TV Channel 3 screened it 100 times each (Ministry of Interior, 2006). While Almajd TV is a family-oriented commercial television channel, Saudi TV Channel 1 and Channel 3 are government-owned and primarily sports-oriented. Both commercial and government television channels broadcast a campaign commercial developed under the program sponsorship undertaken to create and enhance public awareness on the issue of road safety.

In addition to television, the campaign used brochures narrating traffic stories of children who were victims of road accidents, with 500,000 copies distributed to Saudi schools. These brochures were included pictures of players from the country’s national football team together with the 2006 World Cup timetable. It was an effective way of reaching a young audience (Ministry of Interior, 2006). Overall, the campaign utilised all mass media channels, including television, radio, national newspapers and roadside signs to appeal to the mass public and young drivers in particular.
When analysing *Enough’s* use of media channels, it is reasonable to point out the large-scale nature of the message delivery. As already indicated, all mass media channels were used to distribute the message. Furthermore, during the 30-day campaign, commercials and advertisements were repeatedly run in the various media to convey the message. Such an abundance of media coverage was possible due to the campaign media budget (over AU$650,000) which was possible because national investors such as Aramco and Mobily sponsored the campaign (Ministry of Interior, 2006). The reliance on this substantial budget allowed campaign designers to follow the advertising concept of Krugman (1972) who asserted that effective advertising requires at least three broadcasts (in Rodgers & Thorson, 2012). The idea comes from the belief that the first exposure arouses viewers’ curiosity, the second one provokes their consideration, and the third one elicits their recognition. Three exposures are the optimal maximum, since after the third one, the attention viewers’ give to the broadcast decreases (Rodgers & Thorson, 2012).

Empirical studies in the field of advertising have shown that the traditional rule of thumb (frequent message delivery) was likely to result in an abundance of information which distracts the audience’s attention from the core objective. Instead, scholars have suggested replacing exposure to three broadcasts with a single exposure which maximises the content value (Rodgers & Thorson, 2012). Thus, multiple message deliveries within a short time frame (30 days) caused the public to lose interest in the content. As a result, the campaign was not attractive; instead, the audience seemed to ignore the information due to its repetitiveness. As discussed above in relation to Australian, British and Swedish campaigns, these campaigns achieved their expected effect through careful timing, but *Enough*, due to the frequent exposure of the message, provoked audience withdrawal from that information (Du Plessis, 2011).

Hence, the message of the campaign was ignored not being a source of awareness and new knowledge. Considering the theoretical considerations underpinning the campaign planning, organisation and execution, as well as the selection of media channels, one may conclude the focus of the *Enough* campaign was on its scheduling. Thus, the design primarily addressed ways of message delivery, frequency and media budget, rather than the creation of innovative content. Hence, the *Enough* campaign completely disregarded the value of the message content, which is the main contributor to a campaign’s effectiveness.

5.2.6. Evaluation of Campaign Effectiveness
There is almost no information on the *Enough* campaign in terms of its design, delivery and effectiveness. Among a few studies evaluating the campaign’s success, the survey of Rashidi (2006) stands out. The researcher interviewed 269 respondents aged above 15 years to assess the campaign’s acceptance and recognition. With a response rate of 95.9%, Rashidi (2006) claimed that *Enough* was a huge success. According to Rashidi’s evaluation, approximately 70% of respondents reported that the campaign’s forced them to adhere to speed limits. Only three out of ten respondents admitted engaging in speed-related misdemeanours (Rashidi, 2006).

Additionally, 85% of respondents reported observing traffic light signals, which is another indicator of the campaign’s effectiveness. Most of the respondents provided a high rating of the campaign’s effectiveness, with over 84% of them supporting its continuation. The survey found an increase in awareness about the consequences associated with road crashes, including the impact of such accidents on families and individuals as well as the injuries and health complications due to road accidents (Rashidi, 2006).

While stressing the threats and dramatic outcomes of dangerous driving, *Enough* sought to highlight the impacts of road accidents not only those direct involved, but also their families and friends. Based on the analysis of Victoria’s *Everybody Hurts* campaign, it is possible to assert that the Saudi campaign employed the concept of emotional contagion. In terms of media channels used, most respondents rated the campaign’s radio advertisements and mosque speeches as the least effective ways of delivering road safety messages. Law enforcement activities carried out in support of the campaign were viewed as highly effective (Rashidi, 2006).

In the light of the absence of other studies assessing the campaign, the survey of Rashidi (2006) provides relevant findings. However, it is essential to indicate that the research relied entirely on self-reported perceptions and behaviour, which undermined the validity of its results. No attempt was made to examine statistics on the number of road accidents and their causes over the period of the campaign, or to carry out causality tests to link any reduction in road crashes to specific behavioural or attitudinal changes. Even if there a had been a decline in road accidents at that period – and there is no indication from accident statistics that this was the case, no correlation between the campaign and accident data was demonstrated. Thus, there is no empirical evidence supporting the findings of Rashidi (2006).
In terms of the study’s limitations, it is essential to point out that the study sample of 369 respondents was not representative for the country, the population of which is over 31.5 million people (The World Bank, 2016). Therefore, not much may be inferred from Rashidi’s (2006) study, except that it supports the effectiveness of *Enough*. Another voice in support of the success of *Enough* was a study by Algamass (2010), who asserted that the total number of car accidents in KSA fell to 283,648 during 2006 in comparison to 296,015 in 2005. This amounted to a statistically significant 5.4% decrease on the 2005 figures and might point to the long-term efficacy of the campaign. To sum up, it is impossible to confirm whether the campaign was effective or not because of the absence of statistically valid findings. No published literature is available that sets out the results of any evaluation of *Enough*. This is definitely a gap in knowledge, resulting in an inability to learn from comparative evaluations. It is a gap that this thesis seeks to address.

### 5.3. The Salamati Campaign

The *Salamati* campaign was launched in April 2010. It was a comprehensive road safety campaign which incorporated various components to achieve its aims, including publicity and law enforcement activities (Public Security Directorate, 2010). The initiative embraced many objectives, such as reducing traffic offences as a way of enhancing road safety; creating and fostering mutually cooperative relationships between the police and the target audience; educating the public on how the new traffic management system dubbed ‘Saher’ worked; increasing the visibility of traffic law enforcement; and raising awareness of the need for individuals to take responsibility for road safety (Public Security Directorate, 2010). The law enforcement part of the campaign was subject to the collaboration of traffic, highway and patrol police. The awareness dimension of the campaign followed four stages with each stage run for a month. There were two-month breaks between stages to avoid information redundancy and to ensure the campaign’s effectiveness (Public Security Directorate, 2010).

#### 5.3.1. Identification of Target Behaviour and Target Audience for the Campaign

In view of the major causes of road accidents in Saudi Arabia, the *Salamati* campaign addressed a set of problems to promote safe driving. Thus, speeding, failure to wear seatbelts, driving while fatigued, and violation of pedestrian and vehicle safety regulations were the core aspects of the campaign. In addition, *Salamati* sought to draw the public’s attention to numerous violations of the traffic law, such as driving through red lights, improper overtaking, driving on the wrong side of the road, alighting from moving vehicles, making
illegal turns, driving without a license or number plate, and losing concentration/falling asleep while driving (Public Security Directorate, 2010).

5.3.2. Message

The Salamati campaign involved three speeding advertisements, two pedestrian advertisements, three advertisements about tyre safety, and advertisements on national security. The present research focuses only a detailed review of a single advertisement to produce an understanding of the campaign. The 33-second commercial starts with a scene displaying a bird’s eye view of a busy eight-lane highway with vehicles moving in all directions. It fades into a medium shot of the instrument panel of a single car as it speeds along the highway. This scene is interrupted by a cutaway shot of a speeding toy car in a video game. For the next few seconds, these two shots alternate through the crosscutting technique, with the use of reverse angle shots to compare the two scenes. This also suggests the use of parallel editing (or an inter-cutting technique).

The maximum position of the speed needle in both shots and the fast pan of the camera creating the illusion of vegetation and roads ‘flying past’ suggest that both the real car on the highway and the toy car in the video game are moving at extremely high speeds. Eventually, the toy car in the video game loses control as it races to catch up with another one ahead of it, hits an embankment by the side of the road, and rolls over. A close-up shot of the boy behind the wheel of the video game car is revealed, as the two shots are brought together and juxtaposed on the same screen, using the parallel editing technique followed by the words: ‘Car’s not a toy.’

Figure 5.3. Image from the Salamati commercial. Note the use of parallel editing with the real car on the highway (left) being juxtaposed with the toy car in the video game (right).
This TV commercial was only one in a series used by the Salamati campaign to deliver its message. Each campaign stage explored five traffic themes and one security theme. Thus, the first stage of the campaign touched upon speeding, violation of traffic light rules, roundabouts rules, seatbelts rules, and pedestrian safety rules. In addition to traffic issues, it dealt with security related to alighting from a moving vehicle and the practice of leaving valuables in one’s vehicle and thus, exposing them to the risk of being stolen (Public Security Directorate, 2010). The second-stage message revolved around vehicle safety, distractions experienced by drivers, tyre safety, fatigue and overtaking skills along with security around the home (Public Security Directorate, 2010).

The third and penultimate stage raised issues of not complying with traffic signs, driving without a driver’s license, driving on the wrong side of the road, abrupt stopping on the road and driving by young people. The security topic in this stage stressed the need for members of the target audience to be responsible and patriotic citizens (Public Security Directorate, 2010). The fourth stage focused on overloading, safe driving techniques during bad weather, the space required between vehicles, illegal U-turning, and dangerous driving without a number plate. The main security topic revolved around the primary policing role of the citizen (Public Security Directorate, 2010).

5.3.3. The Use of Theoretical Models in Underpinning the Conceptual Design of the Campaign Messages

In the context of the above commercial, it is possible to claim that the Salamati campaign echoed the No Extra Life campaign in Sweden. The common ground between the two is the use of a metaphor based on the video game concept to deliver messages to the public. Both campaigns used a video-game racing car to highlight the severe outcomes of inadequate and dangerous driving in the real world (Dieveveen, 2013). The absence of an oral narrative in the Salamati commercial replaced the parallel editing technique to illustrate the metaphor.

The scene in which the toy car in the racing game is juxtaposed against a real car, thus bringing into a sharp focus the similarities and a stark contrast between the real and virtual worlds, requires no verbal accompaniment. Contrasting car crashes in the game and real life, the advertisement invites the audience to understand the desired meaning. The absence of text is compensated for using strong visual images and techniques. Though the commercial neglects the artistic use of light and shadow to create a certain mood and characterisation, it uses light to increase visibility of its images. Despite some weaknesses, it is possible to claim
that this commercial is a clean break from the cognitively stale Saudi road safety messages of yesteryear that were based on coercive or simplistic and condescending appeals.

When analysing the Salamati campaign, it is relevant to consider its multidimensional approach. The campaign pointed out that road accidents occur in Saudi Arabia because of human, road, vehicular and environmental factors (Mansuri et al., 2015). Though human factors are the key causes of road accidents (98%), transportation planning and traffic safety policing play a role as well (Islam & Hadhrami, 2012). Along with traffic problems, Saudi Arabia has an urgent need to deal with its domestic security issues that remain acute because of the state’s rich oil and gas resources and the proximity of Arab militant groups (OSAC, 2015).

Hence, the twofold approach of the Salamati campaign to raise public awareness about road safety and national security was beneficial. It raised concerns about two major problems of the country and the combination of two topics prevented information redundancy. However, the multidimensional approach had its weaknesses as well. The key message that speeding was the key cause of fatal car crashes – was dispersed among many other issues. As a result, the Salamati message lacked power and relevance. Because it dealt with several issues Salamati was unable to deliver a unified message. Hence, to achieve success, Salamati required the adoption of an integrated communication strategy to create a complex but concise message to address all those issues (Percy, 2014).

Through analysis of the campaign planning and execution, the presence of Aristotelian rhetoric concepts becomes evident. The concept of pathos is recognised as a powerful persuasive tool, especially within low elaboration advertising. It entails the use of physical cues to create a certain frame of mind to encourage the audience into agreement with the message (Berger, 2013). In advertising, pathos is achieved using attractive male and female characters in public campaigns and media commercials, including some already discussed in this thesis. The Aristotelian concepts of ethos and logos are also applicable in modern advertising. Through logos and ethos techniques, public campaigns use celebrities as models, thereby persuading through the process of identification. Campaigns can also engage experts, who persuade through the process of internalisation (Berger, 2013).

In the Salamati campaign, the key model for communication was the Saudi police. In each of the four stages, the police appeared in the media to raise public awareness. They were
involved in the design of the campaign’s message in the local newspapers, and visited educational institutions to talk to students and distribute campaign material (Public Security Directorate, 2010). The dominance of the police was accompanied by the persistent use of logos of driving and safety lessons and this produced the strong educational tone of the campaign. The absence of other sources of information and role models reinforced the authoritarian image due to the police presence. Hence, the public perceived the campaign as a set of instructions from the government and the police rather than an appeal for collaborative action.

The dominance of the police led to another limitation. The TV commercial used in the Salamati campaign presented its road safety message through the peripheral route as advocated in the elaboration likelihood model (Nevid, 2011). However, other elements of Salamati relied on higher-order cognitive and logical processes based on driving and safety lessons prepared by police officers. In Saudi Arabia, where most of the population lacks basic literacy skills, a public campaign requiring logical reasoning and analytical skills was doomed to failure. Since most of the campaign’s messages were fashioned by the police, with no background in communication skills, the content of the message remained predominantly unrecognised by the public. While an extensive use of coercive law enforcement activities contributed to the success of this RSC, its coercive tactics aroused resistance among the target audience.

In the context of the theory of behaviour modification, these coercive tactics equated to negative reinforcement, which enforced compliance as long as they were in place, but resulted in drivers’ subsequent return to bad driving practices upon the withdrawal of enforcement pressures (Bellack, Hersen, & Kazdin, 2012). In other words, during the campaign, there was a high adherence to the traffic law, but violations emerged immediately after the campaign ended. To transform the short-term effect of road safety campaigns in Saudi Arabia, it is essential to use disruptive approaches based on proven theoretical models adopted by advertising campaigns in developed countries. In fact, an approach based the S-R (stimulus-response) theory of positive reinforcement of Skinner (1953) is likely to be more applicable and effective (Bellack, Hersen, & Kazdin, 2012). In addition, one may recommend using English instead of Arabic in road safety TV commercials to reach non-immigrants, who constitute a large portion of the Saudi population and are involved in numerous car accidents in the country.
5.3.4. Audience Segmentation and Targeting

Like the *Enough* campaign, *Salamati* targeted the general population to increase its awareness of road safety and national security. As a whole, the campaign delivered 20 road safety messages and four security-related messages during its four stages (Public Security Directorate, 2010). As a mass appeal campaign, it made an attempt to attract the attention of youth who are considered to be the highest-risk group. Using the metaphor of video game racing, the campaign sought to reach young male drivers who were violating speed limits on Saudi roads.

5.3.5. Choice of Media Channels

The main channels used to deliver the core message of *Salamati* were local newspapers and television. They seemed the most appropriate for reaching a mass audience as they were the major sources of information for the targeted audience. In addition, the message was presented through printed material distributed to schools and other educational institutions by the police. Driving schools also utilised the campaign materials to create a strong awareness among future drivers of the need to adhere to traffic laws (Public Security Directorate, 2010).

5.3.6. Evaluation of Campaign Effectiveness

From the very onset, the responsibility for evaluating *Salamati* was given to the Centre of Research and Studies, Public Security Directorate. An assessment of the campaign’s effectiveness took place after each stage, with the final assessment being made after the campaign’s completion. The evaluation occurred through comparing trends in the number of accidents, injuries, traffic violations and fatalities before, during, and after the campaign (Public Security Directorate, 2011). These statistics are presented in Table 5.2 below:
Table 5.2
Accident Statistics Relating to All Stages of the Salamati Campaign (four-month implementation)

<table>
<thead>
<tr>
<th>Period</th>
<th>Car accidents</th>
<th>Death</th>
<th>Injuries</th>
<th>Violations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before the campaign</td>
<td>103,804</td>
<td>2,718</td>
<td>12,604</td>
<td>2,285,091</td>
</tr>
<tr>
<td>During the campaign</td>
<td>105,449</td>
<td>3,015</td>
<td>11,268</td>
<td>2,925,178</td>
</tr>
<tr>
<td>After the campaign</td>
<td>150,857</td>
<td>5,583</td>
<td>10,121</td>
<td>2,811,579</td>
</tr>
<tr>
<td>Total</td>
<td>360,110</td>
<td>11,316</td>
<td>33,993</td>
<td>8,021,841</td>
</tr>
</tbody>
</table>


Weather and seasonal differences affected the numbers of violations, accidents, injuries and deaths, such as the back-to-school season. A small decrease in injury numbers probably did not result from the public relations side of the campaign. Because of the campaign’s focus on law enforcement rather than messages in the media, there was little effect. Another contributing factor to the campaign’s ineffectiveness might have been its execution along with the implementation of the SAHER camera systems to control adherence to traffic lights. In addition, the engagement of office workers in the fieldwork raises a concern over eligibility of their performance there. With no official power to issue tickets, these employees might have damaged the public trust in the police.

Based on the data presented in Table 5.2 above, this analysis concludes that the number of car accidents increased from 103,804 to 150,857 (a 45.3% increase), and death rates increased from 2,718 to 5,583 persons (a 105.4% increase). Injuries declined from 12,604 to 10,121 (a 19.7% reduction), while violations increased to 2.8 million (a 23% increase).

The increase in the number of violations during each stage of the campaign implementation probably reflects the inadequate presence of police on the roads. While this evaluation suggests that the Salamati campaign failed to reduce car accidents, injuries, violations or deaths, it is instructive to note that correlation does not necessarily imply causation. That is, the evaluation of the campaign provides no means of directly attributing certain trends in road accident fatalities, injuries or violations to specific aspects of the campaign.
5.4 Summary of Findings and an Ideal Saudi Campaign Built on Lessons from Developed Countries

A precise analysis of two Saudi safety road campaigns indicates a lack of expertise in this field in Saudi Arabia. In contrast to RSCs launched in developed countries, campaigns in Saudi Arabia lack proper theoretical foundations, evidence-based planning and execution, pre- and post-intervention statistics and evaluation data, and government support. As a result, it is almost impossible to assess the effectiveness of the Enough and Salamati campaigns. Furthermore, it is difficult to identify which elements of the campaigns improved their chances of success and which elements reduced their potential effectiveness. In comparison to the campaigns in developed countries analysed in this thesis, Saudi advertising lacks an integrated approach to message delivery and innovation and creativity in content design.

Despite being the first campaign in Saudi Arabia with an explicit focus on road safety, a major problem with the Enough campaign was that it was too general to capture the audience’s attention. The use of at least ten messages, some of which were not reinforced within 30 days, translated into a confusing and crowded communication. Additionally, the campaign was based on a foundation of threats and fear, which as illustrated was neither useful nor effective within the Saudi context. Another weakness of the Enough campaign was the wasteful nature of its media scheduling. Salamati had almost all the same weaknesses. Its multidimensional strategy and reliance on the police diminished its impact.

Consequently, future RSCs in Saudi Arabia may consider segmenting the entire Saudi driving population using the demographic variables of age and gender, the psychographic variables of lifestyle, attitude, values, and interests, and geographic variables (large cities versus rural towns). Proper audience segmentation, along with an integral approach to message delivery is likely to improve public awareness of road safety and increase adherence to traffic laws (Figure 5.4). Hence, it is essential to refer to successful cases of RSC implementation in developed countries to improve Saudi road safety programmes. The cultural and social values of the Saudi population should be considered in advance to ensure the successful integration of Western campaigns in the context of the Arab world.
Figure 5.4
Strategic Planning for an Effective Saudi Road Safety Campaign

- Age-oriented public segmentation followed by geographic segmentation, since urban youth is more technologically savvy than rural youth
- Investigation of youth culture for its specific values, attitudes, and behaviours
- Definition of non-verbal ways of communicating, symbolic and relevant for young racers, such as film screens, computer game screens, images or gestures
Chapter 6: Survey Analysis

After case study analysis presented in the previous two chapters, in this chapter, the researcher conducts an analysis of data from a survey of drivers in the KSA. This includes an analysis of quantitative survey results, and an analysis of responses to the qualitative open-ended survey questions. The first section of this chapter provides socio-demographic data and descriptive statistics about the drivers who completed the survey and their responses. ANOVA test and correlations are then performed to test for statistically significant differences between and within specific driver categories, and to examine high-risk driving behaviours and the attitudes associated with them. Cross-tabulation analysis is also conducted to create a profile of the typical high-risk driver. The final portion of the analysis relates to Saudi drivers’ awareness about RSCs in Saudi Arabia and their perceived effectiveness in improving driving behaviours.

Several specific survey hypotheses were tested using the survey data:

1. Less experienced drivers are more often involved in risky driving.
2. The acceptability of speeding as normal behaviour on the roads leads to frequent speeding.
3. Speeding is strongly correlated with mobile phone use during driving.
4. Speeding is strongly correlated with non-use of seatbelts when driving.

After the presentation of descriptive data and analysis of dependent variables to test for homogeneity and normalcy of the sample’s distribution, the researcher proceeded to assumption testing for each hypothesis. Based on the findings for these hypotheses and the identification of the most frequent risky driving behaviours, the researcher determined the profile of a typical risky Saudi driver through a series of cross-tabulations.

6.1. Demographic Statistics of the Study Sample

Completed questionnaires were received from 185 male respondents\textsuperscript{10}, but due to eight incomplete answers, only 177 were considered valid for the inclusion in the sample. Table 6.1 shows basic socio-demographic data about the respondents. The largest group of respondents (36.5%) were in the 35–39 age category. The years of driving experience were overwhelmingly reported to be over 10 years (n = 130; 76.5%). Another 8.8% of respondents

\textsuperscript{10} In Saudi Arabia, only men have a legal right to drive a car, so the sample included only male drivers.
said they less than three years of experience, 8.2% reported having from three to seven years
of experience, and 6.5% said they had 8–10 years of driving experience.

Table 6.1
Socio-Demographic Data of Survey Respondents

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 20 years old</td>
<td>10</td>
<td>5.6%</td>
</tr>
<tr>
<td>20–24 years old</td>
<td>18</td>
<td>10.2%</td>
</tr>
<tr>
<td>25–29 years old</td>
<td>30</td>
<td>16.9%</td>
</tr>
<tr>
<td>30–34 years old</td>
<td>48</td>
<td>27.1%</td>
</tr>
<tr>
<td>35 – 39 years old</td>
<td>62</td>
<td>35%</td>
</tr>
<tr>
<td>Over 45 years old</td>
<td>2</td>
<td>1.1%</td>
</tr>
<tr>
<td>Missing</td>
<td>7</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Years of driving experience</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–3 years</td>
<td>15</td>
<td>8.4%</td>
</tr>
<tr>
<td>4-7 years</td>
<td>14</td>
<td>7.9%</td>
</tr>
<tr>
<td>8–10 years</td>
<td>11</td>
<td>6.2%</td>
</tr>
<tr>
<td>Over 10 years</td>
<td>139</td>
<td>73%</td>
</tr>
<tr>
<td>Missing</td>
<td>7</td>
<td>3.9%</td>
</tr>
<tr>
<td><strong>Level of education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high school education</td>
<td>12</td>
<td>6.7%</td>
</tr>
<tr>
<td>High school graduate</td>
<td>74</td>
<td>41.6%</td>
</tr>
<tr>
<td>College degree</td>
<td>35</td>
<td>19.7%</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>50</td>
<td>28.1%</td>
</tr>
<tr>
<td>Higher degree</td>
<td>6</td>
<td>3.4%</td>
</tr>
<tr>
<td><strong>Region of the KSA you live in</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Riyadh</td>
<td>65</td>
<td>36.7%</td>
</tr>
<tr>
<td>Jeddah</td>
<td>10</td>
<td>5.6%</td>
</tr>
<tr>
<td>Taif</td>
<td>58</td>
<td>32.8%</td>
</tr>
<tr>
<td>Alqunfozah</td>
<td>40</td>
<td>22.6%</td>
</tr>
<tr>
<td><strong>Nationality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saudi</td>
<td>116</td>
<td>65.2%</td>
</tr>
<tr>
<td>Egyptian</td>
<td>10</td>
<td>5.6%</td>
</tr>
<tr>
<td>Yemen</td>
<td>4</td>
<td>2.2%</td>
</tr>
<tr>
<td>Jordanian</td>
<td>3</td>
<td>1.7%</td>
</tr>
<tr>
<td>Iraq</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>Syrian</td>
<td>4</td>
<td>2.2%</td>
</tr>
<tr>
<td>Bengali</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>Sudanese</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>Missing</td>
<td>38</td>
<td>21.4%</td>
</tr>
</tbody>
</table>

Seventy-two of the respondents reported that they had completed a high school diploma, and
50 said they had a bachelor’s degree. Another 35 said they possessed a college degree
diploma, while only six persons reported having a postgraduate degree. As for their Arabic
language proficiency level, 1.2% did not know Arabic at all, 11.2% had an average
proficiency, 7.1% were proficient and for 80.6% Arabic was their native language. In terms
of the region of residence, the largest group of respondents (n = 65, 37.6%) came from
Riyadh and the second-largest region was Taif (n = 58, 32.8%). The rest came from
Alqunfozah (n = 40; 22.6%) and Jeddah (n = 10, 5.6%).
6.2. Reported Driving Behaviours: Descriptive Statistics

The initial analysis of the survey relates to descriptive statistical evaluation; this part of the survey contained scalar questions and respondents chose answers on a 7-point Likert scale. These questions dealt with the frequency of certain driving behaviours on a scale where 1 meant ‘always’ and 7 meant ‘never’. For instance, in responding to ‘I get involved in unofficial races with other drivers’, participants were asked to choose one of the following options:

1 – Always
2 – Very often
3 – Often
4 – Cannot say
5 – Occasionally
6 – Rarely
7 – Never

Table B.2 (see Appendix B) presents the descriptive statistical data for these questions, including means and standard deviations. Analysis of means and modes for scalar questions shows certain trends that were important for this particular study; for instance, the question about swerving to avoid an oncoming vehicle after cutting a corner on a right-hand turn has the lowest mean of 3.93, and a mode of 1, which means that the majority of drivers stated that they encountered such a situation quite frequently. Another question with a mode of 1 and quite a low mean of 4.07 was about people’s awareness of the dangers associated with tailgating (driving too close to the vehicle ahead), which shows that although drivers in this study confessed to violating some traffic rules, they still assumed responsibility for such conscious violations as driving too close to the vehicle ahead of them, and understood the hazards associated with this behaviour. These findings are consistent with the findings of Wishart, Davery and Freeman (2006) regarding a cohort of Australian drivers. They found out that despite many self-reported violations in a wide range of areas, drivers’ attitudes towards tailgating and drink driving were very negative, suggesting a high level of awareness about the dangers associated with such risky driving practices.
Exceeding of speed limits by more than 10 km/hour was also among the most frequently reported violations – this question had a mean of 4.17, but the mode was surprisingly 7, indicating that more than a half of the sample stated that they did not exceed the speed limits. Nevertheless, the mode of 7 and the mean of 4.17 indicate that 50% of drivers reported frequently exceeding the speed limit. Overall, speeding is reported as the most frequent violation in DAQ and DBQ studies by many other authors. For instance, Rowe et al. (2015) conducted a longitudinal study in the UK and found speeding and racing away from traffic lights to be the most frequent self-reported violations. Davey, Wishart, Freeman and Watson (2007), and Wishart et al. (2006) also found speeding to be one of the most frequently reported violations. Though the problem of speeding may be considered universal, the Middle East is a region where many drivers speed, as suggested by Bener et al.’s (2013) research in Qatar. Bener et al. also found that disregard for speed limits on motorways is the most common self-reported violation, with Qataris reporting such violations more frequently than representatives of other ethnicities. More details about self-reported errors, attitudes, and violations may be found in Table B.2.

However, before proceeding to an analysis of means, one should have a look at modes; they appear to be either 7 or 1, which shows that the data is skewed. Analysis of frequency graphs (Tables B.3 – B.7) shows that one category is overrepresented in each of the socio-demographic groupings, such as age (30–34, 35–39 years old), years of experience (over 10 years), education (data is polarised, with high school graduates and those possessing bachelor’s degrees), Arabic knowledge (native language), and nationality (Arabic dominates). Such socio-demographic frequency distribution should be taken into account in data analysis, since overrepresentation of one of the population categories may distort the findings.

Next, after a discussion of means for driver behaviour rankings, the researcher explored the frequencies of giving a specific ranking to each survey question – see Appendix B.8. The items ‘Usually exceeds the speed limit by more than 10km/h’, ‘Usually misjudges the speed of a passing vehicle’, and ‘Disregards the speed limits late at night or early in the morning’ are of particular interest with this general sample of drivers. The items were rated very highly by the sampled drivers, and about 20%, 18% and 25% of all the sampled drivers replied ‘yes’ to each of the statements respectively. This was in every location, which translates into about 20% of the drivers in KSA exceeding the speed limits, 18% misjudging the speed of passing vehicles and 25% disregarding the speed limits late at night or early in the morning. Since personal and self-reflective recounts of a negative nature tend to be under-reported and
conservative (Joyce-Beaulieu & Sulkowski, 2015), one could predict that these figures are much higher in practice, probably greater than 30%, indicating that one-third of drivers speed, misjudge of the speed of other vehicles and disregard speed limits late at night and early in the morning. This contrasts dramatically with Australia where speeding is estimated not to exceed 60 km/h and people strictly adhere to the speed limits whether during the day or at night (Road Safety Commission, 2015).

Other items that are of particular interest in this general sample of drivers are ‘Usually have to swerve to avoid an oncoming vehicle when cutting the corner on a right-hand turn’, ‘People are aware of the dangers associated with close following [tailgating]’ and ‘Become impatient with a slow driver in the outer lane and overtake on the inside’. The responses indicated that only 17% of the drivers in KSA do not swerve when cutting a corner on a right hand turn to avoid an incoming vehicle, 22% are not aware of the dangers associated with tailgating and 20% become impatient with slow drivers in the outer lane and overtake on the inside. As these are personal and self-reflective reports of a negative nature, they are likely to have been under-reported and conservative and it could therefore be predicted that the figures might be much higher in practice, which means that drivers in the KSA roads are not aware of the impact of swerving when cutting the corner on a right hand turn to avoid and incoming vehicle, tailgating and overtaking on the inside.

Additionally, the answers of the general sample of drivers to the following statements: ‘Usually drive while talking on the cell phone or texting’, ‘Never wear a seatbelt’ and ‘Do not know exactly how fast to drive and still drive safely’ were rated highly; about 22% replied with a ‘yes’ for each of the three items. This means that about 22% of the drivers in KSA roads usually drive while talking on the cell phone or texting, 22% never wear a seatbelt and 22% do not know exactly how fast they can drive with safety. These behaviours are likely to have been under-reported and it could therefore be predicted that the figures might be much higher in practice, which means that many drivers on KSA roads drive while talking on the cell phones or texting, never wear seatbelts and do not know exactly how fast they can drive and still drive safely. These findings are consistent with Bcheraoui’s (2015) study which found a common disregard for speed limits and seatbelt laws, and frequent use of mobile phones while driving among Saudi drivers.

The next items considered in this analysis were: ‘Usually miss exits on an interstate and have to make a lengthy detour’, ‘Overtaking does not reduce the safety of the driver’ and ‘Steer the wrong way into a skid’. The items were rated highly, with about 27% and 23% and 40%
replying with an affirmative yes respectively to these three statements. One can conclude that this means about 27% of the drivers on KSA roads usually miss exits on an interstate and have to make a lengthy detour, 23% believe that overtaking does not reduce safety and 40% steer the wrong way into a skid.

The analysis of responses to the statements, ‘Drive especially close to the car in front as a signal to the driver to go faster or get out of the way’, ‘Miss “yield” or “stop” signs’ and ‘Usually attempt to pass a vehicle intending to turn right’ showed that all of them were rated quite highly: about 28% and 28% and 31% respectively replied yes to the first, second and the third items. This means that about 28% of the drivers in KSA roads drive close to the car in front as a signal to the driver to go faster or get out of the way, 28% miss ‘yield’ and ‘stop’ signs and 31% steer the wrong way into a skid. Such findings mean that many drivers on KSA roads usually disregard the risks associated with driving close to the car in front as a signal to the driver to go faster or get out of the way, miss ‘yield’ or ‘stop’ signs and attempt to pass a vehicle intending to turn right without considering the risk.

The items ‘It is acceptable to take slight risks on the road when overtaking other cars’, ‘Sometimes you have to drive in excess of the speed limit to keep up with the flow of traffic’ and ‘Brake too quickly on a slippery road’ are of particular interest in this general sample of drivers. The items were rated highly with an average of 30%, 27% and 34% replying yes to the first, second and the third items respectively. This suggests that drivers on KSA roads frequently take slight risks on the road when overtaking other cars, drive in excess of the speed limit to keep up with the flow of traffic and brake too quickly on slippery roads. These findings are supported by Al-Mulhim (2013) and Osuagwu, Al-Aseeri, and Oghuehi (2013),

The items ‘Usually jump the orange and red lights’, ‘People stopped by the police for road safety violations are simply unlucky because many people do that’ and ‘Usually misjudge your turning space when turning right’ are of particular interest in this general sample of drivers. About 29%, 36% and 29% replied yes to the first, second and the third items respectively. This is even more alarming and important if one considers the strict traffic light laws, presupposing imprisonment for violations (BBC News, 2014; Horswill, 2014)

The items ‘Usually violate other general traffic rules’, ‘Usually try to change lanes without first checking your mirror’ and ‘Usually fail to read the signs correctly’ are also significant for analysis in this general sample of drivers. Thirty-two per cent, 34% and 33% replied with yes to the first, second and the third item above respectively. The items ‘You fail to notice
someone on the side waiting to cross in a pedestrian crossing and drive through the crosswalk’, ‘I am not aware of the risks associated with using a mobile phone when driving’ and ‘Close following [tailgating] is not a problem during driving’ were rated highly; about 33%, 39% and 39% replied yes to the first, second and the third items respectively.

Lastly, the items ‘Using a mobile phone is not a problem as drivers can drive safely when using it’, ‘Speeding is rarely a cause of road accidents’ and ‘Get involved in unofficial ‘races’ with other drivers’ were analysed in this section; about 41%, 40% and 45% replied yes to the first, second and the third item above respectively. The existence of such a reckless road safety culture has been repeatedly pointed out by other researchers, including Al-Aseeri (2013), Barrimah, Midhet, and Sharaf (2012), and earlier – by Haigney (2007).

Taken together, these findings demonstrate the existence of a very unsafe complex of behaviours on Saudi roads. These behaviours are not limited to speeding only, but also include other risky and reckless behaviours such as unofficial races, the use of mobile phones while driving, not wearing seat belts, risky overtaking of slower drivers, and other risks contributing to the high RTA rates in Saudi Arabia.

6.3. Analysis of Data Normalcy and Homogeneity

The assumptions of normally distributed and homogenous data are basic preconditions for performing inferential testing (Coakes, 2005). Hence, there is a need to start the statistical analysis process with tests for data normality and normal distribution of data. The Shapiro-Wilks statistical indicator was used to test for normality and homogeneity – see Table B.1.

The Shapiro-Wilks statistical test was applied in this case because it is used with samples of up to 2,000 respondents. This study involved the participation of 177 persons. Unfortunately, the sig. values for all variables in this study did not exceed the significance level of .05, which means that the hypothesis of data normality should be rejected. Moreover, in the t-tests and ANOVAs undertaken, some of the variables investigated in the study violated the assumption of the homogeneity of variance. ANOVAs and t-tests are known to be robust to the assumption of normalcy, but when this assumption is violated in addition to other important assumptions of the tests, the results of the tests are significantly affected (Erceg-Hurn & Mirosevich, 2008; King, 1986). Nimon (2012) recommends lowering the alpha level when several assumptions of a statistical analysis are violated. Thus, for the purposes of the present analysis, and to fit the requirements of analysing non-normally distributed data, the researcher reduced the significance level to 0.01 for t-test and ANOVA results interpretation.
6.4. Assumption and Hypothesis Testing

As one can see from the frequency distribution described above, the most common reported road safety violations were swerving to avoid an oncoming vehicle, disregarding speed limits (points 3-5 in the 5-point scale), talking on the phone while driving, not wearing a seatbelt, and participation in unofficial races with other drivers. These are also the key driving behaviours identified through the preliminary literature review, so they become the key points of interest in the analysis in this section. The analysis of risky driving behaviours will be performed by focusing on these types of violations. In addition, the relationship between years of driving experience and risky behaviour is analysed. The testing of each of the research hypotheses is described below.

6.4.1. Driving Experience and Risky Driving

**Hypothesis 1: Less experienced drivers get involved in risky driving more frequently**

The first hypothesis tested in this study deals with the relationship between years of driving experience and various self-reported risky driving behaviours. The research compared the risky behaviour of drivers with more than seven years’ experience, with the behaviour of drivers with less than seven years’ experience. A statistically significant difference was found between the two groups, as shown in Table 6.2. The strength of correlation between risky behaviour and years of experience was only statistically significant only at the 0.1 level.

<table>
<thead>
<tr>
<th>Driving Behaviour</th>
<th>df</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>USUALLY violate other general traffic rules</td>
<td>3.00</td>
<td>3.85</td>
<td>0.01</td>
</tr>
<tr>
<td>People stopped by the police for road safety violations are simply unlucky because many people do that</td>
<td>3.00</td>
<td>3.28</td>
<td>0.02</td>
</tr>
<tr>
<td>Miss 'yield' or 'stop' signs</td>
<td>3.00</td>
<td>3.79</td>
<td>0.01</td>
</tr>
<tr>
<td>Steer the wrong way into a skid</td>
<td>3.00</td>
<td>5.21</td>
<td>0.00</td>
</tr>
<tr>
<td>Do you know such road safety campaigns as Salamaty and Enough in the KSA? (if yes, please say a few words about them, what they are about, etc)</td>
<td>3.00</td>
<td>3.80</td>
<td>0.01</td>
</tr>
<tr>
<td>USUALLY jump orange and red lights</td>
<td>3.00</td>
<td>4.94</td>
<td>0.00</td>
</tr>
</tbody>
</table>

The ANOVA test revealed that in this study, years of driving experience had a strong impact on many driving behaviours – see Table 6.2. All driving behaviours exhibited results valid at the .01 significance level – a vital precondition for interpretation of statistical findings stemming from the non-normalcy and non-homogeneity of data distribution. Correlations of
years of experience with violations of general traffic rules, missing the ‘yield’ and ‘stop’ signs, and jumping orange and red lights were found to be statistically significant.

After identification of differences in survey responses among respondents, the researcher explored the cross-tabulation of means for these items and years of driving experience to find out which group takes more risks overall. Statistical findings of the cross-tabulation may be seen in Table 6.3.

Table 6.3

<table>
<thead>
<tr>
<th>Variable</th>
<th>0-7 years</th>
<th>Over 7 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>USUALLY jump the orange and red lights</td>
<td>5.73</td>
<td>4.57</td>
<td>4.76</td>
</tr>
<tr>
<td>USUALLY violate other general traffic rules</td>
<td>5.52</td>
<td>4.67</td>
<td>4.81</td>
</tr>
<tr>
<td>People stopped by the police for road safety violations are simply unlucky because many people do that</td>
<td>5.08</td>
<td>4.68</td>
<td>4.74</td>
</tr>
<tr>
<td>Miss ‘yield’ or ‘stop’ signs</td>
<td>5.48</td>
<td>4.66</td>
<td>4.79</td>
</tr>
<tr>
<td>Steer the wrong way into a skid</td>
<td>6.16</td>
<td>4.84</td>
<td>5.04</td>
</tr>
</tbody>
</table>

As one can see, more experienced drivers reported much more frequent risk taking and violations. More experienced drivers missed more ‘yield’ and ‘stop signs’ (M=4.66, compared to 6.16 for less experienced drivers). They scored lower on all items that showed a statistically significant difference in the ANOVA test, reporting more frequently steering the wrong way into a skid (M=4.84 as compared to M=6.16 for less experienced drivers), and also reported violating general traffic rules more often (M=4.67) (Appendix B.9). Therefore, it is possible to conclude from this ANOVA test analysis that drivers with less than 7 years of driving experience exhibited very different attitudes to risks during driving, and reported significantly different driving behaviours, compared to drivers with more than seven years’ experience.

This data indicates that more experienced drivers are indeed more prone to taking risks on the roads, and are more likely to be involved in risky driving because of their over-reliance on their driving experience. Possible explanations for this have already been explored in prior research. Number of years of driving experience has been found by many researchers to produce a significant impact on risky driving. Knight, Iverson and Harris (2012) pointed out in their study that most young people are not risk-takers or sensation-seekers, and the only
typical risky behaviour among young drivers is that of speeding. Cavendish, Guppy and Hand (2012) also claimed that driver-specific attitudes and experiences play a role in predicting risk-taking, culpable near-misses, and accident experiences. Both Porter (2011) and Transport Committee (2007) experts have pointed out that young inexperienced drivers are involved in car crashes at a considerably higher rate than more experienced drivers; however, RTAs may happen because of drivers’ errors rather than risk-taking.

6.4.2. Speeding as a Complex Risky Driving Behaviour

Hypothesis 2: The acceptability of speeding as a normal behaviour on the roads leads to frequent speeding.

To test this hypothesis, non-parametric correlation analysis was used – Spearman’s rho. As the analysis of the data’s normalcy and homogeneity showed, the dataset used in this survey analysis is non-normally distributed and skewed. Hence, Spearman’s rho was applied as a non-parametric counterpart of Pearson’s correlation coefficient. This type of analysis is suitable for cases in which the relationships between variables are not linear; it is universal for any kind of monotonicity (Turner, 2014). To identify the details of speeding as one of the most common risky driving behaviours, the researcher selected the set of behaviours and attitudes from the survey specifically linked to speeding:

1. ‘speed limits are often set too low’
2. ‘become impatient with a slow driver in the outer lane and overtake on the inside’
3. ‘usually exceed speed limits by more than 10 km/hour’
4. ‘get involved in unofficial races with drivers’
5. ‘speeding is rarely a cause of road accidents’

This constellation of items was tested to see how strongly the presence of one of them affects the proneness of drivers to possess the other items in the list. Strength of correlation was considered statistically significant only at the significance level of .01. Findings of this correlation analysis may be seen in Table 6.3.

As shown by the correlation analysis presented above, those who consider that speed limits are often set too low are also highly prone to overtaking drivers whom they consider slow (correlation coefficient of 0.39, \( p < 0.01 \)) and they are also more likely to exceed speed limits by more than 10 km/hour (correlation coefficient of .61 and sig. value = .00). Becoming impatient with slow drivers was also very strongly correlated with getting involved in unofficial races (correlation coefficient of 0.26, \( p < 0.01 \)), while the latter behaviour was also
strongly correlated with believing that speeding was not a problem (correlation coefficient of 0.60, \( p < 0.01 \)).

**Table 6.4**

*Correlation on Speeding Behaviours and Attitudes*

<table>
<thead>
<tr>
<th>Spearman’s rho</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Speed limits are often set too low, so many people ignore them</td>
<td>.39**</td>
<td>.61**</td>
<td>.16*</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>2. Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>.39**</td>
<td>.22**</td>
<td>.19*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. USUALLY exceed speed limits by more than 10 km/hour</td>
<td>.26**</td>
<td>.22**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Get involved in unofficial ‘races’ with other drivers</td>
<td></td>
<td></td>
<td>.60**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Speeding is rarely a cause of road accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

Hence, the correlation tests showed that most common risky driving behaviours included exceeding of speed limits by 10 km/hour, overtaking slow drivers, and involvement in unofficial races with other drivers, and revealed that a negligent attitude to speeding was a probable cause of RTAs. All these dimensions appeared to be strongly correlated with each other, showing that these aspects of speeding are present on Saudi roads. It is also vital to point out that speeding behaviours are strongly correlated with speeding attitudes, which provides an additional insight into the problem of speeding on Saudi roads. Drivers who speed most frequently also perceive speeding as normal and do not associate the incidence of RTAs with this behaviour. Hence, it is evident that speeding behaviours have speeding attitudes as their starting point, and attitudes should be changed first if changes in driving behaviours are to occur. This connection was earlier identified by Ross and Antonowicz (2004) who advocate the use of cognitive strategies in the treatment of bad drivers to change their attitudes, and later by Knipling and Bergoffen (2011) who point out the pervasive impact of the driver’s personalities and driving styles on driving behaviours. Therefore, issues such as attitudes and awareness should be targeted with a level of attention equivalent to that given to unsafe behaviors.

**6.4.3. Speeding and Mobile Phone Use**
Since speeding behaviours and attitudes were found to be strongly correlated, it was further hypothesised that speeding as the most common and acceptable driving safety violation may also be related to other types of violations. In this section, the correlation between speeding and mobile phone use during driving is tested with the help of Spearman’s rho and non-parametric correlation analysis. The set of speeding indicators was taken from the testing of the previous hypothesis, while attitudes, awareness and behaviours in regard to mobile phone use were selected as follows:

1. ‘usually drive while talking on the cell phone or texting’
2. ‘Using a mobile phone is NOT a problem as drivers can drive safely when using it’
3. ‘I am NOT aware of the risks associated with using a mobile phone when driving’

Findings from this correlation analysis are presented in Table 6.4. The strength of the correlation was considered statistically significant only at the .01 significance level.

All variables related to the use of mobile phones while driving were very strongly correlated with the speeding behaviours and attitudes. Those who indicated that they ‘usually drive while talking on a cell phone or texting’ were found to: consider speed limits to be too low, and believe it is reasonable to ignore them (correlation coefficient of 0.31, $p<0.01$), report getting irritated by slow drivers and overtaking them unsafely (correlation of 0.32, $p<0.01$), and to report frequently exceeding speed limits by more than 10 km/hour (correlation of 0.39, $p<0.01$). Those talking over the phone while driving were also prone to getting involved in unofficial races with drivers (correlation of 0.40, $p<0.01$). More significantly, talking over the phone while driving was strongly correlated with negative perceptions regarding road safety. Drivers who reported talking on the phone while driving also said they did not consider the use of a mobile phone while driving (correlation of 0.36, $p<0.01$) and speeding (correlation of 0.26, $p<0.01$) to be problems.
Table 6.5

Correlation of Speeding and Mobile Phone Use

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Speed limits are often set too low. so many people ignore them</td>
<td>.39***</td>
<td>.60***</td>
<td>.31***</td>
<td>.16*</td>
<td>.19*</td>
<td>.04</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>2. Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>.39***</td>
<td>.32**</td>
<td>.22**</td>
<td>.19*</td>
<td>.21**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. USUALLY exceed speed limits by more than 10 km/hour</td>
<td>.39***</td>
<td>.26**</td>
<td>.28**</td>
<td>.22**</td>
<td>.20*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. USUALLY drive while talking on the cell phone or texting</td>
<td>.40***</td>
<td>.36**</td>
<td>.26**</td>
<td>.29**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Get involved in unofficial ‘races’ with other drivers</td>
<td>.64***</td>
<td>.60***</td>
<td>.66***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Using a mobile phone is NOT a problem as drivers can drive safely when using it</td>
<td>.54***</td>
<td>.66***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Speeding is rarely a cause of road accidents</td>
<td>.61***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I am NOT aware of the risks associated with using a mobile phone when driving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Attitude towards using a mobile phone during driving was also strongly correlated with speeding behaviours (exceeding speed limits by more than 10 km/hour – correlation of 0.28, p<0.01; getting involved in unofficial races with other drivers – correlation of 0.64, p<0.01) and bad attitudes toward speeding (not considering speeding a cause of RTAs – correlation of 0.54, p<0.01), and bad attitudes to mobile phone use (absence of awareness regarding the risks of mobile phone use – correlation of 0.66, p<0.01). A similarly alarming tendency was found regarding a lack of awareness of the risks associated with mobile phone use: it was very strongly correlated with all speeding behaviours and attitudes except for considering speed limits too low.

Based on the correlation analysis presented above, one may infer that using a mobile phone while driving, and considering this normal and acceptable, and a lack of awareness of the risks associated with this behaviour are typical of drivers who exhibit frequent speeding
behaviours on the Saudi roads and who also regard speeding as normal. Use of mobile phones was found to be an unsafe driving behaviour by Dragutinovic and Twisk (2005), Bush III (2014), and National Safety Council (2012). Even the use of hand-free cell phones was regarded a risky behaviour because of the distraction that talking or texting causes. Dragutinovic and Twisk (2005) even found out that the use of mobile phones when driving causes slower reactions to traffic signals, slower breaking reactions, and increased risk-taking on the roads. Such evidence suggests that when attempting to bring about an improvement to the driving culture in the KSA, campaign designers should approach these two types of behaviour as a cluster, given the strength of the correlation between all speeding-related and mobile phone-related attitudes and behaviours.

6.4.5. Speeding and Seat Belt Use

Next, the variety of speeding behaviours and attitudes were correlated with failure to wear seat belts. One question from the survey was analysed: ‘I never wear a seatbelt’. Here, the strength of statistical significance was also measured only at the .01 level of significance. The findings of this analysis may be seen in Table 6.5.

Table 6.6

Correlation of Speeding and Non-Wearing of Seat Belt

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Speed limits are often set too low, so many people ignore them</td>
<td>.39**</td>
<td>.61**</td>
<td>.32**</td>
<td>.16’</td>
<td>.04’</td>
<td>.27**</td>
<td>.04’</td>
</tr>
<tr>
<td>2. Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>.39**</td>
<td>.18’</td>
<td>.22”</td>
<td>.19’</td>
<td>.32**</td>
<td>.04’</td>
<td>.27**</td>
</tr>
<tr>
<td>3. USUALLY exceed speed limits by more than 10 km/hour</td>
<td>.50”</td>
<td>.26”</td>
<td>.22”</td>
<td>.27”</td>
<td>.04’</td>
<td>.27**</td>
<td>.04’</td>
</tr>
<tr>
<td>4. NEVER wear a seatbelt</td>
<td>.28**</td>
<td>.22”</td>
<td>.28”</td>
<td>.04’</td>
<td>.27”</td>
<td>.04’</td>
<td>.27**</td>
</tr>
<tr>
<td>5. Get involved in unofficial ‘races’ with other drivers</td>
<td>.60”</td>
<td>.61”</td>
<td>.04’</td>
<td>.27”</td>
<td>.04’</td>
<td>.27**</td>
<td>.04’</td>
</tr>
<tr>
<td>6. Speeding is rarely a cause of road accidents</td>
<td>.51”</td>
<td>.04’</td>
<td>.27”</td>
<td>.04’</td>
<td>.27”</td>
<td>.04’</td>
<td>.27**</td>
</tr>
<tr>
<td>7. Close following is NOT a big problem while driving</td>
<td>.04”</td>
<td>.27”</td>
<td>.04’</td>
<td>.27”</td>
<td>.04’</td>
<td>.27**</td>
<td>.04’</td>
</tr>
</tbody>
</table>

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

*. Correlation is significant at the 0.05 level (2-tailed).
The findings presented in Table 6.5 suggest that failure to wear a seat belt was very strongly correlated with speeding behaviours and attitudes. Those who reported not using a seatbelt were also found to be significantly prone to regarding speed limits as too low (correlation of 0.32, \( p < 0.01 \)), not regarding speeding a cause of RTAs (correlation of 0.22, \( p < 0.01 \)), and not considering close following a high-risk behaviour (correlation of 0.27, \( p < 0.01 \)). Moreover, those who reported never using a seatbelt also claimed that they often exceeded speed limits by more than 10 km/hour (correlation of 0.50, \( p < 0.01 \)), and belonged to the cohort of drivers regularly involved in unofficial races with other drivers. Hence, as one can see, not wearing a seatbelt was found to be strongly correlated with all speeding-related behaviours and attitudes, showing that those who exceeded speed limits and disregarded speed limits were also prone to neglecting seat belt use regulations.

Seat belt use is a serious road safety problem in the KSA. As pointed out by Khan (2015), a significant number of motorists appeared ignorant of traffic rules, and reported a consistent failure to use seat belts. Moreover, failure to use of children’s and infants’ car seats and seatbelts is a catastrophe in the KSA which is associated with a disproportionately high death toll among Saudi children – they are either damaged by airbags or otherwise injured during RTAs (Blue Abaya, 2013). These findings should also be considered in the design of road safety campaigns, since understanding how attitudes and behaviours increase the incidence of other risky behaviours may increase insights into how risky driving behaviours generally form in their complexity.

6.5. Socio-Demographic Profile of a High-Risk Driver

Based on the findings of the ANOVA testing and correlation analysis presented above, the researcher has formulated a set of highly correlated behaviours and attitudes which, when considered together, provide a complex image of the risky driving behaviour of Saudi drivers. In this section, these risky driving behaviours and attitudes are cross-tabulated with socio-demographic data to identify the socio-demographic profile of a typical risky driver.

In terms of age (see Tables B.10-B.18 in the Appendix), 37.2% of 30–39-year-old drivers reported regularly exceeding speed limits by more than 10 km/hour, while over 41% belonged to the 20–29 age category. In terms of not wearing a seatbelt, 23.5% of those reporting doing so regularly were aged 20–24 years old, 23.6% - 35–39 years old. In the 20–29 age group, 30.7% said they usually drove while talking on the phone, and 45.5% believed speed limits were too low. Hence, again, here the leading age category is that of 20–29-year-
olds. In terms of regarding mobile phone use as not being a problem, 4.8% of those aged 30–39 years old agreed with the statement, as compared to 5.8% of those aged 20–24 and 7.2% of those aged 25–29. Close following was considered not a problem by 11.1% of those aged 20–29, in contrast to 4.3% of those aged 30–39 years old. In terms of not regarding speeding as a problem and being impatient with slow drivers, 20–29-year-old drivers were the most plentiful – see Tables B.10-B.18 in the Appendix for statistics.

In terms of driving experience and the most common risky driving behaviours and attitudes, those with less than seven years of experience were more numerous in reporting speeding over 10 km/hour (21.7% compared to 15.9% of those with more than 7 years’ experience), never wearing a seatbelt (19.2%, compared to 15.6% of those with more than 7 years’ experience), not regarding close following as a problem (20% against 4.4% of those with more than 7 years’ experience), and becoming impatient with slow drivers (24% against 17% of those with more than 7 years’ experience). Drivers with over 7 years of driving experience, in their turn, led in such categories as using mobile phones when driving (16.2% against 15.4% of inexperienced drivers), considering speed limits too low (18.5% as compared to 8% of inexperienced drivers), considering that the use of mobile phone was not a problem (6.7% against 0% of inexperienced drivers), considering speeding as not a cause of RTAs (8.8% compared to 8% of inexperienced drivers), and getting involved in unofficial races with other drivers (3.7% compared to 0% of inexperienced drivers). Thus, as one can see, speeding is most commonly a problem among inexperienced drivers, while talking over the phone and involvement in races with other drivers were most commonly practised by those with over 7 years of driving experience – see Tables B.19-B27 in the Appendix. The finding of a surprisingly high level of risk-taking among experienced drivers is explained above.

Tables B.28-B.36 show a cross-tabulation of risky driving behaviours with drivers’ levels of education. In the educational profile of a typical risky driver, ‘some high school education’ and ‘completed high school education’ seem to prevail. High school graduates were the most numerous category that reported speeding by more than 10 km/hour (24.2%), never wearing a seatbelt (24.6%), considering speed limits too low (24.6%), considering the use of mobile phones while driving as normal (9%), and becoming impatient with slow drivers (23.5%). Those having some high school education most frequently reported involvement in unofficial races with other drivers (9%) and not considering speeding to be a cause of RTAs (27.3%). Therefore, the riskiest drivers typically possessed an educational level lower than a college qualification – see Tables B.28-B.36 in the Appendix.
Based on the findings of the cross-tabulation analysis, the following profile of a high-risk driver in the KSA was identified:

- A person aged 20–29 years old
- A person possessing over 7 years of driving experience
- A person with high school diploma or lower education level.

6.6. Awareness of Saudi RSCs and their Perceived Effectiveness

This section presents an analysis of respondents’ reactions to Saudi RSCs – in particular their awareness of the campaigns and their opinions about their effectiveness. Drivers were asked about whether they generally knew about Saudi RSCs such as Salamati and Enough, whether they considered them correctly targeting specific groups of drivers, and whether their duration was sufficient for achieving improvements in driver behaviour. Descriptive statistics for the closed questions about awareness, and the qualitative analysis of open-ended questions are laid out in the following subsections.

6.6.1. Campaign Awareness and Evaluation

The awareness section of this survey included the following questions:

- Do you know road safety campaigns such as Salamati and Enough?
- What aspects of these RSCs attracted you the most?
- Do you think they may have persuaded you to stop risky driving behaviours?
- Indicate the extent to which you find these RSCs effective.
- Do you consider the duration of Salamati/Enough sufficient?
- Do you think they targeted the correct group of drivers?

Tables 6.7 and 6.8 present the key frequency figures for this aspect of the survey; they show that more than a half of the sample, 50.8% of respondents, did not know about road safety campaigns such as Enough and Salamati; the fact that such a high percentage were not reached by these RSCs reveals an inconsistency in Saudi RSCs’ outreach and that they did not increase public awareness because the public was to a significant extent unaware of their existence.
Table 6.7

Descriptive Percentages for Nominal Items

<table>
<thead>
<tr>
<th>Survey Questions</th>
<th>Yes</th>
<th>No</th>
<th>Undecided</th>
</tr>
</thead>
<tbody>
<tr>
<td>39. Do you know such road safety campaigns as <em>Salamati</em> and <em>Enough</em> in the KSA?</td>
<td>39.5</td>
<td>50.8</td>
<td>3.4</td>
</tr>
<tr>
<td>41. With respect to the risky driving behaviours discussed above, do you think</td>
<td>57.3</td>
<td>34.3</td>
<td>7.9</td>
</tr>
<tr>
<td>that any of the road safety campaigns in Saudi Arabia may have persuaded you</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to stop any of the risky driving behaviours you had?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44. Do you consider the length of <em>Salamati</em> to be appropriate to reach its target?</td>
<td>41.8</td>
<td>48.9</td>
<td>9</td>
</tr>
<tr>
<td>45. Do you consider the length of <em>Enough</em> to be appropriate to reach its target?</td>
<td>44.1</td>
<td>45.8</td>
<td>10.2</td>
</tr>
<tr>
<td>46. Do you think these campaigns target the correct groups of drivers?</td>
<td>52.2</td>
<td>30.7</td>
<td>16.5</td>
</tr>
</tbody>
</table>

Table 6.8

Descriptive Percentages for Appealing Aspects of RSCs

<table>
<thead>
<tr>
<th>What aspects of these road safety campaigns attract you most of all?</th>
<th>% of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>13.6</td>
</tr>
<tr>
<td>Emotion</td>
<td>11.9</td>
</tr>
<tr>
<td>Groups</td>
<td>20.3</td>
</tr>
<tr>
<td>Duration</td>
<td>4</td>
</tr>
<tr>
<td>Improve</td>
<td>31.6</td>
</tr>
</tbody>
</table>

Such low levels of information provision to Saudi drivers by RSCs may be explained by evidence provided by Arab News (2013), the Global Road Safety Partnership (2015), Nofal (2013), and other resources indicating a moderate to poor level of awareness about road safety in Saudi Arabia and the lack of success of the most efforts to promote road safety in the KSA (Aldalbhi, 2014). Unfortunately, Saudi road safety messages have been quite ineffective so far, which causes scarce understanding of media channels between drivers, and reduces the outreach of Saudi RSCs, which is also consistent with the findings of Aldalbhi (2014) in a similar study. A visual representation of the distribution of answers in terms of awareness and effect may be seen in Figure 6.1.

However, the low level of awareness among Saudi drivers about Saudi RSCs is not a critical issue, since 57.3% of drivers indicated that they would change their driving behaviour if they felt the impact of RSCs. This may be explained by the fact that reckless driving behaviour in the KSA is mostly of a cultural nature – this might be happening to rapid population growth, luxurious cars, young drivers allowed to drive while being nearly kids, and other cultural specifics that exacerbate ignorance of traffic rules in the Saudi roads. As a result, individual
families suffer, and many Saudis have lost family members or friends because of a tremendous RTA rate, one of the highest in the world. Therefore, the willingness of Saudi drivers to be involved in a change of driving behaviours may be explained by these conditions (Ali, 2013).

![Figure 6.1. RSC Awareness and Perceived Effect](image)

The problem of the low outreach of RSCs is due not to their ineffectiveness per se, but to the ineffectiveness of the use of informational channels by those who design and implement RSCs in Saudi Arabia. Hence, a solution to the problem of risky driving behaviours and the non-responsiveness of the Saudi population to RSCs may be resolved by finding more effective ways communicating RSC messages, so that they reach every family and every individual in the KSA. These observations are consistent with the observations of Naeem (2010) about the preventability of RTAs in Saudi Arabia if there is sufficient data for understanding their causes and trends, and of the ways to communicate with drivers about constructive behaviour change.

Opinions about how long campaign should be were divided for both Salamati and Enough, but many respondents agreed that both these RSCs targeted the correct groups of drivers – risk-taking young drivers (see also Figure 6.2). Such positive responses about group targeting may be explained by the claims of Al-Seghayer (2013) and Bener and Crundall (2015) that young Saudi drivers pose an unprecedented threat regarding road safety, since they disregard authority, are frequently involve in races on the roads with other cars, and do not consider speeding to be dangerous. This also explains why over 20% of the sample praised Salamati and Enough for targeting the right groups, and more than 31% claimed that these campaigns are well-targeted.
The duration of campaigns received the sharpest criticism from this study’s participants; only 4% of respondents found the duration of these RSCs appropriate. Therefore, the problem of short duration comes to the fore and largely explains the low effectiveness of RSCs in Saudi Arabia – they are too short and fragmented to make a strong impact on the targeted driver groups. This suggestion is supported by Jan (2014) and Bendak (2011) who also found Saudi RSCs to be improperly timed and therefore ineffective.

The basic survey analysis provided much useful data on the most dangerous types of risky behaviour. These findings require further analytical testing, which is presented in the next section.

As descriptive statistical analysis showed, only 39.5% of respondents stated that they knew about Salamati and Enough, while the dominant part of the sample, 50.8%, stated that they did not know about them. At the same time, 57.3% of the sample indicated that effective outreach of these RSCs might have made them change their driving behaviours, which suggests that it was the issue of effective outreach rather than drivers’ unwillingness to change that has affected RSCs’ effectiveness in Saudi Arabia. In terms of what aspects of RSCs attracted Saudi respondents the most, the indisputable leaders were targeting specific groups and the way they improve the road situation. A more detailed overview of appealing RSC aspects may be seen in Figure 6.3.
6.6.2. Qualitative Analysis of Perceived Effectiveness

Qualitative analysis was conducted of answers to four open-ended questions:

- Specify driving behaviours affected by Salamati/Enough.
- Why do you think themes of Salamati and Enough are effective/ineffective?
- Do you think that messages and channels were selected appropriately for these campaigns?
- What changes would you propose to make Saudi RSCs more effective in improving risky driving behaviours?

Qualitative analysis revealed the four most frequently cited themes: traffic safety, reasons for campaigns’ ineffectiveness, ways of delivering campaign messages, and making them more effective. A more detailed presentation of emerging themes may be seen in Table 6.9.

**Table 6.9**

*Themes Rising from Open-ended Questions*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Excerpts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic safety</td>
<td>‘wearing seatbelt’</td>
</tr>
<tr>
<td></td>
<td>‘committed to traffic regulations’</td>
</tr>
<tr>
<td></td>
<td>‘follow speed limit and traffic regulations’</td>
</tr>
<tr>
<td></td>
<td>‘not breaking Saher with crazy speed’</td>
</tr>
<tr>
<td></td>
<td>‘taking care of the walking people’</td>
</tr>
<tr>
<td></td>
<td>‘driving cautiously’</td>
</tr>
<tr>
<td></td>
<td>‘using a mobile phone when driving’</td>
</tr>
<tr>
<td></td>
<td>‘driving under the effect of drugs’</td>
</tr>
<tr>
<td></td>
<td>‘driving for the teenagers under 18 years old’</td>
</tr>
<tr>
<td></td>
<td>‘wheel burning’</td>
</tr>
</tbody>
</table>

Figure 6.3. *Appealing Aspects of RSCs*

The final section of this chapter explores the qualitative answers to RSC awareness questions.
| Reasons for effectiveness/ineffectiveness | ‘lack of sleep’  
‘driving without a license’  
‘I never heard about it before’  
‘ineffective because content is weak’  
‘couldn’t reach the majority of people’  
‘ineffective for the teenagers only’  
‘ineffective because it did not target the right group’  
‘ineffective because it could not reach the community’  
‘ineffective because they didn’t choose the right time to start the campaigns and didn’t search for the right places’ |
| Ways of delivering campaigns’ messages | ‘ineffective because advertising on TV was not convincing’  
‘advertising and media have not highlighted in a way that makes me remember the most important principles of it’  
‘ineffective because of lack of ads’  
‘ineffective because of the short period and having no enough ads’  
‘it must use all the media means and the smart devices, schools, governmental institutions’  
‘increase number of campaigns’  
‘it’s better to have more ads in the newspaper and the net social media’  
‘I hope it will focus on well-known TV channels’  
‘SMS message is a bit old way, so it’s better to use the WhatsApp and twitter which is more important’ |
| Ways of improving the outreach | ‘should use the SMS, electronic panels, and the social media’  
‘need more marketing’  
‘should use all TV channels’  
‘TV channels and social media’  
‘focus on the youth part’  
‘media, SMS, ads, awareness centres’  
‘change the campaigns’ content and style’  
‘producing a phone application explaining road traffic signs and rules’ |

The focus on the first theme – ‘traffic safety’ – was in line with the findings of the survey analysis. The overwhelming majority of survey respondents indicated that the core challenges to road safety include mobile phone use, disregard for traffic rules, fatigue, driving under the influence of drugs, not wearing a seat belt, and other violations. Those who stated that *Salamati* and *Enough* were effective had heard about them and regarded them as having an effective outreach to the community. Those who indicated that they had not heard of these campaigns feel that this showed they were ineffective. Other reasons named for RSCs’ ineffectiveness included their inability to reach out to the community, their failure to reach young risk-takers with the message of road safety, their short duration, improper timing, and weakness of content and approach.

When asked about the preferred ways of RSC message delivery, many respondents pointed out the need to use new media channels, such as social networks and the internet. There was a
strong support for using TV and print media, and there was unanimous agreement that there
needed to be an increase in the number of ads and campaign needed to be longer. Ways to
increase the effectiveness of RSCs in Saudi Arabia included more effective targeting of
youth, using a large variety of media channels, creating a mobile phone application dedicated
to road safety, and using research-based content and style of RSCs to achieve behaviour
improvement.

Thus, one can conclude that the themes of proper channel selection for better RSC outreach,
and of addressing major traffic safety issues such as speeding, phone use, and failure to use
seatbelts, were highlighted in both the quantitative findings’ analysis and in the extended
qualitative responses. These two aspects of RSC design and implementation were of vital
significance for the studied sample, since the identified risky behaviours of speeding, mobile
phone use, and seatbelt neglect are the most common violations of safety on the roads which
are putting thousands of Saudi lives in danger. Thus, RSC design should address these safety
concerns by using proper channels and advertising so that the message is properly and
effectively delivered to the highest-risk category of drivers.

6.7. Summary of Findings

In this chapter, a series of hypotheses was tested statistically with the use of analytical testing
tools:

1. Less experienced drivers are more often involved in risky driving.
2. The acceptability of speeding as a normal behaviour on the roads leads to frequent
   speeding.
3. Speeding is strongly correlated with mobile phone use while driving.
4. Speeding is strongly correlated with non-use of seatbelts when driving.

The first hypothesis was rejected, since more experienced drivers were more prone to indulge
in risky behaviour. Those interpreting this finding should bear in mind the distinction
between being involved in RTAs because of driver error (stemming from inexperience) and
being involved due intentional risk-taking (in the form of the recklessness and bravado of
more experienced drivers). These findings are consistent with the findings of Knight et al.
(2012), Porter (2011), and Transport Committee (2007) experts who report that young people
are typically not sensation-seekers, but get involved in RTAs more frequently because of
driver errors due to their lack of experience. However, these findings should be treated with
caution because of numerous reports about a GCC road racing culture among young people, so this study's conclusions should not be over-generalised to the entire KSA population.

The second hypothesis about the acceptability of speeding among the majority of Saudi drivers was validated, with all aspects of speeding behaviours and attitudes strongly correlated with each other. A large portion of the driver sample reported frequent speeding over 10 km/hour, impatience towards slow drivers, and involvement in unofficial races with other drivers. Such findings were recorded both in terms of behaviours and in terms of attitudes, with the largest group in the survey sample agreeing that speeding is not a problem, and stating that overtaking slow drivers is not an unacceptable risk. Such evidence suggests that Saudi drivers have a deeply embedded culture of impatience and risk-taking on the road, with its most common manifestation being in speeding, which is tolerated by other road users, and which poses the greatest threat to Saudi road safety.

The third hypothesis related to the use of mobile phones when driving; the validity of this hypothesis was confirmed by means of a correlation analysis of common speeding behaviours and the use of mobile phones. Most drivers reported regular use of mobile phones while driving, and stated that this is normal, which means that they behaving inappropriately and considered this behaviour normal. Moreover, as the correlation analysis showed, those who were prone to using mobile phones were often also the ones who most often exceeded speed limits. Therefore, the hypothesis was proven, showing that speeding is strongly correlated with mobile phone use when driving also with a failure to see any threat to road safety in such behaviour.

The fourth hypothesis was also supported – a relationship was found between not using a seat belt and speeding. The findings of the correlation analysis revealed that those who speeded frequently and regarded such behaviour on the road as normal were among those who used their seat belts less often. The implications of such findings were discussed, and the points of focus that RSC designers should focus on were identified. RSCs should target speeding, not as a single instance of a violation but as a complex behaviour involving many related actions and attitudes.

As a result of cross-tabulation analysis, the profile of a typical Saudi risk-taker on the roads was compiled. The most common characteristics of high-risk drivers include young age (20–29 years old), over 7 years of driving experience (resulting in unjustified over-confidence in the ability to avoid a car crash), a high school education or lower, and an average knowledge
of the Arabic language. The next chapter presents the results of the analysis of the qualitative section of the survey and of the qualitative data from interviews with Saudi RSC designers, policy-makers, and road traffic authorities.
Chapter 7: Qualitative Interview Analysis

7.1. Introduction

This chapter presents an analysis of the qualitative findings from interviews with 37 representatives of different road safety organisations in the KSA that are dedicated to studying high-risk driving behaviours and the effectiveness of road safety campaigns conducted in the state to manage the problem. The research aim of this study was to understand how road safety campaigns may be employed in Saudi Arabia to modify the high-risk behaviour of young road users to reduce the costs and overall impact of road traffic accidents in the KSA. The key research objectives formulated for this study were:

1. To analyse driving behaviours of Saudi drivers in terms of risk-taking and disregard for road traffic rules. This is expected to provide evidence to inform the development of effective road safety campaigns
2. To determine the perceived significance and effectiveness of Saudi road safety campaigns in improving driving behaviours, which in turn will show the advantages and disadvantages of current measures
3. To recommend best practice protocols from developed countries for application in road safety campaigns in the KSA and other developing countries. This will provide a fresh insight into the issue and help make KSA road safety campaigns more effective.

Since the first objective was achieved by means of analysing a set of case studies of best worldwide practices on RSCs in Australia and other countries, and the second objective is targeted more specifically in the analysis of the quantitative findings, the present chapter focuses on the third objective. Qualitative analysis of interviews with representatives of various authorities related to road traffic regulations, policy-making, and campaign design will show how the Saudi RSCs are viewed at present, what gaps and pitfalls have been detected in them by authorities directly involved road traffic safety control, and what changes may be introduced to make RSCs in Saudi Arabia more effective and relevant for increasing safety and compliance with road safety regulations.

7.2. Socio-Demographic Characteristics of Participants

Interviews were conducted with 37 representatives of different road safety organisations in the KSA, including the police traffic departments of Riyadh, Jeddah and Taif (see dates of
interviews in Appendix C.1). Socio-demographic data on respondents may be found in Table 7.1 below:

**Table 7.1**  
*Data about Interviewees*

<table>
<thead>
<tr>
<th>Respondent Number</th>
<th>Place of Work</th>
<th>Pseudonym</th>
<th>Appendix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent 1</td>
<td>Traffic police administrative, Riyadh City</td>
<td>Ahmed</td>
<td>A1</td>
</tr>
<tr>
<td>Respondent 2</td>
<td>Traffic police administrative, Riyadh City</td>
<td>Mohammad</td>
<td>A2</td>
</tr>
<tr>
<td>Respondent 3</td>
<td>Traffic police administrative, Riyadh City</td>
<td>Musaed</td>
<td>A3</td>
</tr>
<tr>
<td>Respondent 4</td>
<td>Traffic police administrative, Riyadh City</td>
<td>Salman</td>
<td>A4</td>
</tr>
<tr>
<td>Respondent 5</td>
<td>Traffic police administrative, Riyadh City</td>
<td>Husain</td>
<td>A5</td>
</tr>
<tr>
<td>Respondent 6</td>
<td>Traffic police administrative, Jeddah City</td>
<td>Khaled</td>
<td>B1</td>
</tr>
<tr>
<td>Respondent 7</td>
<td>Traffic police administrative, Jeddah City</td>
<td>Mihran</td>
<td>B2</td>
</tr>
<tr>
<td>Respondent 8</td>
<td>Traffic police administrative, Jeddah City</td>
<td>Faisal</td>
<td>B3</td>
</tr>
<tr>
<td>Respondent 9</td>
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<td>Saeed</td>
<td>C1</td>
</tr>
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<td>Respondent 10</td>
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<td>C2</td>
</tr>
<tr>
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<td>D1</td>
</tr>
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<td>Abdulrahman</td>
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</tr>
<tr>
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<td>Policy Maker</td>
<td>Yousef</td>
<td>D3</td>
</tr>
<tr>
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<td>Naif</td>
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<td>E2</td>
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</tr>
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<tr>
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<td>Ibraheem</td>
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<tr>
<td>Respondent 22</td>
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<td>Abbas</td>
<td>G1</td>
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<tr>
<td>Respondent 23</td>
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<td>Akil</td>
<td>G2</td>
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<tr>
<td>Respondent 24</td>
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<td>Altaf</td>
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<tr>
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<td>Asif</td>
<td>I1</td>
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<tr>
<td>27</td>
<td>Traffic Safety Personnel</td>
<td>Bilal</td>
<td>J1</td>
</tr>
<tr>
<td>28</td>
<td>Personnel of Traffic Dept. in Riyadh</td>
<td>Bahir</td>
<td>K1</td>
</tr>
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<td>29</td>
<td>Personnel of Traffic Dept. in Riyadh</td>
<td>Falah</td>
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<td>30</td>
<td>Personnel of Traffic Dept. in Riyadh</td>
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<td>Hadad</td>
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<td>Hazim</td>
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<td>Personnel of Traffic Dept. in Jeddah</td>
<td>Hudad</td>
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<td>Personnel of Traffic Dept. in Jeddah</td>
<td>Ihsan</td>
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<td>Jasim</td>
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<td>36</td>
<td>Personnel of Traffic Dept. in Taif</td>
<td>Karam</td>
<td>M2</td>
</tr>
<tr>
<td>37</td>
<td>Personnel of Traffic Dept. in Taif</td>
<td>Latif</td>
<td>M3</td>
</tr>
</tbody>
</table>

Topics covered in the interviews in this part of research (see Appendix A.1) included past and present public awareness campaigns, assessment of road safety standards in Saudi Arabia, and personal insights into what can be done to improve the behaviour of drivers on the Kingdom’s roads. They included representatives from the Traffic Patrol Division of Riyadh City Centre, the Traffic Violations Investigation Committee in Riyadh Traffic Department, the Driving License Division, the Safety Division in the Jeddah Traffic Department, the Traffic Patrol Division, and Car Accident Investigation (Taif).

### 7.3. Leximancer Analysis

A detailed overview of purpose and underlying methodology of Leximancer was covered in section 3.3.4.2. All interviews with representatives of traffic safety departments, academia, creative agencies, and traffic safety personnel were recorded with the help of a tape recorder on the mobile phone of the researcher. The interviews were later transcribed verbatim by the researcher, with proper editing of text, and removal of redundant phrasing such as the researcher’s questions. After that, the interview transcripts were uploaded in the Leximancer software – an automatic tool for qualitative data analysis that identifies concepts in textual data and delivers key ideas and actionable insights with the help of interactive visualisations.
and data categorisation. As a result the data analysis with Leximancer, the following concept map emerged to indicate the key themes raised in the interviews and to illustrate the interconnectedness of themes and concepts within the interviews – see Figure 7.1.
Figure 7.1. Concept Map – Leximancer Analysis
As one can see from the above concept map, four major themes arose; they unite the largest number of concepts within their fields. The first theme identified through Leximancer analysis may generally be referred to as ‘traffic’ and includes such concepts as ‘problem’, ‘safety’, ‘accidents’, drivers’, and ‘regulations’ – see Figure 7.2.

**Figure 7.2. The ‘traffic’ theme of Leximancer**

The ‘traffic’ theme was evaluated by Leximancer analysis as having 98% relevance, and looking at the nodal clusters and their proximity (overlapping clusters of regulations and driving, awareness, and public security) suggests that this theme relates to evaluation of the role that current road safety departments and their
measures play in safety on Saudi roads. This theme is highly topical for the assessment of Saudi RSCs and the overall state of road safety in the KSA. This is supported by Ahmad (academic, King Saud University), ‘Saudi authorities have tried law enforcement as a sole solution since the 1970s even though car accidents and the death toll are increasing each year.’ The same opinion was expressed by Altaf (NTSC representative) who agreed that Saudi laws are good but only on paper, while their implementation in practice is quite problematic. Hence, it is logical to unite these two themes and to analyse them together, under the theme of the role played by traffic police, officers and other road safety authorities such as NTSC, and research institutions, in the prevention of accidents, the maintenance of road security, and preventing drivers from exceeding speed limits.

In the context of this analysis, themes are groups of ideas, or concepts, which represent the elements of a trend. The second theme identified by Leximancer is centred on the concept of ‘campaigns’ – see Figure 7.3. This theme was identified in theme analysis as having 56% relevance (see Fig. 7.1.), and its related nodal clusters unify such concepts as ‘problem’, ‘time’, ‘speeding’, ‘security’ and ‘media’, which allowed the researcher to assume that this theme may encompass an overview of existing Saudi RSCs, the evaluation of their significance and effectiveness in terms of road safety provision, as well as their impact on drivers’ behaviour including seat belt use and speeding.

This second theme may be referred to as a general overview of existing Saudi campaigns and an evaluation of their effectiveness and relationship to road safety. One single concept is directly connected with this theme but stands out as a separate sphere – ‘impact.’ Hence, the theme is defined as the evaluation of road safety campaigns’ effectiveness, their impact on road safety, and their effect on the target groups of road users. It is relevant because there is much inconsistency in the financing, timing and organisation of RSCs in Saudi Arabia, which finally leads to their failure; as stated by Asif (traffic safety personnel, Jeddah Department of Public Relations and Media), ‘the problem is that the campaigns are short. We should start the campaign with the young generation at schools in order to have the next generation as disciplined’. Many vital aspects of correct RSC are absent; Abdulrahman (policymaker) called them ‘continuity and persistence’ and indicated that unlike European states that have been working on the achievement of feasible
results for decades, Arab people are always in a hurry for the campaigns to achieve results, which results in unsatisfactory outcomes.

Figure 7.3. The ‘campaign’ theme of Leximancer

Abbas (representative of the Ministry of Information and Culture) supported that opinion by suggesting that ‘each campaign needs and accurate follow-up, and applying regulations on violations of laws’. Furthermore, Hadad (Traffic Department, Riyadh) suggested that ‘the campaign must be on a wide scale with the participation of the Ministry of Information for its role in raising the awareness of road users.’ Thus, it is clear here that this theme should be discussed in terms of
positive and negative characteristics of Saudi RSCs, their real-life impacts on drivers’ behaviour, and reasons for low impact if campaigns are ineffective.

The third theme relates specifically to the channels through which road safety campaign messages reach their target audiences. This theme is centred on the concepts of ‘media,’ ‘people,’ and ‘young’. Therefore, this theme includes the discussion of respondents’ opinions about the ways in which road safety campaigns are structured in terms of the messages they deliver, and the channels they use to reach out to their target audiences, as well as the effectiveness of that outreach – see Figure 7.4. So far, based on the interview analysis, it seems that the design of road safety campaigns is not always professional, and this prevents them from achieving their aims. Husain (traffic police administrative, Riyadh) said, ‘campaigns are developed by targeting all segments of society, inside homes and at work in addition to continuous programs in schools and governmental compounds’.
Much consideration has also been given to the involvement of experts in the process of campaign design and implementation: Saad (academic, Taif) believed that involving experts’ was a way to ‘ensure a positive effective on the target group in coordination between experts in traffic, psychological, educational and family aspects’. Ahmad (academic, Riyadh) also noted, ‘campaigns need to be well-planned by professional and experts. The target audience and utilised media must be carefully studied and selected’, while Arfan (traffic safety personnel, Riyadh) stressed that the collaboration of all authorities was needed to ensure the success of campaigns, since the Traffic Department cannot complete these activities alone.
because of a lack of diversified expertise and skills. Therefore, the present theme of “media channels” also includes the discussion of channels, media and programs – both those that are used now and those that may be used for improved outreach to the target audience.

The strongest theme arising from Leximancer analysis with 100% relevance may be marked by the central concept ‘awareness’ surrounded by such nodal clusters as ‘media’, ‘public’, ‘security’, ‘department’, ‘campaigns’ and ‘young’ – see Figure 7.5.

**Figure 7.5. The ‘awareness’ theme of Leximancer**

Therefore, it is logical to suggest that this theme is directly related to ways of improving order and security on the roads through the enhancement of awareness
among young drivers in particular, and among the overall Saudi public/society in general. This assumption will be further tested with interview excerpts. The present theme is closely linked with the assessment of improvement measures, both in terms of road safety campaigns and in terms of road safety regulations, since both aspects are primarily concerned with increasing awareness. According to Husain (traffic police administrative, Riyadh), ‘the campaigns should be applied by traffic policemen in the field, and through cell phone messages and pamphlets’. Naif (policymaker) also claimed, ‘there is negligence in applying regulations. Penalties of some traffic violations should be doubled and toughened. I notice in some of the Gulf countries the fine for disregarding traffic lights is as high as 500SR.’ Therefore, the need to understand the ways in which improvements can be achieved is one of the urgent needs of today’s RSC evaluation and design. Hence, this theme serves as a set of recommendations for improvement overall.

All four themes have been reflected in the concept list and the concept map. The list of themes discussed in this chapter, in compliance with the identified keyword density and concept distribution, is as follows:

1. Raising awareness of the Saudi public, and the young Saudi public in particular, as a way of maintaining security and order on the roads; evaluation of the role of road safety authorities in the promotion and implementation of those improvements
2. The present-day role of road traffic authorities and institutions in the maintenance of road safety and control over speeding
3. Overview of existing Saudi RSCs and evaluation of their significance and impact on road safety and driver behaviour
4. Analysis of channels, messages and programs involved in increasing road safety in Saudi Arabia, as well as evaluation of the effectiveness of their outreach and design.

The themes are presented in the order of their relevance to Leximancer analysis results. The strength of the above themes is not surprising, since all respondents were asked about these specific fields of research interest. The missing areas are nevertheless notable: phone use and seatbelt use, as well as speeding, which is unanimously regarded as the most problematic issue in road safety in the KSA.
7.3.1. Theme One: Road Traffic Authorities and Institutions: their Role in Road Safety

Respondents assessed the perceived importance given to road safety in the KSA as quite low. The reasons were found partly in the inconsistent measures and actions of road traffic authorities and policymakers which precluded the complete and comprehensive implementation of awareness campaigns. One of the reasons for the problems encountered by road safety programs and measures is the complex structure and hierarchy of the authorities responsible for maintaining law and order on Saudi roads. Saad (academic, Taif) supported that view by stating, ‘the traffic system involves the participation of different authorities ... They created the National Committee for Traffic Safety and the Traffic Safety Association in the Eastern Region. The supreme council of traffic plays a coordinating role’.

Such a multitude of authorities responsible for the implementation of road safety measures and initiatives has resulted in overlaps and conflicts regarding duties and roles. Ideally, these institutions would cooperate in the creation of effective, comprehensive RSCs and other measures for improving road safety. However, in reality, these organisations lack a comprehensive program and structure for partnership, which means that road safety standards are at an unreasonably low level.

Overall, there is a significant amount of cooperation between institutions in the KSA dedicated to the design and implementation of effective RSCs. For instance, Yousef (policymaker, Department of Public Relations and Media) reported that the King Abdulaziz City for Medical Science was involved in designing a variety of road safety campaigns, along with many other non-traffic authorities including the Ministry of Interior, the Ministry of Education, the Ministry of Higher Education, the Ministry of Islamic Affairs, and many private actors such as Aramco, SAB, and others. Moreover, Naif (policymaker) talked about the partnership between the Traffic Safety Department and the Ministry of Culture and Information, while Ahmed recognised the efforts of the Ministry of Education towards increasing public awareness of road safety rules, standards and regulations. Nevertheless, even these partnerships turned out to be inadequate for bringing about a significant improvement of the road safety culture of Saudi drivers. Saeed recommended the establishment of a proper collaboration between traffic police and educational...
establishments so that traffic safety fundamentals are taught at school and at universities, thus affecting the target groups of young drivers most effectively.

The Traffic Department was generally assessed as having been ineffective in carrying out its mission of guaranteeing road safety and maintaining compliance with road safety rules among drivers. Such a conclusion can be made from analysis of a closely related nodal cluster of concepts, ‘order’, ‘public security’, and ‘safety’. However, the respondents pointed out many other organisations were actively involved in shaping the road safety initiatives in the KSA. For instance, the Department of Public Relations and Media (the main department responsible for security and road safety awareness campaigns in the KSA) was mentioned as being actively involved in road safety campaigns. Its representative Abdulrahman (policymaker, Department of Public Relations and Media) said, ‘I am directly responsible for setting up, designing and supervising comprehensive awareness raising programs, whether they are internal programs directed at security, or external programs directed to the populace’. Yousef (policymaker) also noted, ‘we first, coordinate with the mass media and the targeted groups, whether they be schools or universities, and then we create a campaign concerning the present strategy’. Naif (policymaker) also reported making a direct contribution to the design of RSCs and road safety programs: ‘the Department of Information is currently my responsibility … I prepare questions, responses and statements for TV and press interviews in addition to my other responsibilities as a magazine editor-in-chief’.

The National Traffic Safety Committee (NTSC) is another institution involved in road safety in the KSA. Among its direct responsibilities are raising awareness, design and implementation of RSCs, and public education about the risks of reckless driving. However, one of the representatives of the NTSC in this research voiced a highly unfavourable opinion about the extent to which NTSC is able to produce a real impact on the population’s awareness. Akil (NTSC representative) described the activities of this organisation as ‘legislative, awareness, and engineering’ and also acknowledged, ‘This committee lacks legislative powers. It pays a great deal of attention to raising awareness, and to engineering but it does not investigate the credibility of officers’. Obviously, this quote suggests that the NTSC has not yet managed to show its full potential; thus, the major obstacle for NTSC’s full-scale development is that all its members are volunteers, which means that they are not
fully dedicated to their NTSC duties, and work for about one hour per month, which is evidently insufficient for the provision of a good road safety program.

Therefore, the NTSC is still limited in its outreach, and much targeted effort is needed for it to become a leader in the field of improving the road safety culture in Saudi Arabia. Akil (NTSC representative) also indicated that NTSC decisions regarding road safety are at present ‘unsound and inapplicable’, and its role is ‘merely formal’. Abbas (NTSC representative) voiced a less pessimistic account of NTSC’s work by stating, ‘our role is informational and focuses on doing research and studies’. Hence, as this view comes from the assessment of the NTSC by one of its own employees, it can be seen that the organisation has not yet reached its full potential, and has not taken an active, multi-faceted approach to the formation and implementation of road safety campaigns and policies.

Finally, a matter of concern in terms of organisations and authorities dealing with the establishment, improvement and maintenance of road safety in the KSA is the image and role of traffic police officers. Many respondents indicated Saudi road users had a negative image of traffic police officers, which prevents them from fulfilling their direct duties of punishing drivers for violations and educating them on road safety rules. As Akil (representative of NTSC) indicated, ‘we have a problem, and we need to restore prestige of traffic policemen in the field as it has declined considerably. Traffic policeman disregard violations in order not to be insulted’. Unfortunately, Akil also recognised the failure to protect the professional image of traffic police officers, which has gradually led to their loss of respect in the eyes of drivers: ‘we [NTSC] presented a terrible failure which has had an effect on police officers. When I go out on the streets, I feel embarrassed about belonging to the traffic department’. This lack of respect and trust of traffic police officers is a serious problem, since drivers should take the comments of traffic police seriously, should learn from them, and should listen to them in terms of the risks they face on certain roads. Under conditions of neglect and disrespect, the ability of traffic police officers to affect behaviours on the roads, and to reduce the risks to which drivers are exposed, is significantly lower.

One of the reasons traffic police are disliked and avoided is that the overwhelming majority of drivers associate them with fines and punishment rather than assistance
and education. Ibraheem (Executive Manager of PI communication) indicated that traffic police officers are usually seen as having ‘a punitive and strict approach’, while Asif (traffic safety officer, Jeddah) noted that ‘the public sees traffic police as a penal and judicial authority’. Akil (NTSC representative) added that ‘policeman, a person holds only secondary stage, is driven away from his original work, and is qualified neither functionally nor temporally and intellectually’. Obviously, traffic police officers should punish drivers for violations, but their duties should not be limited to punitive measures; they should also be actively involved in assisting drivers, and should promote the educational materials of RSCs to raise awareness among drivers about dangers on the roads. If the range of traffic police officers’ duties is extended this way, the attitudes towards them may change.

7.3.2. Theme Two: Saudi RSCs and Their Effectiveness

The ‘campaign’ theme was not the strongest, but it had 56% relevance in the concept map analysis, which suggests that the theme and its related concepts are highly meaningful in this analysis. The respondents enumerated RSCs that had already been implemented in the KSA, and were asked to evaluate their impact on the Saudi population. Reasons for these campaigns’ successes and failures were also discussed. Respondents also spoke about the pitfalls in RSC design and implementation, and discussed the contribution that RSCs made to increasing public awareness about road safety standards, regulations and the risks of reckless behaviour on the roads.

7.3.2.1. RSCs in Saudi Arabia

Respondents named a range of RSCs that had been implemented in the KSA. The secret of the success of the Your Safety Is in Your Hands campaign was identified by Majed (creative agency representative) as follows, ‘the campaign ... has three parts: electronic safety, security, and traffic safety ... it is a package in which three things are distributed and a present is given to children ... [at] commercial centres and summer carnivals.’ As one can see from this assessment, this campaign succeeded because of the outreach to the public in a variety of places, which guaranteed reaching more segments of the population. Not only drivers but also their friends and family members were targeted by this campaign, and this ensured the effectiveness of outreach and a strong rapport with the Saudi public.
The Week of Traffic (held in 2012 and 2013) was also assessed as a very effective method of raising awareness among Saudi drivers; its impact was evaluated as high by Arfan (traffic safety officer, Riyadh) who said the campaign accomplished the role of ‘increasing communication between traffic policemen and users of the road, whether they were vehicle drivers or pedestrians.’ In this way, the major strength of the Week of Traffic was in inter-agency cooperation and the establishment of a stronger partnership between road safety professionals and road users. Abdulrahman and Mohammad also made positive assessments of the inter-agency cooperation that the Week of Traffic introduced, by saying that it united the Secretariat-General of the Gulf Countries, the Cooperation Council and other road safety-related authorities in planning and implementation efforts. Furthermore, the Week of Traffic proved successful in its implementation in the neighbouring state of Qatar; its retrospective evaluation showed its exceptional effectiveness in all stages of the RSC, starting from pre-planning and ending with the post-implementation assessment.

*It Is Time to Know* was another effective Saudi RSC; Majed (creative agency representative) assessed its impact on the Saudi population quite highly by noting the strong appeal to patriotism in that campaign. Majed emphasised that this RSC was such a success mainly because it involved many specialists who partnered in the design and implementation stages, adopting the science-based approach to RSCs. The most pronounced victory of this RSC was that it attracted many volunteers, especially young Saudis, at the implementation stage, which guaranteed its message reached the most important category of drivers – young Saudis.

Finally, the *Enough* campaign was subjectively assessed by respondents as one of the most productive and effective RSCs implemented in the KSA. Its core strength was in its explicit clarification of the dangers associated with non-compliance with road safety regulations, and its focus on educating drivers in a basic understanding of road safety. As pointed out by Ibraheem (creative agency representative) in his assessment of *Enough*,

The *Enough* campaign was distinguished with the message which usually wants to succeed … the Al Jazeera newspaper still has a page titled *Enough*, and streets have *Enough* panels, in Friday preaching speech stop committing sins, with the national team was beaten in Germany, the main sports page was called *Enough*. So, the word *Enough* became like a motto.
Due to the use of a variety of media channels, the participation of celebrities like members of the national football team, and collaboration with religious leaders who also promoted the message of ‘enough,’ the campaign became a catchy and widespread appeal to all Saudi drivers, which made it extremely effective. Nevertheless, *Enough* did not receive many favourable assessments. Naif (policymaker) called *Enough* a weak and ineffective campaign because of its short duration, and Arfan (traffic safety, Riyadh) thought it was weak because there was no follow-up the next year.

The most ineffective campaign, according to the majority of respondents, was the *Salamati* campaign. Latif (traffic department personnel, Taif) described it as a campaign about ‘giving pedestrians the right of the road,’ while Karam (traffic department personnel, Taif) characterised it as having the following message: ‘Do not speed, your children will wait for you.’ Majed (creative agency) saw its essence as follows: ‘they focused on traffic safety only and talked about more than one thing such as the soundness of tyres, check your car before travelling and fasten your seat belt’. Ibraheem (creative agency) indicated that ‘the message was not effective.’ Respondents felt it was hard to identify the reasons for *Salamati*’s failure, but it appeared to have a low impact on the public even though it was repeated several times a year. The evidence suggests that although the duration and regularity of RSCs is important in determining their success, there are many other things which affect a campaign’s impact.

### Evaluation of RSCs

One part of the interviews was dedicated to determining criteria for judging RSCs’ effectiveness, and reasons for why they are ineffective in reducing the number of RTAs in Saudi Arabia. The respondents made a variety of suggestions and suggested a range of factors that they associated with RSCs’ low impacts, based on their observations and personal experiences. For instance, Saad (academic, Taif) noted that ‘the style of messages is repeated’ and ‘the style needs to be renewed and to be updated’. Akil (NTSC representative) said RSCs did not consider past campaigns, and there was a huge waste of human effort and money due to starting projects anew instead of pursuing established best practices: ‘we start every year as if it is the first time, and do not know whether the booklets were distributed or not. Schools have a
In the light of this feedback, one has to think of more effective ways of assessing campaign success, and base their campaigns on previous successful campaigns’ lessons.

In line with the above evaluations, Altaf (NTSC representative) characterised Saudi campaigns as ‘non-professional’, and was supported by Akil (NTSC representative) who felt Saudi campaigns failed because they were developed by non-specialists – judicial policemen and traffic policemen. Hadad (traffic department, Riyadh) said, ‘I think that the informational campaigns are very limited. They need to be occasionally and intensively carried out in all mass media as drivers only commit with driving regulations during the campaign.’ Latif (traffic department, Taif) claimed, ‘they were not broadcast often enough and they were supposed to reach more young men and be viewed on channels attracting young men such as sports channels or during football matches.’ Abbas (NTSC representative) characterised Saudi awareness campaigns in general as ‘completely useless’, while Saleh (traffic police administration) supported that opinion by stating that ‘compliance of drivers does not differ before and after the campaign’.

However, not all evaluations of Saudi RSCs were negative. Some respondents reported high-quality, well-designed and implemented RSCs that were a success. For instance, Mohsen (policymaker) said, ‘five campaigns were developed by the general traffic departments. Those campaigns were based on correct and scientific principles through targeting selected groups using a certain logo in order to be understood’. Abdulrahman (policymaker) went further and described the process of a campaign’s design to show where problems might have arisen, and what challenges public awareness programs usually face on the way to implementation:

We consider the statistical indicators and usually see the causes of accidents and take them into consideration. Themes are selected in agreement with the Ministries of the Interior of the countries of the Gulf Cooperation Council according to the committee on the level of Gulf Cooperation Council which identifies themes for two following years

As one can see from Abdulrahman’s account, there is a large amount of collaboration between Gulf countries in designing their awareness campaigns. The reason for such partnerships is that citizens of Gulf countries watch similar TV channels and listen to similar radio channels, so there is a need to achieve a more universal outreach to
users of common media channels across the Gulf region. Abdulrahman also added some details about work on campaigns: ‘most of members are academicians and specialists in measurement and evaluation as they pay attention to the objective. Some campaigns are evaluated ... after they end and others are evaluated before and after they start’. The present opinion indicates that in general, Saudi authorities have a highly considered and balanced approach to designing awareness campaigns, and the problems in their implementation may be due to practical, not theoretical factors, as well as outdated approaches to the communication of messages, and a lack of creativity in those approaches.

Whether they evaluated campaigns positively and negatively, all respondents agreed about the importance of campaign evaluation. For instance, Abdulrahman reported previously having a campaign assessment mechanism, ‘there was an accurate mechanism by which the campaign was evaluated, before and after the campaign. This revealed what attracted the audience most, whether the timing of the campaign was appropriate, and whether the campaign had an effect on the audience or not’. Yousef (policymaker) supported the use of such an approach to campaign evaluation and added that the most common measure of a campaign’s outcome was ‘a clear change in the behavior of the targeted group even if it is a limited change by 10%’. Nevertheless, regarding the outcomes of campaigns in relation to specific target audiences, Asif (traffic safety, Jeddah) was less optimistic and indicated that the road safety message only reaches a small percentage of the target population. Asif said the impact of the campaign is felt only during the campaign and shortly after its completion, and soon vanishes.

7.3.3. Theme Three: Channels, Messages, and Programs for Road Safety in the KSA: Evaluation of Significance

This section explores the participants’ opinions about the effectiveness of the channels, messages and programs used to communicate road safety messages in Saudi Arabia. Communication of road safety messages was identified as quite challenging in the KSA by the interview respondents. In their opinion, there was a pronounced communication gap between the Saudi public and those responsible for improving road safety. As Majed (creative agency representative) put it, ‘There is a gap between the citizen and the security men, and you can find great problems on YouTube and news… there was a presentation shown to the public security under
the leadership of lieutenant general ElKahtany, and they liked the idea’. Another barrier to reaching Saudi drivers was pointed out by Majed: ‘no one reads. I prefer the drawn things and the new devised ones’. Due to this problem, Saudi authorities have decided to use various mass media channels. At present, such media channels as cell phones, billboards on the streets, radio, TV, press, messages addressed to school students and advertisements are used to attract the public’s attention to the issues of road safety (Abbas (NTSC), Saeed (traffic police administration, Taif)). Though RSCs have only recently begun using these methods, their overall positive effect has already been noted by specialists in media campaigns. According to Saad (academic, Taif), ‘without media efforts, whether through TV, satellite channels, social media and electronic newspapers, traffic awareness campaigns cannot succeed’. That opinion was supported by Hazim who said that campaigns ‘should be published through modern mass media such as the internet, electronic papers and YouTube’ to be more effective. Similarly, Hudad said that ‘campaigns should be more broadly viewed via mass media.’ This idea was further supported by Ghazi (traffic department, Riyadh) who claimed, ‘I think that social networking through Twitter and Facebook should be given more focus so that young men can benefit.’

A trend towards more extensive and varied use of media channels for communicating road safety messages resulted from research in the field of communication, and identification of the most workable models of behaviour change. According to Hisham (academic, Riyadh), this work is based on the ‘theory of result correlation that focuses on the concept of reward and punishment; theory of cognitive dissonance through creating messages that stimulates the feeling of alienation at the audience; theory of change through a number of models’. The involvement of traffic safety authorities in social education was seen by many respondents as an effective form of achieving behaviour changes and increasing awareness. However, Ahmad disagreed and said that no well-researched behaviour change theories are applied in Saudi Arabian road safety campaigns, and that their design is primarily the result of stakeholders’ personal experiences.

In response to sound evidence from research about the effectiveness of media communications, Saudi road safety authorities have established strong collaborative links with Saudi media channels. According to Naif (policymaker), ‘we worked with private channels in KSA that are concerned with Saudi society such as MBC, Arabia,
LBC, and the Future. We also focused on things in which young men are interested such as sports channels’. Abdulrahman (policymaker) extended the list by reporting, ‘we use the Saudi channels such as news, cultural, informational and sports channels, more than we use the other channels in order to powerfully deliver the message’. Therefore, research evidence suggests the use of a wide variety of channels most frequently watched by target groups ensures a much more powerful impact of road safety messages.

The quotes presented above suggest that Saudi authorities are moving toward embracing the power and potential of innovative mass media and channels of communication that were not used in conservative approaches to road safety. As Saad (academic, Taif) said, ‘means of raising awareness may be TV channels, newspapers, electronic papers, social networking sites, and internet forums’. Hisham (academic, Riyadh) said that television was watched by 51% of university students, 76% of preparatory and high school students and 43% of civil servants. Therefore, it appears that Saudi road safety authorities need to take more effort to increase their presence on TV, which could be done in a number of ways. Mohsen (traffic safety policymaker) stated that mass media are chosen according to the campaign’s content, and that if sufficient financial resources are allocated to the campaign, more than one media channel is usually chosen. Abdulrahman (policymaker) added that the choice of a media channel also relies on the campaign’s goals: ‘when the goal of the campaign is to address many segments of society, the programs are broadened so that they include more than one of the mass media’.

7.3.3.1. Use of New Media in RSCs

The reported use of new media, including forums, Web 2.0 and social networking sites, is also increasing, and there is a growing recognition of their profound effect on the young Saudi drivers who constitute the highest-risk category of road users. This cohort is very hard to reach through traditional media channels. Hence, reaching them through social media has become easier and more effective, with the comprehensive, intense use of internet and communication technologies in all aspects of life. Saad (academic, Taif) stated, ‘the new media is effective and I call for employing it and raising the awareness of young men through the internet and social media since every young man is now aware of such channels’. Hisham (academic,
Riyadh) supported that opinion by stating, ‘the worldwide web and social media are the most widespread mass media’. These opinions are in line with the account of Ahmad who characterised young people as not reading conventional newspapers, and using their tablet PCs on a daily basis. Ahmad pointed out that using social media ensures easier access of public awareness campaigns to young people.

Majed (creative agency) also highlighted social media and their effect on young Saudi drivers, ‘I think it was our agency that suggested using social media as they were new and young men felt their effect’. Ibraheem (creative agency) talked about social media as having more credibility nowadays than the traditional press does, which ensures its greater impact on raising awareness. Moreover, Yousef (policymaker) emphasised that the use of social media makes public awareness campaigns less costly, and that replacing traditional campaigns with electronic ones may ensure a greater social impact with less expenditure. Naif (policymaker) reported that his employing organisation had recently taken an active interest in using Twitter and YouTube, which is also a considerable step forward in raising awareness by means of the most understandable, suitable, and attractive media for young Saudis.

In accordance with theory of mediation in communication and media studies, Saudi experts have come to recognise the need for a careful selection of channels and for the design of well thought-out messages if RSCs are to be effective. The choice of media channels is however not the only step to be accomplished during the design of an effective media campaign. Among the issues repeatedly raised by respondents, the choice of target groups and the framing of the message content were identified as the two most important aspects of campaign design. Majed (creative agency) stated that their campaigns unfortunately did not target any specific audience, while Mohsen (policymaker) and Naif (policymaker) said that for each planned campaign, a specific population segment is selected. Naif clarified, ‘when messages are directed at Saudis, we focus on young people between 18 and 21 years. Family is also stressed to participate in raising awareness of people and its sons’. Faisal stressed the need to target young men because a heavy social burden is created on the KSA as a result of young fathers’ deaths. Ahmed stated that most accidents and deaths occur in the 18–35 age group, so this segment is the most important target group of awareness campaigns.
Message content was also regarded as a vital aspect of campaign design, determining its ultimate effectiveness. The importance of proper message content selection should not be underestimated, as Saad (academic, Taif) emphasised, ‘a group of experts should check all aspects of intimidating, enticing and motivating’ and focused on the need to cultivate safety principles from an early age, ‘We should also find a way of motivating pupils of primary schools to say you will gain the approval of God, your parents and your friends, and use raising awareness as a way of influencing behavior’. Several respondents spoke about the need to include visual and audio messages into RSCs, and to avoid images of blood, fear and threats, since they do not produce the desired impacts on drivers. Mohsen (policymaker) recommended emphasising a ‘religious, social or psychological aspect’, and Yousef (policymaker) said strong media messages were ‘effective and non-hermeneutical’.

The framing (previously explained in the theoretical framework) and appeal of the message (explored in more detail in section 2.2.3) were also indicated as key variables determining the success of any road safety campaign. Taiseer (academic, Riyadh) voiced his support for rational and emotional appeals but said that ‘this is not enough; they should be fused, diverse and appealing to all segments of society’. Ahmad (academic, Riyadh) spoke about the mock appeal that could be effectively targeted at young people. In terms of framing, Ahmad stated that it is important because ‘positive or negative framing should rely on the targeted audience’s socio-cultural characteristics’, and Taiseer characterised failed road safety awareness campaigns as ‘passively framed’. Overall, the recommended content of effective road safety-related messages was summarised by Naif (policymaker) as follows: ‘initially, you should have an expressive and brief message which has meaning, as people now have awareness and any bloody thing may turn into its opposite, and we have children at home; thus, the message did not deliver its objective’.

7.3.3.2. Role of Religion in Framing Saudi RSCs

Taking into account the nature of Saudi culture and religion, interviewees also spoke profoundly about involving religious leaders and celebrities in the promotion of road safety messages. The Islamic religion generally condemns risky behaviours on the road, as Saad (academic, Taif) indicated: ‘violation of drifting causes harm to others and Prophet Mohamed (PBUH) said that there should be neither harm nor malice,
and so the way of thought becomes positive’. However, Altaf (NTSC representative) was more sceptical about the involvement of religious leaders, stating that their messages may reach only the older generation that is more conservative, while young men are less susceptible to religious leaders’ opinions and often even misunderstand religious practices. Akil (NTSC representative) gave an example:

‘We used to respect and adhere to religion as a part of our behavior. Recently, adherence to religion and ethics of work has been different. For example, during Jummah prayer, people block streets to do their prayers, which is a misunderstanding of religion. I, myself, see that not doing group prayer is better than doing it if it harms others’.

In this regard, Abbas (NTSC representative) did not think that religious leaders could contribute to road safety improvement, while Asif (traffic safety department, Jeddah) and Arfan (traffic safety, Riyadh) both agreed that religious leaders are often active in the promotion of road safety messages, and they are most helpful during Friday speeches. Arfan even reported often seeing religious leaders talking about the traffic safety problem on TV, which means that the involvement of religious personages in the fight against risky behaviour on the roads is still seen as a powerful tool.

Communication about road safety is specifically targeted at young Saudi drivers, since they are identified as the highest-risk driving category. Saad (academic, Taif) identified the youth driving subculture as one of the primary reasons for frequent RTAs involving young drivers, ‘experts of psychology or sociology are asked to help us decide the messages affecting this age group, the young men that most often commit violations, drifting for example. All messages of awareness concerning this violation are directed at young men.’ Therefore, it is logical to assume that there are actions which aim at raising the awareness of young Saudi drivers who are recognised as target group of the highest importance. There is a need for making more campaigns specifically focused on young drivers’ awareness.

Media diversification is a useful method for communicating any kind of message to the public. As noted by Majed (creative agency), it was a tremendous success because many experts, specialists, and scholars were involved in its design and implementation, attracting many volunteers among young Saudis. Thus, as soon as the need to target young Saudi drivers was identified, campaign’s creators decided to expand it through diversification of media channels. Majed also spoke about a
workshop under the sponsorship of Prince Nayef at the King Saud University and voluntary work sponsored by the Red Crescent, and added, ‘we also were in the field on the National Day and during the beginning of the new school year to make students understand the policemen’s role.’

Besides expecting a strong impact from the involvement of religious leaders in Saudi RSCs and stressing the need for the diversification of channels used, respondents pointed out the impact of including celebrities who are popular among Saudi youth. This method of outreach was regarded as a very effective technique for involving young Saudis and for having them accept the message about road safety. According to Naif (policymaker), ‘celebrities such as Shahid Afridi are regarded as an ideal for young men’. Ahmed (traffic police administration, Riyadh) agreed: ‘in many awareness-raising campaigns, we see that an artist or a football player participates this is very eye-catching’. Majed provided a more detailed account of how the involvement of a celebrity in public awareness campaigns usually works out, by showing that It Is Time to Know was a campaign directed at making relationships between citizens and road safety officers closer and more positive. Majed talked about getting a Saudi celebrity to the RSC, dressing him as a road traffic officer, and disseminating the video across a variety of channels including YouTube. The impact was astonishing: ‘the benefit was so great, and in the first two weeks 100,000 people watched the video. After a month, it increased 200,000’. Mohsen also gave a similar account of the campaign’s success due to the involvement of sports celebrities and famous people: ‘some religious personages such as Sheikh Ghamdi, Al Oudah and EL Erini were chosen to give religious lectures concerning this aspect’.

The evidence suggests that Saudis, like all other people around the world, cherish their idols and like to think that their lives are somewhat similar to those of celebrities. Hence, many celebrities become role models for promoting appropriate behaviour, such as healthy lifestyles and safe driving behaviour. This type of persuasion is particularly useful for young Saudis who have strong preferences for celebrities like actors, singers, and sportspeople, so successfully involving these celebrities in RSCs greatly increases their impact.
6.3.4. Theme Four: Raising Awareness as the Key Purpose of Saudi RSCs

Study participants repeatedly named raising awareness as the key purpose and objective of all RSCs designed and implemented in Saudi Arabia. Raising awareness was mentioned by all respondents without exception as a highly important objective of all Saudi RSCs. Saad (academic, Taif) noted early in his interview that awareness was the key to improving compliance with road safety regulations, ‘there should be awareness raising using techniques to improve traffic behaviour in general; thus, there should be awareness of legislation and regulations in order to apply this concept’. Ibraheem (creative agency) also stressed the importance of awareness among various users of Saudi roads: ‘we need a long-term approach, which the government lacks; we need an approach that has five-year and ten-year goals’. Thus, Ibraheem made a significant observation regarding a lack of long-term commitment among Saudi authorities to the establishment of a strong awareness about the issues of primary concern in road safety. Due to temporary appointments of senior officials, they were not eager to initiate long-term changes to road safety structures, which resulted in fragmented and scattered efforts directed at raising awareness.

Much more evidence was provided in the interviews regarding the overall unwillingness of authorities to be involved in lengthy programs for increasing drivers’ awareness. Ibraheem indicated there was a grave problem because government authorities were concerned with their prestige and using slogans rather than effectively delivering a message regarding road safety. Moreover, governmental entities were not as profitable as commercial authorities, so they have little power and few resources for circulating slogans among the media channels. Akil (NTSC representative) noted that the elite of Saudi Arabia are a problem, since they often violate regulations and go unpunished because they have money, and this creates a poor cultural environment for raising road safety concerns. Funding for programs is also quite scarce, which results in a lack of opportunities. Asif (traffic safety personnel, Jeddah) explained: ‘when the financial support is sufficient, we do awareness raising programs’, which implies that when finances are scarce, awareness raising campaigns are held more rarely, and do not last long enough to build a solid culture of safe driving behaviour.
Akil (NTSC representative) pointed out the importance of targeting RSCs towards increasing awareness among the Saudi population by drawing attention to the integral link between awareness and social values in Saudi society, ‘We lack the value of respecting the other, the valuing of education, and the valuing of time. Our society does not respect time too much. The lack of social values results in the increased number of accidents’. Therefore, when social values and the culture are undermined, the road safety culture is impacted as well, depriving Saudi drivers of an understanding of the need and importance of adhering to road safety regulations to avoid risks to themselves and to other road users. Ali (traffic police administration, Taif) by pointing to a ‘limited understanding and cognition of the dangers, their ignorance of traffic regulations’. Thus, awareness should be increased in a joint effort of the Traffic Department and education and health departments; such a partnership may ensure that comprehensive information about the danger of recklessness during road use can reach all segments of the Saudi population, which may guarantee a strong, far-reaching impact. One of the ways of embedding the road safety culture into the overall Saudi culture is to start from childhood, in the opinion of Mohammad, who called for the introduction of road safety education in primary schools.

Not all respondents believed that raising awareness would increase road safety and improve behaviour on the roads. Ibraheem (creative agency), for instance, still preferred to rely on fines rather than awareness by stating, ‘unfortunately, there is no evidence that raising awareness can benefit the child, and I expect a campaign of fining will succeed in ten years’. Naif (policymaker) also indicated that raising awareness is an effective deterrence method only after some drastic accidents take place, or only during the period when the campaign takes place: ‘The problem is that it is a temporary response ... in ten minutes we heard about another accident and it was that person who had the accident’. Hence, as one can see from interview responses, the majority of respondents believed in the power of raising awareness to change Saudi drivers’ behaviours, and in the power of RSCs to raise awareness.

However, the problem of relying only on efforts to raise awareness is that awareness is usually increased only during RSCs, and decreases after they are over. Taiseer (academic, Riyadh) also observed that the effect was temporary by saying, ‘the message is good, but its impact is short and only few people felt it’, while Ahmad
(academic, Riyadh) indicated the narrow focus of Saudi authorities on the emotional appeals while there can be many other appeals leading to much more successful outcomes. Consequently, a larger spectrum of approaches and appeals needs to be enacted to assist Saudi authorities and road safety personnel to reach Saudi drivers and induce them to change their attitudes to road safety regulations and behaviours.

Another challenge to making awareness-raising RSCs in Saudi Arabia effective related to financing these efforts. As noted by Majed (creative agency),

‘The budget is the most important thing in the campaign. The budget determined by the public security authorities is not sufficient as they have to pay a specific sum of money and have much work. As much as possible, we get down in markets and, frankly, we try to do for free. We ask fresh privates and checkpoints to distribute with us. There are other better ways, but they are expensive and we try to achieve using the available possibilities’.

Therefore, as one can see, there is a lack of resources for making well thought-out and well-designed public awareness campaigns, and this affects the overall quality of the government’s outreach to Saudi society, especially the young generations with high degrees of risk-taking behaviour and recklessness on the roads.

The absence of qualified professionals who would be able to take the lead and design proper, effective RSCs is also a pronounced barrier to raising awareness in Saudi Arabia. Akil (NTSC representative) explained the failure to raise awareness by citing a lack of professionalism; there is no authority in the KSA that could effectively control and adapt the traffic situation in the country. The Ministry of Transportation, despite being officially responsible for traffic safety, pays little attention to the issue. Akil also emphasised that the Traffic Police Department is the authority that should apply regulations, but it has virtually no control in Riyadh, and there is no other big city anywhere in the world without public transportation control. Finally, Saleh (traffic police administration, Taif) noted, ‘the campaigns were not well chosen. This is because the campaigns last for only a week. It is suggested that they should last for the whole year’. The view that awareness campaigns were too short was also voiced by several other respondents (Majed, Ibraheem, and Abbas). Hence, all these hurdles to effective management of road safety concerns in Saudi Arabia require the urgent attention of policy-makers, and have to be eliminated to enable proper functioning of the road safety structures in the KSA.
7.3.5. Recommendations for Road Safety Improvements through Increasing Awareness and Improvement of Regulations

Respondents’ interviews included the assessment of road safety standards in the KSA, and evaluation of reasons why poor compliance with road safety regulations is observed nowadays. The respondents identified various causes for the high incidence of RTAs; the majority of respondents paid particular attention to the high frequency of the involvement of young Saudi drivers in RTAs, pointing out that young drivers represent the highest-risk driving category. Based on these observations, the respondents proposed some ways of improving the road safety situation through increasing awareness, improving regulations, and improving the technical conditions and control of Saudi roads.

7.3.4.1. Reasons for Poor Road Safety

One of the topics emerging from the interview analysis was a low assessment of road safety standards by a large number of respondents: the majority spoke quite pessimistically about the road safety standards and commitment to their maintenance, disregarding the intense, continuous effort by the Saudi government and road traffic authorities. Saad (academic, Taif) saw the reason for these low standards as being the poor awareness about road safety among drivers: ‘traffic accident rates are still increasing which requires doubling efforts exerted to limit rates, statistics and the harm caused by accidents in terms of casualties, souls and public property.’ In line with that pessimistic evaluation, Asif and Mihran also noted the presence of many road accidents, a rising number of fatalities, and increasing injury rates. Statistics cited by Hisham (academic, Riyadh) also sounded very unpromising in this regard: ‘traffic accidents increased by 94% during the same period ... excessive speed is the main cause of traffic accidents; it reached 24.64% of all RTA causes in 2012.’

Understanding of the reasons for high RTA levels and for the poor road safety culture was also profound among respondents, but opinions differed in some respects. For instance, Saleh (traffic police administration, Taif) blamed the weak traffic control systems and methods used in the KSA that did not use innovative technologies. Ali (traffic police administration, Taif) was much more critical about the state of the roads and unsafe paving, the absence of roadside barriers and inadequate road safety measures in the mountainous regions of Saudi Arabia. Mihran
(traffic police administration, Jeddah) agreed about the standard of the roads, and called for more attention to be paid to roads in dangerous regions of Saudi Arabia and for more attention to modernising security equipment there. Analysis of these interview excerpts shows that all these respondents blamed external causes for the problem, including hardware, lack of awareness, and bad roads, but in fact, human decision-making also needs to be included in the causes of RTAs. In the researcher’s opinion, the problem includes the human factor as well, and it should not be neglected.

Traffic patrol officers also gave their ideas about the causes of poor compliance with road safety rules and high RTA rates. Ghazi (traffic department, Riyadh) claimed that ‘the causes are sudden turning, speeding, overrunning traffic lights, insufficient warning signs at digging workplaces in particular, busy drivers by something from driving.’ Jasim (traffic department, Taif) spoke about the causes of RTAs as ‘speeding, lack of vehicle maintenance, busy drivers such as using cell phone or similar things,’ while Falah (traffic department, Riyadh) summarised them as ‘non-compliance with traffic regulations.’ Bahir (traffic department, Riyadh) noted that in some cases, ‘the risky driving behaviour of car drivers and the limited means of ensuring traffic security on some roads’ may be the causes of RTAs. Hence, as one can see, the major problems of road safety in the KSA according to traffic patrol officers were the inappropriate behaviours of drivers, the poor condition of roads, and the technical flaws of cars.

Ahmad (academic, Riyadh) voiced quite a different understanding of Saudi road safety. In his opinion, the road safety standards were fairly good in the country, but they were poorly implemented because of the bureaucracy:  ‘the problem is in implementing those standards as they are usually kept on paper and not applied in the field by the practitioners or law officers for different reasons.’ Among other reasons for high rates of RTAs, Ali (traffic police administration, Taif) suggested the high rates of speeding were dangerous and often caused accidents, while Naif (policymaker) blamed foreigners coming to the KSA and not knowing Saudi roads well. Insufficient control was nevertheless again recognised as a reason for poor road safety, and Mohammad (traffic police administration, Riyadh) observed there were lower rates of RTAs in regions where there were automatic systems of video control, such as Saher.
As the evidence presented in this section suggests, the quality of roads is quite poor in Saudi Arabia. The study’s respondents identified a range of inconsistencies in the practical implementation of road safety, and they mostly blamed the failure of coordination efforts among authorities responsible for road safety in the KSA. Among the causes of RTAs, many problems were caused by busy drivers using cell phones (Yousef), defects in cars such as worn-out tyres and irregular vehicle checks (Naif, Asif, Faisal). Speeding was mentioned by many respondents – Asif, Khaled, Ahmed, Mohammad, Musaed, and Salman. However, one of the most frequently cited reasons for RTAs in Saudi Arabia was the presence of a young subculture whose members were ignorant of road safety rules and engaged in reckless driving. This will be discussed in detail in the next subsection.

6.3.4.2. Role of Young Drivers as a High-Risk Group

Respondents made seriously troubling observations regarding the number of accidents involving young Saudi drivers, which suggests that they represent the key high-risk driver category in the KSA. As observed by Yousef (policymaker), it is a cultural problem involving a generation gap, with conservative Saudi drivers behaving diligently on the roads, and young Saudi drivers ignoring the rules because of their disrespect for regulations and norms. Yousef said, ‘Way of thinking differ from one generation to another due to the changes that take place in societies. We are in the middle, and there is a gap between this middle and the new generation, the young men. Sometimes they like ideas we disparage.’ Indeed, many other respondents supported the view that Saudi youth have a fundamentally different attitude to rules, regulations, laws and authority, and for this reason, they often violate the established rules. Karam (traffic department, Taif) saw the problem with young drivers as ‘exceeding speeding and the indifference of the young [to security]’.

In connection with low compliance with road safety regulations by young Saudi drivers, Falah (traffic department, Riyadh) recommended that ‘campaigns to raise awareness among young men need to be more intensified.’

Akil (NTSC representative) explained the high-risk behaviours of young drivers as being due to a lack of education and respect: ‘we lack the value of respecting the other, the educational values, and the value of time. Our society does not respect time too much. The lack of social values results in more accidents.’ Consequently,
the contemporary Saudi culture, especially that of young Saudis, has reduced awareness of and compliance with stringent road safety rules and standards. Akil said that young Saudi drivers even considered violating rules and not getting caught as things to be proud of; Saudi youths like to provoke police officers and act aberrantly to irritate and harass workers of the traffic police department. Such behaviour is falsely considered a symbol of masculinity, which causes serious cultural erosion and requires attention not only from law enforcement authorities, but also from experts who can influence the cultural values of the present-day Saudi population.

The importance of reckless driving as a sign of masculinity among young Saudi drivers was also noticed by Altaf (NTSC representative) who claimed, ‘young people are usually careless or need to prove their masculinity by doing something against the law,’ agreeing with Akil who noted the high incidence of provocative behaviour on the part of the present-day young driving culture. Asif (traffic safety officer, Jeddah) also said that young drivers took many risks and behaved in a violent manner on the roads: ‘it is a violent group and needs intensive traffic raising awareness. We focus on the young men and we make sure the information given to them is not trivial and boring.’ Thus, young Saudi drivers take risks and are provocative on the roads, which creates additional risks for passengers and other road users.

Because of young people’s major contribution to the high rates of RTAs in Saudi Arabia, respondents repeatedly noted the need to focus awareness campaigns on the young population group. However, they also pointed out that reaching this category of drivers is very challenging, mainly because of the short-term impact that RSCs usually have on them. Mohammad (traffic police administration, Riyadh), pointed out that, ‘the impact on people between 18–20 years stopped by the end of the campaign,’ suggesting that young Saudi drivers are mostly negligent towards both road rules and RSCs. The researcher concluded from the analysis of the interviews that the reasons for the high RTA incidence are indeed varied. They include the poor condition and low safety standards of the roads, and reckless human behaviour. Hence, it seems logical to propose there is a need to develop new methods for getting in touch with high-risk driving groups such as young Saudis, and to design more effective campaigns with a personal outreach so that authorities’ work on improvement of the condition of the roads is effectively coupled with work on
behaviour change on an individual basis. Other ways of road safety promotion, according to the interviewed respondents, are presented in the next section.

6.4. Recommendations for Road Safety Promotion

The review of the effectiveness Saudi RSCs has examined the amount of attention given to proper message design and the implementation of scientifically based approaches to initiating behaviour change. The researcher has made some inferences and formulated recommendations on improving the situation with road safety in Saudi Arabia. These recommendations refer mostly to the fields that interviewees indicated as gaps in research and practice, such as technical safety (of roads and cars), fragmented and disorganized work on road safety improvement, and a lack of attention to theory underlying behaviour changes and communication impacts. All these recommendations are presented in this section, classified according to the area of impact and the stakeholders who should assume responsibility for their accomplishment.

The first recommendation refers to eliminating barriers to positive behavioural changes and improvements of RTA rates that come from a variety of sources. The majority of respondents indicated that the technical condition of roads is inadequate, and many others spoke about the unsatisfactory condition of cars. The researcher’s recommendation here is to develop a nationwide system of control over the technical condition of cars, and not to allow drivers with unsafe cars on the Kingdom’s roads. The importance of this issue may be further enforced by the nodal cluster of ‘regulations’, ‘safety’, ‘traffic’, and ‘problem’ themes revealed in Leximancer analysis, showing that road traffic safety is indeed a problem, while deeper qualitative analysis revealed that the problem is of a technical nature. However, to be effective, this policy has to be coupled with a more responsible and holistic policy of roads’ improvement. If roads are technically safe and drivers use only fully working and safe vehicles, the number of RTAs due to these objective problems may be significantly reduced, which will cause an overall improvement of the road safety situation in the KSA.

Alongside the problem of the poor condition of roads and cars, however, the researcher noted that only a few interviewees spoke about the human factor, which is nonetheless a very important, and frequently the key contributor to car crashes. Not
only young drivers, but Saudis in general, possess a poor culture of behaviour on the road, and they are often involved in inappropriate behaviours such as speeding, improper turning and changing lanes, which also increase the risks of RTAs and sometimes causes them. Leximancer analysis also suggested this, which may be seen from the proximity and overlapping of nodal clusters such as ‘message’, ‘young’, ‘order’, and ‘awareness’. Therefore, the researcher recommends that more attention be given to individual behaviours on the roads, which can be altered by means of stricter fines, more rigorous controls on the roads, and a very precise outreach of RSCs that may change specific dangerous behaviours.

Another recommendation that the researcher formulated in the course of analysing results of interviews is to develop a more integrated and holistic framework for inter-agency collaboration in the design and implementation of RSCs. From the interviewees’ responses, it is clear that much effort and money is allocated to RSCs, and Saudi authorities are genuinely interested in improving safety on Saudi roads. Nevertheless, they fail to achieve a significant impact or tighter regulations. The reason, in the researcher’s opinion, is the absence of a sound scientific basis for the development of RSCs, and a lack of coordination between the agencies responsible for those activities. All institutions which participate in RSC design or oversee road safety, such as the Ministry of Education, the Ministry of Transportation, and the NTSC, have to work together by assigning inter-agency teams of specialists in various sectors to develop RSCs, oversee their implementation, evaluate their impact, and make further decisions regarding the improvement of their outcomes. Leximancer analysis pointed out that respondents’ recognition of the issue, which may be seen in the nodal cluster of the ‘awareness’ theme which aligned the concepts of ‘media’, ‘public security’, and ‘department’. This is a common Western-type approach to project and process management that should work well for the KSA, since it presupposes a continuous, uninterrupted process of refinement on the way towards accomplishing objectives. Such an approach may become a highly productive solution for the problem uncovered in this analysis – fragmented, short, and unconnected RSCs that achieve a short-term effect but fail to achieve behavioural change in the long run.

Next, the researcher pointed out the poor knowledge among Saudis of road safety rules and regulations, and a low level of respect towards them. These trends were
noticed most of all among young Saudi drivers, but they are also manifested in the reckless driving of other age categories as well. Therefore, the researcher recommends imposing fines and stricter monitoring of the roads using Saher to increase drivers’ compliance with the rules, at least for economic reasons at the beginning. Such a component of a wider behavioural change may be a valuable initial impetus for compliance with road safety rules, since drivers may feel reluctant to pay for their reckless behaviour if the fines are increased by significant amounts. Hence, coupling increased fines with stricter monitoring of roads using Saher may help achieve formal compliance with the rules, and could be combined with a social, cultural and emotional appeal in the RSCs. This may contribute to the creation of holistic and effective behaviour change.

Finally, the selection of channels for RSC message delivery should be done very carefully, taking into account the growing popularity of digital media, social networking sites, YouTube, Facebook, and other new media that Saudis have embraced quite quickly, despite the fact that the KSA is quite a conservative Islamic country. Young drivers, who are the highest-risk category of drivers, as a rule are heavy users of the internet, so approaching them through effective RSC appeals in digital media may become an important step forward in reaching out to the Saudi public with road safety messages. Saudi authorities should consider new media very seriously, and should make them one of the key channels for public outreach in today’s highly technological society, which may guarantee a much higher impact of the RSC messages. However, the researcher also recommends not abandoning the usual channels of RSCs such as billboards, newspapers, TV and radio, since achieving maximum effect of RSCs is possible only if the message is delivered comprehensively, through all channels, to all categories of the population, and not only to drivers but to their spouses, children, friends and relatives, so that they also convince drivers to behave more responsibly on the roads, knowing the risks associated with reckless driving behaviours.
Chapter 8: Discussion

This chapter presents the discussion of the major findings obtained in the analysis of the previous four chapters. These chapters included case studies of Western road safety campaigns through the prism of theories selected within the literature review, a Saudi driver survey, and interviews with Saudi road traffic authorities. Here, the findings obtained in the process of this research are situated within the overall body of research in the field of road safety and driver behaviour change through RSC design, implementation and evaluation.

8.1. Review of Study Purpose, Research Question, and Objectives

As has already been stated in the introductory chapter of this thesis, the core purpose of this study was to compare road safety campaigns’ effectiveness in driver behaviour modification in the KSA with several best-practice countries (Australia, the UK and Sweden). The scope of that comparison included the policies and practices of road traffic authorities in the KSA and the three Western countries. The comparison focused primarily on identifying similarities and differences vital for proper design and implementation of RSCs, as well as on understanding the factors driving changes in the road safety culture of the four countries. Based on that comparison, and the findings from the survey and interviews with Saudi road safety stakeholders, the researcher could answer the central research question of this thesis:

*How can enhanced KSA road safety campaigns mitigate disastrous driver behaviour and prevent more injuries and deaths?*

As the preliminary overview of literature suggested, Saudi RSCs have lacked effectiveness because of poor design and implementation of campaigns, which have been developed without proper consideration of theory and best practice in the field, and without rigorous evidence-based risk assessment. Second, Saudi RSCs have shown little concern for proper segmentation and targeting of recipients, which also involved a lack of sensitivity and individualisation of RSC messages and appeals. The analysis of empirical research in the field revealed that effective RSCs should be designed in an evidence-based, culturally specific and sensitive manner, with precise targeting and segmentation of key audiences. Given all these specifics of RSC design
and Saudi RSCs’ evident pitfalls, the researcher formulated the following set of research objectives for this study:

1. To analyse driving behaviours of Saudi drivers in terms of risk-taking and disregard for road traffic rules. This is expected to provide evidence to inform the development of effective road safety campaigns.

2. To determine the perceived significance and effectiveness of Saudi road safety campaigns in improvement of driving behaviours, which in turn will show the advantages and disadvantages of current measures.

3. To recommend best practice protocols in developed countries from developed countries for application in road safety campaigns in the KSA and other developing countries. This will provide a fresh insight into the issue and help make KSA road safety campaigns more effective.

8.2. Discussion of Key Findings

This thesis touched upon numerous aspects of RSCs, including the analysis of numerous RSC examples worldwide, determination of their key components, the nature of their impact on public awareness and driving behaviours, and a specific focus on the RSC awareness and knowledge in Saudi Arabia. Separate stages of data analysis were related to: assessment of drivers based on their self-reported behaviours and attitudes in a nationwide survey, an analysis of road safety authorities’ opinions about RSCs’ ineffectiveness and ways of improving them and addressing the most evident road safety challenges. Each of these aspects is discussed in relation to the objectives of the thesis, and an answer to the central research question is given through a synthesis of findings for all three objectives.

8.2.1. Findings on Saudi Driving Behaviours

Since the primary focus of the present study was the search for ways to increase the effectiveness of Saudi RSCs, the researcher was concerned with finding out why Saudi drivers behave in a risky and reckless manner. The importance of determining trends and prevalent risky driving attitudes and behaviours may hardly be exaggerated, since the nation’s driving culture has a profound impact on road safety practices and awareness. In Saudi Arabia, a comprehensive image of driving culture cannot be compiled without proper regard for Saudi culture which is heavily influenced by history, religion and the socio-cultural landscape.
The analysis of Saudi driving behaviours was conducted using data from numerous data sources, including prior research, a self-report survey of Saudi drivers, and interviews with road safety authorities and RSC creators. The most frequently mentioned risky behaviours included speeding, using a mobile phone when driving, not wearing a seat belt, running red lights, sudden stopping or turning, overtaking of slow drivers, and involvement in ‘burn outs’ or unofficial races with other drivers. As the data has also shown, the Saudi driving culture is characterised by carelessness about road traffic laws and regulations, and a widespread disrespect for road traffic authorities (Fossett, 2013; Orlove, 2012). For instance, Fossett (2013) spoke about the ‘gung-ho’ culture popular among Saudis and GCC drivers more generally, for which this region is notorious – a high-risk, impatient, aggressive manner of driving and racing with other drivers. As a result of such reckless and inconsiderate behaviour on Saudi roads, coupled with high powered sports cars, seven persons die on Saudi roads every day, imposing an enormous death toll and socio-economic burden on the Saudi households and government (Al-Shayea, 2015; Toumi, 2014).

The self-reports of drivers provided in the survey indicated many high-risk driving attitudes and behaviours in which drivers are regularly involved without even recognising the dangers they involve. The survey analysis included an overview of both attitudes and behaviours, and it showed the impact of drivers’ perceptions of road safety on their actual behaviours on the roads. Thus, the survey findings showed a high correlation between acceptance of a variety of road safety violations and involvement in road traffic rule violations. Saudi drivers who stated that they believed it was acceptable to use a mobile phone while driving, not wear a seat belt, and exceeding speed limits by more than 10 km/hour also reported frequently conducting those practices. Those for whom such behaviours were socially acceptable tended to do that so on a regular basis, which is in line with the theory of reasoned action (Fishbein & Ajzen, 1975; Russell & Cohn, 2012) which states that actions are products of behavioural beliefs and normative beliefs.

The careless attitude towards laws and regulations inherent in the Saudi driving culture was also identified in the interview analysis. It was frequently named by representatives of road traffic police and NTSC as the major reason for RTAs and the ineffectiveness of RSCs in Saudi Arabia. Interviewees repeatedly noted that Saudi drivers frequently take risks and have poor relationships with traffic police,
perceiving the latter as able only to punish for violations, and not associating them with assistance and education. Moreover, interview analysis revealed a previously overlooked problem – the absence of education, basic knowledge of traffic signs and regulations, and a lack of respect for taking precautions while driving. While intentional violations of set rules are perceived by many young high-risk drivers as signs of masculinity, unintentional violations are also a frequent cause of RTAs. Because of inexperience and ignorance, drivers commit serious driving errors and put themselves and their passengers at unreasonable risks. Thus, it is evident that Saudi drivers behave unsafely in two ways: intentionally, because of the culture of recklessness and bravado, and unintentionally, because of ignorance about basic road safety issues.

It is vital to point out that the analysis of Saudi driving behaviour is consistent with the findings of prior literature about young men being the highest-risk category of drivers. Constantinou et al. (2011), Al-Reesi et al. (2015), Weiss et al. (2015), and others have also found a link between age and risky driving, saying that young drivers are more risk-taking, so they are overrepresented in RTAs. Moreover, Trivedi and Rawal (2011) found out that young drivers are much more prone to exceeding speed limits, using a mobile phone while driving, and ignoring road safety rules. The survey findings on the profile of a typical Saudi dangerous driver supported those findings by showing that the highest-risk Saudi drivers are aged between 20 and 29.

The large numbers of young drivers among road safety violators and RTA victims may also be explained by the fact that young drivers are less capable of self-control, so they become easily distracted and exposed to stress, aggression and anger on the road. Proneness to aggression and anger were found to be strong predictors of RTAs by Dahlen et al. (2012), Jongen et al. (2014), Li et al. (2014), and Page et al. (2013), which suggests that young drivers’ emotionality may be an additional risk factor for their involvement in RTAs. Emotions and stress are vital components of risk assessment in the field of road safety (Al-Atawi & Saleh, 2014; Verster & Roth, 2012), so a tendency toward emotionality and a susceptibility to stress should be included in the analysis of young drivers’ behaviours and in the development of RSCs and initiatives for reducing the impact of RTAs on the Saudi population.

It is also vital to note that the young driver category is a high-risk one in terms of RTAs globally, so Saudi Arabia may adopt the best practice strategies of other
countries to effectively address the risks posed by young inexperienced drivers. As the analysis of Australian, UK and Swedish RSCs showed, all of them targeted reckless young drivers and focused on changing the psychological and cultural perceptions of risky driving as ‘cool’ or ‘masculine.’ Such findings suggest that young drivers constitute a group of concern in all countries regardless of the level of their development, and the adoption of a well-planned and systematic approach which is working well in other countries may offer a viable solution to the KSA problem of how to reach out to young drivers. As was initially noted by Altwaijri et al. (2012), Ministry of Interior (2012), and Wali and Mercado (2012), among others, many Western educational campaigns and courses may help KSA authorities achieve improvements in road user behaviours, but this is possible only if the human factor and the impact of culture are considered in the RSC design. Hence, the KSA may take advantage of effective practices that have worked in Australia, the UK, and Sweden by adapting them to the socio-cultural specifics of young Saudi drivers and the RSC message tailored specifically to KSA realities.

The analysis of Saudi driving behaviour also supported earlier research findings on speeding being the most problematic aspect of road traffic safety in the KSA. Obviously, it is a widespread problem of global significance, but taking into account the dominance of powerful sports cars possessed by young and inexperienced Saudi drivers yearning for speed, the problem acquires even more pronounced significance. Speeding was analysed based on the survey and interview findings, which showed that speeding is a complex rather than a one-dimensional driving behaviour, and it involves various factors such as impatience with slow drivers, acceptance of speeding as normal behaviour on the road, believing that tailgating is not a problem, and other related attitudes. Over 40% of respondents reported regular speeding, and an ever larger number of drivers characterised exceeding speed limits as normal. Such data is definitely alarming both for policy-makers and for the general Saudi public, especially given that individuals often under-report their own behaviours if they believe they will be met with disapproval (Amado et al., 2014; Cardamone et al., 2014). Due to attitudes such as these, speeding has for many people become an acceptable practice that causes no surprise or embarrassment, and dealing with it becomes more complicated because of the commonplace social acceptance and tolerance of speeding.
Interview analysis also revealed speeding as the greatest challenge to counter, and this can be done through a variety of initiatives. Interviewees pointed out that at present, the image of road traffic police is mostly negative among drivers because they associate them with fines and punishment. However, traffic police officers and the automatic speeding control system Saher are nowadays the most effective ways of combating speeding. Thus, appealing to young and risky Saudi drivers is definitely a productive way of countering speeding; however, the problem of addressing attitudes and perceptions toward speeding is still to be solved. It is more difficult because of its psychological nature (Bandura, 1977; Russell & Cohen, 2012). While behaviours are manifestations of attitudes and opinions, and while they can be punished through fines and the revocation of driving licenses, attitudes are a can makes people conduct violations despite punishments (Fishbein & Ajzen, 1975). If Saudi RSCs become capable of targeting attitudes as well as behaviours, a much more far-reaching and in-depth change of driving behaviours may be expected, including changes to attitudes towards speeding which is the most pressing problem in the field of Saudi road safety.

In addition to consideration of speeding, young drivers, and the close link between attitudes and risk-taking behaviour, analysis of Saudi driving behaviours also revealed an interesting anomaly – survey findings indicated that greater driving experience was associated with a higher incidence of risk-taking, and a greater acceptance of risks. These findings may at first seem strange, but Gwyther and Holland (2012), Papakosmas and Noble (2011), and Rhodes and Pivik (2011) support this finding by stating that young and elderly drivers have much better self-regulation and are more cautious about risk-taking because of their lower self-efficacy perceptions. Additional research findings include the studies of Knight et al. (2012), Cavendish et al. (2012), and Porter (2011), each stating that young drivers are the dominant group of RTA victims because of inexperience and driver errors rather than sensation-seeking and risk-taking, while more experienced drivers more frequently involved in risky driving actions because of an overestimation of their ability to predict risks.

Middle-aged drivers take more risks because their driving experience gives them a false sense of security, and an unfounded belief in their ability to get out of any risky situation safely. Such excessive and unjustified self-confidence often leads to RTAs
in which other vehicles are unable to cope with the high-risk situation created by reckless drivers. Risk-takers often stay safe but send other vehicles into the ditch because of dangerous manoeuvring, so the experienced driving group is rarely represented in statistics as a group requiring special attention. However, the fact that such risky actions may cause other vehicles’ RTAs should not go unnoticed in the design of appropriate RSCs, and appeals should be made to drivers’ responsibility not only for their own lives and safety, but also for the lives of other traffic participants.

Summing up what has been found in regard to Saudi driving behaviours, one should note that young but non-novice drivers (20–29 years old, with over 7 years of driving experience), with scarce knowledge of and little respect for, KSA road safety regulations and legislation are the largest high-risk category of Saudi drivers. They should be the primary target of RSCs in order to achieve reductions in RTA rates, since they follow the false cultural drives of ‘masculinity’ and ‘coolness’ through a disregard for laws, and they practise speeding and other forms of reckless driving. While traditional RSCs may target the common set of risky driving behaviours such as speeding, sudden stopping and turning, driving through red lights, risky overtaking of slow drivers, burnouts, mobile phone use while driving, and failure to wear seatbelts, they are yet unable to address deeper psychological issues, such as acceptance of, and tolerance towards, violation of road traffic rules. Thus, a novel approach is needed to challenge the acceptance of road safety neglect, and to improve attitudes in order to bring about a gradual improvement in driving behaviours.

As one can see, the present study expanded the method and scope utilized by Aldalbhi (2014) in an earlier study of Saudi RSCs. Nevertheless, one should also note considerable differences between this study and the one by Aldalbhi (2014); while the 2014 thesis adopted a qualitative approach to comparative analysis of Saudi and NSW approaches to campaign design, this thesis takes a broader look at the high-risk driver profile, comparison of drivers’ and policymakers’ perspectives, and a multi-aspect discussion of best-fit approaches to targeting the most serious problems on the roads with culturally and socially suitable RSC rhetorics.
More than that, the published research on social marketing and awareness campaigns is generally scarce, and the scarcity becomes even more pronounced when the researcher narrows down the study only to RSCs, which means that more studies like the one by Aldalbhi (2014) should be conducted. Such empirical research is lacking both in Arabic and in English languages, while reliance on related research published in Arabic is problematic because of weak research methods, study cohorts, and limited reliability and validity of findings. There is very little published research in English pertaining to Saudi RSCs, with Aldalbhi’s (2014) thesis being one of the scarce available studies. Hence, the researcher took the thesis of Aldalbhi as a guideline and took a different approach: while Aldalbhi’s (2014) study approached the Saudi RSCs from producers’ perspective, this study deals with them from the perspective of consumer reception. Besides pronounced differences in methodologies in this thesis and the one of Aldalbhi (2014), the latter researcher focused on the comparison of NSW/Australian RSCs with the Saudi campaigns, while the focus of this thesis was expanded to include several European countries as well. Similar Saudi RSCs considered in this thesis and the one by Aldalbhi (2014) is explained by the lack of Saudi RSCs overall, lack of published information on many Saudi campaigns, and the inability to discuss other RSCs because of their scarcity. This is the summary of differences clarifying how Aldalbhi’s (2014) work is similar to, and distinct from, this research endeavour.

8.2.2. Findings on Effectiveness of Saudi RSCs in Changing Driving Behaviours

The second objective of this study involved an evaluation of the present-day state of Saudi RSCs and their effectiveness. Close attention was paid to numerous elements of Saudi RSCs because of the troubling statistics which show no reduction in RTAs and even increases after the implementation of RSCs such as *Enough* and *Salamati*. As reported by Toumi (2014) and Al-Shayea (2015), the annual economic burden of the KSA government due to RTAs constitutes $3.4 billion, and 17 people are killed in RTAs every day across the KSA, which totals 49 deaths per 100,000 persons per year. Therefore, it is evident that these RSCs had some basic weaknesses and inconsistencies that have to be identified and corrected for the achievement of a better outreach to the most troubling driver categories in the KSA.
The analysis of RSCs in Saudi Arabia mostly dealt with Salamati and Enough, though interviewees identified some other RSCs held in the KSA within the framework of regional cooperation. The most notable campaigns included the Gulf Week of Traffic, Your Safety Is Your Target, Take Reasons, and Your Safety Is In Your Hands. They were appraised quite highly by research participants because they included several components, were disseminated through a variety of channels and in many places, and incorporated the idea of drivers taking responsibility for their family and friends on the roads. Week of Traffic was particularly successful as an example of inter-agency cooperation, which is a major barrier for effective popularisation of road safety initiatives in the KSA. Moreover, the Gulf Week of Traffic, as interviewees explained, improved communication between drivers and representatives of road traffic police, which was a very important success, given the atmosphere of hostility and disrespect surrounding the job of traffic police officers in the KSA. It Is Time to Know was strongly integrated into the authentic Saudi culture by communicating the message of one’s love of one’s native country. Interviewees from the NTSC and Traffic Police Department explained the success of It Is Time to Know as being due to the successful collaboration of many specialists and scholars in its design and implementation, which made it truly evidence-based and structured, while vast volunteer participation contributed to strong community buy-in of the RSC’s message.

In line with the named RSCs, the main focus of this study was on the detailed analysis of two RSCs: Enough and Salamati. Enough was launched in 2006 and lasted only 30 days; however, it was rated by all respondents surprisingly positively, in contrast to the Salamati campaign which lasted for a much longer period and was repeated several times a year. The success of Enough was profound; as one of the interviewees, Ibraheem, said, ‘Enough became like a syndrome’. Reasons for such enormous popularity may be diverse; first, as Algammas (2010), Mansuri et al. (2014), and Ministry of Interior (2006) explained, it was the first RSC that explicitly addressed road safety awareness in the KSA, so it enjoyed popularity because it was fresh and non-trivial. Nevertheless, many other components of Enough guaranteed its success, such as focusing on two age groups of drivers (the most vulnerable – younger than 18, and those aged 31–40), making a narrowly focused appeal to
drivers (the message of giving up speeding and dangerous driving practices), and emphasising the socio-cultural context behind risky driving decisions.

The core strength of Enough and of the best Western RSCs are their approaches to high-risk driving as a socially mediated practice. In line with the theory of Redshaw (2011) about the dependence of driving behaviours on social and cultural influences, the designers of Enough carefully reworked the symbols of masculinity and male power that are popular in the Saudi culture and are embodied in reckless driving behaviours. Enough worked specifically on the redefinition of sports cars as symbols of male power, with many similarities to the approach of the Australian Pinkie campaign which targeted the ‘boy-racer’ category of young dangerous drivers. Thus, it was effective to a certain extent in a way that changed the socio-cultural perception of masculinity and power.

Interviewees also voiced a very favourable assessment of Enough in terms of its impact and effectiveness in reaching out to the community. Most respondents characterised it as ‘very effective’ because of its explicit clarification of the dangers associated with non-compliance with road traffic regulations. Its educational potential was also high, and it was praised for its ability to establish a basic understanding of road safety. It became catchy because it was broadcast through a variety of channels and involved the participation of celebrities. Hence, it is evident that Enough became a fairly good standard of RSC effectiveness for the KSA, and some of its successes can be adapted to new RSCs for a better outreach to the public.

However, along with the success that Enough enjoyed in the KSA, some of its weaknesses still limited its impact and outreach. For instance, Carey and Sarma (2011), Lamia (2011), and Al-Rasheed (2013) point out that the threat-based appeal used in it is traditionally much more effective with female drivers, but in Saudi Arabia, women are not allowed to drive. Consequently, the appeal of Enough was effective only to a certain extent, and it faced difficulties in achieving long-term behavioural improvements among Saudi drivers. The survey assessment of Enough by drivers showed that only a very low percentage possessed enough familiarity with the campaign message for it to bring about a positive behaviour change. Some interviewees also voiced criticisms of Enough because of its short duration that limited its effectiveness.
After the initial success of *Enough*, another RSC – *Salamati* – was launched in the KSA with more investment and a longer duration. Some experts assessed it as quite effective, because it increased the visibility of road traffic enforcement and educated Saudi drivers about Saher. At least it was intended to reduce RTAs and create relationships between the road traffic police and the public. Its media content and message design followed the structure of the Swedish *No Extra Life* campaign. The creators of *Salamati* also used the metaphor of a video game and used a method of parallel editing to create the persuasion effect. However, it targeted many themes at a time, was repeated too often, and had many fundamental flaws in its design to appeal to the Saudi public, and this resulted in being ineffective.

As analysis of background literature and the interviews showed, *Salamati* stood in sharp contrast to *Enough*. Algammas (2010) blamed the conservative top-down, non-participatory approach to *Salamati*’s design and implementation for its failure, saying that it was unstructured and fragmented. Moreover, it neglected a complex of road safety problems faced by the KSA drivers, and used too much repetition of messages in a variety of channels, which caused habituation and lowered its impact (Sambridge, 2010). It was limited to police officers’ lecturing of drivers about the importance of safe driving and the introduction of stricter police patrols, which high-risk drivers avoided by staying at home for the period of the patrols.

*Salamati* failed in part because of its appeal to a voluntary behavioural change, the civic virtue of drivers, and their personal responsibility for high-risk driving. A much more effective stand could have been achieved by unifying rational persuasion with cultural appeals to urge a change at a deeper, unconscious level. Such recommendations are in line with the behaviour modification theories used as the theoretical framework for the improvement of RSC effectiveness in this thesis.

Taking a behaviour modification approach to RSC design and implementation means that the creators are aware of the intricate connection between an individual and his environment and the community. Seeing a driver as a product of his community and incorporating cultural and economic domains promises a much more sensitive approach to reaching out for the targeted groups with a road safety message. In this way, as Lee and Kotler (2011) and Eagle et al. (2013) clarified, human cognition and social learning processes are incorporated into the driving behaviour change framework, enabling RSC designers to reach out for, and modify, intentions and
attitudes of risky drivers before they commit risky actions and put other participants of traffic into danger.

A visual analysis of Salamati’s messages shows that elements of Aristotelian rhetoric theory were definitely present in it, with an appeal to logic and emotion. However, it failed because of a reliance on coercive tactics to achieve behaviour modification, which resulted in a very limited impact lasting only for the duration of the campaign, and ending quickly upon its termination. As suggested by Bellack et al. (2012), the inclusion of more positive reinforcement components into Salamati’s approach would have ensured a much more profound impact on driving behaviour. This suggestion was also supported by interviewees who attributed this RSC’s failure to its weak content that did not trigger any psychological response from Saudi drivers.

Thus, as the RSC evaluation suggests, the assessment of Enough was largely positive, while Salamati was considered a failure. Besides these two RSCs, there were some additional campaigns that were memorable for their strong outreach and messages. However, as the survey analysis revealed, the major problem of both Enough and Salamati was that many drivers simply did not hear about them. Out of almost 180 respondents surveyed in various Saudi cities, only about 40% said that they knew these RSCs, while many more stated that they were ready to change their driving behaviour if they were exposed to RSCs and were educated on the dangers of some driving practices. Hence, it is clear that Saudi drivers are ready to change, but they reject the punitive and coercive messages typical of Saudi campaigns and need supportive and educational RSCs. Such RSCs need to explain the entire spectrum of potential consequences of risky driving and they need to teach proper behaviours. Channels of RSC message delivery may also be a root cause of such low levels of awareness; respondents to the survey and interviews repeatedly criticised the narrow selection of few media channels and the almost total neglect of new media, which reduced the campaigns’ impact. All these considerations and recommendations for how to increase the effectiveness of Saudi RSC are discussed in the next section.
8.2.3. Best Practice Protocols for Improving Effectiveness of Saudi RSCs

Given the limited effectiveness of RSCs in Saudi Arabia, this research also focused on a search for design and implementation strategies for RSCs that will allow them to target specific population categories with specific road safety messages, and to achieve a productive behaviour change at both the conscious and unconscious levels. This search for better approaches to RSCs gains even more prominence in light of pessimistic IFRC (2015) projections which indicate that the road safety situation in the KSA will deteriorate, and RTA numbers are likely to mount further. Productive directions in which RSC design and implementation may move include the identification of the psychological determinants of risky driving (Beanland et al., 2013; Castaniera et al., 2013; WHO, 2013), considerations of traffic psychology and vehicle technology (DEKRA, 2015) and better organisational collaboration at all stages of work on RSCs. Moreover, looking at other countries’ past experiences with successful campaigns may provide helpful insights into how to reduce RTAs by using RSCs and targeted behaviour change.

RSCs from Australia, the UK and Sweden were selected as case studies for this thesis because Australian RSCs have a proven record of accomplishment in terms of RTA reduction, and European RSCs are also regarded as best practices in the field, utilizing innovative communication channels and suitable appeals (Cockfield, 2011). Many Australian RSCs are cited as being catchy and using memorable messages publicised through a variety of online, TV, print and outdoor media using a coherent, coordinated and systematic approach. Their major advantage according to Davidson et al. (2013) is that they model behaviour change, and this is highly relevant for the KSA road safety situation because drivers in KSA are not eager to change their behaviour voluntarily but are open to psychologically rational and well-planned messages.

An analysis of the Australian campaigns Pinkie and Everybody Hurts showed some of the most powerful persuasion methodologies employed as a result of rigorous research on driver psychology and environmental drivers motivating certain types of behaviours. For instance, Pinkie challenged the very identity of the ‘boy racer’ as a symbol of coolness and masculinity, and overturned the long-held social stereotypes about recklessness and aggression in driving reflecting male power. Hence, the success of Pinkie was multi-faceted: it achieved a long-term change to the cultural
attributes of the concept of the ‘risky driver’; instead of persuading drivers that what they do is bad and dangerous, the *Pinkie* campaign’s designers ridiculed such behaviours, showing what other people think of such ‘boy racers’. Hence, a change was boosted not from outside, but from within the culture, which embraced the change of stereotypes and endorsed the positive image of rule-compliant drivers.

The *Pinkie* approach was quite revolutionary for the time when the campaign was launched, which contributed to its success, high rates of message recognition, and even triggered a public debate over the propriety of speeding as such (Popova, 2012). According to Witte (2015) and Popova (2012), previous RSCs tried to achieve behaviour change based on fear-provoking imagery and messages, which did not work well. Low responses to the fear-based appeals of RSCs are explained psychologically, with people distancing themselves from messages that trouble them and make them feel fear. Hence, shocking pictures and intimidating statements work well, but have a very short-term impact on the public who prefer to get those images out of their minds as undesirable sources of stress. The approach adopted in *Pinkie* brought about a revolutionary change to the ‘boy racer’ identity, making it a negative stigma instead of a positive one which boosted young drivers’ egos. In this way, speeding was associated with weakness and non-coolness and a highly undesirable loss of reputation for young drivers. It also triggered a larger-scale behaviour and attitudinal change that is pronounced in the present-day minimal RTA rates in Australia.

*Everybody Hurts* also offered a range of useful ideas for RSC designers in the KSA, mainly through its wise, insightful, and clear visualisation of how an individual’s actions may hurt many people. In accordance with the theory of reasoned action, drivers make decisions based on their individual beliefs, and taking risky actions on the roads is always selfish. However, if drivers learn to take a broader view of high-risk driving, they may see how their impatience, anger or wish to nurture their ego may cause irreparable harm to other people, including their families and friends. Assuming broader responsibility for high-risk driving actions is a sure step towards behaviour modification, since everybody has friends and family members. Hence, *Everybody Hurts* aimed to show that one selfish decision of one driver may hurt his family and friends, as well as the families and friends of other unfortunate victims of his actions. Such an emotional appeal, coupled with the establishment of an active
presence of RSC ads in the social media, the internet, TV and other media, worked very well even with such minor offenses as low-level speeding, and such a success may definitely serve as a valuable experience for Saudi RSC designers because of the universal appeal to responsibility toward one’s family and friends.

The Swedish RSC No Extra Life is also a very interesting and potentially informative experience that may also help to streamline Saudi RSC efforts. Elements used in this campaign were easily recognisable in Salamati, but since the latter addressed two major themes at once (road traffic safety and terrorist threats), it failed with both messages. Overall, using imaginative scenarios in RSCs may be interesting for RSC designers, since they manage to show RTAs and their consequences, without causing fear or shock. No Extra Life was successful with the narrow target group that it aimed to address – young people aged 16–24 years old (referred to as Gen Y-ers) – because media channels (YouTube, TV, social networks) and the ad content (popular game imagery) were selected appropriately for this age group, and achieved its intended aim through high recall and acceptance of that game by Swedish youth.

Little can be borrowed from the UK’s Live with It campaign, since it proved to be ineffective in the UK in terms of risky driving reduction. The major reason for this failure may be found in the fear-based appeal – images of the ghosts of people killed by drivers in RTAs, haunting them in their daily activities, are indeed frightening and depressing. This may have been why its appeal was so low. However, the failure of this campaign may still serve as additional proof of the need to include more appeals to positive reinforcement and even humour. Such changes were advocated by Bellack et al. (2012), Rashidi (2006), Robertson and Pashley (2015), Buckley et al. (2014), Staats and Mos (2012), and a host of other researchers who recommend replacing deterrence and fear-based appeals with a positive approach promoting constructive behaviour change. Positive reinforcement should emphasise a reward for proper behaviour on the road instead of punishment for violations, while humour may ridicule high-risk behaviours, thus causing a change in dangerous drivers’ attitudes.

In addition to making the appeal of RSCs more positive, instead of intimidating and blaming, the survey respondents and interviewees pointed out many other features that can make RSCs more effective in their outreach to the Saudi public. For instance, survey responses contained ideas on the inclusion of new media into the
range of media channels used to communicate RSC messages and target young risky drivers effectively, so that they comprehend the need for a broader sense of responsibility. Moreover, proactive RSC messages should recognise not only speeding (though it is still an issue of central concern), but also add the dimensions of fatigue and sleepiness when driving, driving under the influence of drugs, and driving without a license, which are also dangerous behaviours. As the quantitative data analysis revealed, violations such as not wearing a seatbelt and talking over the phone when driving are closely correlated with speeding, and this represents a complex and multi-dimensional picture of risky driving behaviour and indicates the need for more sensitive design of RSCs with regard to these features of typical risky behaviour among Saudi drivers.

Responses contained in the interviews also suggested many additional psychological dimensions that require attention in the process of design Saudi RSCs. In the opinion of the interviewees, modern youth has little respect for laws and regulations, and even if they do, they lack basic knowledge of the law that would ensure compliance. Taking these observations into consideration, especially in light of the strong impact of Saudi culture and Islam on the Saudi nation, RSC developers should adapt psychological methods of influencing driver behaviour in line with the theory of reasoned action and the theory of planned behaviour. Such an approach (for instance by ridiculing ‘boy racer’ behaviours as was done in the Pinkie campaign) may undermine the existing stereotypes associating risky driving with masculinity and power, and substitute those positive attributes of riskiness on the roads with negative connotations of such behaviours. Young drivers are highly susceptible to stigmatisation and will try to avoid it in any possible way; if such social stigma is accompanied with an appeal to Islamic fundamental values of respect and responsibility, the RSCs policy-makers and designers are likely to achieve a much better result in reaching out young Saudi drivers and triggering a large-scale and far-reaching behavioural change.

Based on the analysis of Saudi driving behaviours and attitudes, and evidence elicited from Western RSC design examples, the researcher has summarised what has been found out about why some RSCs are effective and why others are not. This summary is presented as a set of features for the successful design of a Saudi RSC:
1. RSCs have to be designed by a multi-agency team road traffic authorities, scientific agencies, research institutions, creative agencies, and governmental policymakers, with proper funding and allocation of human resources.

2. RSCs should contain memorable messages clearly communicating one simple and recognisable road safety message (with the use of Aristotelian rhetoric theory and sensitive cultural adaptation with the help of cross-cultural theory).

3. RSC messages should be formulated with the inclusion of psychological determinants of high-risk driving behaviour and models of behavioural change, such as traffic psychology, vehicle technology, and theories of reasoned action and planned behaviour.

4. RSCs should use modern persuasion methodologies that will, rather than promote a voluntary change of behaviour, affect driving behaviours and attitudes from within the society, by promoting a positive image of a rule-compliant driver and stigmatising the non-compliant drivers.

5. RSCs should contain an educational component approached in a positive manner instead of a fear-based or shock-based appeal to emotions.

6. RSCs should utilise new media channels in an evidence-based and theory-based manner (utilising the essentials of mediation and communication theory).

7. RSC duration and reiteration within predetermined timespans (e.g., once a year) should be wisely planned to avoid the population’s habituation to the RSC messages.

8.2.4. Answering the Central Research Question

The central research question in this study was: ‘How can KSA road safety campaigns prevent more injuries and deaths than their current low success rates?’. Answering this question involved searching for better approaches to RSC design, implementation, and evaluation so that a long-term change in the RTA rates can be achieved. The need to increase the effectiveness of RSCs that reach out to the Saudi public with an explicit road safety message is urgent, with the number of RTAs rising every day and taking more Saudi lives, increasing the socio-economic, emotional and health consequences on RTA victims, their families and the government. The evidence reviewed in this thesis suggests that Saudi road traffic...
authorities have invested heavily in the development of RSCs, and they have financed improvements in the physical conditions of roads, and conducted many other types of educational and control work aimed at reducing the risks for drivers and passengers (OSAC, 2013). However, despite these efforts, the number of RTAs has not fallen at all, and is mounting even further.

Such observations suggest that the problem is not a lack of finance or the absence of RSCs in the country. The literature review, the survey data, and analysis of the interviews all suggest that the KSA has implemented many RSCs of various types and durations, thus showing there has been a considerable amount of attention devoted to road safety improvement (WHO, 2013; Toumi, 2014; Al-Atawi et al., 2014; Brebbia, 2014). In addition to the Gulf Week of Traffic and It Is Time to Know, the RSC named Enough was very effective despite the fact that it lasted for only one month. However, another RSC titled Salamati, which followed Enough, achieved little success, and was identified as a major RSC failure in the KSA (Algammamas, 2010; Sambridge, 2010; Aldalbhi, 2014). Hence, consideration of the limited impact of Saudi campaigns on road safety attitudes and behaviour suggests that the problem has different causes, which have to be addressed through psychological and research dimensions of road safety improvements and behaviour changes on the roads.

Initial analysis identified the primary causes of RTAs in the KSA as speeding, reckless driving, and inexperience. Therefore, the most evident ways to improve RSCs is to adopt a multi-dimensional, complex approach to road user behaviour. There have been many educational road safety campaigns in KSA but they have neglected the human and environmental factors shaping driver behaviours, so they have failed to reach out to the intended public. As clarified by Beanland et al. (2013), Castaniéra et al. (2013), WHO (2013), and numerous other sources, there is a need to apply theories of reasoned action and planned behaviour to instil the sense of broader responsibility into the minds of Saudi drivers, forcing them to comprehend the entire spectrum of consequences that their actions may cause for other people. Moreover, these theories provide deeper insights into the beliefs that trigger certain behaviours and attitudes among Saudi drivers, and so they offer a highly promising avenue for further RSC development, design, and implementation.

Human beliefs are a deeply cultural phenomenon, and they shape everything people do, consider important, despise, or appreciate. Saudi drivers are no different from
any other nation in this respect, since they are also products of their culture and community (Lee & Kotler, 2011; Reyner & Lang, 2013). Thus, Saudi RSC planners may gain a tremendous advantage if they delve deeper into the specifics of Saudi culture, especially the young subculture, and appeal to the values and beliefs held by this specific driver category. In this way, when Saudi drivers find a message that is individually designed with an understanding of their lifestyle, drives and motives, they will be unable to ignore the message, and will change in line with the changing high-risk driving culture.

Driver identity is also a target for new RSC approaches, since shaping identity is the target of utmost significance for road traffic authorities in the near future. Saudi drivers behave dangerously on Saudi roads because they do not respect or simply do not know Saudi road safety regulations, and because they do not consider violations of road rules to be a problem. Thus, as this study revealed, many Saudi drivers consider a disregard for road traffic legislation to be normal, and this attitude perpetuates violations and precludes productive behaviour. Therefore, with the arsenal of theoretical tools and methodologies identified in this study, Saudi RSCs may design highly effective and memorable RSCs that will destroy the culture of tolerance and acceptance, and will replace it with a culture of promoting and praising road safety compliance. As the results of the Pinkie campaign showed, it is really possible to challenge the positive reinforcement given to dangerous behaviours and replace it with a negative stigma, while creating a new positive stereotype, with features of obedience to the law and respect for road safety rules.

Another serious problem that Saudi RSC designers have to overcome in order to make RSCs more effective is to abandon the reliance on punitive measures only. Saudi road traffic authorities are famous for a strong focus on authoritarianism and punishment for violations, so the majority of Saudi RSCs have adopted a similar stance – that of intimidation with scary images, causing fear and shock, and appealing to people through a threat of punishment for violations (Aldalbhi, 2014). However, these measures have had little effect in the recent years (and even decades). It is simply a matter of human psychology – to distance oneself from a threatening message, and to continue behaving the same way. A different approach to persuasion has been found by Western experts who base their RSCs on new models of behaviour change – making a positive appeal to an image of a law-abiding
driver, undermining the positive image of a macho, high-risk driver, and stigmatising high-risk behaviours by means of focusing on the very identity of a risk-taker. This has worked in many Western nations, and this may work well with the Saudi nation in which the image, reputation, and prestige of the young male driver is as important for him as it is for this cohort of drivers in any country.

Inter-agency collaboration is another issue of concern discussed above. Making RSCs cannot bring about significant and lasting reductions in RTAs without the design of a coherent workflow, starting with research and design of the RSC message, the planning of its delivery, duration, and media channels, the production of RSC materials by a group of technologically savvy experts, and further continuous evaluation of the RSC’s impact on the population, accompanied with adjustments to its duration, and use of different media, in cases where responsiveness of the population is low. Such a complex, multi-stage process cannot be accomplished unless effective inter-agency partnerships are established. NTSC, the Ministry of Transportation, research institutes, and creative agencies have to appoint the members of an RSC team to work out all aspects of design, implementation and evaluation to ensure its success. Hence, collaboration and partnerships should become the starting point for the creation of improved RSCs capable of bringing about a real progress.

Finally, it is essential to point out another challenge that RSC designers have to overcome to make them truly effective. Many researchers, including Aldalbhi (2014), Ayub et al. (2014), and BuMetea (2013), have emphasised Saudis’ scepticism about mass media. Such a feature of Saudi culture undermines the ‘one-size-fits-all’ approach to RSC design according to a Western success pattern (e.g., the USA, the UK, Australia), and requires the careful selection of popular mass media channels (e.g., the new media such as Facebook, Twitter, and other social networking sites) in a culturally sensitive manner. Obviously, the young Saudi generation uses the new media at a much higher rate than older Saudis do; however, for a road safety campaign to succeed, it has to target the entire population as they may affect young drivers’ self-perceptions and egos. Achieving this becomes additionally hard because of the strict governmental regulation of media content, which reduces the credibility and impact of that content. In accordance with this problem, it is vital to combine the intended RSC message with socio-cultural norms,
the legal environment of the KSA, and legal requirements for media content so that the RSC is accepted and embraced by the Saudi population.

8.3. Limitations

Despite great contributions made by this research to the field of knowledge concerning effective road safety programming and policy-making, there are some limitations that should be mentioned. It is possible to identify both methodological and theoretical limitations of the present research. The first and most significant methodological limitation is the use of mixed methods research during primary data collection and analysis. Though it definitely possesses a number of benefits and advantages in contrast to using only qualitative or only quantitative methods, mixed methods research is also connected with a number of challenges. It is hard for one researcher to carry out both qualitative and quantitative research alone, and to understand the complexities of both approaches perfectly for combining them properly. Hence, conducting a mixed methods study is usually lengthy and expensive, even if data is collected simultaneously.

In addition to the mixed research methodology, the study involved two different target audiences. While the survey of drivers investigated various types of road law violations, the personal interviews with Saudi traffic authorities examined the reasons for careless driving behaviour. As different stakeholders of a single public issue, these groups possess different points of view. Hence, the reasons for dangerous driving behaviour identified by Saudi traffic authorities are not necessarily the same as or consistent with those identified by Saudi drivers. In addition, recommendations for improving the existing strategies of road safety campaign planning and implementation reflect mainly the government-level position as reported by official employees. However, it is critical for effective message delivery to be audience-oriented, which indicates the need to acquire the viewpoint of Saudi drivers on ways of increasing road safety awareness as well. Thus, the combination of opinions about different road safety issues poses a challenge for combining them to draw general conclusions applicable to KSA drivers and drivers in other developing countries.

Another methodological limitation concerns the cross-sectional nature of primary research. Both survey and interview data collection processes took place within a month. This short-term perspective on types of driving violations and their reasons
does not allow for changes in community perceptions and attitudes towards speeding and other risky behaviour patterns under the influence of media advertising or traffic policy-making. Thus, the extent to which the results can be generalised is under question, since all data was obtained within a short period, they represent views on the issue at a certain point of time only. In line with the desire for a continuous improvement in Saudi road safety, a longitudinal perspective is required. Therefore, it is possible to argue that there is a need to collect data before a road safety campaign and after its execution.

Finally, the primary research did not provide any consideration of the overall spectrum of factors contributing to dangerous driving. When analysing various types of road law breaches, the drivers’ age, level of education, and years of driving experience were considered. However, no adjustment of the received results was made in accordance with the driver’s nationality and region of residence. Though the majority of the population in Saudi Arabia comprises indigenous Saudis, a significant proportion of the workforce is from other nations. In the regard to building up a road safety culture in the state, it is essential to take into account the heterogeneous nature of Saudi culture.

The issue of the drivers’ geographical origin and location within the KSA is also significant. It well known that the country has not overcome its illiteracy problems yet. Despite the annual increase in the access to and availability of educational institutions, basic reading and writing skills remain challenges for some Saudis. The problem of poor literacy is found mostly in urban areas. In the context of the present study, geographical location is relevant since drivers in urban areas may experience difficulty in reading and comprehending a campaign’s message. Furthermore, during the design process, the area of residence should be a point of consideration in making the message acceptable to the target population. Otherwise, drivers with a low level of education will be unable to understand the message.

There were some limitations concerning secondary data collection and analysis that should be mentioned in this section. The major limitation applicable to the case study section of this research is the cross-cultural compatibility of RSCs and recommendations for RSC design. As noted by scholars, data collection and interpretation may be more challenging in cross-cultural studies, so the researcher
should always be cautious about the potential inappropriateness of certain recommendations, policies, and practices in the Saudi context because of cultural differences. As in any Arab nation, religion and authority are fundamental for Saudi Arabian culture. As further supported by the interview results, Islam and the principle of obedience should be the key pillars of Saudi road safety programming.

Moreover, it is also necessary to keep in mind that drivers’ behaviour may also be a direct result of cultural influences and the broad societal acceptance of certain behaviours, so the application of RSC messages and techniques may work differently in the KSA, Australia and European countries. Finally, it is critical to note that different countries have different ways of administering road safety, relevant law enforcement, and policy making, so the assessment of practices and their comparison should be conducted with these considerations in mind.

Along with methodological limitations, it is crucial to point out some theoretical weaknesses of the study. The theoretical foundations for the research are predominantly behaviour modification theories, theories of persuasive social advertising, and audience segmentation and targeting theories. All the theoretical frameworks ensured an understanding of the essential elements of an effective road safety campaign and provided guidance for the case study and primary research design. The theory of reasoned action and planned behaviour equipped the researcher with skills for identifying the personal and social attitudes and beliefs shaping individuals’ behaviour. Knowledge of these internal motives is essential in formulating and delivering a road safety message. However, the theory of positive reinforcement of Skinner might provide an additional value with its core theme of positive behaviour modification.

8.4. Implications from the Research

8.4.1. Contribution to Research Field

The present study possesses enormous value as a contribution to research in the field of road safety. The most important theoretical contribution achieved in this thesis is the development of a coherent, evidence-based, and cross-validated model of the ways in which the integrity and long-term effectiveness of RSCs in developing countries may be achieved. This contribution became possible through a comparative
analysis of Western RSCs that proved to be a success in their countries, with a high percentage of recognition and memorability of RSC messages. By analysing the RTA epidemiology and history of RSC implementation in the KSA, the researcher constructed a comparative analytical framework for the identification of gaps in Saudi RSCs, and useful lessons to be learned from such RSCs as Pinkie, Everybody Hurts, and No Extra Life. Moreover, the perspective on the long-term effectiveness of RSCs was enriched through the inclusion of a strong theoretical dimension – analysis of models of behaviour change, theories of planned behaviour and reasoned action. The delivery of RSCs was researched as well, yielding a set of valuable findings in terms of theories of rhetoric, mediation, and communication. Such research outcomes are definitely useful for the development of a comprehensive, research-informed, and evidence-based plan for RSC design, implementation and evaluation in developing countries including the KSA, thus making possible a fundamental change in road safety attitudes and behaviours in the KSA.

The second vital contribution to research on road safety was achieved by this thesis in terms of developing benchmarks for traffic safety culture development on the basis of the well-documented experience of Western countries that have managed to reach out to their target audiences and challenge high-risk driving identity characteristics. Unfortunately, the ‘boy racer’ category of drivers that was addressed by the Pinkie campaign is also present in the KSA, with many young drivers considering their ability to take risks and remain safe and sound on the roads as a symbol of their power and masculinity. For such an underlying culture and values, the typical strategy of deterrence, fines, speed monitoring with Saher, and punishment for violations does not work well, as it only deepens the gap between road users and traffic police. Here, a sound and wise theoretical approach to challenging the ‘boy racer’ identity worked in Australia, and was further enhanced through building a broader framework of responsibility for the impact of one’s actions on surrounding people – with the help of the Everybody Hurts campaign.

Similar approaches may be applied in the KSA, but here, a culturally and contextually sensitive method is advisable. Saudi authorities have tight control over the mass media, and the overall Saudi culture is very conservative and firmly based on Islam. Therefore, a message similar to Pinkie may not work – but the overall generic approach is what will definitely work with Saudis. The gist of that approach
was to challenge the culture inside the social circle of high-risk drivers, thus depriving them of social rewards for their risky driving behaviours. Given that high-risk driving is considered cool in the young age category, drivers gain positive reinforcement from taking risks and seeing their friends’ excitement. However, in this case the positive image of a ‘boy racer’ is replaced by stigma, and the young Saudi population understands the entire range of negative consequences of high-risk driving, Saudi authorities will be able to observe a far-reaching, long-term improvement in driving behaviours instilled in the very culture of Saudi youth.

As the literature review and findings from the survey and interviews suggest, the supportive norms pursued by any developing country may work for the KSA, once the Saudi authorities pay enough attention to the culture, values and beliefs underlying the behaviours of Saudi drivers. Such a shift of attention may bring a deeper understanding of how a positive, law-abiding road safety culture may be developed in the KSA, with a long-term change focusing on fostering that culture among the highest-risk drivers. This can be done in part by depriving them of the positive reinforcement they sometimes receive for taking risk. Once such a culture is established, it may be easily supported through targeted educational and RSC measures designed specifically for the maintenance and development of road safety values.

Alongside the development of a framework for a proactive, positive traffic safety culture in a developing country like the KSA, the researcher’s contribution includes proposing ways in which such a framework may be applied for the enhancement of RSC planning and implementation specifically in the KSA. Keeping the Saudi context in mind as the major focus of this thesis, the researcher identified a number of features which, if integrated into the Saudi legal, mass media, and cultural landscape, will enable RSCs to become more effective. These features include the establishment of an inter-agency partnership for smooth and coherent cooperation in various aspects of RSC planning and design, and shifting of the focus from deterrence to positive reinforcement of law-abiding behaviours on the roads. In addition, the proper timing and repetition of messages, as well as the formulation of RSC messages in line with theories of planned behaviour and reasoned action, were named as vital changes and improvements in line with the successful Western experiences. Recommendations on efficient segmentation and targeting of certain
driver categories are crucial as well, since they allow a narrower focus of the campaign’s message and a scaling down of the measurement of RSC success.

The third notable contribution of this thesis to road safety research is a strong focus on the Saudi culture and the adoption of a culturally sensitive approach to design solutions for the KSA. Islamic cultures are vibrant and unique, and the KSA is no exception; hence, developing a universal approach is possible for GCC countries and other Arab countries, but this must always be done with a consideration of some significant peculiarities that may contribute to the success or total failure of an RSC. Consequently, this study drew much valuable evidence from case studies and global empirical research on RSC design, and then included only those recommendations and observations that were relevant to the Saudi context. This was done to achieve one of the major objectives of this study – increasing the effectiveness of Saudi RSCs.

As a result of this approach, the researcher found out that Saudi drivers are unique, being the products of their environment and culture, and they deal with risks on the roads in their own way. Similar to many young Western drivers, some young Saudi drivers use speed and dangerous driving as ways of proving their masculinity and power, and to obtain positive reinforcement from their community. At times however, they simply lack basic knowledge of road safety rules, and this leads them to take unreasonable risks. Therefore, in the KSA, deterrence measures do not work well; young Saudi drivers either do not know traffic rules, or simply do not want to follow them. An alternative approach is thus needed to address the tolerance of road traffic violations that is common in Saudi society, and it has to be complemented with educational efforts to create a proactive Saudi road safety culture nurturing positive values and condemning the threats to life and health that high-risk driving always bring.

Another aspect of the Saudi context vital for consideration is the commonplace disregard for, and scepticism about, the mass media. Saudis are used to strict governmental control of the media, so they are sceptical about TV messages. It is thus an imperative for RSC designers to look for alternative ways of reaching out to the Saudi public. In contrast to the 1990s and even the 2000s, the present-day Saudi youth and even middle-aged Saudis are all technologically savvy, and they actively use online information sources such as YouTube and Facebook. Hence, new and
powerful channels for communicating the road safety message have emerged for Saudi RSC designers, and taking into account that these new media enjoy more trust among Saudis because of their greater freedom of content, RSC planners and designers should utilise them for communication of the road safety message. The inclusion of additional criteria such as the strong impact of Islam, and the considerable degree of authoritarianism in Saudi society, it will be possible to create highly memorable, effective, and culturally appropriate RSCs which are able to bring about real change in road traffic attitudes and behaviours.

The final important implication of this thesis is that it has filled a gap in the KSA literature and research in terms of road safety culture and targeting its improvement through road safety campaigns. The most recent notable research endeavour in this field was conducted by Aldalbhi (2014) who published a thesis comparing the appeal and content of Australian and Saudi RSCs. This study extended Aldalbhi’s (2014) method in many ways, one of which was adding two sources of primary data – a nationwide survey of Saudi drivers and a series of in-depth interviews with Saudi road traffic authorities. Hence, the present thesis may be regarded as providing valuable insights into the ways in which Saudi drivers evaluate their own behaviours, how road safety authorities evaluate driving behaviours in their own country, how each of the road safety stakeholders envisions the role of RSCs in the KSA, and the ideal role of RSCs for contributing to behavioural change.

8.5.2 Implications for Practice

In addition to providing a number of useful theoretical insights into the ways in which Saudi drivers behave on the roads, and how Saudi authorities envision a transformative change in the Saudi driving culture, the present thesis has highlighted several valuable implications for practice in the RSC process. Each of these implications was elicited from all three sources of research data used in this study, which ensures triangulation of findings and suggests their feasibility. Because of its complex nature, each RSC campaign requires the collaboration of different organisations and individuals in the campaign preparation and implementation. Thus, it is reasonable to formulate separate recommendations for policy makers, designers, media planners, and police officers.
8.5.2.1 Recommendations for Policy Makers

Analysis of RSC campaigns in Saudi Arabia revealed a lack of information concerning campaign details, design, implementation processes, and evaluation. While publications on Western RSC campaigns have covered all aspects of the campaign preparation and execution, public awareness about Saudi programs and strategies used to combat speeding and other violations of traffic regulations appears to be very limited. In addition, there is almost no statistical data available on fatal crashes, mortality rates, and the socio-demographic characteristics of drivers who break traffic laws. This discovery allows the conclusion that the absence of factual evidence and low public awareness were the key precursors to the failure of Saudi RSCs.

In line with this notion, this study addressed the aspect of evaluation, which has been almost completely neglected by Saudi authorities. Numerous researchers have repeatedly underlined the need to conduct continuous evaluation of RSCs in terms of changes they cause in driving behaviours. These changes may take some time to take place, but an RSC’s memorability and a proper understanding of its meaning may indeed serve as strong indicators of success. The best evaluation criterion is obviously a significant reduction in RTAs and road safety violations. However, such trends are usually only visible sometime after the RSC’s implementation, so rigorous evaluation criteria should be formulated for any specific RSC before its actual implementation.

8.5.2.2 Recommendations for RSC Creators

The most important recommendation relates to RSC design. As identified by Aldalbhi (2014), the design of Salamati was the major reason for its failure. At the same time, the design of Pinkie – one of the world’s most emphatic RSC successes – was thoroughly planned on the basis of theories of planned behaviour and reasoned action, and it used an effective model of behavioural change (Fishbein & Ajzen, 1975; Witte, 2015; AEW, 2011). The focus of Pinkie was on a cultural element – the identity of high-risk drivers. Therefore, RSC design should be planned on the basis of culture and identity theory, and should contain elements of persuasion affecting people at the unconscious, socio-cultural level by urging them to withdraw from negative social values and to adapt more pro-social behaviours and values such as appreciation of safe driving. In the KSA, this can be done by appealing to a broader
sense of responsibility and pointing out the consequences of dangerous driving for other road users, and by appealing to the tenets of Islamic culture of love and responsibility towards one’s society.

8.5.2.3 Recommendations for Media Planners

In addition to the campaign preparation process, this thesis outlined important recommendations for RSC implementation. The criteria for making decisions about the RSC’s duration, the media channels used for its dissemination, and the form of appeal used, have been examined. Some unsuccessful RSCs were criticised for being too shocking and emotional in their appeal, for being broadcast too often, which resulted in habituation, and for being broadcast through the wrong channels, resulting in very low degrees of recognition and outreach. Given that all three sets of collected data identified the young driver category as the riskiest one in the KSA, RSC makers should implement RSCs using this group’s channels of interest, and by using a positive approach in urging them towards improvement.

Targeting specific categories of RSC message recipients is also one of the key implications for practice. Many survey respondents and interviewees confided that the Saudi RSCs failed to reach out to their target audience – that is, young drivers. However, successful Western campaigns have targeted several categories within one RSC to transform attitudes to unsafe driving, which may also be tried in the KSA. In this way, the central message should definitely be aimed at young Saudi drivers, while their surrounding community such as their relatives, parents, and friends, should also be included to foster a large-scale change of ‘boy racer’ identity. As has been identified in the process of analysis, high-risk drivers usually take risks on the roads for several reasons: because they believe that there is nothing dangerous about breaking road safety rules (i.e., ignorance and absence of education on road safety), because they consider it cool and masculine (i.e., nurturing their egos), and because they have disrespect towards the law (i.e., challenging the dominant legal framework). All these beliefs and attitudes may be dealt with using properly targeted and segmented RSC messages; young drivers should be educated about road traffic hazards, and their surrounding community should also be encouraged to stop praising and tolerating dangerous behaviours. It is only in this way that a positive social image can be turned turn into a negative one, which will encourage young people to refrain from taking risks on the roads in order to avoid damaging their reputations.
8.5.2.4 Recommendations for Police Officers

Police officers should provide a strong support for RSCs. in addition to enforcing the laws about speeding and various traffic regulations, police officers should promote safe driving behaviour as well. However, it is essential to point out that they should not overestimate their powers and authority. Each police officer should perform a set of assigned duties, staying within the established boundaries. As was made clear in the analysis of the Salamati campaign, the Saudi police took an active part in the campaign implementation. The over-presence of police officers resulted in a negative perception of the campaign message by the public, preventing the RSC from succeeding. The role of police officers is to oversee driving practices and impose penalties in cases of traffic law’s breaches. It does not help campaign outcomes when the police are the key distributors of their messages. The last (distribution of campaign messages) should be assigned to celebrities and popular persons to strengthen the appeal.

8.6. Recommendations for Further Research

In the examination of persuasive social marketing in this thesis, the focus was on Greek rhetorical theory and elaboration of the likelihood model, suggesting techniques and approaches to changing traditional social attitudes and perceptions to the desired ones. In that regard, it might have been useful to utilise some arguments of the defamiliarisation theory developed by Shklovsky. The underlying concept of this theory concerns shaping human consciousness to change perceptions of already known objects or concepts. Per Shklovsky, the defamiliarisation strategy serves to provide a person with fresh insights into a phenomenon. Speeding is regarded as a normal driving behaviour in Saudi Arabia and other recently motorised countries, and the application of this theoretical position is likely to contribute to the goal of encouraging safe driving and thus, reducing the incidence of RTAs.

Finally, the socio-cultural context has space for extension as well within this study’s theoretical base. Cultural theories and theories of mediation provide valuable benchmarks for audience segmentation and targeting. However, no specific communication theory or strategy was analysed to define the best ways of delivering the campaign’s message to ensure its acceptance and comprehension. For instance, the agenda-setting theory of McCombs and Shaw is likely to assist in reinforcing the
media impact on public concerns about a certain topic. Despite a range of methodological and theoretical limitations mentioned above, one has to claim that they do not diminish the value and significance of the research, but provide space for recommendations for further academic inquiries.

In addition to the recommendations suggested above in reference to the research limitations, the research leaves space for further academic endeavours. Case studies of RSCs in Australia and Europe revealed effective approaches and strategies for traffic safety programming, while analysis of Saudi campaigns revealed major gaps to be overcome in the future. In line with these findings, one may recommend utilising sophisticated and audience-oriented frameworks of developed nations to build up a road safety culture in the KSA through catching and effective campaigns.

The RSCs from Australia, Sweden and the UK demonstrated innovative approaches to changing driving behaviour. Instead of appealing to a sense of fear, they relied on shame and guilt and emphasised the impact of speeding on drivers’ families, friends, victims and victim’s families. Successful Australian and European campaigns used simple, but strong messages based on the use of symbols, gestures and metaphor to reach target populations. Hence, further research is needed to identify relevant features of Saudi culture to increase the applicability of these approaches in the KSA.

Primary research findings also highlighted the importance of a culture-specific approach. The interviewed Saudi traffic authorities reported that religion played a significant role in shaping the Saudi culture and national identity. Recognised as the national religion and the key source of knowledge, Islam has a great influence on all areas of life in the KSA. Another peculiar feature of Saudi culture is the principle of obedience and high value given to authority. In line with these fundamental pillars of Saudi culture, it is critical to conduct an in-depth research of Islamic dispositions in relation to road safety and driving practices. Finding of supportive religious texts will be useful in the design and distribution of road safety messages. To sum up, further research should cover aspects of religion and other cultural specifics to identify which elements of effective road safety frameworks developed by Australia and European countries are relevant for Saudis to provide a better understanding of how the unique Saudi culture affects the Saudi society’s response to RSCs. Furthermore, such research can lead to the development of an effective communication strategy.
specifically suited to the Saudi context with its social, cultural, and socio-psychological domains.
Chapter 9: Conclusions

The previous chapter was dedicated to the analysis and discussion of the major findings achieved through RSC case studies and primary research. While the discussion chapter addressed the research objectives, this chapter discusses the value of the research. This thesis aimed to test the central hypothesis that KSA road safety campaigns are likely to prevent more injuries and deaths than their current low success rates if they adopt elements from the successful RSCs of other countries. The researcher’s interest in RSCs was a response to the tremendously high TAI (road traffic accident impact) in the KSA. In comparison to developed countries, such as Sweden, the UK and Australia, the level of road traffic safety in the KSA remains low. Consequently, the research explored the impact of road safety campaigns on modifying the driving behaviours and attitudes of road users with the goal of reducing Saudi traffic accidents.

The study adopted a comparative research strategy to contrast road safety policies and practices adopted by the Saudi traffic authorities with those of the UK, Sweden and Australia. The selection of the three developed countries was due to similarities in road safety programmes and traffic practices between them and the KSA. The study used the term traffic accident impact (TAI) to refer to the overall impact of traffic accidents, including direct, indirect, human, and socio-economic impacts. The literature review and overview of relevant theoretical frameworks made it possible to design a detailed coherent plan for analysing public road safety campaigns.

Since the review of the Saudi road safety statistics revealed that speeding was the major cause of road accidents and fatal car crashes, the focus of the present research was on campaigns appealing to road racers. Upon reviewing the consequences and outcomes of road traffic programmes, the most effective campaigns were found to provide valuable lessons for Saudi Arabia. In addition, the two most famous traffic campaigns executed in the KSA were analysed to reveal the existing gaps and weaknesses in the current road safety legislation and policy making to identify areas for improvement. Therefore, the public road safety campaigns (RSCs) examined in this thesis included the Pinkie campaign from New South Wales, Australia,
Everybody Hurts from Victoria, Australia, the UK’s Live with It, Swedish No Extra Life, and Saudi Enough and Salamati campaigns.

9.1. Hypotheses versus Results

Findings from the literature review and case studies of road safety campaigns in the KSA made it possible to formulate several hypotheses which were investigated through primary research. The first hypothesis predicted that less experienced drivers were involved in risky driving more often than their more experienced counterparts. The second hypothesis predicted that the acceptance of speeding as a normal behaviour on the roads led to frequent speeding. In addition to these major hypotheses, the research touched upon other violations of the road law that contributed to the incidence of car crashes and associated deaths. The list included tailgating, not wearing seatbelts, using mobile phones while driving, and impatience toward slow drivers. The primary research revealed a profile of a Saudi reckless driver based on the survey findings. It also revealed the undervalued role of RSCs based on the results of personal interviews with Saudi traffic authorities.

The most profound difference of this thesis from the one of Aldalbhi (2014) is that the present one found that the typical high-risk Saudi driver was a male aged 20–29 years old, possessing over seven years of driving experience and equipped with a high school diploma or lower qualification. Experienced drivers appear to be more vulnerable to speeding due to their overestimation of their own driving skills and ability to react to risky situations. This overconfidence makes some experienced drivers too confident in their ability to avoid car crashes when exceeding speed limits. In addition, the survey findings revealed a low awareness of RSCs held in Saudi Arabia, which indicated a failure of the Saudi traffic authorities to reach its target population and promote safe driving. Hence, while following the major trajectories of Aldalbhi’s (2014) study, this thesis expanded its findings to include not only geographical and cultural differences in RSC design but also the factual fit between the RSCs and driver behaviors on the Saudi roads.

However, besides acknowledging what has been done and achieved with this thesis, the researcher also needs to give credit to vital aspects of RSC research that fall beyond the scope of this particular study and thus deserve further research. First, it is
notable that the entire thesis focused on the ways to improve effectiveness of RSCs in Saudi Arabia, while not dwelling in depth with the root causes of the RSC failure problem. Second, the thesis is much more focused on the communication and rhetorical theories than the formal law enforcement and compliance mechanisms. The researcher made that choice intentionally, but still recommends further research to focus on additional domains such as people’s compliance with law, the level of law enforcement, and the value of human life in Saudi Arabia as an important cultural determinant of compliance.

9.2. A New Approach

This dissertation points out a new dimension in the Saudi struggle against speeding. Currently, Saudi RSCs lack integrity and a long-term perspective. Their focus is too general and they address multiple road safety issues simultaneously. Instead of focusing on changing drivers’ behaviours, there is a need to promote changes in their perceptions of and attitudes toward speeding. This research shows that finding a key to the minds of young racers (as was done using pinkie finger in Australia), it is possible to increase the influence and effectiveness of RSCs in the KSA. This study stresses the potential benefits of building future RSCs around gesture messages to address a cohort of young racers and promote compliance with speed limits. Through the suggested framework for RSC planning, the thesis aims to change the current fear-based appeal to an emotional one. Instead of pointing out the dramatic outcomes of speeding, the dissertation suggests appealing to the inner motivation of young drivers and their social groups. Thus, Saudi RSC designers should define a gesture, symbolic and understandable for the target group, but acceptable in the state’s culture.

In fact, the thesis underlines the importance of grounding RSC messages and designs on valuable behavioural theories and concepts. Thus, the theory of reasoned action that views an individual as a part of one’s social group indicates that reckless driving may reflect certain social beliefs and norms. In its turn, individuals’ decision-making affects the group as well, which indicates a continuous interaction between different members in the group. This research utilised this theoretical foundation to emphasise that dangerous driving might cause physical damage to drivers, but also emotional harm to their family members and friends. This strategy seems relevant, since the
KSA is an Arab country with a culture characterised by strong family ties. The concept of the family is one of the key values in the Saudi society; Saudis care deeply about their family members.

Hence, an RSC emphasising the emotional hurt produced to the families of victims is likely to prevent young racers from speeding and dangerous driving. In other words, to encourage safe driving, Saudi traffic authorities should point out the possible emotional outcomes to the families and friends of accident victims instead of highlighting the physical threats to drivers. Although they may care little about their own wellbeing or and although they may overestimate their own driving skills, young racers might change their attitudes to speeding out of concern for the welfare of other people who would be affected if they were to cause a serious accident. In addition, an appeal to a sense of guilt might be useful in the KSA’s struggle against speeding and dangerous driving practices. When designing a new campaign, Saudi traffic authorities should highlight the dramatic consequences of breaking speed limits for innocent passengers or passers-by. Even if they ignore the risk to their personal safety, Saudi racers should take account for potential victims who do not seek thrills or social recognition through engaging in speeding.

The thesis sets up a new roadmap for customising RSCs to achieve the desired results. Thus, thoughtful population segmentation and targeting are critical. In contrast to the strategy of dwelling on the issue of the driver’s physical safety and wellbeing, the thesis stresses the importance of modifying drivers’ behaviour through changing perceptions of speeding in terms of damage caused to others. Hence, it is essential to stress the various physical and emotional outcomes for other people affected by fatal crashes, and to emphasise the how easily deaths can occur due to speeding.

9.3. A New Instrument

This thesis is a comprehensive analysis of the theoretical foundations, conceptual frameworks, and practical measures related to the promotion of safe driving. It shows that mass media RSCs are powerful tools of encouraging safe driving through the visual portrayals of the various physical, emotional and psychological outcomes of reckless driving for drivers themselves and their victims. In contrast to earlier studies
and RSCs executed in the KSA, this study stresses that effective campaigns should be sophisticated in their messages. This dissertation indicates that an effective RSC utilises multiple distribution channels, including social media, official announcements, school-based instruction, mass media and others. Saudi Arabia is a highly technological country with its youth being adept in the use of various devices and software applications, including computer games. By integrating references to computer games using social media channels that are popular among the Saudi youth, Saudi campaign designers can point out the different consequences of car crashes in computer games and real life.

The present paper provides an insight and clarification of the role of generic norms in cultures of target audience nations in encouraging desired behaviour. In addition, the thesis suggests a framework to increase understanding of the effectiveness of RSCs in regard for the presence or absence of such cultural norms. In other words, this study illustrates the role of socio-cultural contexts and emphasises the importance of integrating cultural values and social standards in designing RSCs. In addition, the study determines ways of employing this culture development framework to enhance the process and outcomes of road safety planning and the implementation of safety campaigns. In other words, the proposed framework for the staged development of a road safety culture builds up a long-term perspective on planning and executing RSCs in a sequenced manner. Thus, it is possible to predict a sharp reduction of the TAI in developing nations and the KSA in particular over time.

Therefore, this thesis points out a new field of inquiry required to equip policy makers and road safety campaign designers in developing nations including the KSA with a deeper understanding of the issues and effective ways of reaching young drivers. The research provides a framework, enabling better decision-making in designing an effective message for the target audience. A multidimensional investigation of traffic safety programming in different parts of the globe is useful in allocating road safety budgets in an ordered fashion to ensure effective message development and distribution. Hence, the present study is dedicated to encouraging thorough RSC planning instead of simple experimentation. Unless a road safety campaign is based on the preliminary prepared culture, it is doomed to failure. In
other words, to succeed, a RSC require a safe driving culture inherent to the target audience’s culture.

9.4. A New Culture

This thesis points out ways of creating and promoting a culture of safe driving. It underlines the importance of integrating cultural changes to emphasise to drivers the value of life in relation to themselves and people around. This dissertation stresses the importance of building and promoting a traffic safety culture, suggesting some benchmarks for staged culture development. Such a detailed framework is likely to succeed in developing states, including the KSA. In that context, a precise overview of the Australian, Swedish and British experiences in combating speeding was a great source of knowledge. An extensive scholarly and research database of these developed countries covering road safety programming for the past few decades is fundamental for defining a basic set of supportive norms to be pursued by the Saudi culture. This research points out that the KSA road authorities and government should develop a thorough, sophisticated, and multi-layered traffic safety strategy to reduce reckless driving and road accidents.

In the pursuit of creating a detailed roadmap for Saudi campaign designers and policy makers, the thesis defines supportive elements for an effective framework of road safety culture development. It focuses on the impact that may be produced by changes in social-institutional alignments through integration of major sporting codes, such as football and cricket on the re-alignment of traditional community attitudes. Hence, the research indicates that such a shift in community cognition is likely to create a cultural environment favourable for the design of RSCs dedicated to combating high-risk driving behaviour, such as speeding, drunk driving and reckless driving.

An essential dimension for the creation of a new road culture involves adapting the RSC appeal and rhetoric of RSCs to the unique Saudi cultural, social, and psychological context. The evidence outlined in this study is definitely valuable and informative, but one should not forget that the best Australia RSC practices may not work in their original form in the KSA context, and a certain level of cultural glocalisation is required to maximise their effect. For instance, an open sexual
reference in the Pinkie campaign is inappropriate for a highly conservative Saudi
culture, and a stronger reference to traditional Saudi values of family and personal
responsibility may work much better as a cultural adaptation. The problem with RSC
failures may be rooted in the cultural “one-size-fits-all” approach of RSC marketers
without proper regard to the Saudi context and audience response. In connection with
these distinctions, the researcher strongly recommends that the most effective
European and Western practices are followed but not adopted blindly; they should
instead be adapted in a culturally, socially, and psychologically sensitive way.

In addition, this thesis indicates that all possible means should be utilised in the
process of developing a solid road safety culture. In the pursuit of strengthening
negation to speeding and promoting safe driving, Saudi traffic authorities should
adopt a practice of delivering structured road safety lessons within the school system.
Education on the importance of careful driving is likely to create awareness of
potential threats and equip young people with a knowledge base that helps them to
counter less rational views and make right decisions when they reach their eligible
driving age. The school-based reinforcement of a traffic safety culture is critical in
making RSCs’ messages acceptable and comprehensible for a cohort of novice
drivers.

Another direction pointed out by the thesis concerns the availability of data in
relation to road accidents and outcomes of speeding and other violations of traffic
regulations. Thus, the dissertation justifies the importance of creating and
maintaining national statistics on the issue. The thesis illustrates the potential
benefits of establishing an authoritative body responsible for collecting, synthesising
and publishing data on road accidents and their outcomes. This task implies
collecting statistics from police reports, records of fatal car crashes, public
announcements and corresponding legislative provisions. These data should be
accessible to the public to ensure public awareness on the issue and to support further
research in the field. For a newly motorised nation like the KSA, it is extremely
important to fill in this knowledge gap to achieve safety and security on its roads. In
this regard, the study points out the effectiveness of well-documented traffic statistics
in creating a new driving culture.
9.5. Epilogue

2018, Riyadh

Sitting in his already stuffy office early in the morning, Ali Abudalziz gazed disconsolately though the window. He was occupied by the requirement to design an effective road safety campaign aimed at reducing speeding and other dangerous conduct patterns on Saudi roads. Considering the absence of a safe driving culture in the KSA, his task was challenging. In addition to the many who speed on Saudi roads to reach their desired destinations more quickly, others exceeded speed limits driven by nothing more than a selfish ego or a desire to test their vehicles’ powers and limits. Observing drivers’ behaviours from his office located at the twentieth floor of the city’s main business centre, Abudalaziz nodded, “Yes, nothing seems efficient in reaching minds of reckless drivers in this country”. He recalled the indifferent outcomes of earlier campaigns and government policies launched to promote safer driving and reduce road toll.

Pondering these challenges, Abudalaziz drew himself away from the window and sat at his table to check the latest data for road traffic accidence and fatal incidence. Suddenly, Ali abud Al-Aziz remembered having recently read a scholarly publication that had analysed a Saudi approach to road safety promotion based on successful campaigns executed in the Western countries. Having regarded its findings as valuable for the design of road safety campaigns, Abudalaziz had stored the article for the future. Relying on the study’s recommendations, Ali Abudalaziz identified a model for behavioural change to discourage speeding.

In reference to successful experiences of Australia and Great Britain, the PR campaigner developed a message: “Take care! These Might Be Your Victims!” The following image supplemented the campaign catch-cry: at the front left (in low angle semi-relief), a young man lies with fingers held in a tortured pear-shaped configuration, tips pointing up at waist level; in the background, occupying most of the picture, there is an upturned car with the mainly dead bodies of its passengers strewn around—a mother, a little daughter, two elder brothers, and a father-driver. The latter is the only survivor. His head is lifted off the ground, but the man is clearly paralysed by serious car accident injuries. Utilising elements of persuasive theory and socio-cultural change, Ali Abudalaziz’ campaign appealed to the Islamic culture of love and valuation of family.
The proposed campaign received immediate approval and was launched in an expedient manner.

Another valuable lesson taken from the publicised research by the campaign creator was the engagement of celebrities to deliver road safety campaign messages. Hence, Ali Abudalaziz’ campaign referenced Saudi national sport celebrities, especially those occupied in race competitions. Celebrities’ voices and images found expression in videos broadcast television, radio, YouTube, Facebook, and other social media channels. As a result, the campaign received extensive recognition among the public, opening a new horizon in road safety policing and uniting the overall Saudi population in the appeal to safer driving.

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2019, Riyadh

A year after the campaign launch, a road traffic analyst, Abdullah Daher, was assigned to collect and analyse the recent statistics on road accidents to provide feedback on the latest government campaign against speeding. The task was the one in a long row of similar tasks performed by Abdullah Daher during his 20-year career in the Traffic Department. For years, the state of affairs had remained unchanged – drivers exceeded speed limits causing death and injuries to others and themselves as well. But this time Abdullah Daher was excited to observe a small but important change in driving behaviours in Saudi Arabia. Several days passed in heavy statistical calculations and results’ interpretation until Abdullah Daher could generate a final report, providing concrete evidence of the success of the executed road safety campaign. For the first time since records began, there was a modest but statistically significant reduction in car accidents and corresponding fatalities on Saudi roads. The report therefore signified a new era in Saudi traffic management. New campaigns and safety enforcement measures would now have a primary goal of strengthening the safer driving culture already established by the successfully executed campaign.

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2019, the Saudi desert
It was an ordinary day, hot and windy, as any other in the Saudi summer. Eighteen-year-old Mouna Sarraf was driving his car on his way home. After a busy week of study at the King Abdulalaziz University, the young man was on his way home for a weekend. Mouna was looking forward to a family gathering with his older brothers coming with their families to a large celebration of their father’s birthday. The road was not busy, which provoked in Mouna a desire to increase his speed to get home as fast as possible. As he started to press down on the accelerator of his Subaru WRX, Mouna was attracted to a roadside banner with a road safety campaign message. The billboard’s image was dramatic: a car crash had destroyed an entire family. The scene produced a great impression on Mouna who realized that speeding might cause injury to another family—the members of which may have loved one another the same way as those of Mouna’s. In addition to the billboard’s frightening images, Mouna saw the 110 kph sign, reminiscent of the recent change in fierce law enforcement of speeding. One of Mouna’s friends lost his driving license a week before; he had no right to appeal for its return and also had his car repossessed because of creating danger on the road and speeding at 180 kph. Easing his foot back off the gas pedal, the young man decided that a few more minutes at home might result in unthinkable catastrophe. Mouna adjusted his body in his seat, and settled back into the drive, this time within the speed limit.

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Appendices

Appendix A

*Appendix A.1 Interview Questions*

أسئلة المقابلة الخاصة بصانعي سياسة الحملات المرورية.

القسم الأول: قضايا السلامة المرورية.
أ. ما هي مسؤولياتك الرئيسية؟

ب. من وجهة نظرك أي مدى ترى أهمية التوقيع المروري في المملكة العربية السعودية؟

الرجاء الإختيار حسب الصندوق المناسب أدناه:
غير مهمة للغاية غير مهمة لحد ما لا مهمة أو غير مهمة لحد ما مهمة مهمة للغاية

ت. ما هي الأسباب التي تعزز إجابتك للسؤال 1 (ب) أعلاه؟ الرجاء التوضيح:

ث. كيف تختارون المواضيع والأهداف والرسائل والقوات الإعلامية الخاصة بحملات السلامة المرورية؟

ج. هل تضعون الجمهور المستهدف في الاختبار عند تصميم برنامج الحملة؟ ما هو السبب والكيفية التي تختارون بها الجمهور المستهدف؟

ح. هل لديك لجنة محددة لإدارة الحملة؟ وما هي الكيفية التي يتم بموجبهها اختيار أعضاء اللجنة؟

خ. ما هي الكيفية التي يتم بها تحديد أهداف الحملة؟ وهل الأهداف قابلة للقياس؟

د. ما هي القوانين والتنظيمات التي تضعونها في الاختبار عند اختيار حملة السلامة المرورية؟
Interview questions for Campaign Policy Makers in the Department of Public Relation and Media:

1. PART 1: Road Safety Campaign Issues:

   a. What are your main responsibilities?

       ........................................................................................................................................

       ........

   b. In your opinion, how significant is the road safety message considered in Saudi Arabia? Please tick the relevant box below:

       Very significant  Significant  Somewhat significant  Neither significant nor insignificant  Somewhat insignificant  Insignificant  Very insignificant

       

       

   c. What reason(s) would you advance for your response in question 1b above?

       Please elaborate......................................................................................................................

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   d. How do you select road safety campaign themes, objectives, message and media?

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   e. Do you keep a target audience in consideration when designing a campaign program? Why and how do you select the target group?

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   f. Do you have in place a specific campaign management committee? How are the members of this committee
g. How are the campaign objectives decided? Are the objectives measurable?

h. What laws and regulations do you take into consideration in choosing a traffic campaign?
i. What factors do you consider in deciding the key messages of a traffic
campaign?..................................................................................................................
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j. Do you evaluate the success or failure of a campaign and how do you do this?
Why or why not?..............................................................................................................
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k. What would count as a campaign success for you?............................................................
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l. Do you think people see road safety ads?..............................................................................
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m. How do you think people respond to the ads?

i. Do they think them through?.............................................................................................
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ii. Do they relate them to their own experience?....................................................................
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iii. Do they respond primarily to the visuals? ...............................................................

2. القسم الثاني: المعلومات الشخصية:

أ. ما هي الجهة التي تعمل فيها؟

ب. الموقع الوظيفي؟ الرجاء الاختيار من القائمة أدناه:

1- موظف صغير
2- الإدارة الوسطى
3. **PART 2: Personal Details:**

   a. What organization do you work for? ...................................................

   b. What position do you hold in the organization? Please tick the appropriate box below:

   i. Junior cadre employee……………………………………….

   ii. Middle management……………………………………….

   iii. Senior management……………………………………….

   iv. Other (Please specify)……………………………………..

   Your participation in this interview is greatly appreciated! Thank you very much for your attention and cooperation!
Interview Questions for National Traffic Safety Committee:

2. **Part 1: Road Safety Campaign Issues**:

a. What is your opinion about road safety standards in Saudi Arabia?

b. In your opinion, how significant is the road safety message considered in Saudi Arabia? Please tick the relevant box below:

   - Very significant
   - Significant
   - Somewhat significant
   - Neither significant nor insignificant
   - Somewhat insignificant
   - Insignificant
   - Very insignificant

   

c. What reason(s) would you advance for your response in question 1b above?

   Please elaborate.
d. What is your current role in road safety in general and in road safety campaigns in particular?

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e. Do you see any improvement in driver attitudes towards risky driving behaviour as a result of these two campaigns?

Explain...........................................................................................................................................

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ح. هل تعتقد بأن الحملة كانت ناجحة في إثارة النقاش حول سلوك القيادة المتهورة في المجتمع السعودي؟ الرجاء تحديد وجهة نظرك أو رأيك بالإشارة إلى كل حملة محددة؟

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خ. ما هو تعليقك حول أثر البيئة الثقافية على القيادة بين أوساط السعوديين؟

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d. هل البيئة الثقافية تتأثر حول كيفية إستقبال رسالة السلامة المرورية المعينة؟ الرجاء التوضيح.

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ذ. هل تعتقد بأنه يوجد ما يسمى بثقافة قيادة الشباب بين أوساط الذكور في السعودية؟ الرجاء التوضيح.
e. Do you think the campaign has been successful in triggering discussion on dangerous driving behaviour within the Saudi society? Please state your point of view with reference to each specific campaign.

f. What would be your comment about the impact of culture on driving among Saudi Arabians?
g. Would culture have an impact on the way a particular road safety message is received? Please elaborate
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   .........................

h. Do you think there is such a thing as a youth driving sub-culture among Saudi males? Please elaborate
   ........................................................................................................................
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   .........................

i. Do you think religion has or can have an impact on driving behaviour among Saudis? If yes, what impact is this and why would that be the case?
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   .........................

j. Would religious considerations affect the way a particular road safety message is received? Which considerations, within the specific context of the Saudi situation, would these be? In your opinion, how would such considerations affect the success of any particular campaign?
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   ........................................................................................................................
   .........................
k. Do you think some other programs such as setting up speed cameras or mobile police stations would be more effective than just safety advertisements? Please give reasons behind your opinion.

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ش. هل تعتقد بأن حملات السلامة المرورية يمكن أن تكون أكثر فعالية إذا كانت تحتوي على أكثر من جانب (على سبيل المثال أمنية و مرورية)؟

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س. هل تعتقد بأن حملات السلامة المرورية يمكن أن تكون أكثر فعالية إذا كانت تحتوي على أكثر من مرحلة؟

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ص. ما هي الخطط التي تقترحها لتحسين / تطوير وضع السلامة المرورية في المملكة العربية السعودية؟

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ض. ما هي وجهة نظرك أو رأيك حول حملات السلامة المرورية في المملكة العربية السعودية بصورة عامة؟

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1. Do you think the road safety campaigns will be more effective if they have more than one aspect (for example, security and road safety)?

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m. Do you think that the road safety campaign would be more effective if it has more than one phase?
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n. What plans do you have for improving the road safety situation in Saudi Arabia?
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o. What is your opinion about road safety campaigns in Saudi Arabia in general?
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3. **PART 2: Personal Details:**

   a. Organization.................................................................

   b. Position.................................................................

   Your participation in this interview is greatly appreciated! Thank you very much for your attention and cooperation!

 أسئلة المقابلة الخاصة بالأكاديميين المهتمين بالسلامة المرورية.

 1. ما هي وجهة نظرك أو رأيك في معايير السلامة المرورية بالمملكة العربية السعودية؟
ب. إلى أي مدى ترى أهمية رسالة التوعية المرورية المتتابعة في المملكة العربية السعودية؟

الرجاء الاختيار حسب الصندوق المناسب أدناه:

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ت. ما هي الأسباب التي تعزز إجابتك للسؤال 1 (ب) أعلاه؟

ث. هل لاحظت أي استخدام مدروس لأي منظورات التغيير السلوك في حملات السلامة المرورية في السعودية؟ ما هي تلك المنظورات؟

ج. الرجاء التعليق على مستوى الإعلانات المستخدمة في الحملات وأثرها على فعالية حملات التوعية المرورية؟

ح. هل تحصد أنك قد تم استخدام أساليب الخوف أو التهديد في حملات التوعية المرورية بالمملكة العربية السعودية؟ إذا كانت الإجابات بنعم هل ترى أن تلك الأساليب كانت فعالة؟

**Interview Questions for Academics Who Have an Interest in Road Safety:**

2. **PART 1: Road Safety Campaign Issues:**
a. What is your opinion about road safety standards in Saudi Arabia?

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b. In your opinion, how significant is the road safety message considered in Saudi Arabia? Please tick the relevant box below:

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c. What reason(s) would you advance for your response in question 1b above?

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d. Do you see the use of any well-researched behaviour change theories in the Saudi Arabian road safety campaigns? Which theories are these?

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e. Please comment on the levels of advertising exposure used in the campaigns and their impact on the effectiveness of the road safety campaign.

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خ. هل ترى بأن هناك بديلًا لاستخدام أساليب الخوف أو التهديد في حملات التوعية المرورية بالملكة العربية السعودية؟ ما هي تلك البدائل؟
f. Do you think that the fear or threat appeal has been used in any of the road safety campaigns in Saudi Arabia? If yes, how effective has the use of threat or fear appeals been?

.........................


g. Do you see any alternatives to the use of fear or threat appeals in road safety campaigns in Saudi Arabia? Which alternatives are these?
h. In your opinion, has the integration of campaign activities such as enforcement, education, and legislation into road safety campaigns had any impact on the effectiveness of road safety advertisements in Saudi Arabia?

i. Do you think that new forms of media and technology can enhance the effectiveness of the delivery of road safety messages in Saudi Arabia? Please explain

j. Is there any evidence to show that the target behaviours and groups for the road safety campaign were identified using systematic data-driven processes?

k. What is the influence of gender, if any, on the effectiveness of different emotional appeals used in the road safety campaigns?
What is your opinion about the suitability of crash data as a yardstick for evaluating the effectiveness of a road safety campaign? Which variables, in your opinion, should be used for evaluation purposes?
m. What would you say about the choice of media for the road safety campaign based on the following?

i. Target audience characteristics

ii. Characteristics of the different types of media available

iii. Proximity to the point of impulse

iv. Synergistic effects of different media

n. How would you evaluate the following elements of the message execution strategy of the road safety campaign?

i. Message structure: does it adopt a one-sided or a two-sided argument and what is the impact of this on the effectiveness of the advertisement?

ii. Framing: is the message negatively or positively framed and what is the impact of the framing style?
iii. Does it use rational or emotional appeals and what is the impact of the type of appeal used on the advertising effectiveness?

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موثوقة وصادقة
امينة
سهيلة الفهم

ض. حسب رأيك عن حملات السلامة المرورية، كيف تقيم مدى قدرة الجوانب التالية في رسالة السلامة المرورية على جذب الإنتباه وتحفيز الجمهور المستهدف لتبني السلوك المرغوب وذلك حسب ما هو مستخدم في حملات السلامة المرورية في المملكة العربية السعودية؟
Based on your own opinion about the road safety campaign, how would you respond to the following antecedents of the ability of the road safety message to capture attention and motivate the target audience to adopt the desired behaviour as used in specific Saudi Arabian road safety campaigns?

- Credible
- Honest
- Easy to understand
- Persuasive
- Used repeatedly

Please indicate your level of agreement with each statement using the following scale:

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree
p. How much do you think cultural values would impact on acceptance of particular type of safety advertisements? For example, if an advertisement is not consistent with what the majority people believe in, will that be accepted by the community? Please also rank your response of culture’s impact in message acceptability by ticking in the relevant section below:

Completely acceptable
Not at all acceptable

q. Do you think road safety messages formulated in one different cultural setting (for example in a European country) can be transferred to a different cultural setting (for example, an Arab country) and be equally effective in that new setting? Please give reasons for your belief.

In your opinion, how can future road safety campaigns in Saudi Arabia be improved?
PART 2: Personal Details:

a. Organization

................

b. Position

...........

Your participation in this interview is greatly appreciated! Thank you very much for your attention and cooperation!

 أسئلة المقابلة للوكالات الإعلانية التي تقوم بتصميم العناصر الإبداعية في الحملات.

1. القسم الأول: خصائص حملات السلامة المرورية:

أ. ما هي حملات التوعية الخاصة بالسلامة المرورية التي شاركت فيها في المملكة العربية السعودية؟

................

ب. ما الذي كنت تهدف لتحقيقه في تلك الحملات؟

........................

ت. ما هو العنصر الأساسي والضروري في تلك الحملات؟ ولمى أناعتك بأن ذلك العنصر كان مهماً للغاية؟

........................

ث. لصالح من قمت بتصميم حملتك؟ ومن هو الجمهور المستهدف؟

................
Interview questions for Creative Agencies who design(ed) creative elements in campaigns:

1. **PART 1: Road Safety Campaign Issues:**

a. Which road safety publicity campaigns in Saudi Arabia have you been involved in within the creative context role?

b. What were you trying to achieve in those campaigns?

c. What was the critical element in the campaign? Why do you think that element was so important?

d. For whom did you design your campaign? Which target audience did you have in mind?
f. How do you put together the creative aspects of the campaign message? Is the process systematic and data-led, or influenced by policymakers?

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1- ﻣﻦ اﻟﺎﺷﺨﺎﺻﻲ اﻟﺬﻳﻦ ﻣﻮﻗﻮم ﺑﺎﺳﺘﺸﺎرﺗﮫﻢ؟

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3- ﻋﻠﻰ ﻣﺎ ﺗﻨﻘﺮ ﻓﻲ اﻟﻤﻠﺎﻛﺎت ﺑﺎﻟﺬﻳﻦ؟

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د. ﻋﻠﻰ ﻣﺎ ﺗﻌﻤﺪ ﻋﻠﯿﮫ ﻓﻲ ﺗﺼﻤﯿﻢ اﻟﺤﻤﻼت؟

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ر. ﻋﻠﻰ ﻣﺎ ﻣﺎ ﺗﻌﻤﺪ ﻋﻠﯿﮫ ﻓﻲ وﻀﻊ اﻟﺸﻌﺎرات / اﻟﻜﻠﻤﺎت اﻟﻤﺴﺘﺨﺪﻤﺔ / اﻟﺼﻮرا؟

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1- ﻋﻠﻰ ﻣﺎ ﺗﻌﻤﺪ ﻋﻠﯿﮫ ﻓﻲ وﻀﻊ اﻟﺤﻤﻼت، ﻻن:
2- هل حاولت ربطها بممارسات/لغة أو لحجة، أو ثقافة شعبية شائعة؟

3- هل حاولت التأكد من أن الرسالة كانت واضحة؟

4- ما هي الطرق والأساليب الأخرى، خلف تلك الطرق المذكورة أعلاه، التي قمت بإستخدامها؟

g. What guided you in developing the campaign?

i. Who did you consult?.................................................................

ii. Whose ideas were important?.......................................................

iii. Did you think back on previous campaigns?.................................

h. What guided you in developing the slogan/approach/words used/images?

i. Do you try to reduce complexity?....................................................

j. When you develop a campaign/ad, do you
i. Try to link it to particular discourses/customs?

ii. Try to link it to practices/language/popular culture?

iii. Try to make sure that the message is most prominent?

iv. What other approach, apart from the ones listed above, could you have?

(For question i above, please feel free to tick more than one of the options given, as the case may be).

- ز. هل توصي باستخدام الصور والرسوم وإعلانات الفيديو أكثر؟ هل يمكنك الإشارة في خيرك؟

- س. ما مدى أهمية "طريقة إيصال الرسالة الأساسية" في إعلانات السلامة المرورية؟

- ص. كيف تضمن أن الشعارات التي تم اختيارها للحملة المعينة لن تثير حفيظة الجمهور أو المجموعات المستهدفة الثقافية أو الدينية؟

- م. كيف تختار القناة الإعلامية؟ ولماذا؟
k. Would you recommend using graphic and video ads more than other types of ads? Could you expand on your preference?

l. How important is the way in which the key messages are delivered?

m. How do you ensure that a logo or slogan selected for a particular campaign does not offend the culture or religion of the targeted population groups?

o. How do you choose the media channels? Why?

p. Do you have a specific budget for campaigns? Is the budget sufficient?
3. **PART 2: Personal Details:**

   a. Organisation...........................................

   b. Position............................................... 

      i. Junior cadre employee................................

      ii. Middle management................................ 

      iii. Senior management................................ 

      iv. Other (Please specify)............................

   c. What is your major responsibility within this organization?

   *Your participation in this interview is greatly appreciated! Thank you very much for your attention and cooperation!*

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3. أسئلة قيادات المرور بالرياض وجدوة والطائف

الجزء الأول: قضايا السلامة في الطريق.

أ. ما هو رأيك في مستوى السلامة المرورية في طريق المملكة العربية السعودية؟
Interview questions for traffic police administrators in Riyadh, Jeddah and Taif:

ب. من وجهة نظرك إلى أي مدى ترى أهمية التوعية المرورية في المملكة العربية السعودية؟

الرجاء الاختيار حسب الصندوق المناسب أدناه:

غير مهمة للغاية غير مهمة مهمة نسبيًا لا مهمة أو غير مهمة مهمًا مهمًا للغاية

ت. ما هي الأسباب التي تعزز أجابتك للسؤال 1 (ب) أعلاه؟ الرجاء التوضيح:

ث. ما هي الأسباب الرئيسية لحوادث الطرق المرورية حسب رأيك؟

ج. ما هي العوائق / العقبات التي يجب التصدي لها أو تجاوزها لضمان نجاح برامج التوعية المرورية؟

ح. ما هي حوادث التوعية المرورية في المملكة العربية السعودية التي تتذكرها؟

ج. كم استغرق وقت هذه الحوادث؟

Interview questions for traffic police administrators in Riyadh, Jeddah and Taif:
1. **PART 1: Road Safety Issues:**

   a. What is your opinion about road safety standards in Saudi Arabia?

   b. In your opinion, how significant is the road safety message considered in Saudi Arabia? Please tick the relevant box below:

   - Very significant
   - Significant
   - Somewhat significant
   - Neither significant nor insignificant
   - Somewhat insignificant
   - Insignificant
   - Very insignificant

   ![Ticked Box]

   c. What reason(s) would you advance for your response in question 1b above? Please elaborate...

   d. What do you think are the major reasons for road traffic accidents?

   e. What constraints/barriers do you think should be addressed or overcome for more successful campaign programs?

   f. Which Saudi Arabia road safety campaigns are you familiar with, if any?
g. How long did the campaigns you are familiar with run?

.................................................................................................................................
.................................................................................................................................
.................................................................................................................................

د. ما هو موضوع تلك الحملات؟
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................

ذ. منهم شرائح الجمهور التي استهدفتها هذه الحملات؟
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................

ر. ما هي الرسائل الأساسية لهذه الحملات؟
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................

ز. ما هي الوسائل الإعلامية التي استخدمت في كل حملة؟
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................

س. حسب رأيك، هل تم اختيار وقت و مدة الحملات والجمهور المستهدف والرسائل والوسائل الإعلامية بصورة صحيحة؟ وضح إجابتك في كلا الحالتين.
.................................................................................................................................
.................................................................................................................................
.................................................................................................................................

ش. حسب رأيك، هل تنتج عن الحملة أي تأثير. ما هو نوع هذا التأثير؟ الرجاء الاختيار من الأقسام التالية أدناه:

1. أثر طويل المدى (استمر أثر الحملة حتى بعد نهايتها)
2. أثر قصير المدى (التأثير كان محدوداً فقط أثناء فترة الحملة)
3. لم يحدث أي تأثير
h. What was the theme of each of these campaigns?
   .................................................................................................................
   .................................................................................................................
   .................................................................................................................

i. Which segments of the Saudi Arabia population did the campaigns target?
   .................................................................................................................
   .................................................................................................................
   .................................................................................................................

j. What was the core message of each of the campaigns?
   .................................................................................................................
   .................................................................................................................
   .................................................................................................................

k. Which media channels were used to convey the message?
   .................................................................................................................
   .................................................................................................................
   .................................................................................................................

l. In your opinion, were the campaign length, themes, and target groups, message and media channels chosen correctly? Why or why not?
   .................................................................................................................
   .................................................................................................................
   .................................................................................................................

m. Did the campaign, in your opinion, have any impact? What kind of impact did it have? (Please tick the appropriate section below):
i. Long – term impact (its impact continues even after the end of the campaign)

ii. Short – term impact (impact limited only during the campaign period)

iii. No impact

n. How would you describe the level of compliance of drivers to traffic laws during the campaign period? For example, in a campaign about speeding, did speeding decrease during the campaign - particularly among the target group of the campaign?

o. In your opinion, how can future road safety campaigns in Saudi Arabia be improved?
2.  PART 2: Personal Details:

a. Area of Jurisdiction

   i. Riyadh.................................

   ii. Jeddah.................................

   iii. Taif.................................

   iv. Other (Specify)......................

b. Role in the Traffic Police Administration.................................

   Your participation in this interview is greatly appreciated! Thank you very
   much for your attention and cooperation!
Interview Questions for traffic safety operatives, in Riyadh, Jeddah and Taif:

PART 1: Road Safety Issues:

a. Which Saudi Arabia road safety campaigns are you familiar with, if any? .................................................................

.................................................................
b. How long did the campaigns you are familiar with run?

........................................................................................................................................
........................................................................................................................................


c. What was the theme of each of these campaigns?

........................................................................................................................................
........................................................................................................................................


d. Which segments of the Saudi Arabia population did the campaigns target?

........................................................................................................................................
........................................................................................................................................


e. What was the core message of each of the campaigns?

........................................................................................................................................
........................................................................................................................................


f. Which media channels were used to convey the message?

........................................................................................................................................


خ. حسب رأيك، هل تم اختيار وقت ومرة الحملات والمجموعات المستهدفة والرسائل والوسائل الإعلامية بصورة صحيحة؟ وضح إجابتك في كلا الحالتين.

........................................................................................................................................


د. حسب رأيك، هل نتج عن الحملة أي تأثير، ما هو نوع هذا التأثير؟ الرجاء الإختيار:

1. أثر طويل المدى (استمر أثر الحملة حتى بعد نهايةها)
2. أثر قصير المدى (التأثير كان محدوداً فقط أثناء فترة الحملة)
3. لم يحدث تأثير.
g. In your opinion, were the campaign length, themes, and target groups, message and media channels chosen correctly? Why or why not?
......................................................................................................................................
......................................................................................................................................
......................................................................................................................................
......................................................................................................................................

h. Did the campaign, in your opinion, have any impact? What kind of impact did it have? (Please tick the appropriate section below):

i. Long – term impact (its impact continues even after the end of the campaign)

ii. Short – term impact (impact limited only during the campaign period)

iii. No impact

i. How would you describe the level of compliance of drivers to traffic laws during the campaign period? For example, in a campaign about speeding, did speeding decrease during the campaign -particularly among the target group of the campaign?
j. In your opinion, how can future road safety campaigns in Saudi Arabia be improved?

PART 2: Personal Details:

a. Organisation

b. Position

c. What is your major responsibility within this organization? Please tick the appropriate section below:

i. Policy determination

ii. Creation and development of road safety campaigns

iii. Execution of road safety campaign

iv. Evaluation of road safety campaigns

v. Others (please specify)

....
Your participation in this interview is greatly appreciated! Thank you very much for your attention and cooperation!

Survey Questionnaire for the frontline traffic system personnel, in Riyadh, Jeddah and Taif:

Please take your time to fill in the questionnaire below. This exercise is voluntary and no information provided here, whether of a personal nature or otherwise, will be disclosed to third parties without your express consent and knowledge. Apart from this non-disclosure undertaking, the researcher also commits to keep all the information you provide strictly anonymous. Readers of the final research document will not be able to identify individual respondents.

القسم الأول: قضايا حملات السلامة المرورية:

أ. ما هو رأيك حول معايير السلامة المرورية بالمملكة العربية السعودية؟

.................................................................

.................................................................

ب. إلى أي مدى ترى أهمية رسالة السلامة المرورية في المملكة العربية السعودية.
1. **PART 1: Road Safety Campaign Issues:**

a. What is your opinion about road safety standards in Saudi Arabia?

b. In your opinion, how significant is the road safety message considered in Saudi Arabia? Please tick the relevant box below:

<table>
<thead>
<tr>
<th>Very significant</th>
<th>Significant</th>
<th>Somewhat significant</th>
<th>Neither significant nor insignificant</th>
<th>Somewhat insignificant</th>
<th>Insignificant</th>
<th>Very insignificant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
c. What reason(s) would you give for your answer in 1b above? Please elaborate.

..............................................................

..............................................................

.................

d. What do you think are the major reasons for road traffic accidents?

..............................................................

..............................................................

.................

e. With which Saudi Arabia road safety campaigns are you familiar, if any?

..............................................................

..............................................................

.................

f. How long did the campaigns with which you are familiar run?

..............................................................

.................

g. What was the theme of each of these campaigns?

..............................................................

..............................................................

.................

h. 

..............................................................

..............................................................

.................
i. Which segments of the Saudi Arabia population did the campaigns target?

<table>
<thead>
<tr>
<th>Campaign 1</th>
<th>Core message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Campaign 2</th>
<th>Core message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Campaign 3</th>
<th>Core message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Campaign 4</th>
<th>Core message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

j. What was the core message of each of the campaigns? Please indicate in the boxed sections in the table below as appropriate:

<table>
<thead>
<tr>
<th>Campaign 1</th>
<th>Core message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Campaign 2</th>
<th>Core message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Campaign 3</th>
<th>Core message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Campaign 4</th>
<th>Core message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ز. ما هي الوسائط الإعلامية التي استخدمت في كل حملة؟
J. Which media channels were used to convey the message?

k. In your opinion, were the campaign length, themes, and target groups, message and media channels chosen correctly? Why or why not?

<table>
<thead>
<tr>
<th>مجموعه الأولى</th>
<th>التأثير</th>
</tr>
</thead>
<tbody>
<tr>
<td>مجموعه الثانية</td>
<td>التأثير</td>
</tr>
<tr>
<td>مجموعه الثالثة</td>
<td>التأثير</td>
</tr>
<tr>
<td>مجموعه الرابعة</td>
<td>التأثير</td>
</tr>
</tbody>
</table>

1. Did any of the campaigns, in your opinion, have any impact? What impact was this? Please indicate your response in the boxed sections in the table below:
<table>
<thead>
<tr>
<th>Campaign 1</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaign 2</td>
<td>Impact</td>
</tr>
<tr>
<td>Campaign 3</td>
<td>Impact</td>
</tr>
<tr>
<td>Campaign 4</td>
<td>Impact</td>
</tr>
</tbody>
</table>

How would you describe the level of compliance of drivers to traffic laws during the campaign period? For example, in a campaign about speeding, did speeding decrease during the campaign - particularly among the target group of the campaign?
m. Do you think there is room for improvement of road safety campaign creation and execution in Saudi Arabia?

n. In your opinion, which improvements (if any) need to be made to road safety campaign creation and execution in Saudi Arabia?

3. PART 2: Personal Details:

a. Organisation

b. Position

Your participation in this survey is greatly appreciated! Thank you very much for your attention and cooperation.

Appendix A.2 Survey Questions (Original)

Socio-Demographic questions: age, years of driving experience, occupation, level of education, region of KSA.
**Driver Error Questions**

0 = never  
1 = hardly ever  
2 = occasionally  
3 = quite often  
4 = often  
5 = nearly all the time

<table>
<thead>
<tr>
<th>Questions</th>
<th>Categories of answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Miss your exist on an interstate and have to make a lengthy detour</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>2. Try to change lanes without first checking your mirror, and then be honked by the car behind you which is already in the lane</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>3. Lost in thought or distracted, you fail to notice someone on the side waiting to cross in a pedestrian crossing and drive through the crosswalk</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>4. Misjudge the speed of a passing vehicle</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>5. Pass a single line of stationary or slow-moving vehicles, only to discover that they were in a line to get through one-lane construction zone</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>6. Cut the corner on a left-hand turn and have to swerve to avoid an oncoming vehicle</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>7. Fail to read the signs correctly at an intersection and turn onto the wrong road</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>8. Attempt to pass a vehicle that you hadn’t noticed was signaling its intention to turn left</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>9. Misjudge your turning space when turning left and narrowly miss collision</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>10. Attempt to drive away from traffic lights in third gear</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>11. Lock yourself out of your car with keys still inside</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>12. Drive as fast along country roads at night on dipped lights as on full beam</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>13. Attempt to drive away without first having switched on the ignition</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>14. Forget where you left your car in a multi-level car park</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>15. Forget which gear you are currently in and have to check with your hand</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>16. Forget when your road tax/insurance expires and discover than you are driving illegally</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>17. Have an aversion to a particular class of road user, and indicate your hostility by</td>
<td>0 1 2 3 4 5</td>
</tr>
</tbody>
</table>
whatever means you can

18. Park on a double-yellow line and risk a fine  0  1  2  3  4  5
19. Hit something when reversing that you had not previously seen  0  1  2  3  4  5
20. Deliberately drive the wrong way down a deserted one-way street  0  1  2  3  4  5

**DAQ**

1 = strongly disagree
2 = disagree
3 = neither agree nor disagree
4 = agree
5 = strongly agree

<table>
<thead>
<tr>
<th>Questions</th>
<th>Categories of answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Driving safely after drinking a couple of pints of beer is possible</td>
<td>1  2  3  4  5</td>
</tr>
<tr>
<td>2. People stopped by the police for road safety violations are simply unlucky because many people do that</td>
<td>1  2  3  4  5</td>
</tr>
<tr>
<td>3. Speed limits are often set too low, so many people ignore them</td>
<td>1  2  3  4  5</td>
</tr>
<tr>
<td>4. It is acceptable to take slight risks on the road when overtaking other cars</td>
<td>1  2  3  4  5</td>
</tr>
<tr>
<td>5. Using a mobile phone is not a problem as drivers can drive safely when using it</td>
<td>1  2  3  4  5</td>
</tr>
<tr>
<td>6. I would be happy if regulations on mobile phone use while driving were applied more strictly</td>
<td>1  2  3  4  5</td>
</tr>
<tr>
<td>7. I am well aware of the risks associated with using a mobile phone when driving</td>
<td>1  2  3  4  5</td>
</tr>
<tr>
<td>Question</td>
<td>1</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>8. Close following is not a big problem during driving</td>
<td></td>
</tr>
<tr>
<td>9. I know exactly how fast I can drive and still drive safely</td>
<td></td>
</tr>
<tr>
<td>10. Some people can drive safely even if they leave a small gap behind</td>
<td></td>
</tr>
<tr>
<td>the vehicle in front of them</td>
<td></td>
</tr>
<tr>
<td>11. I would be happier if close-following regulations were more</td>
<td></td>
</tr>
<tr>
<td>strictly applied</td>
<td></td>
</tr>
<tr>
<td>12. Overall, people are not aware of the danger associated with close</td>
<td></td>
</tr>
<tr>
<td>following</td>
<td></td>
</tr>
<tr>
<td>13. Overtaking even in a slightly risky situation reduces safety of the</td>
<td></td>
</tr>
<tr>
<td>driver</td>
<td></td>
</tr>
<tr>
<td>14. I would be happier if speed limits were more strictly enforced on</td>
<td></td>
</tr>
<tr>
<td>the roads</td>
<td></td>
</tr>
<tr>
<td>15. Random breath testing should be introduced for drivers</td>
<td></td>
</tr>
<tr>
<td>16. Speeding is one of the main causes of road accidents</td>
<td></td>
</tr>
<tr>
<td>17. Sometimes you have to drive in excess of the speed limit to keep</td>
<td></td>
</tr>
<tr>
<td>up with the flow of traffic</td>
<td></td>
</tr>
<tr>
<td>18. Current alcohol limits for drivers are too low – they need to be</td>
<td></td>
</tr>
<tr>
<td>more strict</td>
<td></td>
</tr>
</tbody>
</table>

Questions marked in yellow should be scored reversely – 1 = 5 scores; 2 = 4 scores; 3 = 3 scores; 4 = 2 scores; 5 = 1 scores

**DBQ**

0 = never

1 = hardly ever
2 = occasionally

3 = quite often

4 = often

<table>
<thead>
<tr>
<th>5 = nearly all the time Questions</th>
<th>Categories of answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>2. Drive especially close to the car in front as a signal to the driver to go faster or get out of the way</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>3. Attempt to overtake someone that you hadn’t noticed to be taking a right turn</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>4. Cross a junction knowing that the traffic lights have already turned against you</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>5. Angered by another driver’s behavior, you chase him/her with the intention of giving him/her a piece of your mind</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>6. Disregard the speed limits late at night or early in the morning</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>7. Drive even though you realize you might be over the legal blood alcohol level</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>8. Get involved in unofficial ‘races’ with other drivers</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>9. Attempt to pass someone on an undivided road that you hadn’t noticed to be signaling a left turn</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>10. Run yellow lights</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>11. Fail to notice pedestrians crossing</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>12. When merging, pay such close attention to the main stream of traffic that nearly hit the car in front of you</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>13. Underestimate the speed of an oncoming vehicle when passing on an undivided road</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>14. Miss ‘yield’ or ‘stop’ signs; narrowly avoiding a collision</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>15. Fail to check your rearview mirror before pulling out, changing lanes, etc.</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>16. Brake too quickly on a slippery road, or steer the wrong way into a skid</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>17. Use a mobile phone when driving</td>
<td>0 1 2 3 4 5</td>
</tr>
</tbody>
</table>

Appendix A.3 Survey Questions (Improved After Field Testing)
Safe Driving Survey in KSA

This survey is part of my doctoral thesis at the University of Western Sydney, Australia. Please take your time to fill in the questionnaire below. This exercise is voluntary and no information that you provide here, whether of a personal nature or otherwise, will be disclosed to third parties without your express consent and knowledge. The researcher also commits to keeping all the information you provide strictly anonymous. Readers of the final research document will not be able to identify individual respondents. By submitting the survey, you consent to being a part of my research. Thank you, Sultan Almuammar, Feb, 2015.

1. Your age:
☐ under 20 ☐ 20–24 ☐ 25–29 ☐ 30–34 ☐ 35–39 ☐ 40–44 ☐ over 45 years old

2. Years of driving experience:
☐ 0-3 years
☐ 4-7 years
☐ 8-10 years
☐ over 10 years

3. Occupation: _______________________

4. Level of education:
☐ No education
☐ Primary/basic education
☐ Some high school education
☐ High School graduate
☐ College degree
☐ Bachelor’s degree
☐ Higher degree

5. Region of the KSA you live in:
☐ Riyadh
☐ Jeddah
☐ Taif
☐ Other (specify)_________________

6. Nationality: _____________________
7. Level of Arabic language proficiency:
☐ Do not know at all  ☐ Very weak  ☐ Weak  ☐ Average  ☐ Proficient 
☐ It is my native language

For the following questions, please circle the number that represents your behaviour/opinion in the following situations. An answer of 4 indicates a Not Applicable answer.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Categories of answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. USUALLY miss your exit on an interstate and have to make a lengthy detour</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>9. USUALLY try to change lanes without first checking your mirror</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>10. You fail to notice someone on the side waiting to cross in a pedestrian crossing and drive through the crosswalk</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>11. USUALLY misjudge the speed of a passing vehicle</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>12. USUALLY have to swerve to avoid an oncoming vehicle when cutting the corner on a left-hand turn</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>13. USUALLY fail to read the signs correctly</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>14. USUALLY attempt to pass a vehicle intending to turn left</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>15. USUALLY misjudge your turning space when turning left</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>16. USUALLY exceed speed limits by more than 10 km/hour</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>17. USUALLY jump the orange and red lights</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>18. NEVER wear a seatbelt</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>19. USUALLY drive while talking on the cell phone or texting</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>20. USUALLY violate other general traffic rules</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>21. People stopped by the police for road safety violations are simply unlucky because many people do that</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>22. Speed limits are often set too low, so many people ignore them</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
| 23. It is acceptable to take slight risks on the road when overtaking | 1 2 3 4 5 6 7 | It is NOT acceptable to take slight risks on the road when
<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>other cars</td>
<td>overtaking other cars</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Using a mobile phone is NOT a problem as drivers can drive safely when using it</td>
<td>1 2 3 4 5 6 7</td>
<td>Using a mobile phone is a problem as drivers cannot drive safely when using it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. I am NOT aware of the risks associated with using a mobile phone when driving</td>
<td>1 2 3 4 5 6 7</td>
<td>I am well aware of the risks associated with using a mobile phone when driving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Close following is NOT a big problem during driving</td>
<td>1 2 3 4 5 6 7</td>
<td>Close following is a big problem during driving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. I do NOT know exactly how fast I can drive and still drive safely</td>
<td>1 2 3 4 5 6 7</td>
<td>I know exactly how fast I can drive and still drive safely</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. People are aware of the danger associated with close following</td>
<td>1 2 3 4 5 6 7</td>
<td>People are not aware of the danger associated with close following</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Overtaking does NOT reduce safety of the driver</td>
<td>1 2 3 4 5 6 7</td>
<td>Overtaking even in a slightly risky situation reduces safety of the driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Speeding is rarely a cause of road accidents</td>
<td>1 2 3 4 5 6 7</td>
<td>Speeding is one of the main causes of road accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Sometimes you have to drive in excess of the speed limit to keep up with the flow of traffic</td>
<td>1 2 3 4 5 6 7</td>
<td>It is NOT appropriate to drive in excess of the speed limit to keep up with the flow of traffic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>1 2 3 4 5 6 7</td>
<td>Never become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Drive especially close to the car in front as a signal to the driver to go faster or get out of the way</td>
<td>1 2 3 4 5 6 7</td>
<td>Never drive especially close to the car in front as a signal to the driver to go faster or get out of the way</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Disregard the speed limits late at night or early in the morning</td>
<td>1 2 3 4 5 6 7</td>
<td>Never disregard speed limits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35. Get involved in unofficial ‘races’ with other drivers</td>
<td>1 2 3 4 5 6 7</td>
<td>Never get involved in unofficial ‘races’ with other drivers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. Miss ‘yield’ or ‘stop’ signs</td>
<td>1 2 3 4 5 6 7</td>
<td>Never miss ‘yield’ or ‘stop’ signs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37. Brake too quickly on a slippery road</td>
<td>1 2 3 4 5 6 7</td>
<td>Never brake too quickly on a slippery road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38. Steer the wrong way into a skid</td>
<td>1 2 3 4 5 6 7</td>
<td>Never steer the wrong way into a skid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

39. Do you know such road safety campaigns as Salamaty and Enough in the KSA? (if yes, please say a few words about them, what they are about, etc)

☐ Yes

☐ No
☐ Undecided

__________________________

__________________________

__________________________

(space for additional comments)

40. What aspects of these road safety campaigns attract you most of all?

☐ Content
☐ Emotional appeal
☐ Targeting specific driver groups
☐ Duration
☐ The way they improve road safety
☐ Other (please specify)

41. With respect to the risky driving behaviors discussed above, do you think that any of the road safety campaigns in Saudi Arabia may have persuaded you to stop any of the risky driving behaviors you had?

☐ Yes
☐ No

42. Please indicate the extent to which any of the road safety campaigns in Saudi Arabia has been effective in persuading you to change any of your risky driving behavior.

☐ Completely
☐ Very much
☐ Much
☐ Somewhat
☐ Little
☐ Very little
☐ Very little
☐ Not at all

43. Please specify the driving behaviours that have been affected by the campaigns.
44. Do you consider the length of Salamaty to be appropriate to reach its target?
☐ Yes
☐ No

45. Do you consider the length of Enough to be appropriate to reach its target?
☐ Yes
☐ No

46. Do you think these campaigns target the correct groups of drivers? Which ones? If no, which ones they should target?
☐ Yes, target groups are correct
☐ No, these campaigns should target other groups (if others – please indicate which ones)

47. Why do you think themes of Salamaty and Enough campaigns are effective/ineffective?
48. Do you think messages and media channels were selected appropriately for these campaigns? If no, which ones would you recommend to add??

________

________

49. What changes would you propose to make the current road safety campaigns in the KSA more effective?

________

________

Thank you for your participation!

Appendix A.4 Survey in Arabic

استبيان القيادة الأمنة في المملكة العربية السعودية

هذا الاستبيان هو جزء من رساليتي للدكتوراه في جامعة غرب سيدني، أستراليا. يرجى أخذ الوقت الكافي لملء الاستبيان أعلاه. هذه العملية طوعية والمعلومات التي تقدمها هنا، سواء كانت ذات طابع شخصي أو خلاف ذلك، لن يتم الكشف عنها إلى طرف ثالث دون موافقة صريحة منك أو معرفتك. يلزم الباحث أيضًا بشكل صارم بسرية جميع المعلومات التي تقدم في هذا الاستبيان بحيث أن القارئ لوثيقة البحث النهائية لن يكون قادرًا على تحديد هوية المشاركين الفردية. عن طريق تقديم هذا الاستبيان، فإrik توافق على كونه جزءًا من بحثي.

شكراً لك

الباحث: سلطان العمر في فبراير 2015
1 - كم عمرك:

2 - منذ متى ونعتك تقود السيارة:
☐ 0 - 3 سنوات
☐ 4 - 7 سنوات
☐ 8 - 10 سنوات
☐ أكثر من 10 سنوات

ادخل:

3 - المستوى التعليمي:
☐ غير متعلم
☐ التعليم الأبتدائي
☐ التعليم المتوسط
☐ الثانوية العامة
☐ شهادة جامعية
☐ درجة البكالوريوس
☐ درجة علمية أعلى

4 - المنطقة التي تعيش فيها في المملكة العربية السعودية:
☐ الرياض
☐ جدة
☐ الطائف
☐ أخرى (حدد)

5 - الجنسية:

مستويات الكانالغة العربية:
☐ لا أتحدث العربية
☐ ضعيفة جداً
☐ ضعيفة
☐ متوسطة
☐ ماهر
☐ العربية هي لغتي الأم

الأسئلة التالية، برجي وضع دائرة حول الرقم الذي يمثل choixك/أيكوني المواقف التالية.

الجواب رقم 4 معناه لست من المعاد أن أقول المخرج الذي أريد في الخط السريع وأضطر إلى سلوك طريق أطول للوصول.

<table>
<thead>
<tr>
<th>الالتباس</th>
<th>الفئة</th>
</tr>
</thead>
<tbody>
<tr>
<td>ليس من المعاد أن أفوت المخرج الذي أريده في الخط السريع وأضطر إلى سلوك طريق أطول للوصول</td>
<td>7</td>
</tr>
<tr>
<td>من المعاد أن أفوت المخرج الذي أريده في الخط السريع وأضطر إلى سلوك طريق أطول للوصول</td>
<td>6</td>
</tr>
<tr>
<td>ليس من المعاد أن أغير المسار</td>
<td>7</td>
</tr>
<tr>
<td>من المعاد أن أغير المسار دون</td>
<td>7</td>
</tr>
<tr>
<td>النظرة إلى المرأة أولاً</td>
<td>بدون النظر إلى المرأة أولاً</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>إذا لم تكون المشاهد على جانب الطريق وسافر لهم بالعور 7654321</td>
<td>النظرة إلى المرأة أولاً 86321</td>
</tr>
<tr>
<td>عادة أستخدم تقدير سرعة السيرة العارية الجبارية 7654321</td>
<td>عادة لا أستخدم تقدير سرعة السيرة العارية المحمولة 7654321</td>
</tr>
<tr>
<td>لا أناستري عادة للانحراف لتجنب الكلاب المركبات القادمة في حال عبور المنطقة 7654321</td>
<td>لا أناستري عادة للانحراف لتجنب المركبات المركبة في حال عبور المنطقة 7654321</td>
</tr>
<tr>
<td>أستخدم قراءة المعلومات المرورية الموجودة على الطريق 7654321</td>
<td>ليس من المعتاد أن أانصرف إلى القيادة التي تأتي من الآخرين 7654321</td>
</tr>
<tr>
<td>ليس من المعتاد أن أانصرف إلى القيادة التي تأتي من الآخرين 7654321</td>
<td>استمر في تقدير السرعة عند محاولة القيادة في 7654321</td>
</tr>
<tr>
<td>لا أعلن السرعة القانونية به 7654321</td>
<td>ليس من المعتاد أن أانصرف إلى القيادة عند الضوء الاحمر أو الأحمر 7654321</td>
</tr>
<tr>
<td>إذا استخدم حرم الأمن 7654321</td>
<td>إذا استخدم أحالف قوانين المرور 7654321</td>
</tr>
<tr>
<td>ليس من المعتاد أن أانصرف إلى القيادة عند وصول المرور العام 7654321</td>
<td>ليس من المعتاد أن أانصرف إلى القيادة إذا استخدم أحالف قوانين المرور العام 7654321</td>
</tr>
<tr>
<td>الأشخاص الذين يتم إيقافهم من قبل شرطي المرور بسبب مشاكل مرورية هم محظوظون من العدل 7654321</td>
<td>السرعة القانونية هي مناسبة ويجب على الناس الألتزام بها 7654321</td>
</tr>
<tr>
<td>إنه ليس من المقبول أن تتجاوز قليلاً على الطريق عند تجاوز المركبات الأخرى 7654321</td>
<td>في النهاية أستعمل أسلوب رأسية في 7654321</td>
</tr>
<tr>
<td>استخدام الهاتف المحمول أثناء القيادة خطر حيث أن السائقين لا يقدرهم 7654321</td>
<td>استخدام الهاتف المحمول أثناء القيادة 7654321</td>
</tr>
<tr>
<td>إخباري إذا أعني استخدام المشروع المحمول أثناء القيادة 7654321</td>
<td>استخدام الهاتف المحمول أثناء القيادة 7654321</td>
</tr>
<tr>
<td>لا أخلي أي الأفكار من السيارة الأمامية بشكل خطر كبير 7654321</td>
<td>استخدام الهاتف المحمول أثناء القيادة 7654321</td>
</tr>
<tr>
<td>أي عمل بالتحديد ما هو السرعة القصوى التي أستخدم الوصول إليها، وأ filtro 7654321</td>
<td>لا أعلم بالتحديد ما هي السرعة القصوى التي أستخدم الوصول إليها، ولكن أقوم بقرار 7654321</td>
</tr>
</tbody>
</table>
لا يتبع اهتمام الناس لدراسة المخاطر المرتبطة بالأقران العالية من المركبات التي أمانهم

26- الناس ليسوا على دراية بالمخاطر المرتبطة بعد ترک مسافة كافية والأقران العالية من المركبات التي أمانهم

27- تجاوز المركبات بشكل خطر وله قليل يقلل من أمام السائق

28- السرعة قد تتجاوز السائق في حوادث الطريق

29- في بعض الأحيان على تجاوز السرعة القانونية لما وراء السرعة الآخر في الطريق

30- يجب صبري ازاء سائق يطني في الطريق العام ولا تجاوزه في الطريق الفرعية

31- إذا أبدا القيادة بالقرب من المركبة الأمامية كشارة للسائق لسرع أو يبتعد عن الطريق

32- لا تتابع السرعة القانونية في الأوقات المتأخرة ليلاً أو في الصباح الباكر

33- لا اشترك أبدا في سياتات على الطريق مع السائقين الآخرين

34- لا أعطني أبدا علامة "العودة" أو "التوقف"

35- لا استخدم المكابح بسرعة عالية في الطريق الزلقة أبدا

36- أدير المكود للجهة المعاكسة في الطريق الزلقة

- هل تعترف إحدى حملات السلامة المرورية، مثل (سلامتي و يكمي) في المملكة العربية السعودية؟

37- إذا كانت الإجابة بنعم أذكر عبارات قليل عنهما.

- لا

- ألم يتم التحديد

- ماهو أكثر ما واجهناه في هذه الحملات المرورية؟

- المضمون

- التدابير والتعويض

- استهداف الشريحة معينة من السائقين

- مدة الحملة
اأقرتها على رفع مستويان سلامة المرورية
أخرى (الرجاء التوضيح)

فيما يتعلق بسلوكيات القيادة الخطرة التي نوقشت أعلاه، هل تعتقد أن حملات السلامة المرورية في المملكة العربية السعودية قد أقنعتك لوقف أي من سلوكيات القيادة الخطرة لديك؟

نعم ☐
لا ☐

إلى أي مدى كان تأثير أي من حملات السلامة المرورية في المملكة العربية السعودية فعالاً في لتغيير سلوكيات القيادة الخطرة لديك؟

كاملًا ☐
كثير جداً ☐
كثير ☐
إلى حد ما ☐
قليل ☐
قليل جداً ☐
ليس لها تأثير ☐

يرجى تحديد سلوكيات القيادة التي تتأثر بالحملات المرورية؟

يرجى توضيح

يرجى توضيح

يرجى توضيح

يرجى توضيح

يرجى توضيح

يرجى توضيح

هل تعتقد أن انطول المدة الزمنية للحملة سلامتي كانت مناسبة للوصول إلى الهدف المنشود؟

نعم ☐
لا ☐

هل تعقد أن انطول المدة الزمنية للحملة يكفي كانت مناسبة للوصول إلى الهدف المنشود؟

نعم ☐
لا ☐

هل تعتقد أن هذه الحملات استهدفت الشريحة الصحيحة من السائقين؟ إذا كانت أجابتك بنعم ما هي الشريحة في رأيك؟ إذا كانت الأجابة لا، ما هي الشريحة التي كان يجب أن تستهدف برأيك؟

نعم، استهدفت الشريحة الصحيحة ☐
لا، ليست هذه الحملات أن تستهدف الشريحة الصحيحة (أخرى، يرجى التوضيح) ☐
45 لماذا تعتقد أن مواضيع حملتي (سلامتي و يكفي) فعالة / غير فعالة؟

- 46 هل تعتقد أن تم اختيار رسائل الحملة والقنوات الإعلامية الناقلة لهذه الحملة بشكل مناسب؟ إذا كانت الأجابة بل، ما هي الرسائل والقنوات التي تنتص بإضافتها؟

- 47 ما هي التغييرات التي تتوقعها لجعل حملات السلامة المرورية في المملكة العربية السعودية أكثر فعالية؟

شكراً لمشاركتك.

Appendix A.5 Ethics Approvals

UWS HUMAN RESEARCH ETHICS COMMITTEE
19 November 2012

Doctor Paul Ryder,
School of Humanities and Communication Arts

Dear Paul,

I wish to formally advise you that the Human Research Ethics Committee has approved your research proposal **H9750 'Saving Lives in Saudi Arabia: Reforming a Culture of Reckless Bravado on the Kingdom's Roads'**, until 1 March 2013 with the provision of a progress report annually and a final report on completion.

Please quote the project number and title as indicated above on all correspondence related to this project.

This protocol covers the following researchers:
Paul Ryder, Raymond Archee, Sultan Almuammar.

Yours sincerely

Dr Anne Abraham
Chair, UWS Human Research Ethics Committee

p.ryder@uws.edu.au
16257362@student.uws.edu.au
Extension Approval

Our Reference: 12/019302 | H9750

12 April 2013

Doctor Paul Ryder
School of Humanities and Communication Arts

Mr Sultan Almuammar
School of Humanities and Communication Arts

Dear Paul and Sultan:

RE: Amendment Request to H9750

I acknowledge receipt of your email dated 11 April 2013 concerning a request to amend your approved research protocol H9750, ‘Saving Lives in Saudi Arabia: Reforming a Culture of Reckless Bravado on the Kingdom’s Roads’.

The Office of Research Services has reviewed your amendment request and I am pleased to advise that it has been approved as follows:

1. Extension of approval until 30 June 2013

Please do not hesitate to contact me at humanethics@uws.edu.au if you require any further information.

Regards

Jillian Shute
Human Ethics Officer
Office of Research Services
Appendix A.6 Participant Consent Form

Participant Consent Form

This is a project specific consent form. It restricts the use of the data collected to the named project by the named investigators.

Note: If not all of the text in the row is visible please click your cursor anywhere on the page to expand the row. To view guidance on what is required in each section hover your cursor over the bold text.

Project Title: Saving Lives in Saudi Arabia: Reforming a Culture of Reckless Bravado on the Kingdom's Roads

I, ........................., consent to participate in the research project titled [Saving Lives in Saudi Arabia: Reforming a Culture of Reckless Bravado on the Kingdom’s Roads].

I acknowledge that:

I have read the participant information sheet [or where appropriate, ‘have had read to me’] and have been given the opportunity to discuss the information and my involvement in the project with the researcher/s.

The procedures required for the project and the time involved have been explained to me, and any questions I have about the project have been answered to my satisfaction.

I consent to the [insert specific activities] [if applicable] [list all components of involvement, e.g. audio/video taping to ensure participants can indicate their willingness to participate in all or some of the research]

I understand that my involvement is confidential and that the information gained during the study may be published but no information about me will be used in any way that reveals my identity.

I understand that I can withdraw from the study at any time, without affecting my relationship with the researcher/s now or in the future.

Signed:

Name:

Date:

Return Address:

[Dr Paul Ryder
School of Communication Arts
University of Western Sydney
Office B1.01
Locked Bag 1797
Penrith South DC NSW 1797
Australia
Tel: +61-2-4626-5610
Fax: +61-2-4626-5424
p.ryder@uws.edu.au]

This study has been approved by the University of Western Sydney Human Research Ethics Committee.

The Approval number is: H9750
Appendix A.7 Participant Information Sheet

Participant Information Sheet (General)

An information sheet, which is tailored in format and language appropriate for the category of participant - adult, child, young adult, should be developed.

Note: If not all of the text in the row is visible please 'click your cursor' anywhere on the page to expand the row. To view guidance on what is required in each section 'hover your cursor' over the bold text. Further instructions are on the last page of this form.

Project Title: Saving Lives in Saudi Arabia: Reforming a Culture of Reckless Bravado on the Kingdom's Roads

Who is carrying out the study?
Sultan Almuammar

You are invited to participate in a study conducted by Sultan Almuammar, School of Humanities and Communication Arts, University of Western Sydney.

Contact Details
Phone Mob: 0424986637
Email: Sultan02@live.com.au

What is the study about?
The purpose is to investigate the essential research question of this thesis is: Whether, despite religious and cultural differences, the principles and strategies that guide road safety campaigns in NSW/Sydney might provide insights useful to policy makers in KSA. The significance of this thesis: 1) It will contribute to the improvement of the integrity and long-term effectiveness of road safety campaigns in the KSA and developing countries. 2) It provides an opportunity to suggest benchmarks indicating significant stages in the development of traffic safety culture, in developing nations generally. 3) The thesis proposes a framework for understanding the dynamics of road-safety campaigns in order to better plan and implement safety campaigns. 4) This thesis will open a new field of inquiry, currently neglected, intended to equip policy makers in KSA and other nations with a framework for the staged implementation of road-safety campaigns, through which they may make better decisions. 5) The gap in public policy knowledge with regard to traffic accidents in the KSA, means that the thesis can make a unique and useful contribution to the public policy literature in KSA.

What does the study involve?
Different categories of participants will be interviewed in personal and asked to answer questions about the effectiveness of road safety campaigns based on their personal and profession
experience. The drivers and traffic police patrol also will be asked to complete survey questions about their opinions about road safety campaigns and its impact on the driving behaviour of drivers.

How much time will the study take?
It might take approximately one hour to complete the interview while only twenty minutes will be enough to complete the survey questionnaire.

Will the study benefit me?
You need to be aware that there is no direct benefit for you for participating in this project. Your reward may be that you are supporting a public interest project, which may be of great community benefit.

Will the study involve any discomfort for me?
Generally speaking, there are no obvious risks for you as a participant. We call this as a low risk research project. It does not interfere with your welfare, rights, beliefs, perceptions, customs and cultural heritage either at an individual or at a collective level. However, you may feel upset in responding to some questions because of your prior experience of an accident or trauma to yourself or a family member. If you feel upset by any question or discussion you will be able to withdraw from the study at any moment. Your withdrawal will not disadvantage you in any way. Disclosing sensitive or unpublished information might put at risk as a government employee. However, all information will be de-identified through the use of participant numbers and you will have the opportunity to review their contribution and to not approve the use of information you find in conflict with your work obligations.

How is this study being paid for?
The study is being sponsored by Saudi Arabia Government and University of Western Sydney.

Will anyone else know the results? How will the results be disseminated?
All aspects of the study, including results, will be confidential and only the researchers will have access to information on participants.

Can I withdraw from the study?
Participation is entirely voluntary: you are not obliged to be involved and you can withdraw at any time without giving any reason and without any consequences.

Can I tell other people about the study?
Yes, you can tell other people about the study by providing them with the chief investigator’s contact details. They can contact the chief investigator to discuss their participation in the research project and obtain an information sheet.

What if I require further information?
When you have read this information, Mr. Sultan Almuammar will discuss it with you further and answer
any questions you may have. If you would like to know more at any stage, please feel free to contact Sultan Aimuummar,
Phone Mob: 0424985637
Email: Sultan02@live.com.au

SUPERVISORS:

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Email r.archee@uws.edu.au

Dr Roger Dawkins
School of Humanities and Communication Arts
University Of Western Sydney

Contact Details
Email: R.Dawkins@westernsydney.edu.au
Phone: (02) 9685 5663

What if I have a complaint?
This study has been approved by the University of Western Sydney Human Research Ethics Committee. The Approval number is H9750

If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Office of Research Services on Tel +61 2 4736 0229 Fax +61 2 4736 0013 or email humanethics@uws.edu.au.

Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

If you agree to participate in this study, you may be asked to sign the Participant Consent Form.
## Appendix B

### Appendix B.1

*Normality Testing: Shapiro Wilks Tests*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Shapiro-Wilk Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>USUALLY miss your exit on an interstate and have to make a lengthy detour</td>
<td>.897</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>USUALLY try to change lanes without first checking your mirror</td>
<td>.849</td>
<td>48</td>
<td>.000</td>
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<td>You fail to notice someone on the side waiting to cross in a pedestrian crossing and drive through the crosswalk</td>
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<td>.000</td>
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<td>48</td>
<td>.002</td>
</tr>
<tr>
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<td>48</td>
<td>.001</td>
</tr>
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<td>USUALLY fail to read the signs correctly</td>
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<td>.000</td>
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<td>USUALLY attempt to pass a vehicle intending to turn right</td>
<td>.903</td>
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<td>.001</td>
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<tr>
<td>USUALLY misjudge your turning space when turning right</td>
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<td>.000</td>
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<td>USUALLY exceed speed limits by more than 10 km/hour</td>
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<td>48</td>
<td>.001</td>
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<td>USUALLY jump the orange and red lights</td>
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<td>48</td>
<td>.000</td>
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<tr>
<td>NEVER wear a seatbelt</td>
<td>.893</td>
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<td>.000</td>
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<td>USUALLY drive while talking on the cell phone or texting</td>
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<td>48</td>
<td>.000</td>
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<td>USUALLY violate other general traffic rules</td>
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<td>.000</td>
</tr>
<tr>
<td>People stopped by the police for road safety violations are simply unlucky because many people do that</td>
<td>.842</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>Speed limits are often set too low. so many people ignore them</td>
<td>.891</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>It is acceptable to take slight risks on the road when overtaking other cars</td>
<td>.899</td>
<td>48</td>
<td>.001</td>
</tr>
<tr>
<td>Using a mobile phone is NOT a problem as drivers can drive safely when using it</td>
<td>.855</td>
<td>48</td>
<td>.000</td>
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<tr>
<td>I am NOT aware of the risks associated with using a mobile phone when driving</td>
<td>.839</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>Close following is NOT a big problem during driving</td>
<td>.822</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>I do NOT know exactly how fast I can drive and still drive safely</td>
<td>.865</td>
<td>48</td>
<td>.000</td>
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<tr>
<td>People are aware of the danger associated with close following</td>
<td>.878</td>
<td>48</td>
<td>.000</td>
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<tr>
<td>Overtaking does NOT reduce safety of the driver</td>
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<td>.000</td>
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<tr>
<td>Speeding is rarely a cause of road accidents</td>
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<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>Sometimes you have to drive in excess of the speed limit to keep up with the flow of traffic</td>
<td>.897</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>.910</td>
<td>48</td>
<td>.001</td>
</tr>
<tr>
<td>Drive especially close to the car in front as a signal to the driver to go faster or get out of the way</td>
<td>.907</td>
<td>48</td>
<td>.001</td>
</tr>
<tr>
<td>Disregard the speed limits late at night or early in the morning</td>
<td>.896</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>Get involved in unofficial ‘races’ with other drivers</td>
<td>.844</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>Miss ‘yield’ or ‘stop’ signs</td>
<td>.889</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>Brake too quickly on a slippery road</td>
<td>.894</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>Steer the wrong way into a skid</td>
<td>.872</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>Do you know such road safety campaigns as Salamati and Enough in the KSA? (if yes. please say a few words about them. what they are about. etc)</td>
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<td>48</td>
<td>.000</td>
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<tr>
<td>Item</td>
<td>N</td>
<td>Median</td>
<td>Mode</td>
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<td>----------------------------------------------------------------------</td>
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<td>--------</td>
<td>------</td>
</tr>
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<td>USUALLY have to swerve to avoid an oncoming vehicle when cutting the</td>
<td>168</td>
<td>4.00</td>
<td>1</td>
</tr>
<tr>
<td>corner on a right-hand turn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People are aware of the danger associated with close following</td>
<td>169</td>
<td>4.00</td>
<td>1</td>
</tr>
<tr>
<td>Speed limits are often set too low. So many people ignore them</td>
<td>167</td>
<td>4.00</td>
<td>7</td>
</tr>
<tr>
<td>USUALLY exceed speed limits by more than 10 km/hour</td>
<td>161</td>
<td>4.00</td>
<td>7</td>
</tr>
<tr>
<td>USUALLY misjudge the speed of a passing vehicle</td>
<td>169</td>
<td>4.00</td>
<td>7</td>
</tr>
<tr>
<td>Become impatient with a slow driver in the outer lane and overtake</td>
<td>167</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>on the inside</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USUALLY drive while talking on the cell phone or texting</td>
<td>169</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>USUALLY miss your exit on an interstate and have to make a lengthy</td>
<td>169</td>
<td>4.00</td>
<td>7</td>
</tr>
<tr>
<td>detour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disregard the speed limits late at night or early in the morning</td>
<td>167</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>NEVER wear a seatbelt</td>
<td>161</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>I do NOT know exactly how fast I can drive and still drive safely</td>
<td>162</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>Drive especially close to the car in front as a signal to the driver</td>
<td>166</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>to go faster or get out of the way</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overtaking does NOT reduce safety of the driver</td>
<td>164</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>USUALLY attempt to pass a vehicle intending to turn right</td>
<td>164</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>People stopped by the police for road safety violations are simply</td>
<td>166</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>unlucky because many people do that</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USUALLY jump the orange and red lights</td>
<td>167</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>It is acceptable to take slight risks on the road when overtaking</td>
<td>162</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>other cars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miss ‘yield’ or ‘stop’ signs</td>
<td>166</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>USUALLY try to change lanes without first checking your mirror</td>
<td>168</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>USUALLY violate other general traffic rules</td>
<td>163</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>USUALLY misjudge your turning space when turning right</td>
<td>163</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>Sometimes you have to drive in excess of the speed limit to keep up</td>
<td>167</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>with the flow of traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You fail to notice someone on the side waiting to cross in a</td>
<td>171</td>
<td>5.00</td>
<td>7</td>
</tr>
<tr>
<td>pedestrian crossing and drive through the crosswalk</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
USUALLY fail to read the signs correctly
Steer the wrong way into a skid
Brake too quickly on a slippery road
I am NOT aware of the risks associated with using a mobile phone when driving
Close following is NOT a big problem during driving
Speeding is rarely a cause of road accidents
Using a mobile phone is NOT a problem as drivers can drive safely when using it
Get involved in unofficial ‘races’ with other drivers

Appendix B.3. Frequency graph for age

Appendix B.4. Frequency graph for years of experience
Appendix B.5. Frequency graph for education

Appendix B.6. Frequency graph for Arabic language knowledge
Appendix B.7. Frequency graph for nationality
## Frequency Analysis of Survey Answers

<table>
<thead>
<tr>
<th>People are aware of the danger associated with close following</th>
<th>Always</th>
<th>Often</th>
<th>Quite Often</th>
<th>N/A</th>
<th>Rarely</th>
<th>Very Rarely</th>
<th>Never</th>
</tr>
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<tr>
<td>USUALLY have to swerve to avoid an oncoming vehicle when cutting the corner on a right-hand turn</td>
<td>20.9</td>
<td>7.3</td>
<td>9.6</td>
<td>13.6</td>
<td>12.4</td>
<td>14.1</td>
<td>17.5</td>
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<tr>
<td>Speed limits are often set too low, so many people ignore them</td>
<td>16.4</td>
<td>10.7</td>
<td>11.9</td>
<td>10.2</td>
<td>13.0</td>
<td>12.4</td>
<td>19.8</td>
</tr>
<tr>
<td>Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>16.4</td>
<td>6.8</td>
<td>7.3</td>
<td>13.6</td>
<td>15.3</td>
<td>15.8</td>
<td>19.2</td>
</tr>
<tr>
<td>USUALLY exceed speed limits by more than 10 km/hour</td>
<td>15.8</td>
<td>10.7</td>
<td>8.5</td>
<td>13.6</td>
<td>10.2</td>
<td>14.1</td>
<td>18.1</td>
</tr>
<tr>
<td>USUALLY drive while talking on the cell phone or texting</td>
<td>15.3</td>
<td>7.3</td>
<td>9.0</td>
<td>11.9</td>
<td>14.1</td>
<td>16.9</td>
<td>20.9</td>
</tr>
<tr>
<td>NEVER wear a seatbelt</td>
<td>14.7</td>
<td>4.5</td>
<td>7.3</td>
<td>13.6</td>
<td>13.0</td>
<td>17.5</td>
<td>20.3</td>
</tr>
<tr>
<td>USUALLY try to change lanes without first checking your mirror</td>
<td>13.6</td>
<td>5.1</td>
<td>5.6</td>
<td>13</td>
<td>11.9</td>
<td>13.6</td>
<td>32.2</td>
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<tr>
<td>USUALLY misjudge the speed of a passing vehicle</td>
<td>13.0</td>
<td>11.3</td>
<td>10.7</td>
<td>14.1</td>
<td>14.7</td>
<td>14.1</td>
<td>17.5</td>
</tr>
<tr>
<td>I do NOT know exactly how fast I can drive and still drive safely</td>
<td>13.0</td>
<td>7.3</td>
<td>4.0</td>
<td>14.1</td>
<td>14.7</td>
<td>18.6</td>
<td>19.8</td>
</tr>
<tr>
<td>Disregard the speed limits late at night or early in the morning</td>
<td>12.4</td>
<td>11.3</td>
<td>7.9</td>
<td>12.4</td>
<td>11.9</td>
<td>15.3</td>
<td>23.2</td>
</tr>
<tr>
<td>People stopped by the police for road safety violations are simply unlucky because many people do that</td>
<td>11.9</td>
<td>9.0</td>
<td>5.6</td>
<td>13.0</td>
<td>11.9</td>
<td>8.5</td>
<td>33.9</td>
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<tr>
<td>Overtaking does NOT reduce safety of the driver</td>
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<td>3.4</td>
<td>7.9</td>
<td>12.4</td>
<td>19.8</td>
<td>16.9</td>
<td>20.9</td>
</tr>
<tr>
<td>It is acceptable to take slight risks on the road when overtaking other cars</td>
<td>10.2</td>
<td>5.6</td>
<td>7.9</td>
<td>13.6</td>
<td>14.1</td>
<td>12.4</td>
<td>27.7</td>
</tr>
<tr>
<td>USUALLY misjudge your turning space when turning right</td>
<td>9.6</td>
<td>6.8</td>
<td>6.2</td>
<td>11.9</td>
<td>13.0</td>
<td>18.1</td>
<td>26.6</td>
</tr>
<tr>
<td>Drive especially close to the car in front as a signal to the driver to go faster or get out of the way</td>
<td>9.0</td>
<td>9.6</td>
<td>9.0</td>
<td>16.4</td>
<td>10.2</td>
<td>13.6</td>
<td>26.0</td>
</tr>
<tr>
<td>USUALLY miss your exit on an interstate and have to make a lengthy detour</td>
<td>9.0</td>
<td>11.9</td>
<td>10.2</td>
<td>20.3</td>
<td>10.2</td>
<td>8.5</td>
<td>25.4</td>
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<tr>
<td>USUALLY attempt to pass a vehicle intending to turn right</td>
<td>8.5</td>
<td>7.3</td>
<td>11.3</td>
<td>14.7</td>
<td>11.3</td>
<td>11.3</td>
<td>28.2</td>
</tr>
<tr>
<td>USUALLY violate other general traffic rules</td>
<td>8.5</td>
<td>5.6</td>
<td>7.9</td>
<td>15.3</td>
<td>16.9</td>
<td>8.5</td>
<td>29.4</td>
</tr>
<tr>
<td>USUALLY jump the orange and red lights</td>
<td>7.9</td>
<td>9.6</td>
<td>6.2</td>
<td>15.8</td>
<td>14.1</td>
<td>13.0</td>
<td>27.7</td>
</tr>
<tr>
<td>Miss ‘yield’ or ‘stop’ signs</td>
<td>7.9</td>
<td>5.1</td>
<td>10.7</td>
<td>15.8</td>
<td>13.0</td>
<td>15.3</td>
<td>26.0</td>
</tr>
</tbody>
</table>
You fail to notice someone on the side waiting to cross in a pedestrian crossing and drive through the crosswalk

<table>
<thead>
<tr>
<th>Speeding is rarely a cause of road accidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sometimes you have to drive in excess of the speed limit to keep up with the flow of traffic</td>
</tr>
<tr>
<td>Steer the wrong way into a skid</td>
</tr>
<tr>
<td>I am NOT aware of the risks associated with using a mobile phone when driving</td>
</tr>
<tr>
<td>Brake too quickly on a slippery road</td>
</tr>
<tr>
<td>USUALLY fail to read the signs correctly</td>
</tr>
<tr>
<td>Close following is NOT a big problem during driving</td>
</tr>
<tr>
<td>Using a mobile phone is NOT a problem as drivers can drive safely when using it</td>
</tr>
<tr>
<td>Get involved in unofficial ‘races’ with other drivers</td>
</tr>
</tbody>
</table>

### Appendix B.10

**Crosstabulation: Exceed speed limits versus age**

<table>
<thead>
<tr>
<th>Your age</th>
<th>under 20</th>
<th>20–24</th>
<th>25–29</th>
<th>30–34</th>
<th>35–39</th>
<th>over 45 years old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>USUALLY exceed speed limits by more than 10 km/hour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Count</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>9</td>
<td>9</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>% within Your age</td>
<td>12.5%</td>
<td>29.4%</td>
<td>10.3%</td>
<td>21.4%</td>
<td>15.8%</td>
<td>.0%</td>
<td>17.5%</td>
</tr>
<tr>
<td>2 Count</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>17.6%</td>
<td>17.2%</td>
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<td>8.8%</td>
<td>.0%</td>
<td>12.3%</td>
</tr>
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</tr>
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<td>16.7%</td>
<td>5.3%</td>
<td>.0%</td>
<td>8.4%</td>
</tr>
<tr>
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<td>21</td>
</tr>
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<td>17.5%</td>
<td>.0%</td>
<td>13.6%</td>
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<td>10.5%</td>
<td>.0%</td>
<td>11.7%</td>
</tr>
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<td>17.2%</td>
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<td>19.3%</td>
<td>100.0%</td>
<td>16.2%</td>
</tr>
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<td>8</td>
<td>5</td>
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<td>20.1%</td>
</tr>
<tr>
<td>Total Count</td>
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<td>29</td>
<td>42</td>
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<td>1</td>
<td>154</td>
</tr>
<tr>
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<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
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</table>

### Appendix B.11
### Crosstabulation: Never wear a seatbelt vs. Age

<table>
<thead>
<tr>
<th>Never wear a seatbelt</th>
<th>Your age</th>
<th>under 20</th>
<th>20–24</th>
<th>25–29</th>
<th>30–34</th>
<th>35–39</th>
<th>over 45 years old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>55</td>
</tr>
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<td>0%</td>
<td>23.5%</td>
<td>13.8%</td>
<td>11.6%</td>
<td>23.6%</td>
<td>.0%</td>
<td>16.9%</td>
<td>16.9%</td>
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<td>3</td>
<td>1</td>
<td>0</td>
<td>7</td>
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<td>% within Your age</td>
<td>.0%</td>
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<td>3.4%</td>
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<td>4.5%</td>
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<td>1</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>13</td>
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<tr>
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<td>.0%</td>
<td>5.9%</td>
<td>3.4%</td>
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<td>9.1%</td>
<td>.0%</td>
<td>8.4%</td>
<td>8.4%</td>
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<td>10.9%</td>
<td>.0%</td>
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<td>14.3%</td>
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<td>3</td>
<td>4</td>
<td>11</td>
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<td>.0%</td>
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<td>6</td>
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<td>10</td>
<td>1</td>
<td>29</td>
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<td>20.7%</td>
<td>20.9%</td>
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<td>100.0%</td>
<td>18.8%</td>
<td>18.8%</td>
</tr>
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<td>4</td>
<td>10</td>
<td>8</td>
<td>9</td>
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<td>34</td>
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<td>23.5%</td>
<td>34.5%</td>
<td>18.6%</td>
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<td>.0%</td>
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<td>1</td>
<td>154</td>
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<tr>
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<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
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</tr>
</tbody>
</table>

### Appendix B.12

### Crosstabulation: Usually drive while talking on the phone versus age

<table>
<thead>
<tr>
<th>Usually drive while talking on the phone</th>
<th>Your age</th>
<th>under 20</th>
<th>20–24</th>
<th>25–29</th>
<th>30–34</th>
<th>35–39</th>
<th>over 45 years old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>10</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
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<td>.0%</td>
<td>17.6%</td>
<td>13.8%</td>
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<td>16.9%</td>
<td>.0%</td>
<td>15.4%</td>
<td>15.4%</td>
</tr>
<tr>
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<td>2</td>
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<td>3</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
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<td>.0%</td>
<td>11.8%</td>
<td>6.9%</td>
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<td>5.1%</td>
<td>.0%</td>
<td>8.0%</td>
<td>8.0%</td>
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<td>1</td>
<td>5</td>
<td>6</td>
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<td>16</td>
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<td>17.6%</td>
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<td>10.2%</td>
<td>50.0%</td>
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<td>9.9%</td>
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<td>3</td>
<td>3</td>
<td>7</td>
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<td>17</td>
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<td>22.2%</td>
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<td>10.3%</td>
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<td>.0%</td>
<td>10.5%</td>
<td>10.5%</td>
</tr>
<tr>
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<td>2</td>
<td>4</td>
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<td>16.9%</td>
<td>.0%</td>
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<td>1</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>1</td>
<td>29</td>
</tr>
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<td>20.7%</td>
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<td>20.3%</td>
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<td>18.6%</td>
<td>.0%</td>
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<td>100.0%</td>
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<td>100.0%</td>
<td>100.0%</td>
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</tr>
</tbody>
</table>
## Appendix B.13

**Crosstabulation: Speed limits are often set too low versus age**

<table>
<thead>
<tr>
<th>Speed limits are often set too low, so many people ignore them</th>
<th>Count</th>
<th>under 20</th>
<th>20–24</th>
<th>25–29</th>
<th>30–34</th>
<th>35–39</th>
<th>over 45 years old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Your age</td>
<td></td>
<td>22.2%</td>
<td>23.5%</td>
<td>10.7%</td>
<td>22.2%</td>
<td>15.0%</td>
<td>.0%</td>
<td>17.5%</td>
</tr>
<tr>
<td>% within Your age</td>
<td></td>
<td>22.2%</td>
<td>11.8%</td>
<td>10.7%</td>
<td>13.3%</td>
<td>6.7%</td>
<td>.0%</td>
<td>10.6%</td>
</tr>
<tr>
<td>% within Your age</td>
<td></td>
<td>33.3%</td>
<td>17.6%</td>
<td>10.7%</td>
<td>11.1%</td>
<td>10.0%</td>
<td>.0%</td>
<td>12.5%</td>
</tr>
<tr>
<td>% within Your age</td>
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<td>5.9%</td>
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<td>6.7%</td>
<td>100.0%</td>
<td>14.4%</td>
</tr>
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<td>% within Your age</td>
<td></td>
<td>.0%</td>
<td>5.9%</td>
<td>17.9%</td>
<td>13.3%</td>
<td>16.7%</td>
<td>100.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td>% within Your age</td>
<td></td>
<td>11.1%</td>
<td>17.6%</td>
<td>14.3%</td>
<td>4.4%</td>
<td>20.0%</td>
<td>.0%</td>
<td>13.8%</td>
</tr>
<tr>
<td>% within Your age</td>
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<td>24.4%</td>
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<td>.0%</td>
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<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
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<td>100.0%</td>
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</table>

## Appendix B.14

**Crosstabulation: Using a mobile phone is NOT a problem versus age**

<table>
<thead>
<tr>
<th>Using a mobile phone is NOT a problem as drivers can drive safely when using it</th>
<th>Count</th>
<th>under 20</th>
<th>20–24</th>
<th>25–29</th>
<th>30–34</th>
<th>35–39</th>
<th>over 45 years old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Your age</td>
<td></td>
<td>.0%</td>
<td>5.9%</td>
<td>7.1%</td>
<td>4.4%</td>
<td>5.0%</td>
<td>.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td>% within Your age</td>
<td></td>
<td>.0%</td>
<td>.0%</td>
<td>7.1%</td>
<td>4.4%</td>
<td>5.0%</td>
<td>.0%</td>
<td>4.4%</td>
</tr>
<tr>
<td>% within Your age</td>
<td></td>
<td>.0%</td>
<td>.0%</td>
<td>3.6%</td>
<td>4.4%</td>
<td>3.3%</td>
<td>.0%</td>
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</tr>
<tr>
<td>% within Your age</td>
<td></td>
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<td>23.5%</td>
<td>10.7%</td>
<td>15.6%</td>
<td>6.7%</td>
<td>.0%</td>
<td>12.5%</td>
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<td>5.9%</td>
<td>14.3%</td>
<td>11.1%</td>
<td>23.3%</td>
<td>100.0%</td>
<td>16.9%</td>
</tr>
<tr>
<td>% within Your age</td>
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<td>14.3%</td>
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<td>23.3%</td>
<td>100.0%</td>
<td>16.9%</td>
</tr>
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<td>25.0%</td>
<td>15.6%</td>
<td>13.3%</td>
<td>.0%</td>
<td>15.6%</td>
</tr>
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<td>32.1%</td>
<td>44.4%</td>
<td>43.3%</td>
<td>.0%</td>
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</tr>
<tr>
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<td>17</td>
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Total Count: 160
Appendix B.15

**Crosstabulation: Close following is NOT a problem versus age**

<table>
<thead>
<tr>
<th>Your age</th>
<th>under 20</th>
<th>20–24</th>
<th>25–29</th>
<th>30–34</th>
<th>35–39</th>
<th>over 45 years old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close following is NOT a big problem during driving</td>
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<td>1</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>23.5%</td>
<td>3.6%</td>
<td>6.5%</td>
<td>3.4%</td>
<td>.0%</td>
<td>6.3%</td>
</tr>
<tr>
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<td>9</td>
</tr>
<tr>
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<td>.0%</td>
<td>5.9%</td>
<td>.0%</td>
<td>6.5%</td>
<td>8.6%</td>
<td>.0%</td>
<td>5.7%</td>
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<td>11</td>
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<td>7.1%</td>
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<td>8.6%</td>
<td>.0%</td>
<td>6.9%</td>
</tr>
<tr>
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<td>2</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>0</td>
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<td>11.8%</td>
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<td>.0%</td>
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<td>7</td>
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<td>1</td>
<td>29</td>
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<td>17.9%</td>
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<td>18.2%</td>
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<tr>
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<td>4</td>
<td>4</td>
<td>9</td>
<td>3</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>% within Your age</td>
<td>22.2%</td>
<td>23.5%</td>
<td>14.3%</td>
<td>19.6%</td>
<td>5.2%</td>
<td>.0%</td>
<td>13.8%</td>
</tr>
<tr>
<td>Count</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>19</td>
<td>25</td>
<td>0</td>
<td>64</td>
</tr>
<tr>
<td>% within Your age</td>
<td>44.4%</td>
<td>23.5%</td>
<td>42.9%</td>
<td>41.3%</td>
<td>43.1%</td>
<td>.0%</td>
<td>40.3%</td>
</tr>
<tr>
<td>Count</td>
<td>9</td>
<td>17</td>
<td>28</td>
<td>46</td>
<td>58</td>
<td>1</td>
<td>159</td>
</tr>
<tr>
<td>% within Your age</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Appendix B.16

**Crosstabulation: Speeding is rarely a cause of road accidents versus age**

<table>
<thead>
<tr>
<th>Your age</th>
<th>under 20</th>
<th>20–24</th>
<th>25–29</th>
<th>30–34</th>
<th>35–39</th>
<th>over 45 years old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speeding is rarely a cause of road accidents</td>
<td>Count</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>.0%</td>
<td>3.8%</td>
<td>11.4%</td>
<td>13.2%</td>
<td>.0%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Count</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>11.8%</td>
<td>7.7%</td>
<td>4.5%</td>
<td>1.9%</td>
<td>.0%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Count</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>.0%</td>
<td>11.5%</td>
<td>9.1%</td>
<td>1.9%</td>
<td>.0%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Count</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>.0%</td>
<td>7.7%</td>
<td>9.1%</td>
<td>11.3%</td>
<td>.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Count</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>10</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>% within Your age</td>
<td>11.1%</td>
<td>11.8%</td>
<td>15.4%</td>
<td>22.7%</td>
<td>18.9%</td>
<td>100.0%</td>
<td>18.7%</td>
</tr>
<tr>
<td>Count</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>% within Your age</td>
<td>11.1%</td>
<td>17.6%</td>
<td>7.7%</td>
<td>11.4%</td>
<td>18.9%</td>
<td>.0%</td>
<td>14.0%</td>
</tr>
<tr>
<td>Count</td>
<td>7</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>18</td>
<td>0</td>
<td>61</td>
</tr>
<tr>
<td>% within Your age</td>
<td>77.8%</td>
<td>58.8%</td>
<td>46.2%</td>
<td>31.8%</td>
<td>34.0%</td>
<td>.0%</td>
<td>40.7%</td>
</tr>
</tbody>
</table>
### Appendix B.17

**Crosstabulation: Become impatient with a slow driver versus age**

<table>
<thead>
<tr>
<th>Your age</th>
<th>Count</th>
<th>20</th>
<th>20–24</th>
<th>25–29</th>
<th>30–34</th>
<th>35–39</th>
<th>over 45 years old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>1</td>
<td>Count</td>
<td>0</td>
<td>6</td>
<td>4</td>
<td>9</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>35.3%</td>
<td>14.8%</td>
<td>20.0%</td>
<td>13.1%</td>
<td>.0%</td>
<td>16.9%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Count</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>% within Your age</td>
<td>11.1%</td>
<td>11.8%</td>
<td>3.7%</td>
<td>8.9%</td>
<td>6.6%</td>
<td>.0%</td>
<td>7.5%</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Count</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>.0%</td>
<td>7.4%</td>
<td>11.1%</td>
<td>8.2%</td>
<td>.0%</td>
<td>7.5%</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Count</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>8</td>
<td>7</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>% within Your age</td>
<td>33.3%</td>
<td>5.9%</td>
<td>14.8%</td>
<td>17.8%</td>
<td>11.5%</td>
<td>.0%</td>
<td>14.4%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Count</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>11</td>
<td>11</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>% within Your age</td>
<td>11.1%</td>
<td>29.4%</td>
<td>14.8%</td>
<td>11.1%</td>
<td>18.0%</td>
<td>.0%</td>
<td>16.3%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Count</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>11</td>
<td>9</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>5.9%</td>
<td>22.2%</td>
<td>24.4%</td>
<td>14.8%</td>
<td>.0%</td>
<td>16.9%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Count</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>17</td>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td>% within Your age</td>
<td>44.4%</td>
<td>11.8%</td>
<td>22.2%</td>
<td>6.7%</td>
<td>27.9%</td>
<td>100.0%</td>
<td>20.6%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>9</td>
<td>17</td>
<td>27</td>
<td>45</td>
<td>61</td>
<td>1</td>
<td>160</td>
</tr>
<tr>
<td>% within Your age</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

### Appendix B.18

**Crosstabulation: Get involved in unofficial races with other drivers versus age**

<table>
<thead>
<tr>
<th>Your age</th>
<th>Count</th>
<th>20</th>
<th>20–24</th>
<th>25–29</th>
<th>30–34</th>
<th>35–39</th>
<th>over 45 years old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get involved in unofficial ‘races’ with other drivers</td>
<td>1</td>
<td>Count</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>.0%</td>
<td>3.6%</td>
<td>2.2%</td>
<td>5.0%</td>
<td>.0%</td>
<td>3.1%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Count</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>5.9%</td>
<td>.0%</td>
<td>2.2%</td>
<td>5.0%</td>
<td>.0%</td>
<td>3.1%</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Count</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>23.5%</td>
<td>7.1%</td>
<td>11.1%</td>
<td>3.3%</td>
<td>.0%</td>
<td>8.1%</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Count</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>5</td>
<td>9</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>% within Your age</td>
<td>.0%</td>
<td>5.9%</td>
<td>21.4%</td>
<td>11.1%</td>
<td>15.0%</td>
<td>100.0%</td>
<td>13.8%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Count</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>11</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>% within Your age</td>
<td>11.1%</td>
<td>5.9%</td>
<td>10.7%</td>
<td>15.6%</td>
<td>18.3%</td>
<td>.0%</td>
<td>14.4%</td>
<td></td>
</tr>
</tbody>
</table>
### Appendix B.19

**Crosstabulation: Exceed speed limits versus years of driving experience**

<table>
<thead>
<tr>
<th>Years of driving experience</th>
<th>0–3 years</th>
<th>4–7 years</th>
<th>8–10 years</th>
<th>over 10 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>USUALLY exceed speed limits by more than 10 km/hour</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>20</td>
<td>26</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>14.3%</td>
<td>33.3%</td>
<td>10.0%</td>
<td>16.4%</td>
<td>16.8%</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>7.1%</td>
<td>33.3%</td>
<td>20.0%</td>
<td>10.7%</td>
<td>12.3%</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>.0%</td>
<td>.0%</td>
<td>.0%</td>
<td>12.3%</td>
<td>9.7%</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>7.1%</td>
<td>11.1%</td>
<td>20.0%</td>
<td>15.6%</td>
<td>14.8%</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>21.4%</td>
<td>.0%</td>
<td>10.0%</td>
<td>10.7%</td>
<td>11.0%</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>7.1%</td>
<td>11.1%</td>
<td>20.0%</td>
<td>17.2%</td>
<td>16.1%</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>42.9%</td>
<td>11.1%</td>
<td>20.0%</td>
<td>17.2%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>9</td>
<td>10</td>
<td>122</td>
<td>155</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Appendix B.20

**Crosstabulation: Never wear a seatbelt vs. years of driving experience**

<table>
<thead>
<tr>
<th>Years of driving experience</th>
<th>0–3 years</th>
<th>4–7 years</th>
<th>8–10 years</th>
<th>over 10 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEVER wear a seatbelt</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>14.3%</td>
<td>25.0%</td>
<td>.0%</td>
<td>16.9%</td>
<td>16.2%</td>
</tr>
</tbody>
</table>
### Appendix B.21

*Crosstabulation: Usually drive while talking on the phone versus years of driving experience*

<table>
<thead>
<tr>
<th>Years of driving experience</th>
<th>0–3 years</th>
<th>4–7 years</th>
<th>8–10 years</th>
<th>over 10 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Count</strong></td>
<td>14</td>
<td>12</td>
<td>11</td>
<td>125</td>
<td>162</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USUALLY drive while talking on the cell phone or texting</th>
<th>0–3 years</th>
<th>4–7 years</th>
<th>8–10 years</th>
<th>over 10 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Count</strong></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>20</td>
<td>26</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>14.3%</td>
<td>16.7%</td>
<td>18.2%</td>
<td>16.0%</td>
<td>16.0%</td>
</tr>
<tr>
<td><strong>Count</strong></td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>.0%</td>
<td>25.0%</td>
<td>.0%</td>
<td>8.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td><strong>Count</strong></td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>.0%</td>
<td>25.0%</td>
<td>18.2%</td>
<td>8.8%</td>
<td>9.9%</td>
</tr>
<tr>
<td><strong>Count</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>.0%</td>
<td>.0%</td>
<td>.0%</td>
<td>16.8%</td>
<td>13.0%</td>
</tr>
<tr>
<td><strong>Count</strong></td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>35.7%</td>
<td>8.3%</td>
<td>.0%</td>
<td>14.4%</td>
<td>14.8%</td>
</tr>
<tr>
<td><strong>Count</strong></td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>22</td>
<td>29</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>7.1%</td>
<td>8.3%</td>
<td>45.5%</td>
<td>17.6%</td>
<td>17.9%</td>
</tr>
<tr>
<td><strong>Count</strong></td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>% within Years of driving experience</td>
<td>42.9%</td>
<td>16.7%</td>
<td>18.2%</td>
<td>18.4%</td>
<td>20.4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total</th>
<th>Count</th>
<th>14</th>
<th>12</th>
<th>11</th>
<th>125</th>
<th>162</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Years of driving experience</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>
### Appendix B.22

*Crosstabulation: Speed limits are often set too low versus years of driving experience*

<table>
<thead>
<tr>
<th>Speed limits are often set too low, so many people ignore them</th>
<th>Count</th>
<th>0–3 years</th>
<th>4–7 years</th>
<th>8–10 years</th>
<th>over 10 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Years of driving experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Count</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>15.4%</td>
<td>.0%</td>
<td>10.0%</td>
<td>19.2%</td>
<td>16.9%</td>
</tr>
<tr>
<td>2</td>
<td>Count</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>15.4%</td>
<td>25.0%</td>
<td>20.0%</td>
<td>8.8%</td>
<td>11.3%</td>
</tr>
<tr>
<td>3</td>
<td>Count</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>7.7%</td>
<td>25.0%</td>
<td>10.0%</td>
<td>12.8%</td>
<td>13.1%</td>
</tr>
<tr>
<td>4</td>
<td>Count</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>7.7%</td>
<td>8.3%</td>
<td>10.0%</td>
<td>11.2%</td>
<td>10.6%</td>
</tr>
<tr>
<td>5</td>
<td>Count</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>15.4%</td>
<td>8.3%</td>
<td>10.0%</td>
<td>15.2%</td>
<td>14.4%</td>
</tr>
<tr>
<td>6</td>
<td>Count</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>7.7%</td>
<td>8.3%</td>
<td>30.0%</td>
<td>12.0%</td>
<td>12.5%</td>
</tr>
<tr>
<td>7</td>
<td>Count</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>26</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>30.8%</td>
<td>25.0%</td>
<td>10.0%</td>
<td>20.8%</td>
<td>21.3%</td>
</tr>
</tbody>
</table>

Total

<table>
<thead>
<tr>
<th>Count</th>
<th>13</th>
<th>12</th>
<th>10</th>
<th>125</th>
<th>160</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Years of driving experience</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Appendix B.23

*Crosstabulation: Using a mobile phone is NOT a problem versus years of driving experience*

<table>
<thead>
<tr>
<th>Using a mobile phone is NOT a problem as drivers can drive safely when using it</th>
<th>Count</th>
<th>0–3 years</th>
<th>4–7 years</th>
<th>8–10 years</th>
<th>over 10 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Years of driving experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Count</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>.0%</td>
<td>.0%</td>
<td>10.0%</td>
<td>6.4%</td>
<td>5.6%</td>
</tr>
<tr>
<td>2</td>
<td>Count</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

Total

<table>
<thead>
<tr>
<th>Count</th>
<th>13</th>
<th>12</th>
<th>10</th>
<th>125</th>
<th>160</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Years of driving experience</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
### Appendix B.24

**Crosstabulation: Close following is NOT a problem versus years of driving experience**

<table>
<thead>
<tr>
<th>Count</th>
<th>0–3 years</th>
<th>4–7 years</th>
<th>8–10 years</th>
<th>over 10 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Count</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>15.4%</td>
<td>25.0%</td>
<td>.0%</td>
<td>4.8%</td>
</tr>
<tr>
<td>2</td>
<td>Count</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>.0%</td>
<td>.0%</td>
<td>10.0%</td>
<td>7.3%</td>
</tr>
<tr>
<td>3</td>
<td>Count</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>.0%</td>
<td>.0%</td>
<td>10.0%</td>
<td>8.9%</td>
</tr>
<tr>
<td>4</td>
<td>Count</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>7.7%</td>
<td>25.0%</td>
<td>10.0%</td>
<td>8.1%</td>
</tr>
<tr>
<td>5</td>
<td>Count</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>15.4%</td>
<td>16.7%</td>
<td>20.0%</td>
<td>19.4%</td>
</tr>
<tr>
<td>6</td>
<td>Count</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>15.4%</td>
<td>16.7%</td>
<td>20.0%</td>
<td>12.1%</td>
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<td>7</td>
<td>Count</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>49</td>
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<tr>
<td></td>
<td>% within Years of driving experience</td>
<td>46.2%</td>
<td>16.7%</td>
<td>30.0%</td>
<td>39.5%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>13</td>
<td>12</td>
<td>10</td>
<td>124</td>
</tr>
</tbody>
</table>
Appendix B.25

Crosstabulation: Speeding is rarely a cause of road accidents versus years of driving experience

<table>
<thead>
<tr>
<th>Speeding is rarely a cause of road accidents</th>
<th>Count</th>
<th>% within Years of driving experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Count</td>
<td>% within Years of driving experience</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>16.7%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>11.1%</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>8.6%</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>8.7%</td>
</tr>
<tr>
<td>2</td>
<td>Count</td>
<td>% within Years of driving experience</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>11.1%</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>7.8%</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>6.7%</td>
</tr>
<tr>
<td>3</td>
<td>Count</td>
<td>% within Years of driving experience</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>11.1%</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>5.2%</td>
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<td></td>
<td>8</td>
<td>5.3%</td>
</tr>
<tr>
<td>4</td>
<td>Count</td>
<td>% within Years of driving experience</td>
</tr>
<tr>
<td></td>
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<td>0%</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0%</td>
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<td>11.1%</td>
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<td>9.5%</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>8.0%</td>
</tr>
<tr>
<td>5</td>
<td>Count</td>
<td>% within Years of driving experience</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>15.4%</td>
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<td></td>
<td>2</td>
<td>16.7%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>22.2%</td>
</tr>
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<td></td>
<td>22</td>
<td>19.0%</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>18.7%</td>
</tr>
<tr>
<td>6</td>
<td>Count</td>
<td>% within Years of driving experience</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>23.1%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>11.1%</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>14.7%</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>14.7%</td>
</tr>
<tr>
<td>7</td>
<td>Count</td>
<td>% within Years of driving experience</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>61.5%</td>
</tr>
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<td></td>
<td>6</td>
<td>50.0%</td>
</tr>
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<td></td>
<td>2</td>
<td>22.2%</td>
</tr>
<tr>
<td></td>
<td>41</td>
<td>35.3%</td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>38.0%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>% within Years of driving experience</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>116</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Appendix B.26

Crosstabulation: Become impatient with a slow driver versus years of driving experience

<table>
<thead>
<tr>
<th>Become impatient with a slow driver in the outer lane and overtake on</th>
<th>Count</th>
<th>% within Years of driving experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Count</td>
<td>% within Years of driving experience</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>23.1%</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>25.0%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>10.0%</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>17.6%</td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>18.1%</td>
</tr>
<tr>
<td>2</td>
<td>Count</td>
<td>% within Years of driving experience</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0%</td>
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<td></td>
<td>7</td>
<td>79%</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>33%</td>
</tr>
</tbody>
</table>
Appendix B.27

Crosstabulation: Get involved in unofficial races with other drivers versus years of driving experience

<table>
<thead>
<tr>
<th>Get involved in unofficial 'races' with other drivers</th>
<th>Count</th>
<th>% within Years of driving experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>.0% .0% .0% 4.0% 3.1%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.0% 8.3% .0% 4.0% 3.8%</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.0% 33.3% 20.0% 7.2% 9.4%</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>.0% .0% 20.0% 16.0% 13.8%</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>8.3% 8.3% 10.0% 16.8% 15.1%</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>8.3% 8.3% 20.0% 10.4% 10.7%</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>83.3% 41.7% 30.0% 41.6% 44.0%</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>12 10 125 159</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years of driving experience</th>
<th>0-3 years</th>
<th>4-7 years</th>
<th>8-10 years</th>
<th>over 10 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get involved in unofficial 'races' with other drivers</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Get involved in unofficial 'races' with other drivers</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Get involved in unofficial 'races' with other drivers</td>
<td>3</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Get involved in unofficial 'races' with other drivers</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>Get involved in unofficial 'races' with other drivers</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>Get involved in unofficial 'races' with other drivers</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Get involved in unofficial 'races' with other drivers</td>
<td>7</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>52</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>12</td>
<td>10</td>
<td>125</td>
<td>159</td>
</tr>
</tbody>
</table>
### Appendix B.28

*Crosstabulation: Exceed speed limits versus education*

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Some high school education</th>
<th>High School graduate</th>
<th>College degree</th>
<th>Bachelor’s degree</th>
<th>Higher degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>USUALLY exceed speed limits by more than 10 km/hour</td>
<td>0</td>
<td>15</td>
<td>6</td>
<td>6</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>Count</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>5</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>18.2%</td>
<td>6.5%</td>
<td>22.9%</td>
<td>10.6%</td>
<td>.0%</td>
<td>11.8%</td>
</tr>
<tr>
<td>Count</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>12.9%</td>
<td>2.9%</td>
<td>8.5%</td>
<td>16.7%</td>
<td>9.3%</td>
</tr>
<tr>
<td>Count</td>
<td>1</td>
<td>13</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>21.0%</td>
<td>5.7%</td>
<td>14.9%</td>
<td>16.7%</td>
<td>14.9%</td>
</tr>
<tr>
<td>Count</td>
<td>2</td>
<td>8</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>18.2%</td>
<td>12.9%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>.0%</td>
<td>11.2%</td>
</tr>
<tr>
<td>Count</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>11</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>27.3%</td>
<td>6.5%</td>
<td>14.3%</td>
<td>23.4%</td>
<td>33.3%</td>
<td>15.5%</td>
</tr>
<tr>
<td>Count</td>
<td>2</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>18.2%</td>
<td>16.1%</td>
<td>28.6%</td>
<td>19.1%</td>
<td>16.7%</td>
<td>19.9%</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>62</td>
<td>35</td>
<td>47</td>
<td>6</td>
<td>161</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Appendix B.29

*Crosstabulation: Never wear a seatbelt vs. education*

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Some high school education</th>
<th>High School graduate</th>
<th>College degree</th>
<th>Bachelor’s degree</th>
<th>Higher degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEVER wear a seatbelt</td>
<td>1</td>
<td>16</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>Count</td>
<td>10.0%</td>
<td>24.6%</td>
<td>11.4%</td>
<td>8.9%</td>
<td>16.7%</td>
<td>16.1%</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Count</td>
<td>10.0%</td>
<td>4.6%</td>
<td>5.7%</td>
<td>2.2%</td>
<td>16.7%</td>
<td>5.0%</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>13</td>
</tr>
</tbody>
</table>
### Appendix B.30

*Crosstabulation: Usually drive while talking on the phone versus education*

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Some high school education</th>
<th>High School graduate</th>
<th>College degree</th>
<th>Bachelor’s degree</th>
<th>Higher degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>USUALLY drive while talking on the cell phone or texting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Count</td>
<td>1</td>
<td>12</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>17.6%</td>
<td>20.0%</td>
<td>14.3%</td>
<td>.0%</td>
<td>16.0%</td>
</tr>
<tr>
<td>2 Count</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>5.9%</td>
<td>2.9%</td>
<td>12.2%</td>
<td>16.7%</td>
<td>7.7%</td>
</tr>
<tr>
<td>3 Count</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>27.3%</td>
<td>7.4%</td>
<td>8.6%</td>
<td>10.2%</td>
<td>.0%</td>
<td>9.5%</td>
</tr>
<tr>
<td>4 Count</td>
<td>1</td>
<td>11</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>16.2%</td>
<td>5.7%</td>
<td>12.2%</td>
<td>16.7%</td>
<td>12.4%</td>
</tr>
<tr>
<td>5 Count</td>
<td>2</td>
<td>10</td>
<td>7</td>
<td>6</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>18.2%</td>
<td>14.7%</td>
<td>20.0%</td>
<td>12.2%</td>
<td>.0%</td>
<td>14.8%</td>
</tr>
<tr>
<td>6 Count</td>
<td>1</td>
<td>5</td>
<td>11</td>
<td>12</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>7.4%</td>
<td>31.4%</td>
<td>24.5%</td>
<td>16.7%</td>
<td>17.8%</td>
</tr>
<tr>
<td>7 Count</td>
<td>2</td>
<td>21</td>
<td>4</td>
<td>7</td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>18.2%</td>
<td>30.9%</td>
<td>11.4%</td>
<td>14.3%</td>
<td>50.0%</td>
<td>21.9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11</td>
<td>68</td>
<td>35</td>
<td>49</td>
<td>6</td>
<td>169</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
### Appendix B.31

**Crosstabulation: Speed limits are often set too low versus education**

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Some high school education</th>
<th>High School graduate</th>
<th>College degree</th>
<th>Bachelor’s degree</th>
<th>Higher degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed limits are often set too low, so many people ignore them</td>
<td>1 Count 9.1%</td>
<td>17</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>2 Count 18.2%</td>
<td>13.0%</td>
<td>11.4%</td>
<td>8.7%</td>
<td>.0%</td>
<td>11.4%</td>
<td></td>
</tr>
<tr>
<td>3 Count .0%</td>
<td>10.1%</td>
<td>17.1%</td>
<td>17.4%</td>
<td>.0%</td>
<td>12.6%</td>
<td></td>
</tr>
<tr>
<td>4 Count .0%</td>
<td>13.0%</td>
<td>11.4%</td>
<td>10.9%</td>
<td>.0%</td>
<td>10.8%</td>
<td></td>
</tr>
<tr>
<td>5 Count 18.2%</td>
<td>11.6%</td>
<td>2.9%</td>
<td>19.6%</td>
<td>50.0%</td>
<td>13.8%</td>
<td></td>
</tr>
<tr>
<td>6 Count 36.4%</td>
<td>8.7%</td>
<td>14.3%</td>
<td>13.0%</td>
<td>16.7%</td>
<td>13.2%</td>
<td></td>
</tr>
<tr>
<td>7 Count 18.2%</td>
<td>18.8%</td>
<td>25.7%</td>
<td>19.6%</td>
<td>33.3%</td>
<td>21.0%</td>
<td></td>
</tr>
<tr>
<td>Total Count 100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

### Appendix B.32

**Crosstabulation: Using a mobile phone is NOT a problem versus education**

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Some high school education</th>
<th>High School graduate</th>
<th>College degree</th>
<th>Bachelor’s degree</th>
<th>Higher degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using a mobile phone is NOT a problem as drivers can drive safely when using it</td>
<td>1 Count .0%</td>
<td>9.0%</td>
<td>2.9%</td>
<td>4.2%</td>
<td>.0%</td>
<td>5.4%</td>
</tr>
<tr>
<td>2 Count 18.2%</td>
<td>3.0%</td>
<td>5.7%</td>
<td>4.2%</td>
<td>.0%</td>
<td>4.8%</td>
<td></td>
</tr>
<tr>
<td>3 Count 0</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
### Appendix B.33

*Crosstabulation: Close following is NOT a problem versus education*

<table>
<thead>
<tr>
<th>Close following is NOT a big problem during driving</th>
<th>Some high school education</th>
<th>High School Graduate</th>
<th>College Degree</th>
<th>Bachelor's Degree</th>
<th>Higher Degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>11</td>
<td>67</td>
<td>35</td>
<td>48</td>
<td>6</td>
<td>167</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Count and % within Level of education for different education levels.
### Appendix B.34

**Crosstabulation: Speeding is rarely a cause of road accidents versus education**

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Some high school education</th>
<th>High School graduate</th>
<th>College degree</th>
<th>Bachelor’s degree</th>
<th>Higher degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speeding is rarely a cause of road accidents</td>
<td>3</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Count</td>
<td>27.3%</td>
<td>10.8%</td>
<td>3.4%</td>
<td>4.3%</td>
<td>.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>7.7%</td>
<td>6.9%</td>
<td>4.3%</td>
<td>.0%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>65</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>3.1%</td>
<td>6.9%</td>
<td>6.5%</td>
<td>.0%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>0</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>.0%</td>
<td>9.2%</td>
<td>3.4%</td>
<td>13.0%</td>
<td>.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>65</td>
<td>29</td>
<td>46</td>
<td>0</td>
<td>157</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Appendix B.35

**Crosstabulation: Become impatient with a slow driver versus education**

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Some high school education</th>
<th>High School graduate</th>
<th>College degree</th>
<th>Bachelor’s degree</th>
<th>Higher degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>1</td>
<td>16</td>
<td>3</td>
<td>9</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Count</td>
<td>9.1%</td>
<td>23.5%</td>
<td>8.8%</td>
<td>18.8%</td>
<td>.0%</td>
<td>17.4%</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>0</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>.0%</td>
<td>5.9%</td>
<td>20.6%</td>
<td>2.1%</td>
<td>.0%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Become impatient with a slow driver in the outer lane and overtake on the inside</td>
<td>2</td>
<td>19</td>
<td>4</td>
<td>11</td>
<td>0</td>
<td>62</td>
</tr>
<tr>
<td>Count</td>
<td>100.0%</td>
<td>10.3%</td>
<td>2.9%</td>
<td>8.3%</td>
<td>16.7%</td>
<td>7.8%</td>
</tr>
</tbody>
</table>
### Appendix B36

**Crosstabulation: Get involved in unofficial races with other drivers versus education**

<table>
<thead>
<tr>
<th>Get involved in unofficial ‘races’ with other drivers</th>
<th>Level of education</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Some high school education</td>
<td>High School graduate</td>
</tr>
<tr>
<td>1 Count</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>4.4%</td>
</tr>
<tr>
<td>2 Count</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>.0%</td>
<td>5.9%</td>
</tr>
<tr>
<td>3 Count</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>8.8%</td>
</tr>
<tr>
<td>4 Count</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>11.8%</td>
</tr>
<tr>
<td>5 Count</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>36.4%</td>
<td>11.8%</td>
</tr>
<tr>
<td>6 Count</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>27.3%</td>
<td>8.8%</td>
</tr>
<tr>
<td>7 Count</td>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>9.1%</td>
<td>48.5%</td>
</tr>
<tr>
<td>Total Count</td>
<td>11</td>
<td>68</td>
</tr>
<tr>
<td>% within Level of education</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
## Appendix C

### Appendix C.1 Schedule of Interviews with Respondents

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Category</th>
<th>Data Type</th>
<th>Date of interview</th>
<th>Position</th>
<th>Appendix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmed</td>
<td>Traffic police administrative, Riyadh City</td>
<td>Qualitative</td>
<td>14 Sep 2012</td>
<td>Head of Traffic Patrol Division of Riyadh City Centre</td>
<td>C2</td>
</tr>
<tr>
<td>Mohammad</td>
<td>Traffic police administrative, Riyadh City</td>
<td>Qualitative</td>
<td>15 Sep 2012</td>
<td>Head of Traffic Violations Investigation Committee in Riyadh Traffic Dept.</td>
<td>C3</td>
</tr>
<tr>
<td>Musaed</td>
<td>Traffic police administrative, Riyadh City</td>
<td>Qualitative</td>
<td>15 Sep 2012</td>
<td>Head of Driving License Section in Riyadh Traffic Dept.</td>
<td>C4</td>
</tr>
<tr>
<td>Salman</td>
<td>Traffic police administrative, Riyadh City</td>
<td>Qualitative</td>
<td>17 Sep 2012</td>
<td>Deputy manager of License Division in Riyadh city center.</td>
<td>C5</td>
</tr>
<tr>
<td>Husain</td>
<td>Traffic police administrative, Riyadh City</td>
<td>Qualitative</td>
<td>19 Sep 2012</td>
<td>Car accidents investigator in Riyadh Traffic Department.</td>
<td>C6</td>
</tr>
<tr>
<td>Khaled</td>
<td>Traffic police administrative, Jeddah City</td>
<td>Qualitative</td>
<td>23 Sep 2012</td>
<td>Head of Safety division in Jeddah Traffic Department</td>
<td>C7</td>
</tr>
<tr>
<td>Mihran</td>
<td>Traffic police administrative, Jeddah City</td>
<td>Qualitative</td>
<td>23 Sep 2012</td>
<td>Deputy Manager of Traffic Patrol division in Jeddah Traffic dept.</td>
<td>C8</td>
</tr>
<tr>
<td>Faisal</td>
<td>Traffic police administrative, Jeddah City</td>
<td>Qualitative</td>
<td>23 Sep 2012</td>
<td>Head of Licenses Dept in Jeddah</td>
<td>C9</td>
</tr>
<tr>
<td>Saeed</td>
<td>Traffic police administrative, Taif City</td>
<td>Qualitative</td>
<td>27 Sep 2012</td>
<td>Head of Traffic Patrol Section in Taif Traffic Department</td>
<td>C10</td>
</tr>
<tr>
<td>Ali</td>
<td>Traffic police administrative, Taif City</td>
<td>Qualitative</td>
<td>29 Sep 2012</td>
<td>Head of car accident investigation in Taif Traffic Dept.</td>
<td>C11</td>
</tr>
<tr>
<td>Saleh</td>
<td>Traffic police</td>
<td>Qualitative</td>
<td>01 Oct</td>
<td>Head of car driving</td>
<td>C12</td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
<td>Qualitative</td>
<td>Date</td>
<td>Role</td>
<td>Code</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------</td>
<td>-------------</td>
<td>----------</td>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Mohsen</td>
<td>Policy Maker</td>
<td>Qualitative</td>
<td>03 Oct 2012</td>
<td>Head of Traffic Safety Section in General Traffic Department</td>
<td>C13</td>
</tr>
<tr>
<td>Abdulrahman</td>
<td>Policy Maker</td>
<td>Qualitative</td>
<td>04 Oct 2012</td>
<td>Head of Awareness Section in the Department of Public Relations and Media</td>
<td>C14</td>
</tr>
<tr>
<td>Yousef</td>
<td>Policy Maker</td>
<td>Qualitative</td>
<td>04 Oct 2012</td>
<td>Awareness Section in the Department of Public Relations and Media</td>
<td>C15</td>
</tr>
<tr>
<td>Naif</td>
<td>Policy Maker</td>
<td>Qualitative</td>
<td>05 Oct 2012</td>
<td>Head of Media Sec. in the Department of Public Relations and Media</td>
<td>C16</td>
</tr>
<tr>
<td>Saad</td>
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