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PARENT AND CARER BELIEFS, ATTITUDES AND
BEHAVIOURAL INTENTIONS TOWARDS SAFE CHILD
PASSENGER TRAVEL

By
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200701430
MINOR DISSERTATION

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MANAGEMENT

at the

UNIVERSITY OF JOHANNESBURG

SUPERVISOR: PROF. M. MPINGANJIRA

FEBRUARY 2016
DECLARATION

I Barandereka Bonfils declare that the Masters’ Dissertation, which I hereby submit for the degree MCom (Business Management specialising in Marketing Management) at the University of Johannesburg, is my own independent work and that the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this document has not previously been submitted by me for a degree at any other university.
ACKNOWLEDGEMENTS

Many people have assisted with the development and progression of this research project. It is difficult to acknowledge all the people involved, however;

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ABSTRACT

Road accidents contribute significantly to child mortality and injuries in South Africa. One way in which countries around the world, including South Africa, are trying to deal with the problem is through promoting the use of child car restraints. Despite this, use of child car restraints is noted to be low. This study examines parent and carer beliefs, attitude and behavioural intentions towards safe child passenger travel, particularly as this relates to use of child car restraints. The study utilises the Theory of Planned Behaviour (TPB) and the Health Belief Model (HBM) to propose a conceptual model that can be used to assist in explaining behavioural intentions towards use of child car restraints.

The study follows a quantitative research approach to address the presented objectives. The research process put forward by Saunders et al. (2012) is followed. A structured questionnaire was used to collect data from parents and carers of children up to 8 years old. The data was collected in areas within three main regions of Gauteng: namely, Johannesburg, Ekurhuleni and Tshwane. 261 questionnaires were collected, of which 253 were usable. The data is analysed using SPSS (Statistical Package for Social Science).

The results show that parents and carers had a positive attitude and positive behavioural intentions towards use of child car restraints. The results further indicate that attitudes towards use of child car restraints is influenced by perceived susceptibility, perceived benefit, perceived barriers, perceived seriousness, and subjective norm. It is also found that knowledge of legal requirements, knowledge of use as well as attitude all have a positive influence on behavioural intentions towards use of child car restraints.
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CHAPTER 1: INTRODUCTION

1.1. BACKGROUND TO THE STUDY

South Africa is a country where one faces the dangerous prospect of traffic collisions. According to Statistics South Africa (2013), approximately 14 000 people die in traffic collisions on an annual basis, and a further 100 000 people are seriously injured. According to Marion (2013), South Africa is among the ten countries that are jointly responsible for approximately 62 percent of global deaths due to road accidents. A 2014 report by the South Africa National Injury Mortality Surveillance System (NIMSS) places children as the most vulnerable of road users. One of the reasons for this is to the low levels of use of child passenger restraints. A study conducted by Statistics South Africa (2013) reports that as many as 84 percent of South African children do not wear restraints when travelling. Surveys conducted between 2007 and 2012 by the Red Cross Children’s Hospital revealed that, in 2007, as many as 89 percent of children were not ‘buckled up’, with this figure remaining high at 79 percent by 2012. Road accidents are known to be one of the major causes of child deaths and injuries in South Africa (Marion, 2013). The fact that so many people do not make use of child car restraints is of grave concern to government as well as other stakeholders. For this reason, government is investigating means of reducing road accidents, injuries and deaths. Government is particularly concerned with ways in which children, specifically, can be protected from road fatalities. According to Marion (2013), using child car restraints is a good way of reducing the risk of child passenger injuries and fatalities.

According to Brown, Finch, Hatfield and Bilston (2011), there are many things that can happen to a child during a collision and child car restraints have been designed to soften the severity of such. They are of the opinion that child car restraints have been designed in such a way that they decrease the risk of children being ejected from the vehicle during a collision and distribute the severity of the crash to bones that are structurally stronger thus preventing soft tissue from bearing the brunt of the impact. This restricts the force of the crash that the individual experiences and could potentially limit the contact that the accident victim might have with any intruding vehicle parts. Koppel et al., (2012) state that child car restraints have been designed to offer specialised protection to child passengers in a vehicle involved in a collision.
Child car restraints are only effective when the correct system for the corresponding age is correctly used. If a device is not age-appropriate or it is used incorrectly, it may not offer the measure of protection expected (Marion, 2013; Xiaojun et al., 2012). Research finds that the measure of effectiveness of child car restraints in reducing injuries and fatalities depends primarily on whether the proper child car restraints are used and this is in turn dependent on both the child’s age and the correct and proper application of the system. Efforts to encourage correct and proper use of child restraining devices should thus be intensified. According to Statio (2010), social marketing can play an important role in influencing public sentiment, attitude and behaviour regarding a variety of social issues, one of which is child passenger safety. Kotler and Lee (2011) describe social marketing “as being about influencing behaviour by utilising a systematic planning process that applies marketing principles and techniques, focusing on priority target audience segments, and delivering a positive benefit for society”.

From a social marketing perspective, this study aims to understand parental beliefs, attitudes and behaviours relating to child passenger safety and the use of child car restraints, by utilising a sample of parents from Gauteng in South Africa. It is hoped that the results will assist in informing the development of social marketing strategies that can help to influence parents’ beliefs, attitudes and behaviours in relation to safe child passenger travel.

1.2. PROBLEM STATEMENT

Child car restraints are designed to keep child passengers in place in the event of a collision or sudden stop. There are different types of restraints and each is meant to protect the child passenger from being ejected from the seat. Child car restraints are designed especially to suit the body of a child, while restraining them in a comfortable manner (St Johns Ambulance, 2012). Literature shows that children who are properly and correctly secured in child car restraints appropriate to both age and stage of physical developmental (weight and height) face a lower risk of suffering serious injury or fatality in case of a collision while they are passengers in a vehicle (Durbin, Elliot & Winston, 2013). Durbin et al. (2013) further point out that, in the event of a vehicle collision, children who are in child car restraints are 90 percent less likely to suffer death and 70 percent less likely to suffer serious injury. If properly restrained children are compared to children who are not properly restrained or not restrained at all, the likelihood of the latter two groups suffering head injuries is four times higher when not restrained at all, and twice as high when improperly restrained (NIMSS, 2014).
Vehicle injuries pose a significant threat to children and child safety and it is thus of utmost importance that parents, and others involved in caring for and transporting children, be aware of and use appropriate child car restraints when transporting children. According to a study conducted in the USA (Ebel et al., 2006), as many as 80 percent of parents and carers make use of correct car restraints; however, many of these parents and carers use the restraints incorrectly even though much awareness is created about the importance of these measures in lowering the risk of children sustaining serious or fatal injuries in case of vehicle collisions. Although actual figures are not as readily available in the South African context, it is believed that the situation in South Africa is different. According to Statistics South Africa (2014), many parents in Gauteng do not use any form of child car restraint at all, despite South Africa having the dubious honour of being among the top ten countries in the world in terms of annual traffic deaths.

Review of the literature reveals that no studies have as yet been conducted to help get a better understanding of child passenger safety practices in South Africa. Most published research about the issue of child passenger safety has been conducted in developed countries such as Australia, the USA, Canada and the UK (Thuso, 2011).

Weaver, Suzanne, Brixey, Williams and Nansel (2013) state that the promotion of child passenger safety is fraught with challenges relating to beliefs, attitudes and behaviours. It is extremely important to investigate the beliefs, attitudes and behaviours of parents, as parents are usually the main or regular drivers of children and the safety of child passengers is very much dependent on these drivers behave. This study not only examines parents as drivers but also considers carers and others involved in the transportation of child passengers. Taking an interrogative format, the research problem addressed in this study is captured in the main research question below.

1.3. RESEARCH QUESTION

The main research question is: what are parents’ and carers’ beliefs, attitudes and behavioural practices and intentions relating to the use of child passenger restraints?

The sub questions are:

- What are parents’ and carers’ beliefs relating to use of child car restraints?
- What are parents’ and carers’ attitudes towards use of child car restraints?
• What are parents’ and carers’ behavioural practices relating to use of child car restraints?
• What are parents’ and carers’ behavioural intentions relating to use of child car restraints?
• What are parents’ and carers’ level of knowledge regarding use of child car restraints?

1.4. RESEARCH OBJECTIVES

The primary objective of this study is to investigate the beliefs, attitudes and behavioural practices and intentions of parents and carers regarding the use of child car restraints and the factors influencing these.

The secondary objectives are:
• to determine parents’ and carers’ beliefs relating to the use of child car restraints;
• to investigate the attitude of parents and carers regarding the use of child car restraints;
• to examine factors that influence parents and carers attitudes towards the use of child car restraints;
• to examine knowledge on the part of parents and carers regarding the use of child car restraints;
• to uncover parents’ and carers’ behavioural practices and intentions relating to the use of child car restraints; and
• to examine the factors that influence parents and carers behavioural intentions towards the use of child car restraints.

1.5. SIGNIFICANCE OF THE STUDY

Statistics show that South Africa compared to the rest of developing countries has one of the highest death tolls (and number of injuries) caused by road accidents. Research by Soul-City (2013) reports that 34.4 percent of road deaths are of children aged 14 years old or younger. According to the report, it is estimated that 36 people die daily, 100 get seriously injured daily and 7 000 are hurt or permanently disabled each year as a result of car road accidents. In spite of the effort of Arrive Alive campaigns, and legislation, research still shows the use of child restraints in South Africa to be low.
Arrive Alive (2014) argue that a combination of comprehensive programmes, legislation, law enforcement, public education and publicity is required in order to promote the benefits of child restraints and child restraint use. Any efforts aimed at promoting use of child restraints needs to be based on a sound understanding of factors such as beliefs, attitudes and behaviours that influence such use. The results of this study should help inform the development of social marketing strategies that can help to influence parents’ beliefs, attitudes and behaviours relating to safe child passenger travel and also create a foundation for future studies on issues related to use of child car restraints in South Africa.

1.6. RESEARCH METHODOLOGY

1.6.1 Population and sampling

The target population in this study is parents and carers of children (up to eight years old) who drive. The parents/carers were drawn from three major metros in Gauteng: namely, Johannesburg, Ekurhuleni and Tshwane. In these metros, low socio-economic areas and high socio-economic areas were identified. Field workers distributed the questionnaires among parents/carers. Convenience sampling was used to select respondents. Convenience sampling takes place when individuals who are the easiest to access and obtain data from are selected (Malhotra & Birks, 2000; Saunders et al., 2012).

1.6.2 Data collection procedures and instrument

The data collection instrument used is a structured questionnaire. This questionnaire contains two sections, as follows: Section A was used to capture background data pertaining to the respondents involved in the study, while Section B was used to measure the beliefs, attitudes and behavioural intentions of parents and carers relating to use of child car restraints. Section B also included questions that examined knowledge on the part of parents and carers regarding use of child car restraints. The questionnaire was pre-tested on ten parents and carers. By the end of the data collection process, a total of 261 usable responses were obtained.

1.6.3 Data analysis

Version 21 of the Statistical Package for Social Science (SPSS) is used to analyse the quantitative data collected. The main tools used include descriptive statistical analysis and
regression analysis. STATKON, the Statistical Consultation Service, at the University of Johannesburg assisted in analysing the data.

1.7. DEFINITION OF KEY TERMS

**Child restraints:** Brown, Finch, Hatfield and Bilston (2011:1128) define child restraints “as safety devices that are primarily designed to prevent or minimize injury to a child passenger when a collision occurs”.

**Social marketing:** Andreasen (1995:20) defines social marketing as “the application of commercial marketing technique to the analysis, planning, execution, and evaluation of programmes designed to influence voluntary behaviour of target audiences in order to improve their personal welfare and that of their society”.

**Behaviour:** Francis et al. (2004:967) define behaviour as “an action that is carried out at a specified time”.

**Behavioural intention:** Intention is defined as “an individual’s motivation or desire in the sense of their sober and informed conscious plan to put effort to carry out a specific behaviour” (Gielen & Sleet, 2011: 566).

**Perceived behavioural control:** “Behavioural control is described as an individual’s anticipation of the complexity or capability to act out behaviour” (Nigg, Lippke, & Maddock, 2008:698)

**Perceived susceptibility:** Susceptibility is the “person’s perceived subjective risk of contracting a condition” (Becker et al., 2013:268).

**Perceived barriers to action:** These are “the unfavourable aspects that can stop one from undertaking the desired behaviour” (Becker et al., 2013:268).

**Perceived seriousness:** This refers to “a person’s perception of how severe the impact a particular condition is likely to be on his or her life” (Becker et al., 2013:268).
1.8. CHAPTER OUTLINE

This dissertation is structured as follows:

- **Chapter one – Introduction to the study**
  This chapter introduces the research study. It begins by providing background to the study, followed by a discussion of the research problem and an outline of the research questions and objectives. Thereafter, a brief overview of the methodology used to address the objectives of the study is presented, followed by definitions of key terms.

- **Chapter two – Literature Review**
  Chapter 2 provides a review of literature. Special focus is given to literature on understanding social marketing and theories that were used to help understand attitude and behaviour.

- **Chapter three – Research methodology**
  Chapter 3 focuses on the research design and methodology deployed in the study. Details relating to the research philosophy adopted, target population, sampling, development of data collection instrument, among others, are provided. The chapter also discusses the data analysis methods used in the study.

- **Chapter four – Findings**
  Chapter 4 presents and discusses the findings of the study. Presentation of the results is structured so as to take into consideration the objectives of the study outlined in Chapter 1.

- **Chapter five – Conclusions and recommendations**
  Chapter 5 presents a summary of the findings of the study and the conclusions drawn. It also presents recommendations as to how safe child passenger travel can be effectively promoted.
CHAPTER 2: LITERATURE REVIEW

2.1. INTRODUCTION

Literature relating to the use of child car restraints is presented in this chapter. The chapter is divided into five main sections, each examining a particular aspect of this topic. The first section examines literature pertaining to the child passenger safety aspects of the motor vehicle industry. This section makes it clear that the issue of child passenger safety is a social one and can thus be understood from a social marketing perspective. Thereafter, section 2.2 examines the concept of social marketing and, more specifically, the origins of social marketing and how social marketing is used to address social ills and influence change in people’s behaviour for the benefit of consumers, or of society as a whole.

Section 2.3 discusses theoretical frameworks that can be used to understand factors that influence child passenger safety behaviour. Theories discussed include the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB) and the Health Beliefs Model (HBM). The latter two theories, TPB and HBM, form the base of this study and, for this reason, these two theories are explored in significant detail. The penultimate section reviews literature pertaining to economic status, knowledge and use of child restraints. Finally, section 2.5 presents the proposed conceptual model for this study. This model is based on the findings of the literature review. This chapter concludes with a summary of the main issues covered within it.

2.2. THE AUTOMOBILE INDUSTRY AND CHILD PASSENGER SAFETY

South Africa is currently experiencing a rapid increase in the number of cars on the road (NAAMSA, 2013). National sales figures in 2014 show that the number of vehicle sold increased to 644 523 units, compared to 623 914 units sold in 2012, 492 956 units sold in 2010 and 395 186 units sold in 2009 (Stats SA, 2014; Stats SA, 2013; NAAMSA, 2012). The more vehicles on the road, the higher the possibility of accidents occurring. According to Stats SA (2013), approximately 14 000 people die in traffic collisions on an annual basis, and a further 100 000 people are seriously injured. According to Marion (2013), South Africa is among ten countries that jointly account for approximately 62 percent of global deaths due to road accidents: a significant proportion of these fatalities are said to be children. Research by Soul City (2013) reports that 34.4 percent of road accident fatalities are of children aged 14 years.
old or younger. That report estimates that 36 people die daily and 7000 get hurt or are permanently disabled annually as a result of all car road accidents.

A study conducted by the World Health Organisation (WHO) (2013) reveals that 1.3 million people around the world die in road traffic accidents every year. It is estimated that this number will reach 2.4 million per annum by 2030 unless mechanisms are put in place to stem this tide. According to the WHO study, South Africa has the dubious honour of being ranked as the fourth worst country in the world when it comes to road accidents. The WHO (2013) also highlights research that shows motor vehicle accidents to be one of the leading causes of sudden and unexpected deaths among children in many parts of the world.

Mortality and injury statistics for motor vehicle accidents illustrate only part of the problem involving child passengers. Weinreich (2006) states that the far-reaching effects of accidents on society are not reflected in these statistics; these effects include: the burden of responsibility placed on families and individuals as a result of financial costs relating to injuries, fatal or not, as well as the emotional costs associated with grief, loss, pain and suffering. When a child dies in a sudden and unexpected manner, it can often lead to distress not only for parents, but for friends and the community at large (Trochim, 2006). Other indirect costs include loss of productivity and potential earnings, either from the child in the case of premature death or the parent in lost earnings if such parent is forced to be absent from work for long periods as a result of serious injury (Weinreich, 2006). Direct costs include material costs, loss of car and medical expenses. Jones (2013) points out that deaths and injuries of unrestrained passengers are the responsibility of society as tax money is often used for police services, emergency and medical care, rehabilitation services and special education for the handicapped. Potential increases in insurance premiums and hospital costs are also directly linked to accidents (Marion, 2013).

Because of the direct and indirect costs associated with road accidents, the use of child car restraints is promoted across the world as an effective way of preventing child injuries and deaths. Brown et al. (2011) describe child car restraints as safety devices that are primarily designed to prevent or minimise injury to a child passenger in case of a collision.
2.2.1 Age of the child and use of restraints

According to Arrive Alive (2014), South African law stipulates that it is the responsibility of the driver of a vehicle to ensure that children use either a child car restraint or a seatbelt, where their ages allow such seatbelt use, when the vehicle is in motion. Traffic legislation categorises children into the following four groups with regards to required method of occupant restraint.

Group 1: Infants under the age of one year

According to NHTSA (2013), the infants head at birth is around a quarter of their total length and about a third of their body weight. The NHTSA states that an infant’s skull is very flexible, so a relatively small impact can result in significant deformation of the skull and brain. According to Paediatrics (2014), the smaller the child, the lower the force needed for injury. They further argue that an infant’s rib cage is also very flexible and that impact to the chest can result in a large compression of the chest wall onto the heart and lungs as well as the abdominal organs. At the same time, the infant pelvis is unstable and cannot withstand the forces from an adult restraint system (Bilston, Brown & Kelly, 2005). For this reason, infants require their own special seat designed to cradle them in a crash, and provide protection from many types of crashes. Some infant seats are convertible, that is, they can revert to an older child safety seat as the child grows older. According to Bilston et al. (2005), a rear-facing child restraint system (sometimes called an “infant car seat”) provides the best protection for infants until they are one year of age and at least 13 kilograms (kg) in weight. They further state that for the best protection, infants should be kept rear facing for as long as possible. Paediatrics (2014) notes that the safest place for infants is in the back seat in an approved rear-facing infant car seat.

Group 2: Children aged 1 to 4 years

According to Bilston et al. (2005), the bone-formation process in humans only reaches completion around the age of 6 or 7 years; until then, a child’s skull is not as strong as that of an adult. A restraint system needs to limit forward head movement in a frontal impact and provide protection from intrusion in a side impact (NHTSA, 2013). The recommended type of seats for children between one and four years old is the child safety seat. A child safety seat secures the child and, in times of accidents, spreads the crash forces over a wide area. This is as long as belts and harnesses fit well and are properly positioned as recommended by the
manufacturer. The restraint system should also provide protection from contact with the vehicle interior in the event of front and side impacts (NHTSA, 2013). The child safety seat can be used until either the weight of the child exceeds 18 kg or they grow too tall for the height of the adjustable harness (Paediatrics, 2014).

**Group 3: Children aged 4 to 6 years**

According to Keay et al. (2013a), booster seats are best used only when a child has outgrown a child safety seat. This is usually between the age of 4 and 6. Booster seats are designed for weights of between 15 and 25 kg. It is recommended that children should continue to ride in a booster seat until the lap and diagonal belts of the booster seat no longer fit properly, typically when they are approximately 145 centimetres (cm) tall (Paediatrics, 2014). Booster seats raise the seating position of the child so that the adult seat-belt lies properly across the chest, crossing diagonally at the child’s shoulder rather than the neck, and low across the pelvis. If the adult belt is too high across the stomach, serious injury can result during a crash, or the child could ‘submarine’ under the seat-belt (NHTSA, 2013). The booster seat has a back and provides some protection in the event of a side impact (Keay et al., 2013a).

**Group 4: Children aged 6 to 11 years**

Booster cushions without backs are designed for children that weigh between 22 and 36 kg (Paediatrics, 2014). Some manufacturers, however, now produce booster cushions with backs that cover the full range of growth between 15 and 36 kg (Paediatrics, 2014). These weights roughly coincide with ages between 6 and 11 years. It should also be noted that, although children in this age group are best protected when secured in age-appropriate child restraints. If such restraints are not available, it is still better to use an adult seat-belt on an older child than leave the child unrestrained on the back seat (Keay et al., 2013a).

In many high-income countries, the use of child restraints is common – with usage rates up to 90% – but in low income countries, they are rarely used (Paediatrics, 2014). Keay et al. (2013a) report that, even in countries where the use of child restraints is high such as Sweden, the United Kingdom and the United States, restraints are frequently inappropriately used or misused. For instance, a child may be restrained in the wrong system for its age or weight, or the straps or harnesses may not be adequately secured or entirely left undone, thus placing the
child at an increased risk of both fatal and non-fatal injuries. A lack of awareness about appropriate and correct use of restraints can thus jeopardize the effectiveness of these devices.

### 2.2.2 Child restraint laws and advocacy programmes

The technical effectiveness of seat-belts and child restraints is well researched and proven. Properly designed and fitted restraints save lives (Marion, 2013). Laws making seat-belt and child restraint use compulsory are essential, especially in low- and middle-income countries, where usage rates are low (Bohner & Dickel, 2011). To ensure that a much higher level of usage is achieved, a comprehensive programme is required. Marion (2013) recommends that to be successful, legislation should be preceded by public information campaigns to raise awareness of the benefits of wearing seat-belts and using child restraints and to provide information on the requirements of the law. Strong enforcement, especially in the period immediately after the law is implemented is required (Bilston et al., 2005). Also required are publicity and enforcement campaigns, both before and after enactment. Marion (2013) points out that although legislation is essential, it will not ensure high usage rates unless it is part of a comprehensive programme that includes enforcement, publicity and encouragement.

It is important to note that most studies that examine the impact of car restraint-related laws have been conducted in high-income countries, where legislation is heavily enforced, and is usually preceded by extensive publicity campaigns (Bohner & Dickel, 2011). Although it is likely that low- or middle-income countries can decrease fatality rates among motor vehicle occupants, children in particular, the availability of suitable child restraints is variable across such countries. Level of enforcement is another factor that may compromise usage. Legislation is most likely to work where age-appropriate child restraints are readily available, where enforcement is comprehensive and where there is widespread community education on the benefits of restraint use. In low- and middle-income countries, where police resources are constrained and community attitudes to the use of restraints are not supportive of legislation, effective enforcement requires widespread effort aimed at changing people’s attitudes and behaviours (Marion, 2013).

South African law stipulates that it is the driver’s responsibility to ensure that each person travelling in his or her vehicle is correctly restrained (Arrive Alive, 2014). Legislation for the protection of child passengers in a motor vehicle is clear, but the law can only be effective if people have a clear understanding of the requirements of, and the correct and proper use of the
restraints. The Arrive Alive advocacy group plays an integral role in raising concerns with regard to child passenger safety and provides information on the use of child seats. Despite these efforts, and the existent legislation, research still shows the use of child restraints in South Africa to be low (Arrive Alive, 2014).

This study argues that any efforts aimed at promoting the use of child restraints need to be based on a sound understanding of factors influencing such use. Taking a social marketing perspective, this study aims to understand behaviours relating to the use of child restraints. In particular, the study aims to examine parents’ beliefs and attitudes relating to use of child restraints.

2.3. SOCIAL MARKETING

This section reviews literature on social marketing. The first part of the section examines the origins of social marketing, by revisiting the evolution of marketing concepts and their assimilation of societal issues. The second part of this section examines operational definitions of social marketing, before the final part sheds light on behavioural aspects within social marketing.

2.3.1 Origins of social marketing

Social marketing dates back to the 1960s (Andreasen, 2014), and is seen as a unique discipline within marketing. According to DeStefano (2013), the 1960s was a time when social and environmental consciousness was embraced by a large number of adults, particularly in the USA. During the 1970s, social marketing was defined as a marketing discipline (DeStefano, 2013). A seminal publication in this regard was Social Marketing: An Approach to Planned Social Change, published in 1971 by Philip Kotler and Gerald Zaltman which made a significant contribution to the recognition of the discipline. DeStefano (2013) points out that this publication formally introduced the term and subject matter to governments, academic researchers, and businesses (primarily non-profits) around the world. Kotler and Zaltman (1971) reasoned that commercial marketing strategies, which had been so successful in selling products, originally goods and more recently services, to consumers, could be used to change individual and group behaviours, and even organizational policies. Social marketing, as advocated by Kotler and Zaltman, could be used to promote socially beneficial ideas, attitudes and behaviours (NIMSS, 2014). Following further interrogation and application, Kotler and
Andreasen (2014:264) asserted social marketing as “different from other areas of marketing only with respect to the objectives of the marketer and his or her organization”. They note that social marketing seeks to influence social behaviours and not to benefit the marketer, but to benefit the target audience and general society (Weinreich, 2006).

From a health perspective, Kotler and Andreasen (2014) state that social marketing attempts to increase healthy behaviours and attitudes in a target group by applying marketing techniques proven to successfully promote commercial (profit-driven) products. The proven techniques referred to are those from marketing science, human reception of messages, behaviour theory, and social and cognitive psychology (Evans & McCormack, 2008). Andreasen (1995:231) argues that these are “proven concepts and techniques drawn from the commercial sector to promote changes in diverse socially important behaviours such as drug use, smoking, sexual behaviour and that this marketing approach has an immense potential to affect major social changes if we can only learn how to harness its power”.

### 2.3.2 Operational definition of social marketing

Since the late-1960s, social marketing has gained a unique identity. Andreasen (2003:296) states that: “the field has had its infancy and adolescence and it is just now entering early maturity”. Revision of the conceptual focus of social marketing, particularly a movement away from the promotion of ideas, as Kotler and Zaltman (1971) originally suggested, toward behavioural influence, is perhaps the most significant evolution, in theoretical terms, since the concept was introduced as a scholarly field of study (Veludo-de-Oliveira, 2009 & Orzan, Serban, Iconaru & Macovei, 2013). Different definitions have been proposed over the years which reflect the development of the concept. Proper definition of the concept has been necessary so as to combat the various misinterpretations that have plagued the field and have caused semantic inaccuracy and generated confusion with other, closely-related concepts (Veludo-de-Oliveira, 2009). A review of the literature shows that one of the frequently cited definitions of the concept of social marketing is that given by Andreasen in the 1990s:

“Social marketing is the application of commercial marketing technique to the analysis, planning, execution, and evaluation of programmes designed to influence voluntary behaviour of target audiences in order to improve their personal welfare and that of their society.”

(Andreasen, 1995:231)
In 2002, Kotler described social marketing as: “the use of marketing principles and techniques to influence a target audience to voluntarily accept, reject, modify, or abandon a behaviour for the benefit of individuals, groups or society as a whole” (Veludo-de-Oliveira, 2009:626). Kotler and Lee (2011) revised this definition as follows: a process that applies marketing principles and techniques to create, communicate, and deliver value in order to influence target audience behaviours that benefit society as well as the target audience. In 2005, the National Consumer Council in the UK was commissioned by the British government to undertake a review of social marketing (French & Blair-Stevens, 2006:37): one of the outcomes of this review is the following definition: “social marketing is the systematic application of marketing, alongside other concepts and techniques, to achieve specific behavioural goals, for a social good” (French & Blair-Stevens, 2006). Furthermore, in a publication in the Journal of Business Research, Dann (2009:9) provides a historical description of social marketing and proposed a new definition which describes social marketing as: “the adaptation and adoption of commercial marketing activities, institutions and processes as a means to induce behavioural change in a targeted audience on a temporary or permanent basis to achieve a social goal”.

In 2011, several social marketing experts were asked by the National Consumer Council in the UK to put forward their definition of social marketing. Direct quotes from a few of these experts follows; these help to define approaches to, and the desired results of, social marketing programs:

- Professor of Marketing at Georgetown University, Alan Andreasen, updated his original description of social marketing as “the application of the voluntary behaviour of target audiences to improve their lives or society of which they are a part” (Kotler & Lee, 2011: 502).

- International social marketing consultant, Nancy Lee, Professor of Marketing at the University of Wisconsin-Madison, Michael Rothschild, Emeritus Professor at the School of Business, University of Wisconsin-Madison, and Bill Smith, former Executive Vice President of the Academy of Educational Development, stated that “this strategically oriented discipline relies on creating, communicating, delivering, and exchanging offerings that have positive value for individuals, clients, partners, and society at large” (DeStefano, 2013: 561).

- Jay Bernhardt, Professor and Chair of Health Education and Behaviour at the University of Florida, offered an emphasis on the system that invokes interest and involvement from consumers by stating that social marketing “is the systematic application of interactive marketing principles and techniques that harness audience participation to
deliver value and achieve specific behavioural goals for a social good” (Kotler & Lee, 2011: 502).

- Sharyn Rundel-Theile, Associate Professor of Marketing at Griffith University in Australia, clarifies the elements and goal of social marketing by stating that “social marketing is the activity and processes for understanding, creating, communicating, and delivering a unique and innovative offering to overcome a societal problem” (DeStefano, 2013: 561).

- Mike Newton-Ward, Social Marketing Consultant at North Carolina Division of Public Health and Independent Consultant, brought the above definitions together by stating that “social marketing is a way to reduce the barriers and increase the facilitators to behaviours that improve the quality of life for individuals and society. It uses concepts and planning processes from commercial marketing. It goes beyond communication, public service announcements, and education to give you a 360 degree view of potential causes and solutions for health and human-service problems” (DeStefano, 2013: 561).

Kotler and Lee (2011) point out, after reviewing a number of definitions, that social marketing is ultimately about identifying a human condition or behaviour which has negative societal implications, applying standard marketing principles, tools and techniques, identifying and focusing on a particular target audience segment or society, influencing the underlying factors that cause the negative behaviour of condition, and producing a lasting benefit to society through its individuals.

### 2.3.3 Behavioural aspects in social marketing

There is a growing body of social marketing research that addresses various behavioural aspects in order to support causes linked to education, safety, human rights, ecology, health, and so on. This section highlights some behavioural aspects which social marketing research has attempted to address. This discussion is framed by the notions of ‘behaviourally-induced social problems’ and ‘prosocial behaviours’.

**Behaviourally-induced social problems**

Kotler and Lee (2011) states that social marketing seeks primarily to address social problems and, by so doing, to promote the well-being or the good of society. The link between social marketing, on the one hand, and concerns with problems affecting society, on the other, is well
understood. Many intricate social ills, such as lung cancer, can be seen to be at least partly caused by problems of human behaviour (Kotler & Lee, 2011), and social marketing seems to be a suitable approach to help address such behaviourally-induced social problems. Behaviours which might be the object of social marketing influence are those involving voluntary actions (or inactions) whose repercussions enable or inhibit occurrence of a social problem, and consequently impact individuals and the general welfare of society as a whole.

In dealing with behaviourally-induced social problems, social marketing has addressed the behavioural aspects of individuals in need of help (e.g. alcoholics), the vulnerable or those exposed to risky situations (e.g. drivers and traffic accidents, women and breast cancer), or with the ability to assist society and to alleviate the social problem (e.g. recyclers, blood donors, volunteers). As behaviourally-induced social problems multiply there are an abundance of opportunities for social marketing (Veludo-de-Oliveira, 2009).

Prosocial behaviours

Social psychology has a long history of debate pertaining to how to promote the social or public good via the study of prosocial and helping behaviours, which are closely related to a number of behavioural aspects that social marketing addresses. In this vein, it is worthwhile clarifying the extent to which prosocial behaviours coincide or differ from those behaviours which are suitable for intervention on the part of social marketing. Before proceeding to such an analysis it is appropriate to define both terms.

Although often used interchangeably, prosocial behaviour and helping behaviour carry different meanings. Owyang (2012) explains that prosocial behaviour labels a broad category of actions, which includes helping behaviour. The term ‘prosocial behaviour’ refers to acts valued positively by society (Owyang, 2012). These are actions “defined by society as generally beneficial to other people and to the ongoing political system” (Veludo-de-Oliveira, 2009: 768). In contrast, ‘helping behaviour’ is construed to include “any act of giving and receiving aid that is intended to alleviate suffering or to improve quality of life” (Gross & McMullen, 1982). Helping behaviour has been used to name voluntary acts that benefit others and are intended to do so (DeStefano, 2013).

It follows from the foregoing discussion that prosocial behaviour, which embraces helping behaviour, is guided by desirable and undesirable criteria stipulated by society in a specific
moment in time. It is the position taken in this study that social marketing attempts to trigger prosocial behaviour. The study of social marketing is not limited to the study of behaviours whose intent is to help others but it also promotes actions that, like prosocial behaviours, are in accordance with the present values of society in areas such as health, education, safety and so on.

This study, specifically, examines the use of child passenger restraints. This is a significant societal issue which requires the involvement of various parties, including government, parents and advocacy groups. The focus of this study is on parents. Review of the literature shows that different theoretical frameworks can be used to understand social behaviour from an individual perspective. The following section discusses some of these theoretical frameworks.

2.4. UNDERSTANDING SOCIAL BEHAVIOUR: THEORETICAL OVERVIEW

Theoretical frameworks provide a perspective on behavioural change processes in their entirety and can be utilised in the development of programmes which aim to influence behaviour (Veludo-de-Oliveira, 2009). Lefebvre (2010) contends that the use of theoretical approaches in social marketing can result in the achievement of a more comprehensive understanding of human behaviour. Lefebvre (2010) further points out that formal consensus does not govern the process of selecting the most appropriate models and theories for addressing social problems across various situations. This particular study uses two of the more commonly cited theories in social marketing studies in order to identify possible factors that may explain the use, or non-use, of child restraints. These two theories are: Theory of Planned Behaviour, which originated from the Theory of Reasoned Action, and the Health Belief Model. Commonly cited including a recent studies by Menegaki (2012), Thomson, White and Hamilton (2012) and Dolatabadi, Parhizgar and Aghcheh, (2013) used TPB to understand social marketing issues. Examples of recent studies that used HBM to examine social marketing related issues include Ozmete and Hira (2011), Akey, Rintamaki and Kane (2013) and Amoah and Jorgensen (2014).

2.4.1 Theories of reasoned action and planned behaviour: An introduction

The theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and the theory of planned behaviour (Ajzen, 1991) are intellectual decision-making theories that attempt to describe actions that are the result of rational, psychological processes. In both theories, an individual is considered to be making a logical choice to perform certain actions;
and this choice is seen as a function of the individual’s attitude to the behaviour or the individual’s perception of social norms or the feeling of social backing regarding certain behaviour. On the other hand, attitudes and norms are considered to be formed by a group of certain underlying beliefs and their evaluation. The theories of reasoned action and planned behaviour make the same assumptions, except that the theory of planned behaviour has an added construct: perceived behavioural control. This additional construct accounts for the extent to which the behaviour being considered is under voluntary control. The assumption within the theory of reasoned action is that behaviour is voluntary. However, this assumption is not true in all cases. Therefore, the theory of reasoned action is considered by many to be of more use in trying to understand voluntary behaviour, whereas the theory of planned behaviour is considered of more use in better understanding less voluntary behaviours.

### 2.4.2 Perceived behavioural control (PBC)

As previously indicated, in attempting to gain greater understanding of behaviour that is not completely under a person’s control, Ajzen (1988) developed the theory of planned behaviour as an extension to the theory of reasoned action. Ajzen argues that if an individual has a significant amount of control over an action (like brushing ones teeth), then the theory of reasoned action provides sufficient explanation. In contrast, Ajzen suggests that, where such action is not completely within the control of the individual, for example, when there are performance limiting factors and lack of opportunities, skills or where the action is dependent on the cooperation of others, etcetera, the perception as to how much control an individual has regarding behavioural performance becomes pivotal in explaining and predicting intention and behaviour.

Prior to formulating a plan to act, a person needs to feel that they are able and have the tools to perform an action (see Ajzen, 1991; Bandura, 1982). This is considered to be perceived control, or self-efficacy, in terms of behaviour. Generally, people have different perceptions of control. Rotter’s (1966) internal-external locus of control construct is one of the dispositional approaches to perceived control. An individual who has an internal locus of control is of the belief that he or she decides the outcomes that they are affected by. Contrary to that, an individual with an external locus of control believes that factors that are external to him or her are the determinants of outcomes. Ajzen (1988) states that locus of control influences behaviour in that it has an influence on perceived behavioural control with regard to performing a certain behaviour.
Perceived behaviour control is hypothesised to be a motivating factor in developing an intention to carry out behaviour (Ajzen, 1988). This means that for an individual to perform a certain action, he or she must have a sense that they can do it; they must also have a sense that they possess the required skill and the opportunity to be able to perform that action. Ajzen (1988) states that a positive intention to carry out an action cannot arise if the individual has the perception that he or she lacks control over the action, irrespective of how favourable the attitude or subjective norm is. Therefore, perceived control is considered to have a motivating influence on intention that is independent of attitude and subjective norms.

2.4.3 The Theory of planned behaviour

The theory of planned behaviour (Ajzen, 1988, 1991) marries the construct of perceived control with the theory of reasoned action in an effort to provide an improved explanation and prediction of behaviours that are not perceived to be completely voluntary. Within the theory of planned behaviour, perceived control is considered to work in two ways: (1) perceived control may have an indirect effect on behaviour, as a determinant of intention, and (2) perceived control may have a direct effect on behaviour, which shows actual control over behavioural performance. The central tenet of the theory of planned behaviour is that intention is the main determinant of an individual’s decision to carry out certain behaviour. Therefore, to increase intention levels, three antecedent elements need to be addressed. These elements are behavioural beliefs, normative beliefs and control beliefs.

![Conceptual framework for the theory of planned behaviour (Ajzen, 1991)](chart)

Figure 2.1: Conceptual framework for the theory of planned behaviour (Ajzen, 1991)

The antecedents of behaviour in the theory of planned behaviour are salient beliefs that individuals hold and that are relevant to the behaviour (Ajzen, 1991). Three different types of behaviour are associated with the theory of planned behaviour: behavioural beliefs, normative
beliefs and control beliefs. Ajzen (1991) and Khan, Saleh and Nivarthi (2015) explain these beliefs as follows:

- **Behavioural belief**: This refers to an individual’s belief about the consequences of a given behaviour. This is based on the subjective probability that the behaviour will produce a given outcome. The theory stipulates that an individual’s attitude towards behaviour will be based on available beliefs and, specifically, the evaluation of each outcome in terms of desirability or undesirability.

- **Normative beliefs**: These are beliefs that relate to the behavioural expectations of people who are seen to be important and influential individuals or groups. Central to normative beliefs are perceptions of social normative pressure. It is argued that when normative beliefs are combined with an individual’s motivation to comply with various referents, the prevailing subjective norm is determined.

- **Control beliefs**: These beliefs are based on an individual’s perceived proficiency related to the behaviour. It is about level of ease or difficulty associated with performing the behaviour. Ajzen (1991) and Higuchi, Chacon and Hernani-Merino, (2016) argue that perceived behavioural control is influenced by situational and internal factors inhibiting or facilitating performance of the behaviour.

The argument of the theory is that for a person to have a high level of intention to engage in a behaviour, that person’s behavioural beliefs, normative beliefs and control beliefs need to be high. It also argues that before engaging in a behaviour, it is necessary to have an intention to carry out that behaviour.

**Core constructs within the TPB**

Core independent variables within the theory of planned behaviour are (a) attitudes, (b) subjective norm, and (c) perceived behavioural control. These constructs have a direct influence on behavioural intention which in turn influences actual behaviour.

**Behaviour** is the end result of interest. It is treated as a dependent variable in the theory of planned behaviour when behaviour can be adequately and directly measured. Francis et al.
(2004) and Ozmete and Hire (2011) define behaviour as “an action that is carried out at a specified time”.

**Intention** is defined as an individual’s motivation or desire, that is, their sober and informed conscious plan to put effort into carrying out a specific behaviour (Gielen & Sleet, 2011). In the theory of planned behaviour, this is influenced by an individual’s attitude, subjective norm and perceived behavioural control.

**Perceived behavioural control** describes an individual’s anticipation of the complexity or capability to act out a behaviour (Nigg et al., 2008). Ajzen relates the construct of perceived behavioural control to the concept of self-efficacy (Ajzen, 2006). Perceived behavioural control can be determined using direct questions asking about an individual’s capability to act out a behaviour (self-efficacy) or indirect, belief-based questions that ask about one’s ability to deal with factors that hinder or enable the behaviour to be undertaken (controllability) (Ajzen, 2006). Gielen and Sleet (2011) further explain that, with the exception of behaviour, all of the variables within the theory of planned behaviour are psychological (internal) factors that can be analysed by both direct and indirect measurement. Behaviour is not directly examined within this study as no observation is made as to whether and how parents actually use child restraints. Instead, this study uses questioning to uncover parents’ and carers’ attitudes, perceptions and behavioural intentions and behaviours.

Attention needs to be given to how perceived control, behaviour and behavioural intention interrelate. In this regard, Ajzen (1988, 1991) states that, given two individuals with the same positive intention or the same motivation to act out a certain behaviour, the one who recognises that they have a great deal of control over their own behavioural performance is more likely to act out the behaviour than the one who feels that they lack control over their own behavioural performance. With regard to intention to act out a specific behaviour, it is suggested that perceived control has an inspirational force on an individual’s intention (Ajzen & Madden, 1986). Ajzen (1988:179) states that "attribution of control to internal factors should, as a general rule, encourage attempts to act out the behaviour". Ajzen (1988) further states that perceptions of control aid in the advancement of an acceptable plan to act out behaviour. When an individual has a positive attitude toward certain behaviour, the ability to recognise control over the behavioural performance should contribute to a particular intention to act out that behaviour (Ajzen, 1991).
**Subjective norm** refers to perceived social pressure to perform or not to perform a given behaviour (Ajzen, 1991). This is tied to an individual’s own opinion about what others would expect or believe one should do (Ajzen, 2006). The theory of planned behaviour postulates that subjective norm has a positive influence on behavioural intention.

**Attitudes** are defined as the psychological inclination to think by assessing behaviour with some level of approval or criticism (Francis et al., 2004; Carrillo, Varela, Salvador & Fiszman, 2011). Just as with perceived behavioural control and subjective norm, attitude is denoted within the theory of planned behaviour as a predictor of behavioural intention.

The theory of planned behaviour has been applied extensively across various disciplines. For example, a study on the prediction of driving behaviours of truck drivers (Aghamolaei et al., 2013) reveals that, where there is an intent to engage in safe driving behaviour, such intent is a predictor of safe driving behaviour. For example, if there is an intention on the part of a driver to honour speed limits, not use a cell phone while driving, wear a seatbelt and perform other safety functions, this gives rise to the practice of these behaviours. The results of this particular study also show that perceived behavioural control and attitude are predictors of the intention to practise safe driving behaviour.

Hoie, Moan and Rise (2010) also used the theory of planned behaviour to investigate retail employee theft: they establish a link between perceived behavioural control and the intent to engage in retail theft. They find that if employees can easily engage in theft, this serves to reinforce their intentions to do so. Another study (Norman et al., 2007) in which the theory of planned behaviour is deployed deals with binge drinking: it finds that all the constructs within the theory of planned behaviour, with the exception of perceived control, have a significant positive correlation with the intention to engage in binge drinking. This study also reveals that intention had a significant positive correlation with binge drinking behaviour.

### 2.4.4 The Health Belief Model

The Health Belief Model is used to explain and predict the likelihood of an individual engaging in a specific health action in order to prevent a health problem (Rosenstock et al., 1994). According to Rosenstock et al., (1994), this model was developed in the 1950s and 1960s, at a time when the United States Public Health Service focused on preventing illness and disease through applied research. Turner (2009) states that the originators of the model created a
conceptual framework for researchers to use as a guide when they do research regarding health challenges. Turner (2009) further states that Kurt Lewin’s theory influenced the development of the model.

The Health Belief Model incorporates four beliefs that determine the likelihood that a person may take part in a health behaviour in an attempt to avoid a health risk (Lawrence et al., 2003). These beliefs include: perception of disease susceptibility, disease seriousness, benefits of health action and barriers to taking health action (Lawrence et al., 2003; Pebam Nganthoiba Mangang, 2012). Although later studies added further constructs, in this study, focus is given to the four original constructs.

Figure 2.2: Major elements of the health belief model (adapted from Rosenstock et al., 1994).

The Health Belief Model focuses on the perceived threat related to health conditions in relation to the expected outcome of taking actions for one’s health (Rosenstock et al., 1994; Ketikidis, Dimitrovski, Lazaras & Bath, 2012). To achieve success in the promotion of health behaviours, the Model suggests that individuals need to perceive a threat posed by their current behavioural patterns to the extent that they come to believe that a change in these behavioural patterns will present them with a valued outcome. In addition, individuals’ levels of self-efficacy must be high enough for them to believe that they should make the change (Lawrence et al., 2003; Pebam Nganthoiba Mangang, 2012).
Table 2.1. Health Belief Model constructs (adapted from Rosenstock et al., 1994)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived susceptibility to problem</td>
<td>An individual’s assessment of his or her chances of getting exposed to a health threat.</td>
</tr>
<tr>
<td>Perceived seriousness of consequences</td>
<td>An individual’s judgement as to the severity of the health threat.</td>
</tr>
<tr>
<td>Perceived benefits of specific action</td>
<td>An individual’s conclusion as to whether the new behaviour is better than what he or she is already doing.</td>
</tr>
<tr>
<td>Perceived barriers to taking action</td>
<td>An individual’s opinion as to what will stop him or her from adopting the new behaviour.</td>
</tr>
</tbody>
</table>

Susceptibility refers to a person’s perceived subjective risk of contracting a condition, that is, it refers to how susceptible a person thinks he or she is to a health threat (Becker, 2013). Some people may think that they are highly susceptible to a health threat, while others may be under the impression that they are not at risk of being affected by a certain health threat.

A person’s perception of how severe the impact of a particular condition is likely to be on his or her life is referred to as seriousness. Severity may be perceived in terms of physical and mental damage or the influence on a person’s job, family, life and social relations (Becker, 2013). Even though perceptions of susceptibility and seriousness result in certain behaviours, these factors are not determinants of the kind of behaviours that may occur. The course of action is instead determined by how much a person believes in the effectiveness of the available options that exist for addressing the health issue. It is believed that an option presents benefit if it decreases a person’s susceptibility to a serious health threat (Becker, 2013).

Barriers to action refer to unfavourable aspects that can prevent one from undertaking a desired behaviour. These barriers include elements such as inconvenience, cost, unpleasantness, pain and emotional upset. Barriers are known to contribute to the formation of contradictory motives and avoidance behaviours towards an action (Becker, 2013). Rosenstock et al. (1994) point out that in cases where there are more benefits than barriers, a person will usually attempt to address the barriers; they further note that in cases where there are more barriers than benefits, the barriers tend to be powerful hindrances to a person acting on the health problem.

Later studies that deployed the Health Belief Model identified various additional factors that can influence health-related behaviour. These factors include modifying factors, cues to action and self-efficacy. Modifying factors are defined as individual personal factors that affect whether a behaviour is adopted (Rosenstock et al., 1994). Modifying factors include
demographic variables (age, gender, race and ethnicity), socio-psychological variables (personality, social class) and structural variables (knowledge, about health issues) (Becker, 2013). Cues to action refer to factors that signal or remind an individual to engage in the health behaviour. These cues can be internal, for example, the perception of bodily states, or they can be external, for example, interpersonal interaction. They include advice from others, persuasive mass media campaigns and reminders from health providers (Becker, 2013). Triggers, or prompting events, that initiate the process of determining health beliefs and conclude with the implementation of a health action, are referred to as cues to action.

Self-efficacy was later added to the Health Belief Model (Rosenstock et al., 1994). Self-efficacy originates from Social Learning Theory and refers to an individual’s belief that he or she can effectively perform an action necessary to result in the anticipated outcome (Bandura, 1982). According to Rosenstock et al. (1994), knowledge forms the basis of personal efficacy expectations. They further identify the following sources of knowledge: (1) performance accomplishments, (2) vicarious experience, (3) verbal persuasion and (4) emotional arousal. Performance accomplishments refer to a person’s experience with mastering a certain situation (Wheeler, 2010; Huang & Dunbar, 2013). Vicarious experience involves witnessing other people effectively carrying out an action without negative outcomes. A person then persuades him- or herself that he or she can also successfully carry out that action. Verbal persuasion involves vocally convincing a person that he or she is able to carry out an action with success (Wheeler, 2010; Huang & Dunbar, 2013). Self-efficacy is also influenced by emotional arousal or stress that is created by the threat imminent within a situation. People that experience nervousness, for example, about a task may convince themselves that they are not capable of succeeding in performing that task. Conversely, people that feel relaxed about a task are likely to be confident in their ability to perform it.

The Health Belief Model has been found to be useful in the prediction and examination of a person’s reasons for engaging in preventative actions and other health-related behaviour (Wheeler, 2010; Janz & Becker 1984). The use of child safety restraints by parents is a preventative health behaviour that is carried out by a parent on behalf of the child. In summary, the health belief model and the theory of planned behaviour share various similarities which makes their integration useful for obtaining a comprehensive view of factors that influence use of child car restraints. Both frameworks approach behaviour from the level of the individual, both assume that decision making is a deliberate process, and both are based on a framework
of expectations and values (Gerend & Shepherd, 2012). Both approaches have also been used by the researcher to examine different kinds of preventative health measures (Jing Xu, 2006).

2.5. ECONOMIC STATUS, KNOWLEDGE AND USE OF CHILD CAR RESTRAINT SYSTEMS

Researchers have examined various factors that influence, or that are related to the use of child car restraints. Issues of economic status and knowledge often come to the fore in many of these studies. The following section examines these issues in some detail.

2.5.1 Economic status and use of child restraints

The American Psychology Association (2014) defines socioeconomic status (SES) as the social standing or class of an individual or group. A combination of education, income and occupation measurements are the common determinants of socioeconomic status. According to Keay et al. (2013a), privilege, power, and control are emphasised when viewed from a social perspective. Furthermore, if SES is examined as a gradient, it becomes clear that there are inequalities with regard to access to resources and the distribution thereof.

SES is relevant to all realms of behavioural and social science, including research, practice, education, and advocacy (NHTSA, 2010). Low SES and the factors associated with it, such as lower levels of education, poverty and poor health, are a societal problem. Other factors such as inequalities in wealth, distribution of resources and overall quality of life are on the increase in South Africa, but also globally (Laflamme, Hasselberg & Burrows, 2010). Laflamme et al. (2010) state that there is a general benefit to society when socioeconomic inequalities are addressed, and when efforts are made to reduce the ever widening gaps in SES within society.

In order to assist parents in their attempts to protect children, there is a need to develop an understanding of what prevents them from doing so. The theory of planned behaviour notes that perceived behavioural control is based on self-efficacy and facilitating resources (Peterson, Farmer & Kashani, 1990). Parents cannot perform behaviours if they do not have the resources to afford child car seats, for example.
2.5.2 Parents’ knowledge relating to child passenger safety

Brown et al., (2013b) are of the opinion that it is a requirement that children are restrained in age and size appropriate restraints. This means that the system should be specifically designed for the child’s size and age in order to be effective. It is also of utmost importance that the child car restraint is used according to the manufacturer’s instructions. Edwards, Anderson and Hutchinson (2006) point out that for a child car restraint to be fully effective, it has to be fixed to the vehicle and the child must be properly secured within the restraint. In the event of a collision, if the child has been properly fastened in accordance with instructions, the force of the collision is distributed over a much larger and stronger area of the child’s body. It also allows for the child and the restraining device to slow down with the vehicle, thus reducing the risk of the child being injured (Weber, 2001). According to Lennon (2007), the part of a child’s body that is most vulnerable to injury is the head. Lennon states that if a child car restraint is designed well, it should protect the child’s head in such a manner that it prevents the head from coming into contact with any part of the interior of the vehicle.

Research done in the USA indicates that more than 80 percent of parents make an effort at using child car restraints to restrain their children in case of a collision (Muller et al., 2013). However, this research further indicates that less than 20 percent of these parents and carers use the child car restraints properly and in accordance with the design instructions. The children are thus not provided with the best possible protection that these systems should afford. Koppel et al. (2012) also state that there are numerous types of child car restraints and that they all have different means of installation, and that the fitting and adjustment of the restraints pose a problem to parents.

In a study conducted in Australia, it was found that many parents of children aged between four and 11 years move children out of restraints and into actual car seats because they believe that, at that age, their children had outgrown the child car restraints (Charlton et al., 2006). Keay et al. (2013b) suggest that best practices in the use of child car restraints can be encouraged through the creation of awareness around the safety benefits of age-appropriate restraints. This is consistent with established theories of behavioural change, including the Health Belief Model. Keay et al. (2013b) find that there has been consistency in the correlation of knowledge with appropriate child car restraint use. Bilston et al. (2008) report much the same observations and state that there is an association between lack of knowledge and failure to use age-appropriate child restraints for children between the ages of two and three years.
2.6. PROPOSED CONCEPTUAL MODEL AND RESEARCH HYPOTHESES

Figure 2.3 presents the conceptual framework to be used in this study so as to understand beliefs, attitude and behaviour relating to safe passenger travel. The proposed model was put together taking into consideration the arguments of the theory of planned behaviour and the Health Belief Model. As shown in the framework, the aspects of perceived susceptibility, perceived benefits, perceived barriers, perceived seriousness, subjective norms and attitude are located as important variables that influence behavioural intentions.

Based on this model, the hypotheses proposed in this study are as follow:

**H1** There is a significant positive relationship between perceived susceptibility and attitude towards use of child car restraints.

**H2** There is a significant positive relationship between perceived benefits of using child car restraints and attitude towards use of car child restraints.

**H3** There is a significant negative relationship between perceived barriers to use of child car restraints and attitude towards use of child car restraints.

**H4** There is a significant positive relationship between perceived seriousness of accident consequences and attitude towards use of child car restraints.
H5  There is a significant positive relationship between perceived subjective norms and attitude towards use of child car restraints.

H6  There is a significant positive relationship between knowledge regarding legal issues and behavioural intentions toward use of child car restraints.

H7  There is a significant positive relationship between knowledge regarding use and behavioural intentions towards use of child car restraints.

H8  There is a significant positive relationship between attitude towards use of child car restraint and intention to use child car restraints.

2.7.  CHAPTER SUMMARY

Children are at risk of preventable injuries such as those sustained in motor vehicle accidents. Parents and care-givers are responsible for providing for the safety and well-being of children. Given the evidence from the literature that child car safety restraints provide protection, attention needs to be given to the fact that many children ride in motor vehicles without appropriate restraints, leaving them susceptible to serious injury and possible death. The theory of planned behaviour and the Health Belief Model offer approaches to understanding beliefs, attitudes and behaviours. Using these approaches, this study attempts to provide insight into parents’ decision-making regarding use of child car restraints. In the following chapter, detail regarding the methodology deployed in order to achieve this objective is provided.
CHAPTER 3: RESEARCH METHODOLOGY

3.1. INTRODUCTION

This chapter presents detail regarding the methodology used in this study in order to meet the set objectives. This study follows the research process recommended by Saunders et al. (2012), which comprises of six components that need to be addressed when conducting research. Figure 3.1 presents these six components in what Saunders et al. (2012) refer to as the research onion. The first layer of the research onion pertains to the research philosophy to be adopted. The second layer concerns the research approach while the third focuses on the research strategies to be deployed. The fourth layer deals with research choices to be made. The penultimate layer concerns time horizons and the final layer pertains to data collection and analysis.

![Research Onion](image)

*Figure 3.1: Research onion (Saunders et al., 2012)*

This chapter is divided into eleven subsections, excluding this introductory section. The first five subsections (3.2 through 3.6) examine issues relating to the first five layers in the research onion. Thereafter, Section 3.7 discusses the issues of population and sampling, while section 3.8 examines matters relating to questionnaire development and administration. Section 3.9 discusses measures taken to ensure reliability of scales and validity of findings. Sections 3.10
and 3.11 deal with data analysis and the ethical considerations taken into consideration during the study, respectively. This chapter concludes with a summary of issues covered (Section 3.12).

3.2. RESEARCH PHILOSOPHY

According to Saunders et al. (2012), research philosophy is an “overarching term relating to the development of knowledge and nature of that knowledge in relation to research”. There are two specific philosophical paradigms that researchers can opt for: positivism and interpretivism. Positivism is the research paradigm adopted for use in this study. As mentioned by Saunders et al. (2012), within a positivist paradigm, the researcher works with noticeable social reality and the end results of research produce laws, similar to generalisations, similar to those produced by natural and physical scientists. Greenwood and Levin (2000) mention that “positively-based researchers employ the language of objectivity, distance, and control”. It is for this reason that this study is located within this paradigm. The study aims to gain an objective understanding of the influence of parents’ and carers’ beliefs and attitudes regarding use of child car restraints.

3.3. RESEARCH APPROACH

According to Saunders et al. (2012), there are two main research approaches that a researcher can opt for: inductive and deductive approaches. The deductive approach begins with a hypothesis that is then tested, while the inductive approach begins with the collection and analysis of data which then leads to the development of a series of propositions or hypotheses (Saunders et al., 2012). In this particular study, in accordance with the particular philosophy adopted, a deductive approach was utilised. This study postulates a number of hypotheses based on findings in the literature that are to be tested.

3.4. RESEARCH STRATEGY

There are various strategies that a researcher can opt for in conducting research, including case studies, experiments and surveys. In this research, the strategy used was a survey using a structured questionnaire. In business and management research, use of a survey strategy is common (Saunders et al., 2012). Saunders et al. (2012) note that “surveys using questionnaires are popular because they enable the collection of standardised data from a sizable population
in a highly economical way. They further note that “the survey strategy allows the researcher to collect quantitative data which can be analysed quantitatively using descriptive and inferential statistics” (Saunders et al., 2012).

3.5. RESEARCH CHOICE

Research choice is associated with the use of quantitative and/or qualitative research methods. According to Saunders et al. (2012), quantitative methods are techniques for gathering and analysing information that produce or utilise numerical information, while qualitative methods are techniques that generate or utilise non-numerical data. As indicated by Saunders et al. (2012), a decision to opt for mono-method (a single data collection technique and matching analysis procedure), or for multi-method (use of more than one data collection technique and analysis procedures) needs to be made. In this study, the choice taken was to adopt a mono-method design as only quantitative research was undertaken.

![Figure 3.2: Research choices (Saunders et al., 2012)](image)

3.6. TIME HORIZON

There are two types of time horizon to be considered: cross-sectional and longitudinal time horizons. Saunders et al. (2012) define a cross-sectional time horizon as concerned with selecting a sample that can be used to measure particular variables at a particular time. A longitudinal study, in contrast, involves selecting a sample from whom information is gathered over a period of time. This study is cross-sectional in nature as it collects data on parents’ or carers’ beliefs, attitudes and behaviours at a particular point in time.
3.7. RESEARCH POPULATION AND SAMPLING

3.7.1 Target population

Flick (2007) defines a target population as “the set of persons or organisations to which the researcher wants to make inference”. Saunders et al. (2012) define it as “the full set of cases from which a sample is taken”. The target population in this study is parents and carers of children (up to eight years old) from Gauteng. Gauteng was chosen for this study because of its easy accessibility on the part of the researcher and because the researcher could not include other provinces due to financial constraints. The targeted areas in Gauteng included the major metros of Johannesburg, Ekurhuleni and Tshwane. Field workers were sent to the lower socio-economic areas of Soweto, Mamelodi and Vosloorus as well as the higher socio-economic areas of Hatfield, Sandton and Auckland Park to distribute the questionnaires among parents and carers.

3.7.2 Sampling

According to Malhotra (2010), a sample is a subgroup of the elements of the population selected for participation in the study. Sampling is the process of selecting this subgroup. According to Malhotra (2010) and Saunders et al. (2009), one of two types of sampling techniques can be utilised: probability sampling and non-probability sampling. Probability sampling is realised when “the chance of each case being selected from the population is known” (Churchill & Iacobucci, 2009: 175), while non-probability sampling is when “the probability of each case being selected from the total population is not known (Diamantopoulos & Schlegelmilch, 200:13).

Saunders et al. (2012) state that, in the use of probability sampling, a sample frame is used to identify all the cases from which the sample may be drawn. In the case of this study, a sample frame that lists all the possible individuals who fall within the target population groups, from which a probability sample could be drawn, was not available and it was thus necessary to utilise non-probability sampling. The specific type of non-probability sampling used was convenience sampling. Convenience sampling is a technique whereby participants who are readily available and who agree to participate in the study are included in the sample (Malhotra, 2007).
3.7.3 Determining the sample size

Sample size alludes to the number of individuals from a target population to be included in the study. Several factors can be considered when deciding on sample size. Aaker et al. (2013) note that time and cost issues need to be considered when deciding on sample size. Furthermore, Churchill and Iacobucci (2002) assert that it is helpful for a researcher to consider the sample size utilised by previous researchers when examining comparative issues. The sample size in this study is 261. This sample size is comparable to that used in other social marketing studies, especially one undertaken by Tania Modesto Veludo-de-Oliveira (2009).

3.8. QUESTIONNAIRE DEVELOPMENT AND ADMINISTRATION

“Survey research makes use of a questionnaire to collect the data necessary for accomplishing a project’s research objectives” (Wilson, 2010). This study made use of a structured questionnaire. Acharya (2010) defines a structured questionnaire as pre-coded questions with well-defined skipping patterns that follow the sequence of questions. McDaniel and Gates (2013) point out that when designing a questionnaire, a number of factors need to be considered including the intended respondents for the questionnaire, as well as alignment with the research objectives and research questions. Failure to align with the research objectives and questions would result in data that does not help to achieve the overall purpose of the study.

McDaniel and Gates (2013:337) state that it is similarly important to note that the design of the questionnaire is known to affect the response rate and the reliability and validity of the data collected. According to Saunders et al. (2012), response rates, validity and reliability can be maximised by:

- careful design of individual questions,
- clear and pleasing layout of the questionnaire,
- lucid explanation of the purpose of the questionnaire,
- pilot testing, and
- carefully planned and executed administration.

These factors were taken into consideration in developing the questionnaire used in this study. A structured questionnaire was used, which made use of different types of closed-ended questions, include multiple-choice, dichotomous and scale questions. Multiple choice and dichotomous questions were primarily used in order to capture background information.
pertaining to the respondents, while scale questions were mainly used to capture their beliefs, attitudes and behavioural intentions.

The questionnaire included screening questions aimed at ensuring that only targeted respondents took part in the study. The questionnaire was divided into two main sections. Section A included questions aimed at capturing background information such as gender, relationship to the child, marital status, age, racial group, level of education and income. Section B consisted of questions aimed at examining the beliefs, attitudes and behavioural intentions of parents and carers regarding the use of child car restraints.

In order to measure the constructs presented in the conceptual framework, multi-item scales were used. The constructs were operationalised by adapting items from previous studies. Items were modified so that they would better suit the needs of this particular study. A seven-point Likert scale was used to measure the items. Saunders et al. (2012) define the Likert scale as a rating question that requires respondents to indicate degree of agreement or disagreement with stated items. Each item had seven response categories, ranging from 1 (“very strongly disagree”) to 7 (“very strongly agree”).

A draft copy of the questionnaire was presented to other researchers, including a statistician for review, and to the research supervisor for approval. The reviewers’ recommendation were taken into consideration when developing the pre-test version of the questionnaire. The questionnaire was pre-tested on a convenient sample of 10 parents in the Johannesburg metro. Malhotra (2010) explains pre-testing as the testing of a questionnaire on a small sample of respondents in order to improve the questionnaire by identifying and correcting errors prior to administering the actual survey. This pre-testing enabled the researcher to determine whether respondents would understand the questions and be able to respond without difficulty. Table 3.1 provides detail as to the number of items used to measure each construct, as well as where each item was drawn from.

3.8.1 Administering the questionnaire

Different approaches can be used in administering a questionnaire, including self-administration, where the respondent completes the questionnaire without the assistance of an interviewer, and personal (researcher) administration. In this study, the questionnaire was self-administered. A major benefit associated with this method is that it removes interview bias and
it is also economical with respect to cost (Hair et al., 2013:188). Parents and carers were approached at various public places and invited to participate in the study.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Items</th>
<th>Adapted from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived susceptibility</td>
<td>4</td>
<td>Leifried (1997) and Duta and Feng (2007)</td>
</tr>
<tr>
<td>Perceived benefits</td>
<td>4</td>
<td>Baily (2013)</td>
</tr>
<tr>
<td>Perceived barriers</td>
<td>4</td>
<td>Baily (2013)</td>
</tr>
<tr>
<td>Perceived seriousness</td>
<td>4</td>
<td>Duta and Feng (2007) and Levitt (2010)</td>
</tr>
<tr>
<td>Subjective norms</td>
<td>4</td>
<td>Maduku (2011)</td>
</tr>
<tr>
<td>Knowledge regarding use</td>
<td>3</td>
<td>NHTSA (2010)</td>
</tr>
<tr>
<td>Knowledge regarding legal issues</td>
<td>3</td>
<td>Suggested by Dr Davey Richard</td>
</tr>
<tr>
<td>Attitude</td>
<td>3</td>
<td>Maduku (2011)</td>
</tr>
<tr>
<td>Behavioural intentions</td>
<td>3</td>
<td>Maduku (2011)</td>
</tr>
</tbody>
</table>

3.9. RELIABILITY AND VALIDITY

Reliability is “the extent to which the data collection techniques or analysis procedures will yield consistent findings” (Saunders et al., 2009:156). One of the principle viewpoints with respect to reliability in a questionnaire, is the internal consistency of the scales (Aaker et al., 2013). This alludes to the degree to which the items in the scale fit together. It aides in ensuring that the items in the construct measure the same variable(s). Internal consistency can be measured utilising Cronbach’s alpha coefficient. Cronbach’s alpha ($\alpha$) was used in this study in order to measure reliability. Cronbach alpha values that are 0.8 or higher are considered to have high reliability; values somewhere around 0.7 and 0.8 are regarded as having good reliability, values between 0.6 and 0.7 are fair, and values lower than 0.6 are associated with low reliability (Pallant, 2011).

The results of this analysis, presented in Table 3.2, show good to high levels of reliability in the case of all constructs examined. According to Pallant (2007: 95), the figures evident in Table 3.2 represent good internal consistency of the scale. However, the construct of ‘knowledge regarding legal issues’, when measured with all four items, produced an alpha coefficient of 0.38. One of the items was found to be inconsistent with all the other items developed for this construct. It was thus necessary to remove this item: A child needs to use a car restraint in their parents’ car only.
Table 3.2. Cronbach alpha coefficient of the constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s Alpha</th>
<th>No of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived susceptibility</td>
<td>0.802</td>
<td>4</td>
</tr>
<tr>
<td>Perceived benefits</td>
<td>0.915</td>
<td>4</td>
</tr>
<tr>
<td>Perceived barriers</td>
<td>0.703</td>
<td>4</td>
</tr>
<tr>
<td>Perceived seriousness</td>
<td>0.832</td>
<td>4</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>0.775</td>
<td>4</td>
</tr>
<tr>
<td>Knowledge of use</td>
<td>0.839</td>
<td>3</td>
</tr>
<tr>
<td>Knowledge of legal issues</td>
<td>0.738</td>
<td>3</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.805</td>
<td>3</td>
</tr>
<tr>
<td>Behavioural intentions</td>
<td>0.928</td>
<td>3</td>
</tr>
</tbody>
</table>

Validity refers to “whether the discoveries are truly about what they appear to be about” (Saunders et al., 2012). In order to ensure that constructs are legitimately measured, previous studies that examined similar constructs were consulted. The questionnaire was also assessed by other researchers, including a statistician, so as to ensure that the questions were in line with the research objectives and research questions.

3.10. DATA ANALYSIS

Version 21 of Statistical Package for Social Science (SPSS) was used to analyse the data. STATKON, the Statistical Consultation Service at the University of Johannesburg, assisted with the data analysis as they have the resources and expertise to assist with analysis of quantitative data. The main statistical techniques used were descriptive analysis and regression analysis.

3.10.1 Descriptive analysis

Descriptive statistics are utilised to summarise data about a sample (Zikmund & Babin, 2010). The descriptive statistics used in this study included frequencies, mean and standard deviation. Zikmund and Babin (2010:593) define frequencies as the “organisation of information by summarising the number of times a particular variable happens”. According to Saunders et al. (2009:444), the mean is defined as a “measurement of central tendency calculated by dividing the sum of all values by the number of values in the data set”. “Standard deviation helps in seeing how grouped or spread the dispersion is around the mean quality” (Saunders et al, 2009:447).
3.10.2 Regression analysis

According to Saunders et al. (2012), regression analysis enables a researcher to assess the strength of relationship between a numerically dependent variable and one or more numerically independent variables. In this study, multiple regression analysis was used to examine the extent to which various predictor variables can help predict attitude towards the use of child car restraints as well as predict behavioural practices and intentions.

3.10.3 Independent sample t-test

Independent sample t-tests were used for further analysis aimed at examining differences between parents and carers regarding factors that influence attitude towards child car restraints. Malhotra (2010:262) defines the independent t-test as “a parametric procedure for testing the statistical difference in mean values of two independent groups”. “This compares the differences in the means of the two groups using a measure of the spread of the scores” (Saunders et al., 2012:456).

3.11. ETHICAL CONSIDERATIONS

According to Babbie and Mouton (2010) and Malhotra (2010), the following ethical considerations need to be taken into account when conducting social research:

- The participants must take an interest on a voluntary basis.
- The anonymity of the participants must be guaranteed at all times.
- The researcher must preserve high levels of data confidentiality.

All participants in the study were made aware that participation in the research was voluntary. The respondents did not have to provide any personal information such as their name, address or identity number.

Respondents were also informed that the data gathered from them would be dealt with in a confidential manner. Moreover, respondents who declined to join in the study were not asked to give reasons for their refusal.
This chapter provides detail pertaining to the methodology followed in order to achieve the objectives set out for this study. This methodology was guided by the research onion, proposed by Saunders et al. (2012). With regards to the research philosophy, the decision was made to make use of a positivism paradigm. With regards to research approach, use was made of a deductive approach as this was in line with the philosophy adopted. Thirdly, regarding research strategy, although a number of strategies were investigated, one was found to be most suitable for this study, that is, the survey method using questionnaires. This was because this strategy is associated with the deductive approach and allows for easy collection of responses from many people located in different areas. The fourth layer of the research onion pertained to research choices and, in this regard, it was decided to deploy a mono-method design, where a single data collection technique and matching analysis procedure was used. Fifthly, regarding the time horizon to be used, the needs of this study suited the selection of a cross-sectional time horizon. The target population for the study consisted of parents and carers who drive children up to the age of 8. This chapter also discussed issues of validity and reliability. Measures taken to lessen ethical concerns were also highlighted. Convenience sampling was used to select respondents from different areas and the collected data was analysed using SPSS. In the following chapter, the results from the statistical analysis are presented.
CHAPTER 4: RESULTS AND DISCUSSION

4.1. INTRODUCTION

This chapter presents the findings obtained in this study. The chapter is divided into four sections. The first of these provides an overview of the demographic profile of the respondents. This includes reference to the respondents’ gender, marital status, age group, racial group, level of education and monthly gross income. This first section also presents detail relating to child passenger and use of child car restraints on the part of the respondents.

Thereafter, the second section provides descriptive statistics pertaining to the main constructs of interest in this study. The third section presents and discusses results relating to the hypotheses posited in the study before the final section presents and discusses results relating to further analysis done on the data. The chapter concludes with a summary of the main issues uncovered.

4.2. BACKGROUND INFORMATION

4.2.1. Demographic profile of respondents

Table 4.1 presents demographic information pertaining to the survey respondents. As can be seen in the table, 36% of the respondent were male and 64% were female. In terms of marital status, 47.5% of respondents were single, 44.3% were married, 7.0% were divorced or separated while 1.2% were widowed. Regarding age, 42.4% were aged between 18 and 29, and 33.3% between 30 and 39. These two categories constituted the bulk (75.7%) of the respondents. In contrast, 21.2% of the respondents were aged between 40 and 49 years, only 2.7% were aged between 50 and 59, and a minimal 0.4% were aged 60 or over.

Table 4.1 also shows that 61.4% of respondents were black, 16.4% were coloured, 9.5% were Indian, 12.3% were white and 0.4% of respondents indicated another race group. These results indicate that there is a large representation of the black population, which is consistent with the fact that the black population is higher than that of other race groups in South Africa (Statistics SA, 2015).
### Table 4.1. Respondent Demographics

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Valid percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>91</td>
<td>36.0</td>
</tr>
<tr>
<td>Female</td>
<td>162</td>
<td>64.0</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>121</td>
<td>47.5</td>
</tr>
<tr>
<td>Married</td>
<td>113</td>
<td>44.3</td>
</tr>
<tr>
<td>Divorced/ Separated</td>
<td>18</td>
<td>7.0</td>
</tr>
<tr>
<td>Widowed</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Age group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29 years</td>
<td>108</td>
<td>42.4</td>
</tr>
<tr>
<td>30-39 years</td>
<td>85</td>
<td>33.3</td>
</tr>
<tr>
<td>40-49 years</td>
<td>54</td>
<td>21.2</td>
</tr>
<tr>
<td>50-59 years</td>
<td>7</td>
<td>2.7</td>
</tr>
<tr>
<td>60 years and older</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Racial group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>156</td>
<td>61.4</td>
</tr>
<tr>
<td>Coloured</td>
<td>42</td>
<td>16.4</td>
</tr>
<tr>
<td>Indian</td>
<td>24</td>
<td>9.5</td>
</tr>
<tr>
<td>White</td>
<td>31</td>
<td>12.3</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Level of Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high school</td>
<td>6</td>
<td>2.4</td>
</tr>
<tr>
<td>Completed high school</td>
<td>44</td>
<td>17.2</td>
</tr>
<tr>
<td>Post high school diploma/ certificate</td>
<td>72</td>
<td>28.2</td>
</tr>
<tr>
<td>Undergraduate degree</td>
<td>70</td>
<td>27.5</td>
</tr>
<tr>
<td>Postgraduate degree</td>
<td>63</td>
<td>24.7</td>
</tr>
<tr>
<td><strong>Monthly income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R0-R5000</td>
<td>31</td>
<td>13.0</td>
</tr>
<tr>
<td>R5001-R10000</td>
<td>37</td>
<td>15.5</td>
</tr>
<tr>
<td>R10001-20000</td>
<td>81</td>
<td>33.9</td>
</tr>
<tr>
<td>R20001-R30000</td>
<td>46</td>
<td>19.2</td>
</tr>
<tr>
<td>R30000+</td>
<td>44</td>
<td>18.4</td>
</tr>
</tbody>
</table>

28.2% of respondents mentioned that their highest education qualification was a post high school diploma/certificate, while 27.5% of respondents held an undergraduate degree, 24.7% of respondents possessed a post graduate degree, 17.2% of respondents completed high school and 2.4% of respondents had only completed some high school.

Finally, 33.9% of respondents earned a gross monthly income of between R10001 and R20000. 19.2% of the respondents indicated that they earned gross monthly income of between R20001 and R30000 while 18.4% of responded indicated that they earned over R30000. Those earning less than R5000 constituted 13% of the respondents. 15.5% earned between R5001 and R10000 gross income per month.
### Table 4.2. Frequencies: Child passenger details and use of child restraints

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Valid Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age of child under focus</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 year old</td>
<td>14</td>
<td>5.8</td>
</tr>
<tr>
<td>2 years old</td>
<td>26</td>
<td>10.7</td>
</tr>
<tr>
<td>3 years old</td>
<td>37</td>
<td>15.8</td>
</tr>
<tr>
<td>4 years old</td>
<td>34</td>
<td>14.0</td>
</tr>
<tr>
<td>5 years old</td>
<td>31</td>
<td>12.8</td>
</tr>
<tr>
<td>6 years old</td>
<td>29</td>
<td>11.9</td>
</tr>
<tr>
<td>7 years old</td>
<td>43</td>
<td>17.7</td>
</tr>
<tr>
<td>8 years old</td>
<td>29</td>
<td>11.3</td>
</tr>
<tr>
<td><strong>Relationship to the child</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>118</td>
<td>46.1</td>
</tr>
<tr>
<td>Father</td>
<td>50</td>
<td>19.5</td>
</tr>
<tr>
<td>Brother</td>
<td>28</td>
<td>10.9</td>
</tr>
<tr>
<td>Sister</td>
<td>20</td>
<td>7.8</td>
</tr>
<tr>
<td>Carer</td>
<td>13</td>
<td>5.2</td>
</tr>
<tr>
<td>Other</td>
<td>27</td>
<td>10.5</td>
</tr>
<tr>
<td><strong>Number of cars in the family</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 car</td>
<td>97</td>
<td>40.6</td>
</tr>
<tr>
<td>2 cars</td>
<td>89</td>
<td>37.2</td>
</tr>
<tr>
<td>3 cars</td>
<td>34</td>
<td>14.2</td>
</tr>
<tr>
<td>More than 4 cars</td>
<td>19</td>
<td>8.0</td>
</tr>
<tr>
<td><strong>Frequency of use of child restraints</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never use and almost never</td>
<td>17</td>
<td>6.6</td>
</tr>
<tr>
<td>Occasionally</td>
<td>43</td>
<td>16.9</td>
</tr>
<tr>
<td>Almost every time and frequently used</td>
<td>195</td>
<td>76.5</td>
</tr>
<tr>
<td><strong>Kind of restraint used</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child seat, rear facing</td>
<td>19</td>
<td>7.1</td>
</tr>
<tr>
<td>Booster seat</td>
<td>34</td>
<td>12.6</td>
</tr>
<tr>
<td>Child Seat, forward facing</td>
<td>63</td>
<td>23.3</td>
</tr>
<tr>
<td>Seatbelt only</td>
<td>154</td>
<td>57.0</td>
</tr>
<tr>
<td><strong>Ease of use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very difficult</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>Difficult</td>
<td>13</td>
<td>5.2</td>
</tr>
<tr>
<td>Somewhat difficult</td>
<td>76</td>
<td>30.4</td>
</tr>
<tr>
<td>Easy</td>
<td>103</td>
<td>41.2</td>
</tr>
<tr>
<td>Very easy</td>
<td>55</td>
<td>22.0</td>
</tr>
<tr>
<td><strong>Involvement in accident with a child</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>26</td>
<td>10.4</td>
</tr>
<tr>
<td>No</td>
<td>224</td>
<td>89.6</td>
</tr>
</tbody>
</table>

The results presented in Table 4.2 show that the largest proportion of respondents (17.7%) had in mind a 7 year old child when responding to the questions. 15.8% considered their child of 3 years, 14.0% a child of 4 years of age, 12.8% a child 5 years of old, 11.3% a child 6 years old, the same proportion a child of 8 years old, and a total of 16.5% considered a child under three years old. Respondents were asked to keep one child in mind when answering the questionnaire.
As shown in Table 4.2, respondents were also asked to indicate the nature of their relationship with that child. In this case, the majority of the respondents (46.1%) were mothers, while 19.5% were fathers. 10.9% were brothers, 7.8% sisters, 5.2% carers and 10.5% reported another type of relationship. While the majority of the drivers (65.6%) were parents, the number of non-parents was significant. This may be due to parents’ growing dependency on other people, including other family members, for child care services. A majority of households rely on the services of individuals from within the family. According to Harris (2014), the pressures of modern living have reduced the time available to parents for family responsibility. This necessitates use of other family members and hired help in raising children (Savage, 2009). When it comes to safe passenger travel, these individuals need to be inducted into the safety measures that need to be taken. All individuals responsible for a child need to be adept at all aspects relating to use of child car restraints.

The information relating to number of cars in the family shows that the largest proportion of respondents (40.6%) had 1 car, 37.2% had 2 cars, 14.2% had 3 cars and 19 respondents indicated that they had more than 3 cars.

Regarding use of child car restraints, only 6.6% of respondents indicated that they never, or almost never use such devices. A further 16.9% indicated that they occasionally used child car restraints, while the majority of respondents (76.5%) indicated that they used such devices frequently or almost all the time.

When asked about the kind of restraints utilised, 57% of respondents stated that they use a seatbelt only, while 23.3% use a forward facing child seat, 12.6% use booster seats and 7.0% make use of a rear facing child seat. Note should be made of the fact that a few respondents indicated using more than one restraint, resulting in frequencies that were higher than the number of respondents. According to Arrive Alive (2014), the right types of seats and properly fitted child restraints keep the child in their seat, preventing them from being thrown about inside, or ejected from, the vehicle. Although child car restraints are effective in reducing the risk of death or injury in a vehicle collusion, their effectiveness is reduced if the right type of restraint is not used or if the right restraint is used but is not properly fitted (Arrive Alive, 2014). The results from this study show that the majority of parents opt to use seatbelts even though seatbelts are not appropriate for children in this age group. Thus, despite the fact that parents take measures to protect their children, seatbelts alone are inadequate to protect the child in the case of an accident.
Ease of use was another construct presented in Table 4.2. In this regard, 63.2% of respondents stated that the types of restraint they use are easy or very easy to use. This is not surprising considering that this proportion closely resembles the number of respondents who indicate only using a seatbelt. One would expect drivers to be familiar with the use of seatbelts even when used for a child. 30.4% of respondents find the restraints they use to be somewhat difficult to use, while 6.4% indicate that they are difficult or very difficult to use.

When asked whether they had been involved in a car accident before with the child in their care, 10.4% of respondents said that they had been involved in a car accident while transporting a child, and the vast majority (89.6%) said they had not.

4.3. DESCRIPTIVE STATISTICS: BELIEFS, ATTITUDE AND BEHAVIOURAL INTENTION

This section presents descriptive statistics relating to the respondents’ beliefs, attitudes and behavioural intentions. As previously indicated, a seven-point Likert Scale, where 1 indicated ‘very strongly disagree’ and 7 indicated ‘very strongly agree’, was used to measure beliefs, attitudes and behavioural intentions relating to child passenger travel. With 4 being the middle point in a seven-point scale, mean values of 4 or close thereto (3.5 – 4.4) were considered to lie within the neutral range. Mean values of 4.5 or higher were considered to denote agreement with the given statement while those less than 3.5 were taken to denote disagreement. It should be noted that the overall mean was calculated as a summated average of the items associated with each construct.

4.3.1 Perceived susceptibility

Table 4.3. presents results obtained with regards to respondents’ (n=254) perceived susceptibility to accidents while with a child passenger. The overall mean and standard deviation scores for “perceived susceptibility were 4.33 and 1.602 respectively. It is important to note that the overall mean value of respondents’ perceived susceptibility to accidents while with a child is in the neutral range. Perceived susceptibility helps determine the likelihood that individuals will change their health-related behaviours. Change in behaviour is considered unlikely unless one believes they are at risk (Wheeler, 2010). The neutral perception of susceptibility indicates that respondents do not perceive themselves to be at high or low risk.
Table 4.3. Mean and standard deviation for “perceived susceptibility” to accident

<table>
<thead>
<tr>
<th>Construct and items</th>
<th>Disagreement (of any kind)</th>
<th>Neutral</th>
<th>Agreement (of any kind)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a strong possibility that I could have an automobile accident with the child.</td>
<td>37.7%</td>
<td>21.3%</td>
<td>41%</td>
<td>3.94</td>
<td>1.684</td>
</tr>
<tr>
<td>My chance of having an accident with the child in the car is quite high.</td>
<td>42.1%</td>
<td>25.6%</td>
<td>32.3%</td>
<td>3.76</td>
<td>1.614</td>
</tr>
<tr>
<td>Having a car accident when the child is with me is something I worry about.</td>
<td>16.5%</td>
<td>21.7%</td>
<td>61.8%</td>
<td>4.82</td>
<td>1.600</td>
</tr>
<tr>
<td>The way other people drive makes it quite likely that I could have a car accident when the child is with me.</td>
<td>14.9%</td>
<td>26.7%</td>
<td>58.5%</td>
<td>4.78</td>
<td>1.509</td>
</tr>
<tr>
<td><strong>Perceived susceptibility: Overall</strong></td>
<td></td>
<td></td>
<td></td>
<td>4.33</td>
<td>1.602</td>
</tr>
</tbody>
</table>

Examination of the items shows that two of the statements had means of over 4.5, thus indicating that the respondents were in agreement with these items. The other two items had means that were in the neutral range. However, it is important to note that in the case of all items, except one, a higher percentage of respondents agreed than disagreed with the given statements. Plummer (2013) is of the opinion that people are more careful when driving with children due to the natural need to protect young ones from harm. Robertson (2015) points out that if people drove as if they had children in their cars all the time, there would be fewer automobile accidents reported.

### 4.3.2. Perceived benefits

Table 4.4. presents results obtained with regard to respondents’ (n=256) perceived benefit from using child car restraints. Perceived benefit was measured using 4 items. These items focused on the respondents’ perceived positive aspects associated with use of child car restraints. The overall result is a mean of 5.73 and a standard deviation of 1.259. This means that the respondents are in agreement with the statements presented to them. According to Becker (2013), perceived benefit can be regarded as the value that an individual places on the positive outcome of engaging in a positive health-related behaviour. According to NHTSA (2013), child restraints that are used correctly can be beneficial to parents by reducing fatalities by as much as 71 percent and hospitalization by as much as 67 percent.
Table 4.4. Mean and standard deviation for “perceived benefits” to using child car restraints

<table>
<thead>
<tr>
<th>Construct and items</th>
<th>Disagreement (of any kind)</th>
<th>Neutral</th>
<th>Agreement (of any kind)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using a child car restraint reduces the chance of injury if an accident occurs.</td>
<td>4.8%</td>
<td>10.2%</td>
<td>85.1%</td>
<td>5.77</td>
<td>1.285</td>
</tr>
<tr>
<td>I feel less stress when I drive with my child secured in a restraint.</td>
<td>5.9%</td>
<td>9.4%</td>
<td>84.8%</td>
<td>5.65</td>
<td>1.302</td>
</tr>
<tr>
<td>I have peace of mind when I drive and the child is in a child car restraint.</td>
<td>4%</td>
<td>11.3%</td>
<td>84.9%</td>
<td>5.62</td>
<td>1.212</td>
</tr>
<tr>
<td>Using a car restraint for the child could save their life in an accident.</td>
<td>5.5%</td>
<td>8.2%</td>
<td>86.4%</td>
<td>5.89</td>
<td>1.238</td>
</tr>
<tr>
<td><strong>Perceived benefit: overall</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>5.73</strong></td>
<td><strong>1.259</strong></td>
</tr>
</tbody>
</table>

Examination of the items shows that the percentage of respondents agreeing with the fact that use of car restraints is beneficial is much higher for all items than those who disagreed. However, between 4% and 5.9% of respondents nonetheless disagreed with these statements. Such respondents need to be educated as to the benefits of child car restraints.

4.3.3. Perceived barriers

Table 4.5 provides an overview of the results obtained regarding respondents’ (n=253) perceived barriers to using child car restraints. Just as was the case with perceived benefit, perceived barriers were measured using four items. The overall mean and standard deviation scores for the construct of perceived barriers were 3.58 and 1.663 respectively. This result means that respondents were, in general, neutral regarding perceived barriers to use of child car restraints. According to Becker (2013), barriers are known to contribute to the formation of contradictory motives and avoidance behaviours towards an action. Examination of the individual items shows that items one and four, which examined whether child restraints are too expensive and whether children avoid being strapped into such restraints, respectively, both had neutral mean values. This is despite the fact that a higher number of respondents agreed with these statements than disagreed. Item two asked whether strapping a child in a car restraint takes too much time and item three whether respondents were made fun of when putting the child in child restraints. Both of these items displayed mean values that reflected general disagreement, 3.21 and 2.90 respectively. These items had the highest percentage of respondents in the range of agreement. Literature shows that economic factors play a significant role in determining affordability of car restraints (Potts, 2012). This can impact on willingness to buy as well as usage levels, particularly in a developing country such as South Africa.
Table 4.5. Mean and standard deviation for “perceived barrier” to using child restraints

<table>
<thead>
<tr>
<th>Construct and items</th>
<th>Disagreement (of any kind)</th>
<th>Neutral</th>
<th>Agreement (of any kind)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child car restraints are too expensive.</td>
<td>29.6%</td>
<td>24.5%</td>
<td>45.9%</td>
<td>4.24</td>
<td>1.549</td>
</tr>
<tr>
<td>Strapping a child into a car restraint takes too much time.</td>
<td>56.9%</td>
<td>22.9%</td>
<td>20.2%</td>
<td>3.21</td>
<td>1.659</td>
</tr>
<tr>
<td>Other people make fun of me if I put the child in a child car restraint.</td>
<td>66%</td>
<td>17%</td>
<td>17.1%</td>
<td>2.90</td>
<td>1.673</td>
</tr>
<tr>
<td>My child does not like being strapped in a child car restraint.</td>
<td>36.7%</td>
<td>19%</td>
<td>44.3%</td>
<td>3.97</td>
<td>1.771</td>
</tr>
<tr>
<td><strong>Perceived barrier</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>3.58</strong></td>
<td><strong>1.663</strong></td>
</tr>
</tbody>
</table>

4.3.4. Perceived seriousness

Perceived seriousness was measured using four items which focused on the respondents’ (n=252) perception of the severity of the consequences of being involved in a car accident while with a child passenger. The overall mean is 5.50 with a standard deviation of 1.457. A person’s perception of how severe the impact of a particular condition will be on his or her life is regarded as an important deterrent to behaviour that has negative consequences. Severity may be perceived in terms of physical and mental damage or the impact on a person’s job, family, life and social relations (Becker, 2013). In this study, the majority of respondents agreed that the effect of a car accident while driving with a child is serious.

Table 4.6. Mean and standard deviation for “perceived seriousness” of accident

<table>
<thead>
<tr>
<th>Construct and items</th>
<th>Disagreement (of any kind)</th>
<th>Neutral</th>
<th>Agreement (of any kind)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional scars from having an accident when a child is with me would last a long time.</td>
<td>12.3%</td>
<td>14.3%</td>
<td>73.4%</td>
<td>5.31</td>
<td>1.569</td>
</tr>
<tr>
<td>My heart beats faster when I imagine having an accident when the child is in the car with me.</td>
<td>10%</td>
<td>13.5%</td>
<td>76.7%</td>
<td>5.34</td>
<td>1.454</td>
</tr>
<tr>
<td>Having a car accident when the child is with me would be more serious than if I was alone in the car.</td>
<td>6.8%</td>
<td>8.4%</td>
<td>84.9%</td>
<td>5.61</td>
<td>1.411</td>
</tr>
<tr>
<td>If I had a serious accident with my child in the car my whole life would change.</td>
<td>6%</td>
<td>9.9%</td>
<td>84.1%</td>
<td>5.74</td>
<td>1.395</td>
</tr>
<tr>
<td><strong>Perceived seriousness: Overall</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>5.50</strong></td>
<td><strong>1.457</strong></td>
</tr>
</tbody>
</table>

Examination of the individual items shows high levels of agreement on the part of the respondents with all the items. All the items have mean values greater than 5 and in each case, over 70 percent of respondents agreed with the statement. Perceived seriousness is an essential part of the Health Beliefs Model, because it provides some indication as to the level of danger.
people believe applies to them (Rosenstock et al., 1994). It is reasonable that respondents who feel that being involved in a car accident with a child passenger can result in serious harm may be inspired to take defensive measures, such as properly restraining their children.

4.3.5. Subjective norms

Table 4.7 presents results obtained with regard to subjective norms (n=252). Subjective norms were measured using four items that focused on the behavioural expectations of others (including friends, opinion leaders and family members) regarding use of child car restraints. The overall mean for subjective norms was 4.85 with a standard deviation of 1.431. This indicates that the perceived behavioural expectations of other people have a high influence on individuals’ use of child car restraints. Other peoples’ expectations can have an impact on parents’ behaviour as the individual may feel pressurised to conform to the expectations of those they value. Rerch (2011) notes that the majority of people make decisions regarding their children’s welfare by taking into consideration the opinions of other people they live with. These are people who exert a significant influence over their decisions on other matters as well (Laskin, 2012). In this case, these are people who can influence the participant to use car restraints.

**Table 4.7. Mean and standard deviation for “subjective norms” relating to use of child restraints**

<table>
<thead>
<tr>
<th>Construct and items</th>
<th>Disagreement (of any kind)</th>
<th>Neutral</th>
<th>Agreement (of any kind)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>People who influence my behaviour believe I should use child car restraint.</td>
<td>11.5%</td>
<td>20.2%</td>
<td>68.3%</td>
<td>5.01</td>
<td>1.400</td>
</tr>
<tr>
<td>People who are important to me believe I should use child car restraint.</td>
<td>6.8%</td>
<td>13.9%</td>
<td>79.3%</td>
<td>5.35</td>
<td>1.210</td>
</tr>
<tr>
<td>My decision to use child car restraints is influenced by other people whose opinions I value.</td>
<td>33.1%</td>
<td>23.1%</td>
<td>43.8%</td>
<td>4.18</td>
<td>1.758</td>
</tr>
<tr>
<td>People who influence my decisions think I should use child car restraint.</td>
<td>13.5%</td>
<td>22.2%</td>
<td>64.2%</td>
<td>4.86</td>
<td>1.357</td>
</tr>
<tr>
<td><strong>Subjective norms</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>4.85</strong></td>
<td><strong>1.431</strong></td>
</tr>
</tbody>
</table>

Examination of the individual items shows that items one, two and four had mean values that indicated overall agreement while responses to item three were largely in the neutral range. In the case of all four items, a greater percentage of respondents agreed with the statements than disagreed.
4.3.6. Knowledge of use of child car restraints

Table 4.8 presents the results obtained with regards to respondents’ (n=253) knowledge of how to use child car restraints. Three items were used to measure this construct. The overall mean was 5.07 with a standard deviation at 1.296. The high mean indicates respondents’ high levels of agreement with the items. Examination of the individual items shows that there was general agreement with all three items. A much greater percentage of respondents agreed with the statements than disagreed. The high level of knowledge of use evident in these results needs to be understood in relation to the fact that most respondents indicated that they primarily use seatbelts. This goes some way in explaining why most of them identify as knowledgeable with respect to use of child car restraints.

<table>
<thead>
<tr>
<th>Construct and items</th>
<th>Disagreement (of any kind)</th>
<th>Neutral</th>
<th>Agreement (of any kind)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am an expert in putting on the child car restraints the correct way.</td>
<td>9.5%</td>
<td>27.7%</td>
<td>62.8%</td>
<td>5.01</td>
<td>1.292</td>
</tr>
<tr>
<td>Child car restraints are easy to install in my car.</td>
<td>9.9%</td>
<td>24.5%</td>
<td>65.6%</td>
<td>5.01</td>
<td>1.355</td>
</tr>
<tr>
<td>I am highly knowledgeable about proper use of child car restraints.</td>
<td>7.1%</td>
<td>22.1%</td>
<td>70.8%</td>
<td>5.19</td>
<td>1.242</td>
</tr>
<tr>
<td><strong>Knowledge use: Overall</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>5.07</strong></td>
<td><strong>1.296</strong></td>
</tr>
</tbody>
</table>

These findings are consistent with those in a study done in the USA by Muller et al. (2013) which showed that over 80 percent of parents make an attempt to use child restraint systems for their children, but that less than 20 percent of them used these systems correctly. According to Polli (2015), having children increases the need for people with cars to become accustomed to car restraints. Taking into consideration findings showing that a large percentage of respondents use age-inappropriate child car restraints, it is questionable whether the perceived knowledge applies to age-appropriate restraints.

4.3.7. Knowledge regarding legal issues

Table 4.9 presents results obtained with regard to knowledge regarding legal issues relating to use of child car restraints. The responses, in general, showed that the majority of respondents were knowledgeable about legal requirements relating to use of child car restraints. In an article published in the Star newspaper (Mokati, 2015), it is stated that laws put in place by
government to help prevent minors from car accidents are yielding results. It was also reported that traffic police are deployed to ensure that parents and carers adhere to these laws, and that there has been a decrease in fatalities, especially in Gauteng, because of the enforcement of these laws. This supports the assertion of Marion (2013) that levels of laws enforcement help determine changes in human behaviour. Marion notes that where enforcement is comprehensive and where there is a high level of education and awareness as to the benefits of restraint use, change becomes imminent.

Table 4.9. Mean and standard deviation for “knowledge regarding legal issues”

<table>
<thead>
<tr>
<th>Construct and items</th>
<th>Disagreement (of any kind)</th>
<th>Neutral</th>
<th>Agreement (of any kind)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A parent can be fined on the spot if found with a child who is not appropriately secured in the car.</td>
<td>9.8%</td>
<td>11.7%</td>
<td>78.6%</td>
<td>5.43</td>
<td>1.410</td>
</tr>
<tr>
<td>All children under fourteen years old must use an appropriate child car restraint.</td>
<td>14.1%</td>
<td>9.8%</td>
<td>76.1%</td>
<td>5.28</td>
<td>1.526</td>
</tr>
<tr>
<td>It is the responsibility of a parent/carer to ensure that a child seated in the car uses an appropriate child car restraint.</td>
<td>0.4%</td>
<td>8.2%</td>
<td>91.4%</td>
<td>5.90</td>
<td>1.020</td>
</tr>
<tr>
<td>Knowledge on legal issues: Overall</td>
<td></td>
<td></td>
<td></td>
<td>5.54</td>
<td>1.082</td>
</tr>
</tbody>
</table>

However, it is concerning that a relatively large number of respondents (n=256) demonstrated a lack of knowledge regarding legal requirements. 21.5% of respondents, for example, either disagreed or were neutral about the fact that a parent can be fined on the spot if found with a child who is not appropriately secured in a car.

4.3.8. Attitude towards use of child car restraints

Table 4.10 presents results pertaining to respondents’ attitudes towards use of child car restraints (n=255). Three items were used to assess these attitudes. The overall mean score regarding attitude towards child restraints was high at 6.01. This shows high levels of agreement with the three statements. This indicates, generally speaking, that parents and carers have a positive attitude towards child restraints. The overall standard deviation was 1.056. These results are in line with observations by Moritz (2014) that indicate that people in general hold positive attitudes towards car restraints. Pinchuk (2013) points out that, in South Africa, people with cars have accepted the need to have car restraints.
Table 4.10. Mean and standard deviation for “attitude” towards use of child restraints

<table>
<thead>
<tr>
<th>Construct and items</th>
<th>Disagreement (of any kind)</th>
<th>Neutral</th>
<th>Agreement (of any kind)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using a child car restraint is a good idea.</td>
<td>0.4%</td>
<td>7.8%</td>
<td>73.7%</td>
<td>6.13</td>
<td>1.023</td>
</tr>
<tr>
<td>I like the idea of using a child car restraint.</td>
<td>0.4%</td>
<td>4.7%</td>
<td>94.9%</td>
<td>6.10</td>
<td>0.961</td>
</tr>
<tr>
<td>Using child car restraints is an appealing idea.</td>
<td>3.2%</td>
<td>5.9%</td>
<td>90.9%</td>
<td>5.81</td>
<td>1.184</td>
</tr>
<tr>
<td><strong>Attitude: Overall</strong></td>
<td></td>
<td></td>
<td></td>
<td>6.01</td>
<td>1.056</td>
</tr>
</tbody>
</table>

Examination of the means for the individual items shows that all three items have a high mean: 6.13 for Item 1, 6.10 for Item 2 and 5.81 for Item 3. For Items 2 and 3, over 90% of respondents agreed with the given statement. These results bode well: Maduku (2011) quotes Thorton et al. (2007) who note that respondents who hold a positive attitude towards a behaviour are more likely to perform that behaviour.

**4.3.9. Behavioural intention**

Table 4.11 presents results pertaining to respondents’ behavioural intentions (n=255). Three items were used to assess behavioural intentions towards the use of child restraints. The overall mean score for this construct was also high at 6.00. This suggests that the respondents had very positive intentions. The overall standard deviation was 1.161. Individual item results show that the mean scores were high for all the given statements. People not using car restraints were willing to start while those using them indicated an intention to continue doing so. House (2011) points to a need to have more individuals use car restraints if the number of injuries and deaths resulting from accidents is to be significantly reduced. The results also show that respondents would recommend the use of child restraint to others. The mean for this item was 6.13 with a standard deviation of 1.110.

Table 4.11. Mean and standard deviation for “behavioural intention” to use child restraints

<table>
<thead>
<tr>
<th>Construct and items</th>
<th>Disagreement (of any kind)</th>
<th>Neutral</th>
<th>Agreement (of any kind)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I intend to start/continue using child car restraints in the future.</td>
<td>3.9%</td>
<td>9%</td>
<td>87.1%</td>
<td>5.89</td>
<td>1.242</td>
</tr>
<tr>
<td>I will always use child car restraints when I drive with a child.</td>
<td>2.4%</td>
<td>8.2%</td>
<td>89.4%</td>
<td>5.97</td>
<td>1.132</td>
</tr>
<tr>
<td>I will strongly recommend use of child car restraints to others.</td>
<td>2.8%</td>
<td>6.3%</td>
<td>90.9%</td>
<td>6.13</td>
<td>1.110</td>
</tr>
<tr>
<td><strong>Behavioural intentions: Overall</strong></td>
<td></td>
<td></td>
<td></td>
<td>6.00</td>
<td>1.161</td>
</tr>
</tbody>
</table>
4.4. HYPOTHESIS TESTING

4.4.1. Attitude and its precursors

As indicated in Chapter 3, simple regression analysis was used to test the hypotheses in this study. Regression analysis is a statistical technique that endeavours to foresee the value of one variable utilising the value of one or more other variables (Pallant, 2010). Table 4.12 presents results of the hypotheses that examined the influence of perceived susceptibility, perceived benefit, perceived barriers, perceived seriousness and subjective norms, respectively, on attitude towards use of child car restraints.

Table 4.12. Regression analysis – Attitude towards child restraints

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.125</td>
<td>.016</td>
<td>.012</td>
<td>.89684</td>
</tr>
<tr>
<td>2</td>
<td>.510</td>
<td>.261</td>
<td>.258</td>
<td>.77599</td>
</tr>
<tr>
<td>3</td>
<td>.333</td>
<td>.111</td>
<td>.107</td>
<td>.85153</td>
</tr>
<tr>
<td>4</td>
<td>.241</td>
<td>.058</td>
<td>.054</td>
<td>.85784</td>
</tr>
<tr>
<td>5</td>
<td>.329</td>
<td>.108</td>
<td>.104</td>
<td>.85221</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Independent variable</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>5.628</td>
<td>.201</td>
<td>27.977</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Perceived Susceptibility</td>
<td>.089</td>
<td>.045</td>
<td>1.985</td>
<td>.048</td>
</tr>
<tr>
<td></td>
<td></td>
<td>125</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>3.672</td>
<td>.254</td>
<td>14.443</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Perceived Benefit</td>
<td>.407</td>
<td>.043</td>
<td>9.366</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>125</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>(Constant)</td>
<td>6.894</td>
<td>.170</td>
<td>40.649</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Perceived Barrier</td>
<td>.250</td>
<td>.045</td>
<td>-333</td>
<td>-5.544</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>(Constant)</td>
<td>5.031</td>
<td>.258</td>
<td>19.470</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Perceived Seriousness</td>
<td>.178</td>
<td>.046</td>
<td>.241</td>
<td>3.880</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>(Constant)</td>
<td>4.696</td>
<td>.245</td>
<td>19.168</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Subjective Norm</td>
<td>.267</td>
<td>.049</td>
<td>3.29</td>
<td>5.435</td>
</tr>
</tbody>
</table>

Model 1 to 5: Dependent variable – Attitude

The results relating to each hypothesis regarding the precursors of attitude are discussed in the following sub-sections.
Perceived susceptibility and attitude towards use of child car restraints

The first hypothesis of this study is:

**H1** There is a significant positive relationship between perceived susceptibility and attitude towards use of child car restraints.

This hypothesis sought to determine the relationship between perceived susceptibility and attitude. The results of the regression analysis (as shown in Table 4.12) indicate a significant relationship between perceived susceptibility and attitude ($p = .000; \beta = .125$). Based on the above, H1 is hereby accepted. The results provide clear indication that parents and carers who believe that they are susceptible to car accident had a positive attitude towards use of child car restraints. These parents understand that transport-related injuries continue to affect the lives of many children and their respective families. In South Africa, injuries from transport-related accidents have been reported as the leading cause of deaths of children aged between 0 and 12 years (Bowden, 2012).

Perceived benefit and attitude towards use of child car restraints

The second hypothesis of this study is:

**H2** There is a significant positive relationship between perceived benefits of using child car restraints and attitude towards use of car child restraints.

Table 4.12 presents the results relating to this hypothesis. The results of the regression analysis (as shown in Table 4.12) indicate that the relationship between the two variables is significant ($p = .000; \beta = .510$). Based on this result, H2 is hereby accepted. Studies by Laflamme et al. (2010), as well as Becker (2013), indicate that people are becoming more aware of the benefits of child car restraints. Perception of positive benefits is important in ensuring that parents and carers take measures to ensure safe passenger travel (Becker, 2013).
Perceived barriers and attitude towards use of child car restraints

The third hypothesis of this study is:

**H3** There is a significant negative relationship between perceived barriers to use of child car restraints and attitude towards use of child car restraints.

The results of the regression analysis indicate that there is a significant negative relationship between perceived barriers and attitude (p = .000; \( \beta = -.333 \)). Based on this result, H3 is accepted. Studies have indicated that there are varied barriers to the use of child car restraints (Becker, 2013). Among these are issues of cost and children not wanting to be restrained (Keay et al., 2013b). It is important to note that, while respondents in this study did not perceive there to be significant barriers to the use of child car restraints, the regression analysis results show that parents and carers who perceived significant barriers to the use of child car restraints tended to have negative attitudes towards the use thereof. Walsh (2011) notes that measures aimed at reducing the perception of barriers to behaviour can help promote positive attitudes towards that behaviour. It is thus important to find ways of reducing perceived barriers so as to promote wider use of appropriate child car restraints.

Perceived seriousness of accident consequences and attitude towards use of child car restraints

The fourth hypothesis of this study is:

**H4** There is a significant positive relationship between perceived seriousness of accident consequences and attitude towards use of child car restraints.

The results of the regression analysis (as shown in Table 4.12) indicate that the relationship between perceived seriousness and attitude is significant (p = .000; \( \beta = .241 \)). Based on this result, H4 is accepted. A study by Duffy (2015) indicates that car restraints presented numerous benefits to all parties, noting that they help parents to be at ease when driving knowing that their children are protected from severe injuries in case of accident. Becker (2013), as well as Weinreich, (2006), posit that involvement in a car accident, particularly where injury to or death of a child occurs, may result in deep emotional scars that can be difficult to heal. Accidents are also associated with loss of productivity on the part of parents and carers as they
have to look after a child in hospital (Weinreich, 2006). The financial burden of accidents can also be high (Marion, 2013).

Subjective norm and attitude towards child car restraints

The fifth hypothesis of this study is:

**H5** There is a significant positive relationship between perceived subjective norm and attitude towards use of child car restraints.

Examination of the regression results show that the relationship between subjective norm and attitude towards use of child car restraints is significant ($p = .000; \beta = .329$). Based on this, H5 is accepted. Subjective norms are the perceived social pressures an individual experiences surrounding the behaviour in question (Rivis & Sheeran, 2003). This social pressure comes from the persons closest to the individual that have influential capabilities (Ajzen, 1991). These individuals may be family members, friends, co-workers, or children and they pressure individuals to make use of child restraints or to change their attitude towards the use of these restraints (Buhi & Goodson, 2007).

Examination of the results pertaining to the direct antecedents of attitude, it is evident that perceived benefit is the most important factor in explaining attitude towards child car restraints. This is evident in the fact that it has the highest standardised beta coefficient value (.510) compared to all the other predictors. Perceived susceptibility, with a standardised beta coefficient value of .125, was the least powerful factor of the five predictors examined.

**4.4.2. Precursors of behavioural intention**

Table 4.13 presents results of the hypotheses that examined the influence of knowledge regarding use, knowledge regarding legal issues and attitude, respectively, on behavioural intentions regarding use of child car restraints.
Table 4.13. Regression analysis – Behavioural intentions towards child restraints

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.338</td>
<td>.114</td>
<td>.111</td>
<td>.102936</td>
</tr>
<tr>
<td>2</td>
<td>.542</td>
<td>.294</td>
<td>.291</td>
<td>.91433</td>
</tr>
<tr>
<td>3</td>
<td>.643</td>
<td>.413</td>
<td>.411</td>
<td>.82890</td>
</tr>
</tbody>
</table>

Model 1, 2 and 3: Dependent variable – Behavioural intention

Knowledge regarding legal issues and behavioural intentions towards child car restraints

The sixth hypothesis of this study is:

**H6** There is a significant positive relationship between knowledge regarding legal issues and behavioural intentions towards use of child car restraints.

Examination of the regression analysis results (in Table 4.13) shows that the relationship between knowledge regarding legal issues and behavioural intentions towards use of child car restraints is positive ($p = .000; \beta = .542$). Based on this result, H6 is accepted. Legal frameworks are used in many countries in order to encourage guardians to protect their children from car accidents (Christoffel, 2006). Past studies have shown a positive relationship between parents’ knowledge regarding these legal issues and behavioural intentions to use car restraints (Geddis, 2002). Legal approaches make it mandatory for people to protect their children from injuries that may result from unsafe child passenger travel.
Knowledge regarding use and behavioural intentions towards use of child car restraints

The seventh hypothesis of this study is:

**H7** There is a significant relationship between knowledge regarding use and behavioural intentions towards use of child car restraints.

The results of the regression analysis (as shown in Table 4.13) indicate that there is a significant relationship between knowledge regarding use and behavioural intention ($p = .000; \beta = .338$). Based on this result, H7 is accepted. Christoffel (2006) notes that lack of knowledge of a child’s height and/or weight and misapprehensions surrounding child car restraint use have been reported to negatively impact parents’ use thereof. Christoffel also states that lack of awareness of the risks of not using car restraints has also been associated with their non-use. Zambon (2014) points out that situational circumstances, such as trip distance and/or time of the trip as well as challenges associated with child car seat use, have all been found to influence behaviour.

Attitude towards use of child restraints and behavioural intention to use child car restraints

The eighth and final hypothesis of this study is:

**H8** There is a significant positive relationship between attitude towards use of child car restraints and intention to use child car restraints.

The result of the regression analysis presented in table 4.13 shows a significant relationship between these two variables ($p = .000; \beta = .643$). Based on this result, H8 is accepted. Research by Harris (2014), as well as by Zambon (2004), point to the positive influence that attitude has on behaviour. This is also consistent with the argument of the theory of planned behaviour.

In summary the results in Table 4.13 show that attitude is the most important factor in explaining behavioural intentions towards use of child car restraints. This is evident in the fact that it has the highest standardised beta coefficient value (.643), compared to the other constructs examined here.
4.5. FURTHER ANALYSIS

4.5.1. Group differences in attitude and direct precursors of attitude

Further analysis of the data was conducted in order to ascertain if there were significant differences between parents and non-parents regarding factors that influence attitude towards child car restraint use. An independent sample t-test was used for this analysis.

Table 4.14. Independent sample t-test: Precursors of attitude

<table>
<thead>
<tr>
<th></th>
<th>Descriptive statistic</th>
<th>T-Test for equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parents (1) VS Non- parents (2)</td>
<td>Mean</td>
</tr>
<tr>
<td>Perceived susceptibility</td>
<td>1</td>
<td>4.472</td>
</tr>
<tr>
<td>Perceived benefit</td>
<td>2</td>
<td>4.043</td>
</tr>
<tr>
<td>Perceived benefit</td>
<td>1</td>
<td>5.744</td>
</tr>
<tr>
<td>Perceived benefit</td>
<td>2</td>
<td>5.713</td>
</tr>
<tr>
<td>Perceived barriers</td>
<td>1</td>
<td>3.642</td>
</tr>
<tr>
<td>Perceived barriers</td>
<td>2</td>
<td>3.474</td>
</tr>
<tr>
<td>Perceived seriousness</td>
<td>1</td>
<td>5.630</td>
</tr>
<tr>
<td>Perceived seriousness</td>
<td>2</td>
<td>5.528</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>1</td>
<td>4.870</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>2</td>
<td>4.815</td>
</tr>
<tr>
<td>Attitude towards use</td>
<td>1</td>
<td>6.029</td>
</tr>
<tr>
<td>Attitude towards use</td>
<td>2</td>
<td>5.973</td>
</tr>
</tbody>
</table>

According to Table 4.14, in the case of the results for perceived susceptibility, the mean for parents was not only higher than the mean for non-parents, but the difference between the two was found to be statistically significant. The same was the case with respect to perceived seriousness, that is, parents perceived the seriousness of being involved in a car accident to be significantly higher than non-parents.

As for perceived benefit, perceived barriers and subjective norm, while the means for parents were higher than those of non-parents, these differences were not found to be statistically significant. The mean values regarding perceived benefit were 5.74 for parents and 5.71 for non-parents, which suggests that both parents and non-parents held positive views about the benefit of using child car restraints. As for perceived barriers, the mean for parents was 3.64 while that for non-parents was 3.47. The mean for parents was in the neutral range while that of non-parents tended towards disagreement. The means for subjective norm were 4.87 for parents and 4.82 for non-parents. Again, differences in means between parents and non-parents
was not significant. The same was the case with attitude. Both parents and non-parents had positive attitudes towards use of child car restraints.

4.5.2. Group differences: Behavioural intention and its precursors

Further analysis was also conducted to examine if there were significant differences between parents and non-parents regarding their behavioural intentions to start/continue using child car restraints and in their level of agreement with precursor factors for behavioural intention.

Table 4.15. Group differences in behavioural intention and its precursors – Independent sample t-test

<table>
<thead>
<tr>
<th></th>
<th>Descriptive statistic</th>
<th>T-Test for equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std Deviation</td>
</tr>
<tr>
<td>Knowledge regarding use</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>4.803</td>
<td>1.162</td>
</tr>
<tr>
<td>Knowledge regarding legal issues</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>5.406</td>
<td>.957</td>
</tr>
<tr>
<td>Behavioural intentions</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>5.754</td>
<td>1.080</td>
</tr>
</tbody>
</table>

Table 4.15 shows that the means for parents were higher than those of non-parents with regards to knowledge regarding use of child car restraints, knowledge regarding legal issues as well as behavioural intention to use child car restraints. However, these differences were found to be statistically significant for knowledge regarding use of child car restraints as well as behavioural intentions to use child car restraints. The differences in means for knowledge regarding legal issues was not found to be statistically significant.

4.6. CHAPTER SUMMARY

This chapter has presented results found from conducting a quantitative research study. In presenting these results, descriptive statistics relating to the respondents’ background characteristics were first presented. In general, there were more female participants than male participants. Most of the respondents were single parents and carers. The age distribution of the respondents ranged from 18 to 70 years old. The largest proportion, however, were aged between 18 and 29. The vast majority of respondents earned between R10001 and R30000 per month. In terms of race, most of the respondents were black.
The chapter also presented descriptive statistics related to participants’ beliefs, attitudes and behavioural intentions regarding use of child car restraints. Different items drawn from the theory of planned behaviour and the Health Beliefs Model were analysed and discussed. With the use of regression analysis, these items were tested so as to understand the influence they have on attitude. The results show that perceived susceptibility, perceived benefit, perceived barriers, perceived seriousness and subjective norm influence attitude towards use of child car restraints. The results also show that knowledge of use, knowledge of legal requirements as well as attitude have a positive influence on behavioural intentions to use child car restraints. The last section of the chapter examined differences in attitude and direct precursors of attitude between parents and non-parents, using independent sample t-tests. These results indicate that the differences were not significant in that both parents and non-parents had positive attitudes towards use of child car restraints. A similar result was obtained regarding behavioural intention.
CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1. INTRODUCTION

This study aimed to examine parents’ and carers’ beliefs, attitudes and behavioural intentions towards safe child passenger travel in order to achieve the stated objectives. As part of the study, a conceptual model based on the Health Belief Model and the theory of planned behaviour was developed and tested. Data was collected from 256 parents and carers from Gauteng, South Africa. Using Statistical Package for Social Science (SPSS), the previous chapter presented the findings that were obtained. This final chapter is divided into three main sections. The first of these addresses each of the research objectives set out for this study, and draws conclusions for each. Thereafter, recommendations for the promotion of use of child car restraints are presented. The final section of the chapter identifies limitations within the study and provides suggestions for future research.

5.2. RESEARCH OBJECTIVES, MAIN FINDINGS AND CONCLUSIONS

The primary aim of this study was to investigate the beliefs, attitudes and behaviours of parents or carers regarding the use of child car restraints for child passengers, and the factors influencing these. For this to be accomplished, a number of specific research objectives were formulated. These are:

- to determine parents’ and carers’ beliefs relating to the use of child car restraints;
- to investigate the attitudes of parents and carers regarding the use of child car restraints;
- to examine factors that influence parents’ and carers’ attitudes towards use of child car restraints;
- to examine parents’ and carers’ knowledge regarding the use of child car restraints;
- to uncover parents’ and carers’ behavioural practices and intentions relating to the use of child car restraints; and
- to examine the factors that influence parents’ and carers’ behavioural intentions towards use of child car restraints.

5.2.1. Perceived susceptibility

Perceived susceptibility can be seen to be related to defensive behaviour, as such behaviour is caused by a perceived threat. Descriptive statistical analysis shows that, in general, more
respondents agreed with the item statements within this construct with one exception. Despite this, the overall mean was found to be in the neutral range (4.33). The conclusion drawn from the findings is that parents’ and carers’ perceptions of their susceptibility to accidents while with a child passenger is neither high nor low. Nonetheless, perceived susceptibility was found to have a significant positive influence on attitude towards use of child car restraint. This means that parents and carers who perceived themselves to be highly susceptible to car accidents had more positive attitudes towards safe passenger travel.

5.2.2. Perceived benefits

According to the Health Beliefs Model and the theory of planned behaviour, a person who sees that noteworthy benefits can be obtained from engaging in a given behaviour is more likely to attempt to engage in that behaviour, as compared to a person who sees little or no benefit therein. The findings in this study show that most parents and carers see child car restraints as beneficial. This is evidenced by the fact that items making up the construct had mean scores ranging from 5.62 to 5.89 and the overall mean was 5.73. These results mean that the respondents were in agreement with the statements presented to them. Perceived benefit was found to have significant influence on attitude towards use of child car restraints. It is thus concluded that parents or carers who perceive benefit in use of child car restraints will have more positive attitudes towards the use thereof.

5.2.3. Perceived barriers

Within the HBM, the barriers that an individual perceives in undertaking a particular behaviour can prevent him or her from doing so. In the context of this study, research has shown that there are several possible barriers to using child car restraints, including knowledge of use as well as cost associated with acquiring such. These apparent barriers may be sufficient to discourage a parent from using restraints, or from properly restraining a child. The results of the present study show an overall mean for perceived barriers of 3.58. This means that the respondents were generally neutral regarding perceived barriers. From this, it can be concluded that perceived barriers were neither high nor low. Nonetheless, perceived barriers were found to be one of the factors that influence attitude towards use of child car restraints.
5.2.4. Perceived seriousness of consequences of accident while with a child passenger

Perceived seriousness provides an indication of the level of danger people believe applies to them. It is expected that parents who feel that their child is in danger of an injury may be roused to take defensive measures, such as, providing safety seating. It is conceivable that most parents are inspired to act defensively by the prospect of even minor injuries to their children. Based on the descriptive statistical analysis undertaken, the items used to measure this construct had mean scores higher than 4.5, while the overall mean was 5.5. It is concluded that parents’ or carers’ perceptions of the seriousness of the consequences of an accident while with a child is high. The findings also show that this construct has a significant positive influence on attitude towards the use of child car restraints. Based on these findings, it can be concluded that parents and carers who are conscious of the possible negative consequences of accidents while driving with a child will show more positive attitudes towards use of child car restraints than those that are not or are less conscious of this.

5.2.5. Subjective norms

With regard to subject norm, this study shows that parents or carers take cognisance of other people’s views on safe child passenger travel. The mean scores for this construct were all above 4.5, with one exception which had a mean score below 4.5, representing a neutral view of the item. The overall mean was 4.85. Based on these results, it can be concluded that subjective norm affects parents’ or carers’ beliefs relating to use of child car restraints. Subjective norm was also found to have significant influence on attitude. It can thus be argued that parents or carers who believe that other important people in their life believe in the use of child car restraints will have a positive attitude towards use of such restraints.

5.2.6. Knowledge of use of child car restraints

The results obtained in this study indicate that parents and carers feel that they were knowledgeable regarding the use of child car restraints. All three items used to measure this construct had mean scores higher than 4.5. The overall mean was 5.07, showing that the respondents agreed that they were knowledgeable on this subject. Knowledge of use was also found to have consequences for behavioural intention. These results, however, are tempered by the fact that they do not necessarily show that parents or carers are knowledgeable about the use of appropriate child car restraints, as many of them use inappropriate restraints.
5.2.7. Knowledge regarding legal issues

South Africa has laws that are in place to protect road users, including children. The findings in this study show that parents and carers are generally aware of laws relating to child car restraints, including the consequences of non-use thereof. All items used to measure this construct had mean values of greater than 5 and the overall mean was 5.54. It can thus be concluded that parents’ knowledge regarding legal issues towards the use of child car restraints is high. It can also be concluded that knowledge of legal issues influences behavioural intentions to start or continue making use of child car restraints.

5.2.8. Attitude towards use of child car restraints

Investigation into attitude reveals that the attitude of parents and carers towards child car restraints was positive. All items used to measure attitude had mean score of above 5.5, with overall mean score at 6.01. It is thus concluded that the respondents’ attitudes towards use of child car restraints were positive.

5.2.9. Behavioural practices and intentions

In terms of practices, this study uncovers the fact that while many parents and carers use child car restraints, age appropriate restraints are seldom used. However, the findings reveal that parents had positive intentions regarding child car restraints. The overall mean score was 6.00 with all items scoring above 5.5. It can thus be confirmed that parents and carers have positive intentions to start using, and even recommend use of, child car restraints.

5.3. RECOMMENDATIONS OF THE STUDY

Based on the findings in this study, a number of recommendations can be drawn for the promotion of use of child car restraints. According to Francis et al. (2004), attitude is of particular significance because of its relation to behaviour. In this sense, attitude plays a major role in understanding behaviour relating to the use of child restraints. Parents’ and carers’ attitudes towards child car restraints is thus vital.

As indicated in Chapter 4, attitude is influenced by different elements: among these are perceived susceptibility, perceived benefit, perceived barriers, perceived seriousness and
subjective norm. These findings are of important implications for future social marketing interventions to promote appropriate child car restraints. Social marketers need to insure that parents and carers are informed of the fact that accidents cannot always be avoided. This makes everyone including those who regard themselves as careful drivers susceptible to accidents. Parents need to thus be informed about the superior protection offered by child car restraints to reduce the threats associated with not using them.

Perceived benefit was found in this study to have a significant influence on attitude towards use of child car restraints. Some of the benefits identified were: reduction in severity of injuries, prevention of occupants being ejected from the vehicle on impact, and distribution of forces of a crash over the strongest parts of the human body. These benefits can be used as a social marketing tool to encourage and educate parents and carers on the safety benefits associated with child car restraint use. The results point to the fact that when parents and carers are aware of the benefits of using child car restraint they will have positive attitude towards the use.

Findings in the present study also indicate that perceived seriousness of consequences of an accident while with a child has a significant positive influence on attitude towards child car restraints. With that being said, perceived seriousness can be used as a social marketing educational tool to inform parents as to the dangers associated with non-use of child car restraints.

With regard to subject norm, findings herein show that parents and carers take cognisance of other people’s views on safe child passenger travel. Social pressure plays a key role in changing the behaviours of parents and carers. This means that reference groups or opinion groups can be used as a change agent in different communities.

In terms of perceived barriers, research has shown that there are several possible barriers to the use of child car restraints, including knowledge of use as well as cost associated with acquiring such. The fact that knowledge and cost were identified as barriers to using child car restraints calls for interventions that will specifically address these problems. One intervention that can be made by stakeholders aimed at addressing the problem of cost can be the promotion of second hand child car restraints in locations where parents and carers cannot afford brand new restraints. Parents and carers of children who have grown up children need to be encouraged to donate their restraints to those who may not be able to afford their own. Government should
also investigate the possibility of subsidising these restraints for individuals who are unable to buy them. Finally, it is recommended that rental options also be investigated.

With regards to knowledge the results obtained in this study indicate that parents and carers feel that they are knowledgeable regarding the use of child car restraints. However, there remains a problem when it comes to using appropriate child car restraints. Knowledge about appropriate child car restraints is important as this has a bearing on child safety. Based on the findings, it can be recommended that improved awareness resources and platforms are necessary to enhance appropriate child restraint use on the part of parents and carers. Another recommendation is the further enhancement of age-specific laws to encourage parents to place their children in car restraints that are age-appropriate. There is also need for interventions aimed at ensuring that parents and carers are taught not only the importance of using age appropriate restraints as well as how to use it. Manufacturers and retailers can be co-opted into providing the know-how to customers who buy restraints from their shops as part of their service to customers. Sales people need to be able to recommend the correct types of child restraints and provide information relating to their appropriate use. Government can also look at the possibilities and disseminating information through antenatal clinics and the public media.

5.4. LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FUTURE RESEARCH

While this study contributes to knowledge on parents’ beliefs, attitudes and behaviours regarding safe child passenger travel, it is not without limitations. The first limitation is to do with the fact that the study is based on a sample of respondents from Gauteng. This limits the extent to which the findings can be generalised to other areas.

A second limitation relates to the fact that the sample included a large number of parents that utilise child restraints, albeit inappropriately. This means that the study did not capture much information about parents that do not use any restraint. Future studies can deploy quota sampling to ensure that users and non-users of restraints are well represented in their studies.

Another limitation relates to the fact that the study made use of non-probability sampling to select respondents, specifically convenience sampling. Convenience sampling has limitations in that it cannot generalise the results to a total population. Future studies should consider making use of probability sampling methods in order to improve on generalisability.
Other suggestions for future research include: research to establish the role of sales people and their knowledge regarding appropriate child car restraints for different child age groups as well as use of restraints in particular. It may also be important to understand the level of training that sales people receive regarding child car restraints before being placed on the sales floor.

5.5. CONCLUSION

The main objective of this study was to investigate parents’ and carers’ beliefs, attitudes and behaviours regarding child car restraints. Use was made of a conceptual model based on the theory of planned behaviour and the Health Beliefs Model. From the findings, it is concluded that perceived susceptibility, perceived benefit, perceived barriers, perceived seriousness and subjective norm influence attitude towards the use of child car restraints. It is also shown that knowledge of use, knowledge of legal requirements as well as attitude have positive influences on behavioural intentions to use child car restraints.

Injuries to child passengers resulting from motor vehicle accidents is a major public health problem. Parents and carers have an obligation to attempt to secure and guarantee the wellbeing of their children. Other stakeholders, including manufacturers, government and civil society, have a social responsibility to teach and work with parents to guarantee the wellbeing of children. Increased efforts are needed to ensure that information regarding child restraints and safe child passenger travel in general is accessible to parents and carers.
REFERENCES


APPENDICES

APPENDIX A: LETTER OF CONSENT

Dear Sir/Madam

SAFE CHILD PASSENGER TRAVEL IN GAUTENG SURVEY.

You are invited to participate in a study being conducted to explore safe child passenger travel in Gauteng. The research is part of my studies towards a Master of Commerce (MCom) degree in Business Management with a specialisation in Marketing Management at the University of Johannesburg.

Completing the questionnaire should take about 10 minutes of your time. It will be appreciated if you can participate in the study by answering all questions. Note that this questionnaire contains questions which might be difficult (emotional) for some participants. Should you find a question difficult (emotional) to answer please remember you have a right to refuse to answer any question and to withdraw from completing the questionnaire at any time.

The information gathered in this study will be treated with the strictest confidence and used in aggregate form so as not to identify any individual respondent. You are therefore not required to indicate your name on the questionnaire.

Thank you in advance for your participation. Should you have any queries please do not hesitate to contact me or my supervisor on contact details provided

Sincerely
Barandereka Bonfils
Mobile: 073 538 6621
Email: bonfilsb@icloud.com
Supervisor:
Prof Mercy Mpinganjira
Senior Lecturer
Department of Marketing Management
Office: C Ring 605 (Kingsway Campus)
Tel +27 (0) 11 559 2129
Fax +27 (0) 11 55 9 4943
Email: mmpinganjira@uj.ac.za
APPENDIX B: SURVEY INSTRUMENT

A BRIEF DESCRIPTION OF CHILD RESTRAINTS

A child car restraint is a safety device designed to secure a child in a car. Child car restraints are designed to provide specialised protection for child vehicle occupants in the event of collusion. Among other things child restraints are meant to help lower the risk of child ejection, to limit the crash forces experienced by a child and limit the contact between the child and parts of the vehicle during a crash. There are different types of child restraints, with the most common one being the child car seat.

SCREENING QUESTIONS

1. Do you sometimes drive with a child/children under the age of 8 in the car?
   
   □ Yes  □ No

If you answered ‘Yes’ to the questions above, please continue with the questionnaire. If your answer is ‘No’, you do not have to complete the rest of the questionnaire.

SECTION A: BACKGROUND QUESTIONS

This section seeks to get background information about you and the child that you drive. If you drive more than one child under the age of 8 kindly keep one child in mind when answering questions 1A to 5A.

1A. How old is the child that you drive…………………..

2A. What is your relationship with this child?

   Mother □  Brother □  Carer □
   Father □  Sister □

If another relationship, please specify……………………..
3A. How often do you use restraints for the child when you drive?
- Never use
- Almost never
- Occasionally
- Almost every time
- Frequently use

4A. If you use a restraint, please indicate the kind of restraint that you use in the vehicle.
- Child Seat Rear Facing
- Child Seat Forward Facing
- Booster Seat
- Seatbelt only

5A. If you use a child seat or some other form of restraint to protect your child in the car, please rate how easy or difficult it was for you to get the car seat/restraint for your child.
- Very difficult
- Difficult
- Somewhat difficult
- Easy
- Very Easy

6A. Have you ever had an accident while driving with a child?
- Yes
- No

<table>
<thead>
<tr>
<th>7A. Please indicate your gender</th>
<th>11A. What is your highest level of education (completed)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Primary school</td>
</tr>
<tr>
<td></td>
<td>Some high school</td>
</tr>
<tr>
<td>Female</td>
<td>Completed high School</td>
</tr>
<tr>
<td></td>
<td>Post high school Diploma/Certificate</td>
</tr>
<tr>
<td></td>
<td>Undergraduate degree</td>
</tr>
<tr>
<td></td>
<td>Postgraduate degree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8A. Please indicate your marital status</th>
<th>12A. What is your monthly income?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>R0 – R5000</td>
</tr>
<tr>
<td>Married</td>
<td>R5001 - R10000</td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>10001 – R20000</td>
</tr>
<tr>
<td>Widowed</td>
<td>R20001 – R30000</td>
</tr>
<tr>
<td></td>
<td>R30001 +</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9A. Please indicate your age group</th>
<th>13A. How many children under the age of 8 do you have?</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29 years</td>
<td></td>
</tr>
<tr>
<td>30-39 years</td>
<td></td>
</tr>
<tr>
<td>40-49 years</td>
<td></td>
</tr>
<tr>
<td>50-59 years</td>
<td></td>
</tr>
<tr>
<td>60 years and older</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10A. What is your racial group?</th>
<th>14A. How many cars do you have in the family?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td></td>
</tr>
<tr>
<td>Coloured</td>
<td></td>
</tr>
<tr>
<td>Indian</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Others (Specify)</td>
<td></td>
</tr>
</tbody>
</table>

91
SECTION B: BELIEFS, ATTITUDE AND BEHAVIOURS RELATING TO SAFE CHILD PASSENGER TRAVEL

Statements in this section looks at beliefs, attitude and behaviours relating to child passenger travel. Irrespective of whether you use child restraints or not please indicate the extent to which you disagree or agree with each statement by crossing (x) the relevant box (Note that 1 = very strongly disagree; 2 = strongly disagree; 3 disagree, 4 = Neutral; 5 = agree; 6 = strongly agree; 7 = very strongly agree).

**Perceived susceptibility**

Please cross (X) to indicate your level of agreement with each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Perceived susceptibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very strongly disagree</td>
</tr>
<tr>
<td>2.1 There is a strong possibility that I could have an automobile accident with the child</td>
<td>1</td>
</tr>
<tr>
<td>2.2 My chance of having an accident with child in the car is quite high</td>
<td>1</td>
</tr>
<tr>
<td>2.3 Having a car accident when the child is with me is something I worry about</td>
<td>1</td>
</tr>
<tr>
<td>2.4 The way other people drive makes it quite likely that I could have a car accident when the child is with me</td>
<td>1</td>
</tr>
</tbody>
</table>

**Perceived benefits**

Please cross (X) to indicate your level of agreement with each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Perceived benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very strongly agree</td>
</tr>
<tr>
<td>2.5 Using a child car restraints reduces the chance of injury if an accident occurs</td>
<td>1</td>
</tr>
<tr>
<td>2.6 I feel less stress when I drive with my child secured in a restraints</td>
<td>1</td>
</tr>
<tr>
<td>2.7 I have peace of mind when I drive and the child is in a child car restraints</td>
<td>1</td>
</tr>
<tr>
<td>2.8 Using a car restraint for the child could save their life in an accident</td>
<td>1</td>
</tr>
</tbody>
</table>
**Perceived barriers**

Please cross (X) to indicate your level of agreement with each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Perceived barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very strongly disagree</td>
</tr>
<tr>
<td>2.9 Child car restraints are too expensive</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>2.10 Strapping a child into a car restraint takes too much time</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>2.11 Other people make fun of me if I put the child in a child car restraints</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>2.12 My child does not like being strapped in a child car restraints</td>
<td>1  2  3  4  5  6  7</td>
</tr>
</tbody>
</table>

**Perceived seriousness**

Please cross (X) to indicate your level of agreement with each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Perceived seriousness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very strongly disagree</td>
</tr>
<tr>
<td>2.13 Emotional scars from having an accident when a child was with me would last a long time</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>2.14 My heart beats faster when I imagine having an accident when the child is in the car with me</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>2.15 Having a car accident when the child is with me would be more serious than if I was alone in the car</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>2.16 If I had a serious accident with my child in the car my whole life would change</td>
<td>1  2  3  4  5  6  7</td>
</tr>
</tbody>
</table>
### Subjective norms

Please cross (X) to indicate your level of agreement with each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very strongly disagree</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Very strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.17 People who influence my behavior believe I should use child car restraint</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.18 People who are important to me believe I should use child car restraint</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.19 My decision to use child car restraints is influenced by other people whose opinions I value</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.20 People who influence my decisions think I should use child car restraint</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

### Knowledge

Please cross (X) to indicate your level of agreement with each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very Strongly disagree</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Very strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.21 I am an expert in putting on the child car restraints the correct way</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.22 Child car restraints are easy to install in my car</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.23 I am highly knowledgeable about proper use of child car restraints</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
Knowledge regarding legal issues

Please cross (X) to indicate your level of agreement with each of the following statements:

<table>
<thead>
<tr>
<th>Statements</th>
<th>Very strongly disagree</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Very strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.26 A parent can be fined on the spot if found with child who is not appropriately secured in the car</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.27 All children under fourteen years old must use an appropriate child car restraint</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.28 It is the responsibility of a parent/carer to ensure that a child seated in the car uses an appropriate child car restraint</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.29 A child needs to use a car restraint in their parent's car only</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

Attitude

Please cross (X) to indicate your level of agreement with each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very strongly disagree</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Very strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.30 Using a child car restraint is a good idea</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.31 I like the idea of using a child car restraint</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.32 Using child car restraints is an appealing idea</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.33 Using child car restraints should be left to the parent/carer to decide</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.34 I worry that in the event of an accident I might not be able to free my child from the car restraint</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.35 I worry that if I were hijacked I would not be able to get my child out of the car if they were in a restraint</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.36 I prefer that my child does not use a car restraint</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
**Behavioural intentions**

Please cross (X) to indicate your level of agreement with each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very strongly disagree</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Very strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I intend to start/continue using child car restraints in the future</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I will always use child car restraints when I drive with a child</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I will strongly recommend use of child car restraints to others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

THANK YOU FOR TAKING TIME TO COMPLETE THIS SURVEY.