2015 Tokiwa University Doctoral Dissertation:

Consequences of Carjacking in South Africa: An Empirical Study on its Victims

By

Chadley Earle-Drennen James

Student Number: 11330029

Submitted in partial fulfillment of the requirements for the degree

Doctor of Philosophy

With specialization in

Victimology

At

Tokiwa University Graduate School of Victimology

Mentor:

Professor Dr. Gerd Ferdinand Kirchhoff

Acknowledgements

I would like to express my sincere appreciation to the following organizations and individuals, without whose help this study would not have been possible:

- To the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of the Government of Japan for awarding me the scholarship that made it possible for me to come to Japan and complete this study.
- To the staff members at Tokiwa University, the Graduate School of Victimology and the Tokiwa International Victimology Institute (TIVI), who facilitated my research and made continuous efforts to accommodate me during my time at the university.
- To my readers: Professor Koyanagi, Professor Morosawa and Professor Nagai, for their valuable support and helpful comments during the progression of this study.
- To Chiharu Matsumoto, for her friendship and incredible support throughout the time that my wife and I have had in Japan.
- To Mari Kirchhoff, for the friendship and encouragement she has given my wife and I throughout this study.
- To Dr. Tod Tollefson, for your comradeship, advice and encouragement on how to assimilate and how to make the most of this opportunity.
- To Professor Dr. Gerd Ferdinand Kirchhoff, to whom in words my gratitude I cannot adequately express. Your passion for victimology, your invaluable guidance throughout this study and your academic perspective in general will be with me throughout my journey as a victimologist. I treasure our friendship.
- To my Grandparents, Dennis and Florence Dendy, without whose love, encouragement and endless support I would not have been able to see and achieve the wonderful things I have. I remain forever grateful.

- To my Mother, Desrae McKenzie, for whom the world does not seem big enough relative to the lengths she is prepared to traverse, to make everything possible for me. Thank you.
- To my best friend, my wife, Natasha James, for your love, dedication and passion to help us make the most of this incredible opportunity, one that has enabled us to achieve this goal. I am truly grateful and love you dearly.

This dissertation is dedicated to Gran, Gramps, Mom and Tash.

Table of Contents

Table of Figures and Tables

Abstract

More than 9,000 carjacking incidents are reported annually to South African police. Behind each of these reported incidents is at least one victim. However, the extent to which this victimization pervades society stands in contrast to the available literature on those who suffer its consequences. Existing literature is dated and gleaned from secondary sources (i.e., interviews with incarcerated offenders and police dossiers). To counteract the dearth in information, this study uses a 'victim's victimology' approach—it collects the information directly from the victims. The aims are to collect up-to-date information, detail the psychological damage victims experience (stress and anger), and better understand the behavioral changes victims make in reaction to this victimization. If victimology is to better understand the impact of victimization, it must transcend the old theoretical constraints of criminology. Reviewing the theories traditionally dealt with in victimology, the study has argued these theories are unsuitable because they are criminological and do not explain the impact of victimization. Therefore, to achieve the goals of this study, the theoretical framework of **Victimizations Are Invasions into the Self of the Victim** is used. Thirty hypotheses were constructed on the basis of the theoretical framework, what is known about the public, and what has been previously documented in the literature on carjacking victims. The hypotheses were divided into six categories and tested in a pilot study. Results were used to furnish a final questionnaire for data collection. The questionnaire was completed by 280 victims. The research shows that carjacking victims react emotionally and experience both stress and anger after this victimization. When reflecting on their victimization, the participants indicated that psychological damage is the worst effect, supporting the main propositions of the

theory that victimizations are invasions into the self. Lastly, this study proves that it is possible to do direct research with victims despite impediments. Using a 'victim's victimology,' this study has strived to eliminate the assumptions about the consequences of this victimization.

概要

南アフリカの警察署には年間 9.000 件の車両強奪が報告されている。その事件報告の影には少なくとも一人の被害者が存在している。しかしながら、このような被害化が社会に蔓延する範囲と被害に苦しむ人々について書かれている入手可能な文献の数は対照的である。現存する参考文献は第二次資料から収集されたものである。(i.e., interviews with incarcerated offenders and police dossiers)（服役中の加害者インタビューと警察側調査書）このような情報不足に対応するために、この研究においては‘「被害者の被害者学への取り組みー　被害者からの直接的な情報」を用いた。最新情報を収集する目的は、被害者の経験による心理的ダメージの詳細（ストレスや怒り）、そして被害化による被害者の行動の変化に対するより良い理解のためである。被害者学が被害化の影響についてのより良い理解というというものであるなら、それは従来の犯罪学の理論上の制約を超えるものでなければならない。もしも、被害者学が被害化の影響としてより深く理解されるならば従来の犯罪学の理論上の制約を超えるものになるであろう。被害者学の中で従来的論じられてきた学説を再考するとそれらの説は犯罪学的であり被害化の影響についての説明がなされていないことから本研究は、それらの説には適応しないことを示している。よって、本研究の目的を達成するための理論構成として“**Victimizations Are Invasions into the Self of the Victim”** 「被害化は、被害者自身に対する侵害である」を用いた。理論構成においては、「どのような（南アフリカの人々の）実状が知られているのか」、「車両強奪について過去の文献にどのようなことが記されているのか」などを基盤とし 30 もの仮説がたてられた。それらの仮説は 6 つのカテゴリーに分けられ予備実験の中で試験された。結果は、データ集積のための最終版の質問票に使われた。質問票は 280 人の被害者による回答である。この研究は、車両強奪に遭った被害者たちは被害化の後ストレスと怒りの両方を経験していることを示している。彼らの身に起こった被害化を熟考してみると、調査の参加者たちは心理的損傷が最悪の影響であったことを示しており、「被害化は、被害者自身に対する侵害であるという」初めの説の主張を裏付けている。最後に、本研究はたとえ阻害要因があろうとも被害者との直接的な研究は可能であるということを証明するものであり、‘victim’s victimology,’「被害者の被害者学」を用いることにより、被害化においての被害者心理の一律性に対する帰結を取り除くものである。
キーワード：南アフリカ共和国、カージャッキング、被害者、被害、被害者学

Key Terms

1. South Africa
2. Victimology
3. Carjacking
4. Victimization
5. Victimizations are invasions into the self
6. Psychological damage
7. Stress
8. Anger
9. Trauma Screening Questionnaire
10. Posttraumatic Anger Scale
11. Physical and financial damage
12. Behavioral damage

CHAPTER 1

INTRODUCTION OF THE PROBLEM

This chapter introduces the concept and problem of victimization by carjacking. The research conducted has focused specifically on victims of carjacking in South Africa. Every year this victimization continues at an extraordinary level. The aim and structure of the current research and its value within the South African context, as well as in victimology, are addressed. The motivation to conduct this research and the problem are introduced next.

1.1 South Africa and Victimization

Situated at the southernmost tip of Africa is South Africa. Once a country notorious for its gross human rights violations and political policy of apartheid, South Africa has since become a global icon for transitional societies around the world. The country today enjoys a functioning democracy and one of the most powerful economies in Africa. Despite remarkable achievements the country has made in the way of relative peace and democracy, political and social challenges persist. High levels of impoverishment and illiteracy, along with unprecedented levels of social and criminal violence, consume political agendas and remain part of the everyday lives of its citizens. The incidence of criminal violence is inextricably linked to the reworking of responses to political legacies and the continued expression of dissatisfaction with the new order (Ellis, 1999; Harris, 2005; Shaw, 2002). Sadly, explanations for the criminal violence remain rooted in the ruptures of political and economic arrangements in the liberalization of the country.

However the point remains, victimization by crime is an indisputable fact of life for most citizens of South Africa (Steenkamp, 1999).

This reality is captured in the mass media, with attention-grabbing quotes such as: "Serious and violent crime is increasing in South Africa" and "Violence remains unacceptably high and should be treated as a serious crisis that stands in the way of South Africa's social and economic development" (Dixon, 2013, p. 1). Quotes such as these, along with other sensationalized headlines, consume the daily discourse of its citizens (Pretorius, 2008). These statements are of course not unfounded. Official crime statistics reveal that on average 2 million cases of serious crime[1] are reported every year (South African Police Service [SAPS], 2012). Given the relative size and population (52 million [(Lehohla, 2013)), this makes South Africa a country with one of the highest levels of victimization in the world (Dixon, 2013; Ellis, 1999), where people live with not only the fear of victimization but the reality of it.

Clearly, victimization is a part of South Africans' daily reality. However, its impact on victims is often overlooked and under researched. The victimization by carjacking in South Africa illustrates this point and prompts the focus of this research.

In South Africa carjacking is a serious problem; more than 9000 incidents are reported to the police annually. The available literature that exists both internationally and in South Africa on carjacking is scarce and/or dated, despite the prevalence of carjacking. Moreover, the available literature is irrefutably criminological, not victimological (this is discussed in more detail in Chapter 2). Evidence of the criminological bias in the literature is found in the variety of theoretical concepts used

[1] According to an official document titled: *The Crime Situation in South Africa* released by the Institute for Security Studies Africa (ISSA) in 2010, *serious crime* refers to contact crime (crimes against the person), contact-related crime, and property-related crime (ISSA, 2010).

to explain this victimization. These include macro[2] criminological theories: the Routine Activities Theory (Davis, 2001c); the Subculture of Violence Theory (Buys, 2003); and Anomie Theory (James, 2010). The micro criminological Rationale Choice Theory has additionally provided a useful theoretical base (Davis, 2001a) to explain its occurrence. These theories highlighted high levels of unemployment, a profitable market for stolen or hijacked vehicles, socially disorganized communities, corruption and easy access to weapons (Davis, 2003; Zinn, 2013).

The bias in the existing literature on carjacking towards criminological discourse reiterates the point that victims and the impacts they suffer are overlooked and under researched. This demonstrates the necessity for a victimological study on carjacking victims in a country 'traumatized' by victimization (Strydom & Schutte, 2005, p. 115). Moreover, it is a study that incorporates the concept Sarah Ben-David termed as a 'victim's victimology' (Ben David, 2000, p. 56). Ben-David's term was originally intended to demand from victimologists that they practice victimology with the aim of trying to improve the situation of the victim in the criminal justice system and to better serve their interests. She did not intent for the term to be used as a political tool; where the victim would be used to exacerbate the criminal justice system for a more retributive approach to offender. A 'victim's victimology' is to serve the interests of victims, and nothing else. That implies, among others, that the voices of victims are heard. That victimological research should instead deal with the responses of victim and not with information gleaned from secondary sources (i.e. interviews with incarcerated offenders and police files) (this is discussed in more detail in Chapter 2). Lamentably, the criminological bias of research in South Africa relies on such sources in discussions about carjacking victims. Therefore, term 'victim's victimology' is

[2] 'Macro theories of crime are theories that address broader questions about differences across societies or major groups in society'. 'Micro theories of crime focus specifically on small groups or why individuals are more likely than others to commit criminal and deviant acts' (Akers & Sellers, 2009, p. 3).

applied to this study to mean that in-depth knowledge of the impact of victimization should be gained through direct empirical research with victims, not through secondary sources; thus attempting to ensure that what is known about the impact of victimization comes directly from those victimized.

Embracing this concept, along with the lack of knowledge and understanding of the impact on these victims provided the motivation to conduct this study.

1.2 What Is Carjacking?

1.2.1 Definition of Carjacking

Defining carjacking in South Africa is a difficult task. Two main problems exist: 1) the victimization itself is not defined in South African criminal law but rather, the South African Police Service (SAPS) categorizes carjacking as property victimization and a form of robbery with aggravating circumstances[3] (SAPS, 2013) and 2) carjacking is commonly referred to, or known as, vehicle hijacking. However, an important distinction between the two terms creates a terminological problem crucial to this study. To eliminate this problem, the distinction is explained.

The distinction between carjacking and vehicle hijacking originates from the way the victimization was recorded by the South African police in their official crime statistics. Before 1996, there was no classification for which this victimization could be recorded. It was recorded as robbery, robbery with aggravating circumstances, or vehicle theft (Davis, 2005; Zinn, 2013). Not having a clear classification for this victimization meant that there was a marked misrepresentation in the country's crime statistics. To counteract this problem, in 1999 the Crime Information Analysis Centre

[3] According to criminal law in South Africa and the Criminal Procedure Act 51 of 1977, the elements of aggravating circumstances in a robbery are: '1) the wielding of a firearm or any other dangerous weapon; 2) the infliction of grievous bodily harm; and 3) a threat to inflict grievous bodily harm' (Kemp et al., 2012, p. 393).

introduced a more elaborate computer database system. The improved system, among other things, enabled the police to record vehicle hijacking under a separate category (Davis, 2005; Zinn, 2013). Incidentally, it soon became apparent that the new classification was limiting. Police noted that there was a palpable difference between the types of hijackings reported (Minnaar & Zinn, 2000). In most reported cases, the vehicle (a motor car) was stolen, but in other cases, the vehicle (a truck carrying cargo) was abandoned, with only its contents missing. To address this problem, it was postulated that vehicle hijacking should be an overarching term that includes two subcategories of hijacking (Minnaar & Zinn, (2000), *carjacking* and *truck (transit cargo) hijacking*. The primary distinction made between these was the following (Minnaar & Zinn, 2000):

- In a *carjacking,* the objective is to not only seize control of the vehicle (a motor car) but also dispossess (rob) its owner.
- In a *truck (transit cargo) hijacking,* the purpose is to seize control of the vehicle (a truck) and to steal its contents, not the vehicle.

The separation in recording these hijackings in the crime statistics came into affect in 2003 (SAPS, 2013). This made South Africa the only country in the world to provide a separate category for this victimization (Young & Borzycki, 2008). This study deals only with the term *carjacking* unless otherwise stated. A definition similar to the one previously provided follows:

Carjacking: *The intentional gaining of control of a vehicle (a motorcar) against the will of its possessor through the use of direct violence or the threat of violence.*

This definition has three distinguishing characteristics that separate it from other illegal appropriations of a motorcar. These characteristics are:

1. Motor vehicle theft can be confrontational and furtive. Carjacking is always confrontational, with face-to-face contact between the victim and the perpetrator/s.
2. The confrontation in a carjacking generally involves the use of (or the threat to use) violence on the side of the aggressing perpetrator/s against the victim. Theft is a nonviolent victimization.
3. Violence is either the means of taking the vehicle away or the reason for the victim to hand over the vehicle to the perpetrator. If an item is "handed over" or given to the perpetrator in this sense, then the item is not stolen. It is extorted. The handing over of "goods" excludes theft, or the taking away of "goods". Thus, carjacking involves the taking away (robbery, theft) and extorting of the vehicle.

The wording "direct use of violence" and/or "threat of violence" in the definition exemplifies the severe victimological consequences associated with the victimization. The victim (using a vehicle) is forced to suddenly stop, without any realistic alternative available, and give up possession of the vehicle while being violently forced (under coercion of a weapon or with physical violence) out. The randomness, unexpectedness, unpredictability, and levels of violence

(well publicized in the national media) of a carjacking make this the most feared victimization in South Africa (Davis, 2001b; James & Barkhuizen, 2013; Pretorius, 2008).

1.2.2 Addressing the Victimological Misunderstanding of Carjacking

Carjacking in South Africa is considered property victimization. The author posits this is a mistake and should instead be considered a personal victimization. Under South African criminal law, the characteristics of carjacking make it a form of robbery with aggravating circumstances.[4] This means it is categorized under property crime, not crime against human life, the person, and the family (personal crime) (Kemp et al., 2012).

The carjacking literature has emphasized this categorization, where time and again it is argued that the objective of the perpetrator is first and foremost to secure the property (a motor car), not to injure the victim (Buys, 2003; Davis, 2005; Zinn, 2003). While this argument may be true, it is forgotten that the perpetrator has ***first and foremost***[5] threatened the safety and security of the victim. This is the "victimological misunderstanding" the author posits. The neglect of this fundamental concept has meant that the victim remains the forgotten actor in this consequential social interaction (Mawby & Walklate, 2004). Proof of this neglect and misunderstanding is demonstrated in the next section in what is known about carjacking.

[4] See footnote 3

[5] The use of italics is that of the author and is intended to emphasize that the safety and security of the victim should be the primary focus in this victimization.

1.2.3 What Is Known about Carjacking?

Previous research on the characteristics and extent of carjacking in South Africa and internationally is available (Davis, 1999a, 1999b, 2001a, 2001b, 2002, 2003, 2005; Donahue, McLaughlin, & Damm, 1994; Jacobs, Topalli, & Wright, 2003; James & Barkhuizen, 2013; Minnaar & Zinn, 2000; Steenkamp, 1999; Young & Borzycki, 2008; Zinn, 2003, 2013). However, what is known about these characteristics has been well documented and is not the focus of this research. Rather, it is to investigate the impact of this victimization on its victims. Thus, the following review is not to detail the characteristics of carjacking but instead to demonstrate the deficiencies in the existing literature and argue why this study is necessary.

Research on carjacking in South Africa begins with the pioneering work of Linda Davis's doctoral dissertation (Davis, 1999b). Her information on carjacking is from a snowball sample of victims (n = 110) and offender interviews (n = 12). Davis's 2001b and 2005 publications on carjacking victims are the offspring of her doctoral dissertation. The importance of Davis's work cannot be understated, but her data are almost 15 years old and her research can be criticized for not providing substantial information on the various aspects of psychological damage victims experience. Most notably, she does not indicate what scales she used to measure psychological reactions.

Additional publications on carjacking by Davis (2001a, 2002, 2003) are criminological studies on Rational Choice Theory and target selection based on offender interviews (n = 12). They do not provide any additional information on the consequences to victims of carjacking.

In a similar study to that of Donahue et al. (1994) in the United States, Steenkamp's (1999, p. 4) South African study analyzes police dossiers to render a

demographic 'profile' of victims of motor vehicle theft and carjacking. Although Steenkamp's study provides some information on carjacking victims, the focus is on victims of motor vehicle theft, not carjacking as studied here. Donahue et al. (1994) and Steenkamp (1999) gather information about victims from secondary sources (police dossiers). Relying on these sources fails to provide any information on psychological damage and provides little information on the physical and financial damages these victims experience. Therefore, their studies do not contribute to the literature on the consequences of this victimization and do not make this study superfluous.

In 2000, Minnaar and Zinn's paper on carjacking in South Africa examined and evaluated the prevention/interventionist strategies taken by the SAPS to limit carjacking. Their paper provides useful information on the establishment of trauma/victim centers opened specifically for victims of carjacking in selected police stations. However, their paper focusing on measures taken to prevent carjacking provides very little information on the victimological consequences. The information they do provide on the victimological consequences is simply that taken from Davis's (1999b) doctoral dissertation.

Zinn's 2002 study concentrates solely on the perpetrators of carjacking in South Africa. His study addresses the usefulness of offenders in providing information to the SAPS in order to help prevent the occurrence of carjacking. A special relevance of the study was to find measures that can be taken to prevent someone from becoming a victim of carjacking. Despite the study's useful information on preventative measures for the public, it is a criminological study and does not provide information on the consequences of this victimization. The same can be argued regarding studies by Jacobs et al. (2003) and Young and Borzycki (2008) on carjacking offenders in the

United States and Australia. Both deal with criminologically relevant information on carjacking. They do not pay any attention to the victims and therefore provide no information on the damages victims suffer as a result of carjacking. James and Barkhuizen (2013), using James's master's dissertation in 2010 (n = 140 victims), analyze the physical, financial, and social impacts on victims of carjacking in South Africa. The results come close to the content of this study. The term 'social consequences' was introduced by Davis (2001b, p. 74) in the context of general thoughts about the fear of crime in South Africa and its effect on the country's reputation. James and Barkhuizen interpret "social impact" more in the wake of Maguire's (1987) study on burglary victims. They investigate victims participation in "socializing in the community" following a victimization. This result shows that participation was reduced following victimization. The study of James and Barkhuizen is a preliminary attempt to explore carjacking victimization in detail but does not address the psychological damage of this victimization. Unlike the present study, they did not investigate the levels of stress and anger victims may experience.

Lastly, Zinn's (2013) article summarizes the existing research on victims of carjacking in South Africa. In this article Zinn uses the same empirical information collected by Davis (1999) to describe the consequences of this victimization. This information on victims of carjacking is augmented by anecdotal observations from interview studies of imprisoned offenders on target selection (Zinn, 2002, 2008, 2010). Offenders cannot give information on victims. They can only give information about their perception of victims. They provide information on target selection (how offenders commit their crimes and, more specifically, how they choose victims). This is a criminological research question, not a victimological one, even if Davis and Snyman (2004, p. 122) maintain:

'It is important that discourse on victims and victimization focuses on the fundamental root of the problem it is addressing, namely crime'. This statement accentuates the "victimological misunderstanding" mentioned in the previous section. Moreover, the studies discussed in this section do not render the current research unnecessary. On the contrary, they demonstrate why this research is necessary.

1.3 Focus and Aims of the Study

Little victimological research exists internationally. Therefore, the **focus of this study is to explore the impacts on those who are victimized by carjacking**.

The aims of this study are to explore and describe:

- **Victimizations Are Invasions into the Self of the Victim**. As a victimological study, it must be asked: Are the theories traditionally dealt with in textbooks of victimology relevant for this study? Here the theories traditionally regarded as victimological are described and discussed. Reasons are given as to why these theories are not relevant for this study and, in fact, not for victimology.

- **Getting up-to-date information on victimization by carjacking**. In light of the urgency of the problem, more up-to-date information on this victimization is necessary. Using a 'victim's victimology' approach (see earlier), this study asks victims of carjacking to describe their experiences. This enables detailed knowledge of psychological, physical, and financial damages to be gained.

- **Concentrate on the psychological damage including stress and anger.** The main criticism to the scant literature on victims of carjacking is the insufficient information on psychological damage. Regarded as the most severe damage

after victimization (Janoff-Bulman, 1992; Kirchhoff, 2005), this study explores the psychological reactions of stress and anger. To measure stress, the Trauma Screening Questionnaire (TSQ) (Brewin et al., 2002) is integrated to indicate what levels of stress these victims experience. The psychological reaction of anger has not been investigated in the field of carjacking. Therefore, along with the TSQ, the Posttraumatic Anger Scale (PAS) (Orth & Maercker, 2009) is integrated into the research instrument. The PAS was developed to measure anger towards various targets following a violent victimization. More detailed information on these scales is provided in **Chapter 3**.

- **Behavioral changes following victimization**. From the victimological literature, we know that victims react to victimizations (Barkhuizen, 2007). To help regain some feeling of safety and security, victims are said to make certain behavioral changes, such as taking precautions (Janoff-Bulman, 1992; Janoff-Bulman & Frieze, 1983; Spalek, 2006). In South Africa, concerned authorities have published official 'Hijack Prevention Guidelines' (Arrive Alive, 2013) for citizens to follow. What is completely unknown is whether these guidelines (precautions) are followed or not. What is also unknown is whether victims feel safer taking these precautions and, if the precautions impose restrictions on their lives.

This study is inherently victimological. Given this, it is necessary to include a description of what constitutes victimology and how this study is related to the general idea of the science.

1.4 Victimology and This Study

Within the social sciences, what constitutes a science cannot be answered simply. Victimology is one such example; it has developed through the contributions of a variety of people from different academic and professional backgrounds (Kirchhoff, 2005; Sapanaro, 2013; Wemmers, 2009). This leads to a diversification in the understandings of victimology, which provides for a richer science, one that can truly objectify its claims.

To explain 'what is victimology?' one can examine the word itself. "Victima," a Latin derivative, means victim. "Logos" is a Greek word used as a term for a principle of order and knowledge. Kirchhoff (2005) notes that, from this, the word victimology can be suggested as a theoretical system of knowledge about victims. This understanding of the word has led to criticisms, notably from the science of criminology.

Criminologists have argued that a science such as victimology would only help in establishing a criminal justice system pursuing a more punitive approach to offenders (Fattah, 2000). Fattah (2000) argues that victimology, as an independent science, would only serve a conservative law-and-order ideology (Fattah, 2000), which is completely unjustified (Elias, 1986). Victimology is not a science that serves the ends and needs of political exploitation. For victimology and victimologists alike, the concern is about the victim, the victimization, and the reactions as experienced by victims, not the ends to which such information can be used as a political propaganda tool (Kirchhoff, 2005, 2010). Social movements might arise out of such scientific analysis and interpretation but are not the science itself (Ben-David, 2000).

Victimology discourse (Doerner & Lab, 2012; Karmen, 2010; Walklate, 2007) often refers to the "Golden Age of the Victim" first introduced by Stephen Schafer

(1977). In his reference to the "golden age," he points to a period in history when victims actively participated in the resolution of crime and criminal matters. This period faded away as state authority increasingly established itself (Karmen, 2010), alienating victims' participation in criminal matters. It has arguably taken a long time for the victim to be included into the proceedings of criminal matters again. However, it is Kirchhoff (2006, 2010) who is first to include in victimology the academic and philosophical discussions of Cesar Beccaria. Beccaria's revolutionary work can be interpreted as 'a clear engagement on the side of the victims, the powerless'. However, to call Beccaria a victimologist would not be right, but certainly he was a forefather to victimology (Kirchhoff, 2006, 2010).

If Beccaria is regarded as a forefather to victimology, then who are the first victimologists? Benjamin Mendelsohn was the first person to use the word "victimology" in a speech he gave in Bucharest, Romania (Hoffman, 1992); however, controversy surrounds this statement, as the speech was never printed. Adding to the debate, Wertham (1948, p. 259) first coined the term "victimology". But it is the early pioneering work of Hans Von Hentig (1948) that gives him credence as the father of victimology. Von Hentig (1948) is additionally the founding father of special victimology, one of the three schools of study in the science.

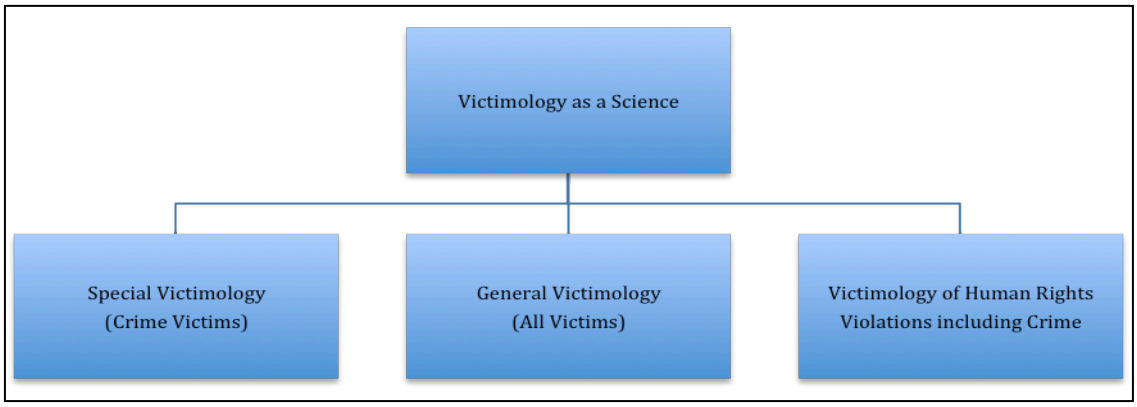
1.4.1 Schools of Victimology

In the science of victimology, complexities surround the question "who is the victim?" Kirchhoff (2005) maintains that this is a vital question to ask and establish in an understanding of the scope of victimology.

The three schools of victimology give different answers to this question:

- Special victimology (the victims of crime)
- General victimology (the victims suffering harm from all causes)
- Victimology of human rights violations (the victims of human rights violations including crime)

Figure 1. Victimology and Its Three Schools



Thomas Kuhn (1962) was the first to elegantly postulate that all scientific thinking is a specific construction of social reality. The thoughts and paradigms, which he speaks of, determine different realities for different scientists, which have all been created through previous experiences and social realities. Therefore, constructing how these schools of victimology came into being and what each school views as a path for scientific study are discussed next.

1.4.1.1 Special Victimology

Special victimology, a derivative of the thought by Hans Von Hentig, outlines the basic principles of this school. This school is described as a subdivision of criminology, and focuses solely on the victims of criminal acts (Wemmers, 2009, p. 39). A great amount of victimological research has used this approach to define the

victim, allowing for the comprehension of knowledge about understanding victims of crime to grow substantially. Subsequently, this school is criticized for being too narrow in its definition of the victim, in addition to encouraging a positivist paradigm (Dussich, Underwood & Peterson, 2003; Kirchhoff, 2005; Wemmers, 2009). In similar criticism, the focus is solely on crime victims, making this school superfluous (Kirchhoff, 2005). In other words, what criminology has already researched is what this school of victimology researches. This limited definition of the victim is completely different from the broad scope of the next school of victimology, general victimology.

1.4.1.2 General Victimology

General victimology stems from the famous speech given by Benjamin Mendelsohn in Bucharest, Romania in 1947. He demanded that victimology should include all victims, their suffering, and their treatment (Hoffman, 1992; Mendelsohn, 1963).
General victimology includes in its study the victims of:

- A criminal
- Oneself
- The social environment
- Technology
- The natural environment

This exceedingly broad scope to study the victim brought with it a tremendous amount of criticism. Highlighting these criticisms, victimologists hesitate to define their field so broadly (Kirchhoff, 2005). This argument would suggest that we are all victims of something or the other, in which case the category “victim” includes too

many things, thus making it empty because it is overpopulated and does not help explain the world better without such broad categories (Kirchhoff, 2005). Becoming a victim of oneself demonstrates this. Victimizations are the invasions into the self of the victim (Kirchhoff, 2005); therefore, it is illogical if the invasion into the self is done so by the individual himself or herself. As described in the previous sections, special victimology as a school of study in victimology is too restrictive in its definition of the victim, and general victimology incorporates too broad a scope of what constitutes a victim. What is needed is a balance in which the needs of both are accommodated (victimology of human rights violations including crime).

1.4.1.3 Victimology of Human Rights Violations Including Crime

Victimology as a science in the later half of the 20th century turned its focus to human rights violations. The first victimologists to combine human rights violations (independently of each other) with victimology were Robert Elias (1986), Paul Separovic (1985), and Elias Neuman (1984). The concept of human rights relates to the idea that human beings have universal human rights, or status, regardless of legal jurisdiction or other localizing factors such as ethnicity, nationality, and gender. These rights are found in the United Nations Universal Declaration of Human Rights (United Nations, 1948), which is based on inherent human dignity, retaining their universal and inalienable character. The concept and validity of human rights are still contested issues in philosophical and political science. Human rights are legally defined in various international laws, covenants, and domestic laws of many states. The elementary basic human rights are found in Article 3 of the United Nations Human Rights Declaration (United Nations 1948), which stipulates that life, liberty, and security of persons should be guaranteed. If any one of these three elements is

violated, victimization occurs in the sense of victimology (Barkhuizen, 2007; Kirchhoff, 2005).

Consequently, this study has no need to resolve the dissension among the schools of victimology. What is required, however, is to indicate how this study fits within the purview of victimology:

1. The victimization researched is caused by crime (Section 1 of the Criminal Procedure Act 51 of 1977, aggravating circumstances in the context of robbery);
2. The victimization is man-made; and
3. All those who are victimized by carjacking have the right to be free of such victimizations.

Therefore, it is demonstratively apparent that this study falls within the purview of victimology.

1.5 Chapter Outline

This dissertation uses the following format. **Chapter 1** has introduced the problem of carjacking victimization in South Africa and discussed the rationale for a study on those victimized. In addition, it has detailed the focus and aims of the study. **Chapter 2** deals specifically with the theoretical foundation utilized in this study. In **Chapter 3** the research method, hypotheses, instrument (questionnaire), and sampling method used in this study to collect and analyze the data are discussed. **Chapter 4** presents the results of the collected data. **Chapter 5** provides an analysis of the extent to which the hypotheses were answered, recommendations for further research, and the conclusions of this research.

1.6 Summary

Carjacking is a consequential victimization in South Africa. However, the extent to which this victimization continues to pervade this society stands in contrast to the available literature on those who suffer its consequences. The existing information on carjacking victims is almost 15 years old and derived from secondary sources. Cogently argued, information gleaned from secondary sources can, at best, provide limited information about victims. No study in South Africa, dealing directly with those victimized, has comprehensively explored the impacts of carjacking victimization. Therefore, to counteract the dearth of information, this study uses a 'victim's victimology' approach to victimologically explore the consequences of carjacking in South Africa. The aims of this study are to collect up-to-date information on those victimized, detail the psychological damage they experience (stress and anger), and better understand the behavioral changes victims make in reaction to this victimization.

CHAPTER 2

THEORETICAL PERSPECTIVE

Victimology as an independent science in the past has been criticized and quoted as being nothing more than a 'hodgepodge of ideas, interests, ideologies, and research methods' (Cressey, 1982, p. 504; 1992, p. 57). These criticisms, however, have been disproved. Victimology has grown in strength as a scientific discipline, developing a collection of knowledge by way of theoretical and methodological accuracy (see Davis & Snyman, 2004; Jerin, 2004; Kirchhoff, 2010). Nonetheless, in discussions which differentiate victimology from criminology, Groenhuijsen (2009, p. 327) has posited that a 'differentiating victimology' has been mostly unfulfilled. This argument is most prominent in the study of crime victims, where the primary criticism to victimology is its lacking of a theoretical identity (Cressey, 1992; Groenhuijsen, 2009; Mawby & Walklate, 1994). This observation does have an element of truth in it, since the theoretical postulations used in the study of crime victims are in essence criminological, not victimological. Saponaro (2013, p. 12) reaffirms this statement: 'Theoretical approaches and perspectives in criminology have just been reversely applied to the [study of the crime] victim'.

The theories and perspectives we find today in victimology textbooks, which include a wide range of causal explanations for variations in the risk of victimization and the victimization of specific groups of people, are also found in criminological textbooks. This is because they are criminological theories. These causal explanations are 1) routine activities and lifestyle-exposure theory, 2) the opportunity model, 3) the differential risk model of criminal victimization. 4) extended low self-control theory,

and 5) extended control balance theory. These theories, despite being criminological, are used and referred to as the traditional theories of victimization in victimology.

This chapter addresses the question: Are the theories traditionally dealt with in textbooks of victimology relevant for this study? These theories are described and discussed, with reasons given as to why they are not relevant for this study and, in fact, not for victimology. The chapter then details the victimological theory: Victimizations are Invasions into the Self of the Victim. This theory provides an explanation of the consequences of victimization suffered by victims—in this study, those victimized by carjacking in South Africa. Applying such a framework further differentiates victimology from criminology in studying crime victims.

2.1 Traditional Theories of Victimization

Before attempting to answer the question set out for this section, whether the theories traditionally dealt with in textbooks of victimology are relevant to this study, a more poignant question needs to be asked first: What is victimology? This question is critical in the 'search for wisdom and truth for victims' (Kirchhoff, 2013, p. vii). Even if seasoned professionals believe this question to be no longer important, or if an all-encompassing answer to the question is no longer possible, it must still be asked (Kirchhoff, 2013).

Asking and answering this question provide the theoretical grounding for this study and distinguish its primary objective: not to determine why this victimization takes place but instead to determine what the consequences of this victimization are. Thus, to recapitulate, victimology is the scientific study of victims of human rights violations (including crime), of victimizations, and of the reactions to both. It stands in complete contrast to criminology, which is the scientific approach to studying

criminal behavior and includes within its scope the process of making laws, breaking laws, and reacting towards those breaking of laws (Sutherland, Cressey & Luckenbill, 1992, p. 3). To be clear, criminology wants to understand why the victimization happens, who commits the victimization, and what solutions help prevent the victimization from reoccurring. It has no intention of understanding what the impact of the victimization is for the victim; in other words, what does the victim experience after victimization? This is exactly what victimology does.

Understanding the marked differences between the two sciences begins to answer the question of this section. However, a brief history of the emergence and analysis of traditional theories in textbooks of victimology will fully demonstrate why they do not actually belong to this science and, more importantly, are not used in this study.

To begin, the history and emergence of traditional theories in victimology are, according to Saponaro (2013) and Wilcox[6] (2010), the result of a variety of paradigm shifts,[7] along with social and political movements that occurred during the 1960s and 1970s. During this period, new sources of information regarding the limitations of data compiled from police reports surfaced. Realizing these limitations, a new approach to collecting data on victimization was developed. This approach entailed collecting large amounts of information through large surveys of the public on victimization (van Kesteren & van Dijk, 2010). Thus, surveys such as the National Crime Victim Survey (NCVS), the British Crime Survey (BCS), and the International Crime Victim Survey (ICVS) were developed and conducted on a regular basis (see

[6] Armando Saponaro and Pamela Wilcox are among many who write about the theories on victimization in victimology. For more literature on the theories of victimization, turn to Ezzat Fattah (2000), Andrew Karmen (2010), and Rob Mawby & Sandra Walklate (1994).

[7] Thomas Kuhn (1962, pp. 17-18), in *The Structure of Scientific Revolutions,* wrote that intellectual and scientific advances consist of the displacement of one paradigm, which has become increasingly incapable of explaining new or newly discovered facts, by a new paradigm, which does account for those facts in a more satisfactory fashion.

van Dijk, van Kesteren, & Smit, 2008). In comparison to police reports, these surveys allow researchers to estimate more accurately the incidence and generality of victimization in society. These surveys enabled measuring between reported and unreported incidences of victimization (van Dijk et al., 2008). The abundance of data these surveys collected on victims, along with a change towards a victim-oriented criminal justice system, was an ideal situation for the emergence of various theoretical perspectives on victimization to develop (Saponaro, 2013; Wilcox, 2010). Wilcox (2010) affirms that a wide range of causal influences from routine daily activities and lifestyles, to interpersonal dynamics, to broad-based social inequalities derived from this data was used to develop theoretical perspectives on victimization (see table below).

Table 1. Traditional Theoretical Perspectives in Victimology

Traditional Theoretical Perspectives in Victimology	
Theory	Author/s
Lifestyle-Exposure Theory	Hindelang, Gottfredson & Garofalo (1978)
Routine Activity Theory	Cohen & Felson (1979)
The Opportunity Model	Cohen, Kleugel & Land (1981)
The Differential Risk Model of Criminal Victimization	Fattah (1991)
Extended Low Self-Control Theory	Schreck (1999)
Extended Control Balance Theory	Piquero & Hickman (2003)

The point of analyzing these theories is not to provide a complete description of the perspectives or evaluate their empirical validity. It is instead to highlight their main suppositions and discuss why they are not relevant to the argument at hand.

The theories of Lifestyle-Exposure Theory (Hindelang et al., 1978), Routine Activity Theory (Cohen & Felson, 1979), and the Opportunity Model (Cohen et al., 1981) can be collapsed into one analysis. Due to their similarity, they are often presented in victimology and criminology textbooks as one theory; therefore, the same is done here (see Akers & Sellers, 2009; Doerner & Lab, 2012; Karmen, 2010; Mawby & Walklate, 1994; Walsh & Ellis, 2007).

Lifestyle and Routine Activities

The Lifestyle-Exposure Theory (Hindelang et al., 1978), Routine Activity Theory (Cohen & Felson, 1979), and the Opportunity Model (Cohen et al., 1981) are theoretical explanations in understanding the social situations in which personal or property victimizations are believed to occur. The theories do not attempt to explain the motivation of offenders, but rather the convergence in time and space between the perpetrator and the victim and their influences on victimization (Gottfredson, 1981).

According to Hindelang et al. (1978, p. 241) and the Lifestyle-Exposure theory, 'lifestyle refers to routine daily activities, both vocational (work, school, keeping house, etc) and leisure'. It is believed that the demographics of age, gender, race, marital status, and income greatly influence the lifestyle of individuals. It is postulated that the variance in lifestyle of the different demographic groups increases the probability of victimization. They influence the prospect of an individual being in a certain location, at a particular time, and coming into contact with a potential perpetrator (Hindelang et al., 1978).

Similar to the lifestyle exposure theory is the routine activity theory. This theoretical perspective argues not why certain demographics are susceptible to criminal victimization, but rather why daily routine activities create the opportunity for criminal victimization (Cohen & Felson, 1979). The propositions of this theory are

that for victimization to take place, there must be three elements: 1) a motivated perpetrator/s; 2) suitable targets (victim); and 3) the absence of a capable guardian at a given place and time (Cohen & Felson, 1979, p. 592). The protagonists of this theory assert that the absence of any of the three elements is sufficient to result in the failure of the successful completion and/or the committing of a victimization, particularly direct personal victimization. However, if the latter two elements (a suitable target (victim) and absence of a capable guardian) are combined, it may lead to an increase in victimization, without an increase in the necessary conditions that motivate perpetrators to become involved (Cohen & Felson, 1979, p. 589).

Increasingly similar to both theories is the Opportunity Model. Cohen et al. (1981) developed this theory to better expound upon predatory victimization. The Opportunity Model takes from the two theories described previously, expands on them, and identifies further factors that may play an integral role in victimization. These factors are exposure, guardianship, proximity of potential perpetrators, attractiveness of potential targets, and properties of specific offences. The inclusion of these factors relocates the prominence of the theory from the characteristics of the perpetrator to the characteristics of the situation (Saponaro, 2013). In reality, this theory is the same as the two already mentioned and does no better in explaining why victimization occurs.

All three of the theories explained in short have been used to describe the variables, which are said to influence the potential probability of victimization (Laub, 1990; Mawby & Walklate, 1994). Thus, what these theories ultimately try to explain is why victimization happens. But in reference to differentiating between victimology and criminology argued earlier, this is not what victimology does or attempts to achieve. Instead, this is exactly what criminology does. These theories do not explain

the impact of victimization. They do not aid in understanding what the victim experiences. Lifestyle and Routine Activities are therefore not suitable theories for this study and victimology.

The Differential Risk Model of Criminal Victimization

In an attempt to eradicate the limitations of the Lifestyle and Routine Activities theory, Ezzat Fattah developed the Differential Risk Model of Criminal Victimization in 1991. The intention of this theoretical perspective is to focus on not only the factors of lifestyle or the demographics of victims in criminal victimization but also on all relevant factors. Therefore, Fattah developed 'a comprehensive scheme' consisting of 10 categories, which he argued influence the potential of being criminally victimized (Fattah, 2000, pp. 64-66):

1. Opportunities are linked to the characteristics of potential targets (persons, households, businesses) and the activities and behavior of those targets;
2. Risk factors are the socio-demographic characteristics such as age, gender, area of residence, and absence of guardianship;
3. Motivated offender: Perpetrators, even non-professional ones, do not choose their victims/targets at random but select them according to specific criteria;
4. Exposure to potential offenders and high-risk situations and environments enhance the risk of criminal victimization;
5. Associations: The homogeneity of the victim and perpetrator populations suggests that differential associations are as important to criminal victimization as they are to crime and delinquency. Therefore, individuals who are in close, social, and professional contact with potential perpetrators have a greater chance of being victimized than those who are not;

6. Dangerous times and dangerous places: Risks of criminal victimization are not evenly distributed in time and space—there are dangerous times such as evenings, early hours, and on weekends. There are also dangerous places such as places of public entertainment, where the risks of becoming a victim are higher than at work or at home;
7. Dangerous behaviors: Certain behaviors, such as provocation, increase the risk of violent victimization while other behaviors such as negligence and carelessness enhance the chances of property victimization. Other dangerous behaviors place those engaging in them in dangerous situations where the ability to defend and protect themselves against attack is greatly reduced;
8. High-risk activities increase the potential for victimization. Among such activities is the mutual pursuit of fun, as well as deviant and illegal activities. It is also well known that certain occupations such as prostitution carry with them a higher than average potential for criminal victimization;
9. Defensive/avoidance behaviors: As many risks of criminal victimization could be easily avoided, people's attitudes to those risks can influence their chance of being victimized. It goes without saying that risk takers are bound to be victimized more often than risk avoiders; and
10. Structural/cultural proneness: A positive correlation between powerlessness, deprivation, and the frequency of criminal victimization exists. Cultural stigmatization and marginalization also enhances the risk of criminal victimization by designating certain groups as "fair game" or as culturally legitimate victims.

After listing these 10 categories of the Differential Risk Model of Criminal Victimization, there is no doubt that Fattah has expanded on the previous models. However, the model is in truth not very different from the Lifestyle and Routine Activities Theory. Like its contributors, it tends to focus on a narrow and conventional understanding of criminal victimization (Mawby & Walklate, 1994; Spalek, 2006). Moreover, this model comes "dangerously" close to placing the blame of the victimization on the victim. Walklate (2003) is in accordance with this statement when she adds that these models seem to have a structural flaw, indicating that the victim has in some way assisted in his or her victimization. Subsequent to this criticism is that this model, like its contributors, is a criminological model. It simply tries to explain the context in which victimization may occur. This model is neither victimological nor suitable for this study.

Extended Low Self-Control Theory

Taking from the General Theory of Crime by Gottfredson and Hirschi (1990), Christopher J. Schreck, in 1999, developed the Extended Low Self-Control Theory. Given that there are 'parallels between victimization and offending [which] raise the possibility that a common underlying cause can influence the likelihood of both becoming an offender and a victim, Schreck (1999, pp. 633-634) postulates that low self-control also explains the increase in the risk of criminal victimization'.

The principle argument in the General Theory of Crime is that those with low self-control have a higher propensity to commit crime (Gottfredson & Herschi, 1990, p. 89). Self-control theory bases its underlying assumption on the premise that behavior is motivated by the benefits and costs of the action. Saponaro (2013) points out that it does seem strange that this theory would also be used to explain criminal

victimization. This is because victimization holds no benefit, only costs and consequences for the victim. However, what Schreck (1999) takes from the General Theory of Crime is that there is a point made about accident proneness and that the possibility that low self-control behavior (the tendency to need immediate, easy, certain short-term satisfaction of desires) increases the risk of accidents (i.e., drinking influences a person's coordination and decision making, possibly resulting in a mishap), potentially increasing one's risk of victimization (Saponaro, 2013, p. 24). Schreck (1999) thus transforms the General Theory of Crime into one of vulnerability to crime. People who engage in low self-control behavior have an increased risk of both property and personal victimization.

It is difficult to overlook the fact that much blame is placed on the victim in this theory. Despite the author (Schreck, 1999) fervently arguing that he and his theory have no intention of doing so, it is hard to read it any other way from a victimological standpoint. Moreover, this theory does not assist in achieving victimology's goals. It only adds to the copious amount of criminological literature already explaining why crime happens. The Extended Low Self-Control Theory is not suited to this study and victimology.

Extended Control Balance Theory

The original Control Balance Theory tries to explain all criminal behavior; which is 'any behavior that the majority of a given group regard as unacceptable or that typically evokes a collective response of a negative type' (Tittle, 1995, p. 124). According to Tittle (1995), two elements belong to the concept of control: 1) the degree of control an individual or group is subjected to; and 2) the degree of control an individual or group can exercise over others. Being controlled and having the

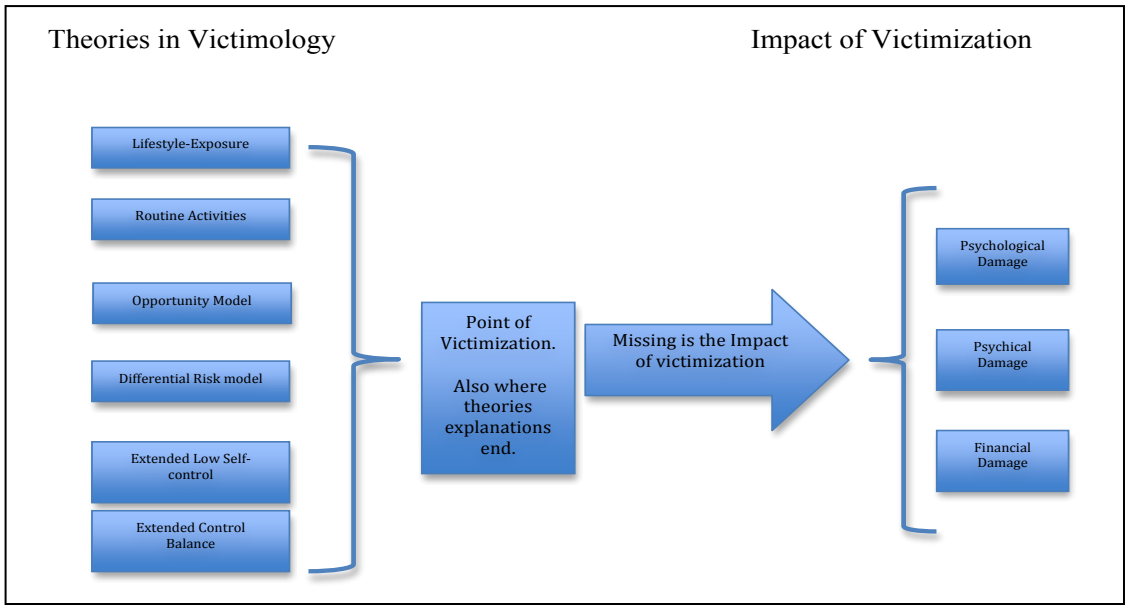
ability to control are continuous variables. Thus, it is argued that if the control ratio is balanced, then it is likely that an individual or group will conform to society's norms. If unbalanced, an individual or group may have a higher propensity to commit criminal behavior (Akers & Sellers, 2009; Saponaro, 2013; Tittle, 1995).

Piquero and Hickman (2003), in developing their theory of Extended Control Balance, saw that control imbalances are positively related to the probability of victimization. They reason that should there be a deficit in the control ratio, it is likely that an individual may become weak due to his or her inability to exercise control, which will make the individual passive, submissive, and vulnerable to victimization. Conversely, when there is a surplus in the control ratio, individuals are too at risk of victimization. The impunity, invulnerability, and "untouchability" these individuals exhibit may lead to victimization. Piquero and Hickman (2003) qualify this by arguing that overconfident individuals may seek out more risky situations to put themselves in, as they attempt to extend their control.

Like the other theories already discussed, this theory invariably places a tremendous amount of accountability on the victim for his or her victimization, which only makes it easier to discredit it as a theoretical explanation in victimology. Additionally, the theory, like those already discussed, explains why victimization may occur. It gives no indication of what damages the victims suffer or what can be done to help them. It does not conform or aid in the tasks victimology sets out to achieve. The Extended Control Balance Theory is not suitable for this study or victimology.

Analyzing these theories has revealed that they all do the same thing—explain the context in which victimization takes place. More concretely, they attempt to explain to whom, what, and where victimization may take place. What they do not explain is the impact of victimization. This is illustrated in Figure 2 below.

Figure 2. Current Theoretical Explanations in Victimology



The line between criminology and victimology can be thin. Nonetheless, if victimology is to be an independent science, it must be clear in what it aspires to achieve. It needs to 'transcend the "old" constraints of criminology' (Elias, 1986, p. 195). Using theories that explain the context, in which victimization takes place, does not transcend these constraints. It neglects to explain the psychological, physical, and financial damages victims suffer. Figure 2 provides an illustrative image of this argument. If we use the definition of victimology in this dissertation as our guide, then we can clearly see that the major theories in victimology do not help us in achieving our goal. For this, we turn to the next theory.

2.2 Victimizations Are Invasions into the Self of the Victim

"Victimizations are invasions into the self of the victim" (Kirchhoff, 2005). This theory aids in explaining the victim's experiences (suffering) from the point of victimization onwards. It is the most suitable for achieving the objectives of this study—to better understand the consequences of carjacking victimization.

Victimization is the harm and suffering inflicted on an individual/s through the direct action of another person or persons (Janoff-Bulman, 1992, p. 76). It is often multifaceted and severe. Different types of victimization, including theft, robbery, rape, and physical and sexual assault, all affect victims differently. Victimology typically focuses on three dimensions of harm resulting from victimization: psychological, physical, and financial. Harm can be substituted for damage. The effects of these damages can be immediate or linger over weeks, months, or years. It comes down to a question of interpretation and meaning—what does the event mean to the victim? (Janoff-Bulman). To explain this, Kirchhoff (2005) draws the analogy between victimization and the peeling of an onion. A person, like an onion, is multilayered. Each has a hard outer layer that protects its center. For the victim, this outer layer protects the center of the personality, the self of the victim. Victimizations are therefore the "needles" or "swords" that cut through the layers penetrating the self of the victim.

The use of such an allegory provides a tool for rank ordering victimization according to its severity (Kirchhoff, 2005, p. 58). Kirchhoff demonstrates this with three examples (Kirchhoff, 2005, p. 58):

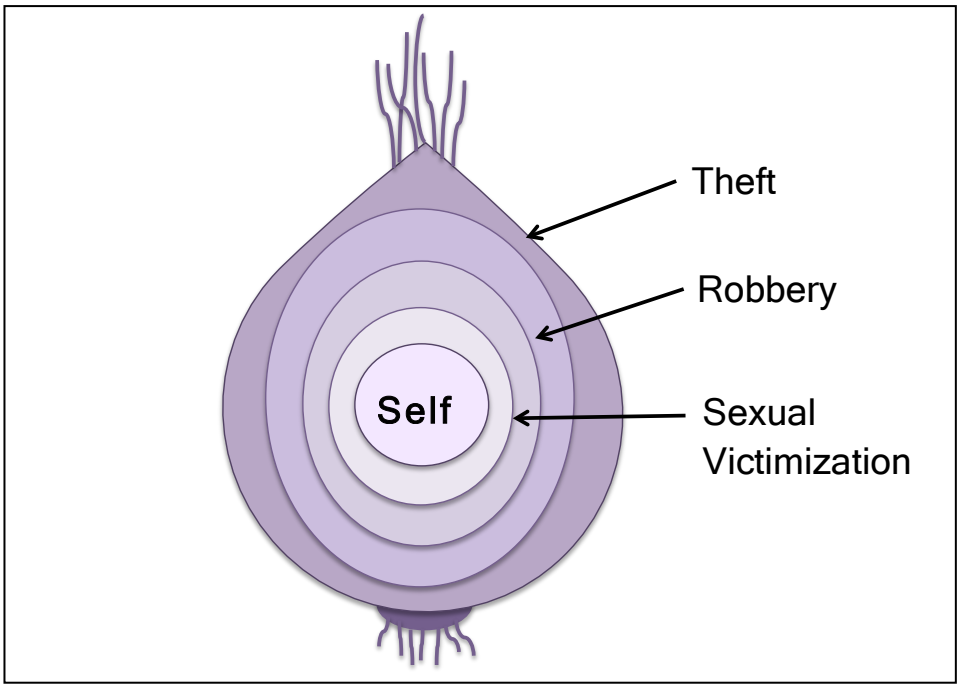
1. On the surface are victimizations in which an item of minor value and easily replaceable is taken from the victim (e.g., a pen). Of course, the stealing of a pen affects the victim financially because he or she will have to replace it. It is also an inconvenience, as it takes time to go to the shop to replace. But on the whole, it does not affect the self much and is quickly forgotten about. However, if the item is emotionally loaded (e.g., the pen was given as a university graduation present), this is different. The loss cuts more deeply

through the layers of the self. It does not just affect the victim materially but also emotionally.

2. A more severe victimization would be burglary. Not only are material items taken from the victim, but the security and sanctity of a person's home are invaded. This type of victimization cuts even deeper through the layers of the victim, who suffers financial losses and has feelings of safety and security shattered (Janoff-Bulman, 1992).
3. Even more devastating, for example, would be physical and/or sexual victimizations. People are continuously sending and receiving sexual messages but prefer to think that they only send and receive these messages when they want to. However, this is exactly where sexual victimization grabs the person—in a state of unexpectedness. Without protection, the self experiences a sudden exposure to unwanted invasions. The effect of these invasions is often inconceivable. The victim cannot believe that someone could attack or invade him or her sexually at a whim. In sexual victimizations, as with physical victimizations, the victim's safety and security is further shattered by the physical contact and injuries suffered. These victimizations cut deep into the self of the victim.

Figure 3. Victimizations Are Invasions into the Self of the Victim

(Kirchhoff, 2005)



Victimizations destroy the idea that people live in a secure world, one in which they can live a self-determined and relatively independent life. Victimizations remove the protective shields that people have around them (Janoff-Bulman, 1992; Kirchhoff, 2005).

Kirchhoff (2005), turning to the reaction of these invasions, argues that it is evident they cause crises. 'Crises are real or imagined situations of instability and insecurity' (Kirchhoff, 2005, pp.58-59). The insecurity results from the fact that normal ways for dealing with such crisis for the victim no longer function. This realization causes the insecurity to increase and the crisis to intensify. The typical crisis reactions victims will experience include shock, disbelief, shame, stress, anger, helplessness, isolation, and distrust. These feelings often cause chaos and confusion for the victim. The victim may also experience feelings of guilt. Of course, not all victims have these reactions; the reactions differ greatly in intensity, visibility, and

duration. These crises then call for crisis intervention. Most often constructive solutions for a crisis are not available to the confused and traumatized victim. It is often the case that these victims need help provided from the "outside" to end or at least minimize the destructive consequences of their victimization (Kirchhoff, 2005).

In victimological literature, the severity between short and long-term damages among different victims is acknowledged but is insufficiently explored and addressed. Instead, a tremendous amount of literature on the experiences of victims is homogenized (Spalek, 2006). If the diversity among victims' experiences is to be pursued, it is important to explore the preexisting literature on victims' experiences but not to use it as a generalization to all victims. The existing literature of carjacking victims does exactly this (see Chapter 1). It uses generalized information or information collected from secondary sources to detail the victims' experiences. This study instead utilizes the preexisting literature on the psychological, physical, and financial damages of victims as the theoretical grounding to explain what victims of carjacking may experience. By collecting information directly from victims of carjacking, we can test whether carjacking victims have similar experiences. Either way, it provides an opportunity for growing knowledge of victims' experiences and proving how carjacking victimizations are invasions into the self. The literature on the psychological, physical, and financial damages is presented next.

Psychological Damage

The psychological damage of criminal victimization is considered to be the most serious for victims (Janoff-Bulman, 1985; 1992; Kirchhoff, 2005). Research into criminal victimization shows that victims suffer from some degree of stress, but only in the most severe cases enough to meet the criteria to be diagnosed with Post-Traumatic Stress Disorder (PTSD) (Andrews et al., 2000; 2007; Bisson, 2007; Brewin et al., 2003; 1999; Denkers, 1996; Indermaur, 1995; Kilpatrick et al., 2003; Maguire, 1982; Winkel; 2007). This study is interested in how far the victims of carjacking experience stress. It does not specifically measure to see if carjacking victims experience enough stress to be diagnosed with PTSD.

Stress is the process by which the environmental demands tax or exceed the adaptive capacities of the individual. Stress responses may elicit either eustress (stress resulting from a positive stimuli) or distress (stress resulting from a negative stimuli) (Baum, Gatchel, & Krantz, 1997; Horowitz, 2001; Janoff-Bulman, 1992). Carjacking is a negative stimulus; therefore its victims experience distress. A negative stimulus like carjacking may also be referred to as a traumatic event. This is an event in which people experience psychological distress and/or physical harm. It is also an event that is perceived, experienced, and conceived to be a threat to one's physical integrity (American Psychiatric Association [APA], 2013). Individual variations occur in the abilities of individuals to deal with the stress from criminal victimization. However, the levels of stress after victimization are argued to vary according to the level of trauma experienced (Brewin et al., 2002; 2003; Janoff-Bulman, 1992; Roth et al., 1997; Wohlfharth, Winkel, & Van den Brink, 2002). Prior victimization has also been found to be a factor in the levels of stress victims experience (Breslau, Peterson, & Shultz, 2008; Cougle, Resnick, & Kilpatrick, 2009).

Given the frequency of carjacking in South Africa, it is likely that a person who has been carjacked more than once experiences higher levels of stress than those victimized once.

Additionally, studies show that there are differences in the levels of stress experienced between gender and victimization. It is suggested that when males and females are compared within the same study, females are at a greater risk of suffering higher levels of stress (Brewin, Andrews, & Valentine, 2000; Norris & Krzysztof, 1991; Wolfe & Kimberling, 1997). This is completely unknown for victims of carjacking making these theoretical aspects relevant for this study.

Coupled with stress is the psychological reaction of anger. 'Anger is an emotional state that may range in intensity from mild irritation to intense fury and rage. Like stress, anger is a (physiological and psychological) response to a perceived threat to the self or important others (Clausen, 2007, p. vii). This has been supported by previous research into anger among combat veterans, former political prisoners, and victims of violent crime (Chemtob, Hamada, Roitblat, & Muraoka, 1994; Novaco & Chemtob, 2002; Orth, Cahill, Foa, & Maercker, 2008; Orth & Maecker, 2009; Winkel, 2007). However, what has been insufficiently explored is at which targets anger is directed (Orth & Maecker, 2009).

According to Orth and Maecker (2009), it is important to assess the level of anger for various target categories. They argue that this can be done specifically by using a sample of people victimized by crime. This line of reasoning was developed from the idea that several targets may be the focus of anger following a traumatic event (Horowitz, 2001). Targets of anger may be the perpetrator or individuals perceived to be held responsible for an accident or disaster; anger at institutions that did not prevent the traumatic event; anger at third persons who had the luck not to

experience the traumatic event; and anger at one's own vulnerability or at one's own behavior for allowing the traumatic event to happen (Horowitz, 2001; Orth & Maecker, 2009). It is also suggested that the desire for revenge might be an important category in levels of anger of victims (Goenjian et al., 2001; Orth, Montada, & Maercker, 2006). Exploring anger of carjacking victims is argued to contribute to the victimological knowledge on the psychological damage these victims experience.

People vary widely in the degrees to which they suffer stress and anger after victimization. It has been found that psychological intervention after victimization is important in helping the victims deal with their traumatic experience (Foa et al., 1991; Kushner et al., 1993; McNally, Bryant, & Ehlers, 2003; Milton & Alison, 1990). Victim support services and trauma centers for crime victims in South Africa have improved significantly since 1994 (Nel & van Wyk, 2013). However, the lack of trained personal and access to victim support services is argued to still be a reality for most victims in the country (Nel & van Wyk, 2013). As so many carjackings take place each year, it is not known if these victims receive counseling, whether or not they receive it from victim support services or professionals, or if they did not receive counseling, whether they would have liked to. This is an important theoretical concept to apply to this study on carjacking victims.

Furthermore, victimizing events often challenge the core assumptions people have of the world (Janoff-Bulman, 1992). Victims often have difficulty in assimilating their traumatic experience into some kind of meaningful context (Barkhuizen, 2007; Janoff-Bulman, 1992). This is the result of fear (Green & Kane, 2009; Norris & Krzysztof, 1991; Janoff-Bulman & Frieze, 1983). In order to deal with fear, victims may make behavioral changes like taking precautions following victimization. They do this for two reasons: 1) they fear re-victimization and want to

avoid it and 2) it helps the victims to regain a sense of safety and security over their lives (Janoff-Bulman, 1992; Spalek, 2006). Precaution taking is a behavioral aspect directly linked to the psychological impact of victimization.

Physical Damage

The physical consequences of victimization can extend from minor injuries to severe internal and external injuries (Stanko & Hobdell, 1993). Detailed in the definition of carjacking is the potential for physical violence to be used upon the victim. The criminological literature on carjacking has indicated that perpetrators commit this victimization with a potentially lethal weapon, prepared to use any violence necessary to successfully acquire the vehicle (Buys, 2003; Davis, 1999, 2002, 2003; Zinn, 2003, 2013). This draws attention to the potential harm that may be vested upon these victims. Many victims may therefore require medical treatment. Depending on the severity of the injury, victims may receive medical attention at home; at hospital; at doctors' consulting rooms; or from paramedics at the scene of the incident (Davis, 1999; Indermaur, 1995; James & Barkhuizen, 2013; Maguire, 1982; Zinn, 2013). Understanding the types of injuries these victims suffer allows us to better understand the invasion into the self of the victim. Given that victimization is a damaging event, Kirchhoff (2005) notes that the psychological damage goes hand in hand with the severity of physical damage.

Financial Damage

Victims may incur financial losses as a result of victimization. This has been well documented in the victimological literature (Elias, 1986; Kirchhoff, 2005, 2012; Maguire, 1987; Mawby & Walklate, 1994; Spalek, 2006).

Various types of financial losses are associated with criminal victimization, some easier to measure than others. These are known as direct and indirect costs (Dolan, Loomes, Peasgood, & Tsuchiya, 2005). Direct costs are those financial resources directly lost as a result of the victimization (i.e., cost of replacing the vehicle and other material items). Indirect costs are those that relate to the loss of earnings and productivity from victims taking time off of work to either replace their vehicle or recover from injuries (Dolan et al., 2005). In pursuing this research, further information on the financial cost of this victimization is gained.

2.3 Summary

In this study the victimological theory of **Victimizations Are Invasions into the Self of the Victim** is used to explain the impact of carjacking victimization. Victimology is the scientific study of victims of human rights violations (including crime), of victimizations, and of the reactions to both. Using this definition as the guiding principle, the chapter has detailed the theories traditionally dealt with in victimology. Moreover, it has cogently argued why these theories are not suitable for this study or, in fact, the science. The main assertion is that these theories are criminological. They explain why crime happens but do not assist in achieving the goal of victimology. If victimology is to better understand the impact of victimization, it must transcend these old constraints of criminology.

The theory of Victimizations Are Invasions into the Self of the Victim helps in achieving the focus and aims of this study. It postulates that victimization is multifaceted and in some cases severe, and that various types of victimizations affect victims differently. Three types of damages happen: psychological, physical, and financial. The effects of these damages can be immediate or linger over weeks,

months, or years (Kirchhoff, 2005). Kirchhoff explains the analogy between victimization and the peeling of an onion. A person, like an onion, is multilayered. Each has a hard outer layer that protects its center. For the victim, this outer layer protects the center of the personality, the self of the victim. Victimizations are the "needles" or "swords" that cut through the layers penetrating the self of the victim (Kirchhoff, 2005).

To better understand these invasions into the self of the victim, research must be done directly with those who suffer—the victims. It is found too often in the victimological literature that the severity of the experiences of victims is homogenized (Spalek, 2006). No doubt, it is important to understand the preexisting literature on victims' experiences, but we cannot generalize these experiences to all victims.

Therefore, the existing literature on these three damages or experiences is used as the theoretical grounding to test whether or not carjacking victims have similar invasions into the self. The existing literature on the psychological damage informs us that this damage is considered to be the most serious for victims (Janoff-Bulman, 1985; 1992; Kirchhoff, 2005). Most research into victims of criminal victimization states that victims suffer some degree of stress; this has never been tested with victims of carjacking. Existing information on the physical impact explains that injuries from victimization can extend from minor injuries to severe internal and external injuries (Stanko & Hobdell, 1993). Carjacking is said to be a violent victimization (Davis, 2001; Zinn, 2002; 2013), although the only information on this damage comes from secondary sources. Therefore, it is necessary to collect information directly from these victims. The financial damages victims suffer are broken down into direct and indirect costs. Carjacking victimization is a pervasive occurrence in South Africa. Better

understanding how this victimization is an invasion into the self of the victim means that we can find ways to help these confused and traumatized victims in their time of need. The following research method chapter reveals how this study progressed.

CHAPTER 3

RESEARCH METHOD

This chapter addresses the research method employed to successfully complete the study. It details the research history of the study, its hypotheses, the type of method applied, the sample, and the data analysis. The hypotheses developed were checked using a quantitative research method. To understand how the hypotheses were constructed, a brief description of the research history of this study is presented.

3.1 Research History

Research done internationally and in South Africa on carjacking victimization is scarce. As stated in Chapter 1, the existing literature available on carjacking victims is predominantly derived from secondary sources. The most pertinent information from victims about the invasions into the self they suffer must come directly from those who suffered. This is what is known as a 'victim's victimology' (Ben-David, 2000, p. 56). Due to lack of information on victims of carjacking, an introductory set of hypotheses was based on 1) the theoretical constructs (see Chapter 2), 2) what is known about the public, and 3) what has been previously documented in the literature on carjacking victims. These were then set into a preliminary questionnaire (see section on instrument) to be tested in a pilot.

3.2 Pilot Study

The pilot study was conducted in August 2013. Its purpose was to establish whether the introductory hypotheses generated, along with the preliminary questionnaire used to collect data, were sufficiently clear or raised questions and/or problems for the

respondents. Specific challenges to conducting research in South Africa are addressed first.

3.2.1 Challenges to the Study

According to Davis and Snyman (2004), South Africa has 11 official languages. Although English is widely spoken and used for legislation and commerce, people in rural areas often cannot speak English. Infrastructure constraints also affect research, which makes accessibility to the wider population difficult. High levels of illiteracy also contribute to the challenges of conducting victimological research in South Africa (Davis & Snyman, 2004, p. 120).

These challenges did not affect this research, however, because in order to obtain a driver's license in South Africa, one must complete a written examination in English and take a practical test. Moreover, all road signs in the country are displayed in English. This makes literacy in English compulsory for driving and eliminates it as a challenge to this research. The challenge of infrastructure that Davis and Snyman allude to is a challenge that has largely been overcome in South Africa. The advancement in technology, along with the affordable accessibility to mobile phones and the Internet, have made the infrastructure argument not applicable.

One challenge that does persist in victimological research but was not mentioned by Davis and Snyman is the access to victims. This is well documented in victimological research on violent victimizations (Barkhuizen, 2007a; Frank & Stewart, 1984; Steyn, 2013). To address this challenge and for the pilot study and subsequently the main study to proceed, four possible ways were proposed to obtain access to victims of carjacking:

1. To approach national insurance companies and request assistance in gaining access to a database of victims of carjacking. Motor vehicle insurance in South Africa has become an essential requirement when owning a vehicle. According to Arrive Alive (2013), the high risk of carjackings, vehicle theft, and accidents make the financial safeguards of an insurance policy crucial.

2. Request assistance from the SAPS. Following victimization, the most common course of action for victims to take is to report to the police (Mawby & Walklate, 1994). Official police statistics on carjacking in the country support this statement (SAPS, 2012). Subsequently, aiding the high rate of reported incidents to the police, victims need to file a report in order to claim from their insurance companies.

3. Request assistance from Victim Support South Africa and LifeLine South Africa, organizations located within various police stations across the country. They provide support to victims of crime and violence, offering counseling, and information on the criminal justice system. Victim Support South Africa and LifeLine South Africa additionally keep records to monitor their services provided to victims of crime (Faull & Mphuthing, 2009).

4. The snowball sampling method[8] is another way to gain access to victims of carjacking. One participant provides the researcher with the name of another potential participant, who in turn provides the name of another (Vogt, 1998). This method is used in response to overcoming problems associated with difficult-to-reach populations, such as victims of criminal

[8] See the snowball sampling method for a detailed description.

victimization (Faugier & Sargeant, 1997). In this case the researcher would use a network of victims of carjacking personally known to him and be provided with an ever-expanding set of potential participants.

3.2.2 Field Trip to Test Feasibility

To test the feasibility of the proposed ways of obtaining access to victims of carjacking, a 2-week (March 1–19, 2013) field trip to South Africa was conducted. Contact was made with several South African insurance companies. Additionally, request for assistance letters were sent by registered mail to the National Commissioner of the SAPS, Victim Support South Africa, and LifeLine South Africa.

Cooperation with insurance companies in gaining access to a database of victims was denied for two reasons. The first was that by sending clients this questionnaire, the insurance companies would be contravening the data protection laws, despite various solutions proposed by the researcher to avoid any such infringements. The second reason was that the contracts stipulate that the insurance company will not send any third-party advertisements to clients and this research fell under this category.

Regarding the request for assistance from the SAPA and victim assistance organizations, 4 months passed without a response. The timeliness in which a response may have been forthcoming from these organizations was of concern to the time frame of this study. Therefore, assistance and cooperation with access to a database of victims was not possible. The best way to proceed was by using a snowball sampling method.[9]

[9] See footnote 8.

3.2.3 Actions and Results of the Pilot Study

The pilot study then proceeded with a sample of $N = 10$ victims of carjacking known personally to the researcher. Each participant was mailed an invitation letter, a written oath (signed by the researcher), an informed consent form,[10] and a preliminary version of the questionnaire (see Appendix A). Upon completion, the participants were asked to use the prepaid posted envelope to mail the questionnaire back to the researcher, along with the signed informed consent form. The participants were then called and asked specific questions about the preliminary questionnaire (see Appendix B).

The researcher also decided to get further assistance on the design and structure of the questionnaire. The preliminary questionnaire was sent to the GESIS–Leibniz Institute for the Social Sciences (Germany). The institute assists social scientists by providing advice on the best methods currently available for conducting research and how to correctly design research projects.

From the pilot study results (including telephone interviews), the advice received from GESIS, and further discussion about the dissertation between the mentor (Professor Dr. Kirchhoff) and researcher; the following changes were made to the questionnaire:

1. The font was changed from "Times New Roman" to "MS Sans Serif" (suggested by GESIS as the best font). The font size was changed from 10 to 12. Each question response was given a "tick box" and provided with directional advice when necessary. Further aesthetic changes were made and are visible in the final questionnaire (see Appendix C).

[10] See section on ethical considerations for detailed description of the information each participant in the study received.

2. Added to question 15: *Did you report your incident to the police?* If Yes, what were the reasons you were satisfied? This was done to eliminate suggesting only negative responses towards the police, which may be considered a leading question.
3. In Section D: Psychological Aspect of the Incident, it was decided to include the TSQ again at the end of this section. This was done for the reason that the responses from the pilot study scored very high "within the first month" of the incident. It was therefore decided to include it again and ask the respondents if they still have these same reactions "now".
4. Finally, question 53 (originally question 52) was designed to ask the respondents what precautions they took before the incident, took directly after, and are taking today.

The pilot study demonstrated that the instrument was useful and that the results it yielded would aid in successfully achieving the study's objectives and answering its hypotheses.

3.3 Hypotheses

The hypotheses are divided into six categories:

1. Demographic hypotheses
2. Incident hypotheses
3. Physical damage hypotheses
4. Psychological damage hypotheses
5. Financial damage hypotheses
6. Behavioral changes hypotheses

In order for hypotheses to be either confirmed or falsified, it is important to define key terms used in the hypotheses (Popper, 2005). These terms are "majority" and "most". For the purpose of this study these terms are defined as follows:

Majority: is used to indicate seventy percent (70%) or more of the sample of victims

Most: is a term used in two contexts: 1) to indicate between fifty-one percent and sixty-nine percent (51%-69%) of the sample of victims; and 2) to indicate the highest percentage of victims in the sample (this only happens in hypothesis 4 and hypothesis 5. This is clearly indicated in the results chapter (Chapter 4, see pages 86-87) where the percentages are provided for both hypotheses)

3.3.1 Demographic Hypotheses

This study only uses the demographic variables of "age" and "gender". All other demographic variables, such as employment status, educational level, and religion, are not included. Of course, relationships can be constructed. For example, it is argued that better educated people cope better, meaning they should have less stress (Dussich, 1988). The purpose of this study is not to investigate the coping abilities of victims. Therefore, these variables do not add value to this study. Race/Ethnicity were also not included. The author believes that including the variable of race perpetuates differential thinking. Ethnology is an outmoded study, and there is no theoretical evidence to suggest that there is a differential impact between victimization and race.

The demographic variable of "age" presents the opportunity to explore whether victimization responses are equally distributed among different age groups. According to Mayer (2011), the majority of South Africa's labor market is between ages 36 and 55. This also means that people in this age group are likely to be in

vehicles more often than other age groups. Thus, for the purposes of this dissertation, hypothesis 1 is:

Hypothesis 1. Age: The majority of people victimized by carjacking are in the category "Middle aged: 36–55".

South Africa's population is approximately 52 million. Of this total, males make up 49% and females 51%. However, in the labor market males make up an overwhelming majority, more than 70% (Mayer, 2011). According to the criminological literature on carjacking, males are the preferred targets of perpetrators (Davis, 1999; Zinn, 2002; 2010; 2013). The reasons given for this preference are that women act erratically in stressful situations such as victimization, whereas men are believed to be calmer (Zinn, 2002). Perpetrators have also noted that it is easier to inflict violence upon a man versus a woman in order to successfully steal the vehicle (Zinn, 2002). In addition, men are thought to be the ones driving the vehicles most desired, making them the more desirable targets (Davis, 1999; Jabavu, 2011; Zinn, 2002; 2013). Therefore, it is important to test if males are more likely to be victimized than females, and how the experiences differ. For the study, hypothesis 2 is:

Hypothesis 2. Gender: Most of people victimized by carjacking are male.

Due to the fact that most information about carjacking victims comes from secondary sources (see Chapter 1), the next set of hypotheses was formulated to get direct information about the incident from the victims.

3.3.2 Incident Hypotheses

With the high amount of carjacking in the country, it is likely that an individual may have been victimized more than once meaning that this victimization may belong to

the group of repeat victimizations. By establishing such information, correlations can be tested to see if the psychological impact (stress and anger) is different in multiple victims or one-time victims. But since this information is not known, the researcher assumes the following:

Hypothesis 3. Majority of the victims will have only been victimized once by carjacking.

The framework for hypotheses 4, 5, and 6 are taken from the International Crime Victim Survey (ICVS) (van Dijk, van Kesteren & Smit, 2008) and existing literature on carjacking.

The literature on carjacking perpetrators suggests that location is an important element to consider before committing this victimization (Davis, 2003; Zinn 2002). Perpetrators have identified traffic lights and stop streets as preferable locations. They argue that at these locations the victims are forced to bring the vehicle to a stop, so they are able to take the victim by surprise. Moreover, perpetrators have said that the location of the victim's house is also desirable. It is thought that when victims arrive home from work, they are tired and not aware of their surroundings, making them easier targets (Davis, 1999, 2003; Zinn, 2002, 2013). Thus, it is argued that location is just as important for the victim for the following reasons: 1) availability of help; 2) familiarity with the environment; and 3) feelings of isolation and helplessness. The next logical step is to also establish whether the victims were carjacked during the week or on the weekend, as well as the time. Due to the prevalence of this victimization, government organizations and the mass media (newspapers, radio, and television) publish crime awareness information for the public. This information is aimed at making the public more aware of certain situations and indicators that may

alert them about a possible victimization. In the case of a carjacking the following are noted to be the most likely indicators:

- A person loitering without apparent purpose
- Being blocked in: this technique is used to obstruct any escape route of the victim on the road or at a particular location (Zinn, 2003)
- Followed by a car: carjackers may wait for an opportunity to commit the crime
- Distraction: Carjackers distract the victim so that the driver may pull off to the side of the road, bringing the car to a stop. Various distractions have been used (e.g., obstacles such as rocks in the road, a bystander asking for help, causing a minor accident) (Davis, 2001a; 2001b; Zinn, 2003).

However, there is no information on whether these victims were aware of certain situations before their victimization. On the basis of the information presented, several hypotheses follow:

Hypothesis 4. Most victimizations will take place "At home," or "10 km around your home,"; and if not at home, most will take place "On a road at a traffic light or stop street".

Hypothesis 5. The majority of carjackings will take place during the week; and most will take place during the busy hours of the day, "16:01 pm–19:00 pm".

Hypothesis 6. Majority of the victims would not have had any signs of danger to warn them they were about to be carjacked.

Many security devices have been developed to prevent both theft of a vehicle and the perpetrator getting away with the vehicle following a carjacking (Davis, 2002; Jacobs, 2003; 2006; Urquhart, 2014). Yet the literature on carjacking in South Africa argues that the victim is nothing but an obstacle. Understanding the actions involved reveals that the victim is much more and a needed element. If the victim were not in the vehicle, the offence would be called vehicle theft and not carjacking. Another element in the process that demonstrates the essential part of the victim is that the victim has information on how to override or deactivate "security devices".

Common security devices used in South Africa are (Arrive Alive, 2013):

- Satellite tracking system: a small device installed in the customer's vehicle that can send electronic signals, which are then received via satellite in a control center (Altech Netstar, 2013; Tracker, 2013). Thus, the sender is connected to an artificial satellite that "tracks" the position of the car. This system must be "activated" to function. In this case, a tracking team pursues the signal in an attempt to recover the vehicle from the perpetrators.

- Alarm system: the standard security feature found in a vehicle. Locking the doors of the vehicle activates the alarm system. If the vehicle is disturbed, the system produces an enormous alarming noise. The offender needs to "deactivate" the alert system only with the help of the victim (unless he or she knows where the deactivating switch is).

- Immobilizer: an antitheft mechanism that prevents a vehicle's engine from being started without a properly coded key (or other device). This prevents perpetrators from starting the car by a method known as hot

wiring (producing a short circuit to ignite the motor). It does not require the car owner to activate it; it operates automatically. An immobilizer provides an additional obstacle and is allegedly more effective than a standard alarm system (Honda-tech, 2002).

- Anti-hijack device installed in a vehicle to achieve the following: When the ignition key is inserted turned to the "on" position to start the engine, a timer will start to countdown from a predetermined period of time. Clicking a hidden switch during the countdown period will disable the system. If the switch is not disabled, the operating fuel system is restricted. The valve moves from an open position to a closed position. The valve has a small valve orifice, which allows only a restricted amount of fuel to flow through the valve assembly in the fuel line. While the amount of fuel is sufficient to keep the engine from stalling, the vehicle will be capable of a speed of no more than 8 to 16 kilometers per hour (PFK Electronics, 2013).

Therefore, it is important to know if the victim had a security device in his or her vehicle and whether he or she was asked to assist in deactivating it for the perpetrators. This is completely unknown in the literature so additional hypotheses were developed:

Hypothesis 7. Majority of the victims would have had a security device in their vehicle.

Hypothesis 8. Most victims would have been asked where the deactivation switches were or how to deactivate them.

Many elements can go wrong in a carjacking. Any event that demands a close proximity between victim and perpetrator may mean that most victimizations remain in the attempted phase and are not completed (Karmen, 2010). Given that most perpetrators commit this victimization with a deadly weapon and are prepared to do whatever it takes to successfully complete the act (Davis, 1999, 2002; Zinn, 2002, 2013), the attempt/completion of a carjacking is extremely important for the victim. This is because it may have consequences for the levels of stress and anger the victim experiences. Additionally, whether the carjacking was successful or not, the victimization may be emotionally and physically damaging (Andrews et al., 2000; Foa et al., 1991).

Other factors may have contributed to the victimization not being completed. This makes it equally important to know what situational factors may have contributed to it remaining in the "attempted phase". The literature argues that victims should not fight back and should give up their vehicles willingly for their wellbeing (Arrive Alive, 2013; Zinn, 2002, 2010, 2013). Because there is no information from the victim on this issue, it is important to ask why the carjacking remained in the attempted phase.

Moreover, given the close contact between victim and perpetrators, it is interesting to see what the victim felt was more upsetting: that safety and security was threatened or that someone wanted to steal his or her property. This will hopefully provide information to support the theoretical literature, which notes that the material losses are not as important as the psychological or physical damages (Kirchhoff, 2005). The following is therefore hypothesized:

Hypothesis 9. Majority of the victims would have had their vehicle taken in the incident.

Hypothesis 10. Majority of the victims will state: "it was more upsetting to have their safety and security threatened".

Insurance companies require the customers to report the incident to the police in order to obtain a case number before making a claim (Arrive Alive, 2013; Holtman & Domingo-Swarts, 2008).. On the basis of the expectation that most victims of carjacking report their victimization to the police, it is important to establish whether victims were satisfied with the way their report was dealt with. Research on victims and police reporting suggests that victims are more concerned with how they are treated by police than in what the police are doing to recover their property (van Kesteren & van Dijk, 2010). Because of this, it can be concluded that:

Hypothesis 11. Majority of the victims would have reported their incident to the police; and most would be satisfied with the way police dealt with their report.

3.3.3 Physical Damage Hypotheses

Victims of carjacking encounter perpetrators who are highly motivated and armed with deadly weapons (Davis, 2002; Zinn, 2002). It may seem superfluous to ask the victim whether or not they encountered aggressive language or weapon, but it is not. It is important to understand whether they sustained physical violence and, if so, what injuries they suffered and where they received treatment. Gaining such information is important to establish the severity of the victimization and the invasion into the self the victim has suffered. Research on robbery indicates that only in a very low percentage of cases are victims injured (Conklin, 1972; Davis, 2003, 2005; Karmen, 2010; Maguire, 1982; Zinn, 2002). However, recent research into robbery in South

Africa suggests that the use of violence during robberies is increasing in the country, resulting in victims being more likely to be injured (Lutchminarain & Minnaar, 2012; Pretorius, 2008; Steyn, de Beer & Fouche, 2009; van der Merwe, 2008). On the basis of this information, the following hypotheses were developed:

Hypothesis 12. Majority of the victims would have had aggressive language used against them.

Hypothesis 13. In the majority of carjackings the perpetrators would have been armed with a gun.

Hypothesis 14a. Most victims would have experienced physical violence.

Hypothesis 14b. Most victims experiencing physical violence would have sustained an injury.

Hypothesis 14c. Most victims' injuries would require medical treatment "at hospital".

In a carjacking there is potential for a victim to be taken along with the perpetrator. Perpetrators have stated that only rarely does this happen (News24, 2014; Zinn, 2013). On the other hand, media reports suggest that when victims are taken, they are likely to have a traumatic experience (News24, 2014). It is important to gain more detailed information from the victim. Using what is known, it is assumed:

Hypothesis 15. Majority of the victims would have been "let go immediately".

3.3.4 Psychological Damage Hypotheses

A surfeit of research on psychological reactions to traumatic experiences exists, but none focuses on victims of carjacking. To investigate the levels of stress these victims' experience, the TSQ was incorporated into the research questionnaire.

This 10-item symptom screen was designed for use with survivors of all types of traumatic events (Brewin et al., 2002). The TSQ is based on items from the PTSD Symptom Scale—Self Report. Each item is derived from the DSM-IV (1994) criteria and describes either a re-experiencing symptom of PTSD (items 1 through 5) or an arousal symptom of PTSD (items 6 through 10). Avoidance and numbing symptoms, though also listed in the DSM-IV criteria, were not included in the TSQ because Brewin et al. (2002) wanted to create a useful screening instrument that was short and contained the minimum number of items necessary for accurate case identification. The authors (Brewin et al., 2002, p. 158) state that 'what the TSQ gains in simplicity and clarity more than compensates for the absence of symptoms that may be difficult to understand and judgments that may be difficult to make' (for the run-of-the-mill victim who is asked to fill out the questionnaire). The TSQ is an already introduced and tested scale, used in many studies measuring stress in victimological research (Kirchhoff, 2013; Walters, Bisson & Shepherd, 2006; Winkel, 2007). The results from these studies have tested accurately and reliably in measuring levels of stress, making the TSQ an attractive instrument to include in this study.

This scale is developed to measure victims' PTSD: Its authors write that those who score more than 6 points on the scale are arguably more likely to develop PTSD (Brewin et al., 2002). As stated in the theoretical section (Chapter 2), this study does not measure if these victims have enough stress to be diagnosed with PTSD, but rather to measure the level of stress they experience. Victims who do not reach the criteria point 6 nevertheless have stress. Each question of the 10-point scale is designed to measure stress, justifying use of this scale as a measure of stress, independent of its screening function.

Victims in this study are asked to answer the TSQ scale by remembering how they felt "within the first month of the incident" and again "sometime after the incident" ("now"). Providing the TSQ twice in the questionnaire allows the opportunity to assess whether stress levels do reduce over time as argued in the theoretical literature (Bonanno, 2004; Janoff-Bulman, 1985, 1992). Hypotheses 16 and 17 are as follows:

Hypothesis 16. The mean score of the stress scores of the victims on the TSQ "within the first month" after the incident, will be above the criteria point 6.

Hypothesis 17. The mean score of the stress scores of the victims on the TSQ for "sometime after the incident" ("now") will be between 3-5, but not as high as the criteria point 6.

In the aftermath of traumatic events, anger has been shown to be a factor to consider in the psychological reactions of victims (see Chapter 2) (Kunst et al., 2011; Orth & Maecker, 2009; Winkel, 2007). However, the expression of anger following traumatic events has been criticized for being unspecifically assessed; for example, it has not been determined at which targets anger is directed (Orth & Maecker, 2009). According to Horowitz (2001) and Orth and Maecker (2009), few studies have assessed different targets of anger. On the basis of this theoretical background, Orth and Maecker (2009) developed the 20-item PAS, mentioned earlier. The scale is designed to specifically measure anger at various targets following a criminal victimization. These targets are anger at the perpetrator and a desire for revenge, anger at the criminal justice system, anger at third persons, and anger at the self. The scale asks participants to assess the frequency at which they had experienced different types of anger. In this study victims were asked to record the feelings of anger they

had "within the first month after the incident". Because the PAS is only included once in the questionnaire, this does not provide the opportunity to measure the difference between anger scores for victims over a period of time. However, the information is useful in that it provides insight into the levels of anger this victimization produces and the targets it is directed towards.

The answers for the scale are measured on a 6-point Likert scale ranging from 0 (*never*) to 5 (*very often*). Victims who show a mean score above the midpoint 3 are said to have, high levels of anger at a particular target. Therefore, taking into account the violent and situational factors that may play a role in a carjacking, as well as assessing the levels of anger for various target categories of victims, the following hypotheses were constructed:

Hypothesis 18a. The mean score of the "anger at the perpetrator" on the PAS will be above the mid-point of 3.

Hypothesis 18b. The mean score of a "desire for revenge" on the PAS will be above the mid-point of 3.

Hypothesis 18c. The mean score of "anger towards the police, courts, or administration" on the PAS will be below the mid-point of 3.

Hypothesis 18d. The mean score of "anger at third persons" on the PAS will be below the mid-point of 3.

Hypothesis 18e. The mean score of "anger at themselves" on the PAS will be above the mid-point of 3.

Criminal victimization takes an enormous toll (psychologically, physically, and financially) on the victim. Access to counseling services or victim assistance is believed to help the victim deal with the direct loss of control that is stripped away by

victimization (Janof-Bulman, 1992; Kirchhoff, 2005; McKendrick & Hoffmann, 1990). Poor access to and availability of victim assistance is one of the biggest challenges to the victimization problem South Africa faces (Nel & van Wyk, 2013; Pretorius & Louw, 2005). Therefore, the next hypothesis is:

Hypothesis 19a. Most victims would not have received counseling after the incident.

Hypothesis 19b: Most would not have liked to have received counseling.

3.3.5 Financial Damage Hypotheses

Following victimization, victims will experience some form of financial loss (Elias, 1986; Kirchhoff, 2005, 2012; Mawby & Walklate, 1994; Maguire, 1987; Spalek, 2006). Various types of financial losses are associated with victimization. Direct costs are financial resources lost as a result of the victimization (i.e., cost of replacing the vehicle and other items in the vehicle at the time). Indirect costs are those that relate to the loss of earnings and productivity from victims taking time off of work to either replace their vehicle or receive medical treatment and recover from injuries (Dolan et al., 2005). To gain more information on the financial losses, these assumptions were made:

Hypothesis 20. Majority of the victims did not have their vehicle recovered.

Hypothesis 21a. Majority of the victims whose vehicles were taken had vehicle insurance.

Hypothesis 21b. Most of the carjackings did not affect the victims' monthly insurance premium.

Hypothesis 22. Majority of the victims did have other items stolen during the incident.

Hypothesis 23. Most victims did not install a security device.

Hypothesis 24. Most victims who received medical treatment and professional counseling did pay an amount for their treatment.

Hypothesis 25a. Most of the victims who had their vehicle taken were only able to replace it "more than one month" after the incident.

Hypothesis 25b. The time it took to replace the vehicle did not have any effect on the majority of the victims' employment.

Hypothesis 26. The majority of those who sustained injuries will report that the injuries sustained did not have any effect on their employment.

3.3.6 Behavioral Changes Hypotheses

Precaution taking is directly linked to the psychological impact of victimization and done for two primary reasons: 1) victims fear re-victimization and want to avoid it and 2) it provides them with some feeling of control (Janoff-Bulman, 1992; Spalek, 2006). Currently, it is not known whether any of the advised precautions are or were taken before the carjacking or directly after it or if the victim still takes any of these precautions "today". To establish this information, nine precautions were taken from the literature (Arrive Alive, 2013). Asking the victims directly what precautions they take will hopefully eliminate the current anecdotal evidence that exists about their practicality. Moreover, it is of interest to investigate whether the victims believe these precautions will prevent them from being re-victimized. Past literature in the country suggests that no area is safe and no vehicle is un-hijackable (Meyerson, 1995). But do victims share this impression?

Precaution taking may also impose unnecessary restrictions on a person's life (Janoff-Bulman & Frieze, 1983). A restriction is a limiting condition or measure—in this sense the precautions act as measures that restrict the victims' lives and force them to live under new conditions. As no such information exists on victims of carjacking, the following hypotheses were constructed:

Hypothesis 27a. The mean score of the precautions taken by the victims "before" the incident will be below 5.

Hypothesis 27b. The mean score of the precautions taken by the victims "directly after" the incident will be five or more.

Hypothesis 27c. The mean score of the precautions taken by the victims "today" will be five or more.

Hypothesis 28. Despite taking these precautions, the majority of victims still feel likely to be re-victimized.

Hypothesis 29. Majority of the victims feel that taking these precautions imposes restrictions on their lives.

Theoretical literature indicates that the most severe impact victims suffer is psychological damage, so establishing this information directly from the source supports the proposition that victimizations are indeed invasions into the self of the victim. Using this information correctly, the most needed assistance to these victims can be applied by the relevant authorities. Therefore:

Hypothesis 30. Majority of the victims will indicate that the psychological damage is the most severe impact following a carjacking.

The quantitative method used in this study is discussed next.

3.4 Method

This study is quantitative, meaning it aims to quantify attitudes and behaviors, measure variables on which they hinge, compare, and point out correlations (Gorard, 2003). Therefore, it requires the development of a standardized and codifiable measuring instrument (i.e., a structured questionnaire) (Creswell, 2009).

A quantitative method was selected for this study for the following reasons:

1. Measure objective facts
2. Focus on variables
3. Gather data from as many subjects as possible
4. Statistically analyze the results

Furthermore, this quantitative research can be classified as exploratory, descriptive, and explanatory. Exploratory research is designed to investigate an area on which little information exists, whereby the aim is to gain more information (Stebbins, 1999). This argument has been highlighted in the presentation of the available literature on carjacking victims. Therefore, this study aims to gain in-depth information on the impact of this victimization.

Descriptive research presents a picture of specific details of the situation being investigated. In addition, the major emphasis is on determining the frequency with

which the victimization that is being studied occurs (Babbie, 2001). The frequency is determined through the use of statistical techniques that test the hypotheses of the study. In this study one of the aims is to determine whether many respondents were victimized multiple times or not. To determine this frequency the research will employ certain statistical techniques when analyzing the data gathered for the hypotheses.

Explanatory research sets out to identify cause and effect (W. L. Neuman, 2000). It helps to predict behavioral actions of groups and determine the accuracy of a principle or theory. Additionally, it tries to determine whether a competing explanation would be better (W. L. Neuman, 2000, pp. 20-21). In this study, one of the research aims is to see whether or not the precautions victims take following their victimization impose restrictions on their life. Without asking the victims these questions we can only assume they pose restrictions, but assumptions do not help in understanding the invasions into the self as a result of victimization in the same way that concrete information does.

3.5 Snowball Sampling Method

Discussed earlier was the difficulty in gaining access to a sample of carjacking victims. After exploring various methods, it was decided that snowball sampling would be the best way forward.

The primary purpose of this method is to access difficult-to-reach sample populations. When one participant provides the researcher with the name of another potential participant, the sample begins to grow (Vogt, 1999). Snowball sampling is an economical, efficient, and effective form of collecting data for a study (Atkinson & Flint, 2001). A further advantage of this method is its distinction between descending

and ascending methodologies (Van Meter, 1990). Descending methodologies used to measure social problems often suffer from a lack of responses from particular groups. Ascending methodologies, such as a snowball sample, are used to work upwards and locate those on the ground who are needed to fill in the gaps in our knowledge on social contexts. In this sense snowball sampling is considered as an alternative or a complementary strategy for attaining more comprehensive data on a particular research population.

3.5.1 Problems of Representativeness and Sampling Principles

Snowball sampling is a non-probability sampling technique. This means that inferences cannot be drawn (researchers cannot make claims about the generality of a particular sample) (Atkinson & Flint, 2001). Snowball samples are cautioned for being biased. Samples are biased by the inclusion of only these individuals who are related and, as such, may over-emphasize responses from these social networks (Atkinson & Flint, 2001).

This problem of selection bias and representativeness can be partially addressed. Atkinson and Flint (2001) argue that because there is often no other way of gaining access to certain populations, the collection of substantial samples may reduce bias. The frequency with which this victimization takes place in the country suggests that a substantial sample size can be collected for this study. Moreover, previous research has shown that snowball sampling is an effective way of gaining access to victims of violent crime in South Africa (Davis, 1999; James & Barkhuizen, 2013).

3.5.2 Finding Respondents and Initiating 'Chain Referral'

Snowball methods often require some previous knowledge of 'insiders' in order to identify initial respondents and prior knowledge of insiders may not be readily available (Atkinson & Flint, 2001). This can make the study very time consuming and labor intensive. This problem is removed when the researcher already has available access to at least a few victims of carjacking, in which relationships of trust have been established.

Snowball sampling is a valuable tool in researching the lifestyles of particular groups located outside mainstream social research (Atkinson & Flint, 2001). Advances in quantitative applications of this method and the increasing need for ascending methodologies in victimological research aid in filling the gaps in our knowledge of victims of crime. The real promise of this method lies in its ability to uncover aspects of social experience and social life—a crucial element in this dissertation.

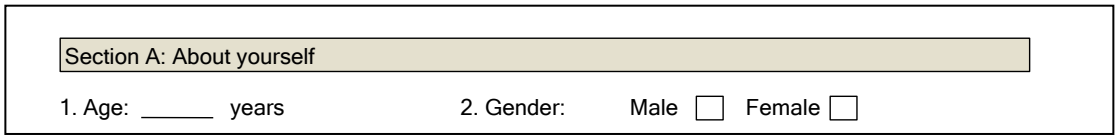
3.6 Type of Research Instrument

The instrument used in this study to collect data is a questionnaire. The questionnaire was based on a review of the literature, the theoretical perspective, and the hypotheses constructed. Using such an instrument allows for the quantitative testing of a number of variables as they are related to carjacking victimization. The composition of the questionnaire and the specific way of asking the questions has been chosen conscientiously. The questionnaire contains 57 questions in six sections: a brief description and examples from each section are now provided. The entire questionnaire can be seen in Appendix C.

3.6.1 Demographic Questions

This section includes the demographic variables of age and gender. These are believed to influence important variations in other variables.

Figure 4. Sample of Demographic Questions



3.6.2 About the Incident Questions

In these 15 questions known variables related to the victimization are asserted. The information gained from these questions is important because it establishes knowledge about the incident from the victim's perspective. Moreover, the information gained from these questions is valuable for correlation analysis with other variables, most notably stress and anger. These questions can be seen in the sample provided:

Figure 5. Sample of Questions About the Incident

Section B: About the incident

3. How many times have you been carjacked? _____

(*If you have been carjacked more than once, the following questions refer to your last incident*)

4. Did the carjacking take place?

- At Home ☐ (*go to question 6*)
- 10km around your home ☐
- Elsewhere in your city ☐
- Elsewhere in your country (but not your city) ☐

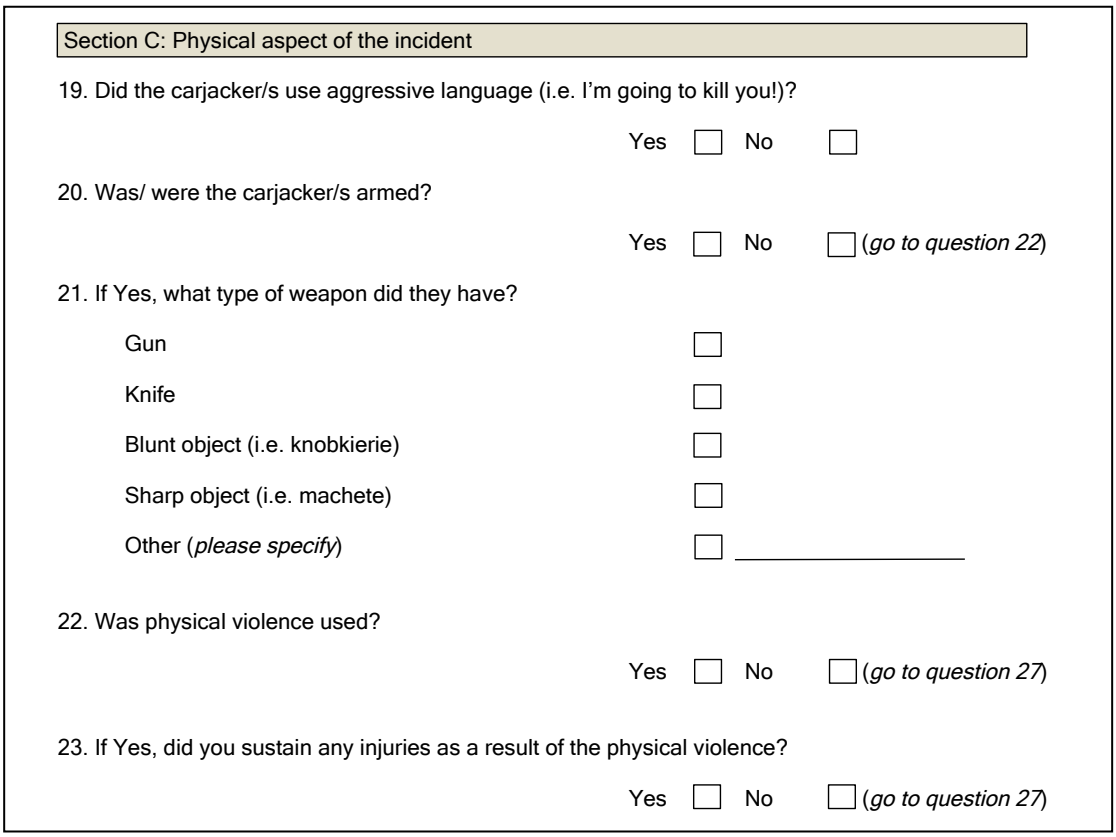
5. If the carjacking was not at your home, was it at?

- A parking area of a shopping center ☐
- A petrol station ☐
- On a road at a traffic light or stop street ☐
- Other (*please specify*) ☐ _____

3.6.3 Physical Damage Questions

These questions were designed to get specific answers regarding the physical damage of this victimization. They ask the participant whether the carjackers were armed, used aggressive language, or inflicted injuries during the incident. A verbally aggressive and armed perpetrator means the threat to the victim and levels of danger are much higher. If the victim did sustain injuries, this section asks victims to note where they received treatment. The severity of the injuries sustained is determined by where the victims received their treatment (e.g., roadside, hospital). This section also includes a set of questions relating to abduction. A sample of the questions about physical damage follows:

Figure 6. Sample of Physical Damage Questions



Section C: Physical aspect of the incident

19. Did the carjacker/s use aggressive language (i.e. I'm going to kill you!)?

Yes ☐ No ☐

20. Was/ were the carjacker/s armed?

Yes ☐ No ☐ (*go to question 22*)

21. If Yes, what type of weapon did they have?

Gun ☐

Knife ☐

Blunt object (i.e. knobkierie) ☐

Sharp object (i.e. machete) ☐

Other (*please specify*) ☐ _____

22. Was physical violence used?

Yes ☐ No ☐ (*go to question 27*)

23. If Yes, did you sustain any injuries as a result of the physical violence?

Yes ☐ No ☐ (*go to question 27*)

3.6.4 Psychological Damage Questions

This section tests the psychological reactions of the victim to the victimization. Specifically, it measures the psychological reactions of stress and anger at various targets. This is done with the TSQ (stress) and PAS (anger) scales.[11] A sample is given below:

[11] Please see Hypotheses section (3.3.4) of this chapter for a detailed description of these scales.

Figure 7. Trauma Screening Questionnaire

Section D: Psychological aspect of the incident

30. Please consider the following reactions, which sometimes occur after a traumatic event. These questions are concerned with your personal reactions to the traumatic event, which happened to you. Please check (Yes or No) whether you experienced any of the following within the first month.

Reactions	Yes	No
(a) Upsetting thoughts or memories about the event that have come into your mind against your will.		
(b) Upsetting dreams about the event.		
(c) Acting or feeling as though the event were happening again.		
(d) Feeling upset about reminders of the event.		
(e) Bodily reactions (i.e. fast heart rate, stomach churning, sweatiness, dizziness).		
(f) Difficulty falling asleep.		
(g) Irritability or outbursts of anger.		
(h) Difficulty concentrating		
(i) Heightened awareness of potential dangers to yourself and others		
(j) Being jumpy or startled at something unexpected		

Figure 8. Posttraumatic Anger Scale

31. Below is a list of questions that relate to feelings of anger people sometimes have after stressful life events. Please read each item, and then check how angry you were after your carjacking. (*Select the response that best describes how you felt*).

"I was angry at the perpetrator…"

(a) …because he caused so much harm in my life

Never		Rarely		Sometimes		Often		Very often	

(b) …because my well-being was so unimportant to the perpetrator

Never		Rarely		Sometimes		Often		Very often	

(c) …because the perpetrator fails to accept his guilt

Never		Rarely		Sometimes		Often		Very often	

(d) …because he behaved badly even in the time after the incident

Never		Rarely		Sometimes		Often		Very often	

"I imagined…"

(e) …how the perpetrator would be a victim themselves one day

Never		Rarely		Sometimes		Often		Very often	

(f) …how the perpetrator will themselves really have to suffer

Never		Rarely		Sometimes		Often		Very often	

(g) …how I would pay back the perpetrator for what s/he did to me

Never		Rarely		Sometimes		Often		Very often	

(h) …how I would get even with the perpetrator

Never		Rarely		Sometimes		Often		Very often	

Additionally, this section addresses questions of counseling. These questions are important for four reasons: 1) determining how many victims of carjacking actually receive counseling services, 2) providing information on exactly where most victims receive their counseling, and 3) whether or not those who did not receive counseling would have liked to receive it. Sample questions are provided here:

Figure 9. Sample of Counseling Questions

32. Did you receive counseling from victim support (at police), a trauma center, or professional (psychologist/ psychiatrist)?

Yes ☐ No ☐ (*go to question 34*)

33. If Yes, please specify which one _____

3.6.5 Financial Damage Questions

This section is broken down into direct and indirect costs. The questions address the various financial damages a victim may incur. A brief sample of these questions follows:

Figure 10. Sample of Financial Damage Questions

Section E: Financial aspect of the incident

36. Was your vehicle recovered?

Yes ☐ No ☐ Vehicle not taken ☐ (*see question 12*)

37. Was your vehicle insured?

Yes ☐ No ☐ (*go to question 41*)

38. If Yes, how much did it cost you personally to replace your vehicle (cost not covered by insurance)?

Less than R30 000	
From R30 000 to R60 000	
From R60 000 to R90 000	
From R90 000 to R110 000	
More than R110 000	

3.6.6 Behavioral Changes Questions

This section asks participants whether they followed the official advice and took precautions before and directly after their carjacking and whether they are taking them today. It additionally asks whether or not taking these precautions aids them in avoiding re-victimization and places restrictions on their lives. The final question tries to establish what was the most severe damage of this victimization. The following is a sample of the behavioral changes questions:

Figure 11. Sample of Behavioral Changes Questions

Section F: After the incident

53. Below is a list of precautions people may take to prevent themselves from being carjacked. Please check the list and mark which ones you may have taken before the carjacking, directly after it, and what precautions you still take today. (*please see pg. 11 for more options*)

Precautions	Before	Directly after	Today
(a) I always try to travel during the busy hours of the day.			
(b) I try to avoid stopping at traffic lights when possible.			
(c) I always maintain a safe distance between myself and the vehicle in front of me.			
(d) I always try to make sure someone serves as a "lookout" when entering and exiting my home.			
(e) I employed the services of a security company to escort me entering and exiting my home.			
(f) I always notify people when I leave and/or have reached my destination.			
(g) I alternate my route home.			
(h) I always travel past my house first to scan the area before entering.			
(i) I try to travel in a convoy when possible.			

54. By taking these precautions do you feel less likely to be re-victimized by carjacking?

Yes ☐ No ☐

55. Do these precautions impose restrictions on your life?

Yes ☐ No ☐ (*go to question 57*)

The questionnaire was also evaluated for objectivity, reliability, and validity.

3.6.7 Objectivity

The questionnaire used in this research study contains as much as possible objective questions. Leading or projective questions would not have served the purposes of this study. The hypotheses constructed were derived from the theoretical literature, with the design and structure of the questionnaire evaluated by an independent research institute (see section 3.2). Objectivity was an important criterion in this study.

3.6.8 Reliability

Reliability is a technical term: it denotes the degree in which measurements are reliable. That is independent from tester and test environment. The concept of replicability is different from reliability. Replicability denotes that degree in which the research is replicable, which can be achieved by following the details of the study provided by the researcher. If a researcher does not provide sufficient information for the study to be replicated, then the study would not contribute to the knowledge in i.e. victimology (Kirchhoff, 1975; Neuman, 2000).

The questionnaire developed can be discerned as a set of different "tests". It has a section for demographic variables. This section follows a simple pattern and does not require a reliability assessment. The questionnaire has a descriptive part, which uses items to measure a particular victimization. Asking these victims directly about certain aspects of the victimization has not been done before and is therefore exploratory. To test the reliability of these sections would have been desirable. Yet the time frame in which this study had to proceed, as well as the difficulty in gaining access to a sample of victims, meant that it was not possible to statistically measure

reliability. Suffice it to state here, the pilot study did not yield results that were significantly different. This indicated that the measures were at best reliable.

To measure the levels of stress and anger at various targets, previously constructed scales with proven reliability were included: the TSQ and PAS.

3.6.9 Validity

In any study, an instrument can only affirm its validity if it measures what it sets out to measure. The instrument in this study is diverse. Its purpose is to measure the overall impact on victims of carjacking. The answer to the question "does this instrument achieve its goal?" is not possible to declare with 100% certainty. No research is ever "uncontaminated" by the context in which it takes place. It is difficult to determine 1) the environment in which the participants did the questionnaire; 2) the simplicity and superficiality of answers, along with socially desirable bias; and 3) the possibility of the misinterpretation of questions. This also means that whether a participant exaggerates or conceals pertinent information is only known to him or her, which makes it impossible to confirm individual subjective validity. Moreover, there is the problem of memory recall. It is argued that in victimological surveys, 6- or 12-month recall periods generally produce results that are of acceptable validity (Schneider, 1981; Skogan, 1986; van Dijk et al., 2008; van Kesteren & van Dijk, 2010). Discussed already was the difficulty in gaining access to a sample of carjacking victims. To not limit or distract any victim participating in this study and to gain as much knowledge about the impact of this victimization as possible, no recall period was stipulated. This limitation has been considered.

Other methods are considered as tests for validity in a study. Studies have applied crosschecks, for example, with police statistics.

However, as Barkhuizen (2007) argues, this would not assist at all in cases where victimization is concerned. He continues by explaining that this is a similar problem faced by studies on self-reported delinquency. In such studies, respondents are asked about the offences they committed. It is a well-known fact that the validity checks for these studies are incomplete and "far from fool-proof" (Barkhuizen, 2007; Kirchhoff; 1975; Gold, 1970). Yet these results are accepted as valid in the criminological literature.

3.7 Ethical Considerations

Ethical research requires the balancing of values that advance knowledge against the values of non-interference in the lives of others (Strydom, 2002).

This research study maintains ethical validity and credibility by following the Tokiwa University Code for Research Ethics. Under this code, when using human participants in a study, the researcher must be conscientious of the needs of those who participate. Therefore, each participant received three specific letters and two pamphlets, along with the questionnaire. Each letter and pamphlet consisted of the following:

1. Letter of Invitation: Introduces to the potential participant who the researcher is and the purpose of the study. It kindly invites the individual to participate,, sign an informed consent, fill in a questionnaire, and return it to the researcher using the prepaid envelope. The invitation letter informs the participant that filling out the questionnaire is voluntary and confidential (see Appendix D).

2. Informed Consent Form: Reaffirms the invitation to the individual to participate. It states the purpose of the study, the procedures, and a description of the questionnaire. The informed consent form explains the potential risks and discomforts that may be experienced should the individual participate, as well as what he or she must do should discomfort occur. Participants are informed that they are free to contact the researcher or mentor at any time with questions, concerns, or complaints about the study. The benefits of participating are also explained. A statement of confidentiality is provided to assure the participant that all information provided will be kept in accordance with data protection legislation and Tokiwa University's Code for Research Ethics. It is clear on the form that no other information than that pertaining to the study will be asked from the participant. Lastly, the form explains that participation is voluntary and that the participant can stop or withdraw any time without prejudice (see Appendix E).

3. Written Oath: signed by the researcher assuring the participant that everything that has been outlined in the invitation letter and the informed consent form will be adhered to (see Appendix F).

4. Victim Support South Africa and LifeLine South Africa Pamphlet: attached to every questionnaire; provides a list of information and details of contacts that assist victims of crime by offering awareness and education programs and counseling services (see Appendix G).

No participant's data was collated unless the participant provided his or her consent. Importantly, all returned questionnaires and collated data were kept on password-protected computers, with a USB backup device. Only the researcher and mentor had access to the data. This complied with all data protection laws and the Tokiwa University's Code for Research Ethics.

Ethical approval for this study was granted on the 25th June 2013: Clearance number: 200071.

3.8 The Sample

A total sample population of 280 responses was received. A response rate cannot be calculated as this was a snowball sample and the number of potential respondents contacted is unknown. It is assumed that the responses are representative of the study population as a whole, although caution is given to the generalising of results.

Final data collection began in October 2013 and ended in March 2014. After a period of 2 months from beginning data collection, the researcher and mentor realized that receiving paper questionnaires through the mail and through emails was becoming difficult to manage without the possibility of losing information, and that if the data were collected online it would eliminate this problem altogether. Moreover, placing it online would give greater accessibility of the questionnaire to victims. Therefore, in December 2013, the questionnaire and its accompanying ethical documentation was uploaded to the online survey software company SurveyMonkey. To further facilitate participation and remind victims to participate, an advertisement was placed in a South African newspaper "*The Thame Times*" (see Appendix H). The

exorbitant advertising fees and limited resources of the researcher meant the advertisement was only placed and made visible to the public periodically (twice a month) from January–March 2014. The period for collecting data was closed at the end of March 2014. This means that no paper questionnaires received after this date were included.[12] Moreover, the online version of the questionnaire was closed and made inaccessible to those wanting to participate after this date.

After closing the data collection, both the data from the paper questionnaires and the online questionnaires were collated into one data spreadsheet. From the total sample 280, 62 participants partially completed the questionnaire. These partially completed questionnaires were retained for analysis.

3.9 Data Analysis

Data gathered from the questionnaires were inserted into the computer software program SAS for analysis. A coding sheet for all the variables can be found in Appendix I. A 5% significance level was used throughout, unless specified otherwise. In other words, p values < 0.05 indicate significant results.[13] The following statistical analysis methods were used:

The X^2 (Chi-Squared) test was used to assess the relationships between two categorical variables (i.e., gender). Fisher's exact test was used for 2 x 2 tables or where the requirements for the X^2 test could not be met. The relationship between a continuous (i.e., Trauma Screening Questionnaire (TSQ)) and a categorical variable

[12] No paper questionnaires were received after the closing data of 31st March 2013.

[13] Significance levels indicate how likely a result is due to chance. The most common level used in social science research is .95. This means that findings have a 95% chance of being true. It is not represented this way in research results but is instead shown as ".05", meaning that the finding has a 5% (.05) chance of not being true, which is the converse of a 95% chance of being true (Rovai, Baker & Ponton, 2013).

(i.e., gender) was assessed by a *t*-test (or ANOVA for more than two categories). Where the data did not meet the assumptions of these tests, a non-parametric alternative, the Wilcoxon rank sum test (or the Kruskal-Wallis test for more than two categories), was used. The relationship between two continuous variables was assessed by Pearson's correlation coefficient. Where the data did not meet the assumptions of these tests, a non-parametric alternative, Spearman's rank correlation coefficient, was used. The completed data analysis forms the basis for the descriptions of the findings of this research. These are presented in Chapter 4.

3.10 Summary

The extent of carjacking victimization in South Africa stands in stark contrast to what is scientifically known about those it affects—the victims. Given the scarcity of such information, 30 hypotheses were constructed, based on 1) theoretical constructs, 2) what is known about the public, and 3) what has been previously documented in the literature on carjacking perpetrators and victims. The hypotheses were divided into six categories:

1. Demographic hypotheses
2. Incident hypotheses
3. Physical damage hypotheses
4. Psychological damage hypotheses
5. Financial damage hypotheses
6. Behavioral changes hypotheses

Various methods were employed to gain access to a sample of carjacking victims. However, the best sampling method for this study to proceed proved to be snowball sampling. From the construction of these hypotheses, a preliminary questionnaire was developed and tested in a pilot study (August 2013). The results of the pilot study helped to furnish the final questionnaire. Final data collection began in October 2013 and ended in March 2014 (6 months). To facilitate the participation of victims of carjacking, the questionnaire was made available online using SurveyMonkey (December 2013), with an advertisement placed in a national newspaper (January/March 2014). Throughout the entire research process any possible ethical problems were considered, along with all methodological imperatives. In the end, 280 victims of carjacking participated in this study.

CHAPTER 4

DATA ANALYSIS

The data gathered were analyzed using specific statistical techniques and examined against the (recognized) hypotheses of the study (see Chapter 3[14]). The previous chapters detailed how these hypotheses originated from the theoretical literature and how the expected outcome of each was determined. The analysis in this chapter establishes whether the constructed hypotheses can be treated as confirmed or falsified. If the data support the presupposition of each hypothesis, it is then confirmed; however, if the data are in conflict, the hypothesis is then falsified[15]. The hypotheses are divided into six categories: 1) demographic hypotheses, 2) incident hypotheses, 3) physical damage hypotheses; 4) psychological damage hypotheses; 5) financial damage hypotheses; and 6) behavioral changes hypotheses.

4.1 Demographic Hypotheses

Age is one of the demographic variables of this study; however, it was not a significant factor. It turned out that age did not have any relationship to stress or posttraumatic anger. Nor did the third main dimension of the study, the behavioral changes after victimization, relate in any way to the age variable. In order to not

[14] The statistical techniques referred to are in subsection 3.9 Data Analysis; and the hypotheses are in subsection 3.3 Hypotheses of Chapter 3.

[15] In order for hypotheses to be either confirmed or falsified, it is important to define key terms used in the hypotheses (Popper, 2005). These terms are "majority" and "most". For the purpose of this study these terms are defined as follows: Majority: is used to indicate seventy percent (70%) or more of the sample of victims. Most: is a term used in two contexts: 1) to indicate between fifty-one percent and sixty-nine percent (51%-69%) of the sample of victims; and 2) to indicate the highest percentage of victims in the sample (this only happens in hypothesis 4 and hypothesis 5. This is clearly indicated on pages 86-87) where the percentages are provided for both hypotheses).

overburden the text of the dissertation with detailed analysis of the random relationship of age to the other main dimensions of the research, the researcher decided to:

1. State at the beginning that age was not at all related to the rest of the study; and
2. That the data, supporting this statement, would be provided in the appendix (see Appendix J).

In this study a total of $N = 280$ victims of carjacking participated. The mean age of the victims was 39.4 years ($N = 280$). Just less than half the victims were between 36 and 55 years of age (42% of $N = 280$ [**H1**]). The distribution of ages is shown below in Table 2.

Table 2. Distribution of Ages

Variable	***n***	**Category**	**Overall**	
			n	%
Age	280	18-25y	50	18
		26-35y	72	26
		36-45y	72	26
		46-55y	46	16
		56y+	40	14
Total			280	100

Hypothesis 1 is falsified: The majority of victims were not in the age group 'middle aged' (36-55y) (42%).

A little more than half the total sample (54% [**H2**]) was male. Assuming an equal proportion of males and females are exposed to the victimization of carjacking, the

proportion of males was not significantly different from 50% (chi-square test: p = 0.19). The distribution of gender is shown below in Table 3:

Table 3. Distribution of Gender

Variable	***n***	**Category**	**Overall**	
			n	%
Gender	280	Female	129	46
		Male	151	54
Total			280	100

Hypothesis 2 is confirmed: Most of those victimized by carjacking were male. A larger data set of carjacking victims is needed to yield a more definitive answer to which gender is victimized more.

4.2 Incident Hypotheses

Eighty-nine percent of the victims (89% of N = 280) had been carjacked once (**H3**); only 11% were victimized more than once, indicating that the majority of the victims did not belong to the group of repeat victims. Table 4 shows this distribution.

Table 4. Distribution of Number of Carjacking Victimizations

Variable	***n***	**Category**	**Overall**	
			n	%
Number of victimizations	280	Once	249	89
		More than once	31	11
Total			280	100

Hypothesis 3 is confirmed: Majority of the victims were victimized once by carjacking.

In total, most of the victimizations took place at home or within 10 km of home (66% of $N = 280$ [**H4**]). Carjackings that took place elsewhere in the city or elsewhere in the country totaled 34% (of $N = 280$). This is shown below in Table 5:

Table 5. Distribution of Location

Variable	*n*	Category	Overall	
			n	%
Location	280	At home	99	35
		10 km around home	86	31
		Elsewhere in city	77	28
		Elsewhere in country	18	6
Total			280	100

The most common carjacking location, if not at home, was at a traffic light or stop street (48% of $n = 181$). Other locations where carjackings took place totaled 33% (of $n = 181$), this includes such locations as a parking area of a shopping center and a petrol station. The distributions are shown in Table 6.

Table 6. Distribution of Location if not at Home

Variable	*n*	Category	Overall	
			n	%
Location if not at home	181	Parking area of shopping center	28	16
		Petrol station	8	4
		Road, at traffic light or stop street	86	48
		Other	59	32
Total			181	100

Hypothesis 4 is confirmed: Most victimizations took place "at home", or "10 km around your home" (66%); and if not at home, most took place "on a road at a traffic light or stop street" (48%).

Seventy-eight percent (of *n* = 278) of the carjackings took place on a weekday. This is shown in Table 7:

Table 7. Distribution of Day of Incident

Variable	*n*	Category	Overall	
			n	%
Day Type	278	Mon-Fri	216	78
		Sat-Sun	62	22
Total			278	100

The data also revealed that most of the incidents occurred during the busiest hours of the day, 16h01 and 19h00 (37% of *n* = 278 [**H**$_5$]). The distributions of the time of the incidents are detailed in Table 8:

Table 8. Distribution of Time of Incident

Variable	*n*	Category	Overall	
			n	%
Time	278	06:01-09:00	30	11
		09:01-12:00	25	9
		12:01-16:00	36	13
		16:01-19:00	102	37
		19:01-00:00	77	27
		00:01-06:00	8	3
Total			278	100

Hypothesis 5 is confirmed: The majority of carjackings took place during the week (78%) and, most took place during the busiest hours of the day, "16:01pm–19:00pm" (37%).

Eighty percent of the respondents (of n = 278 [**H**$_6$]) reported that they were not aware of any signs of danger. This is shown in Table 9 below:

Table 9. Distribution of Any Signs of Danger

Variable	***n***	**Category**	**Overall**	
			n	%
Signs of danger	278	Yes	57	20
		No	221	80
Total			278	100

Hypothesis 6 is confirmed: Majority of the victims did not have any signs of danger to warn them they were about to be carjacked.

For those victims who reported signs of danger, the most common sign was a loiterer (61% of n = 57). The victims also reported being blocked in, followed by a car, and distracted (i.e. the perpetrators placed rocks in the road causing the victim to bring their vehicle to a stop) as signs of danger. A small percentage of victims marked "other" signs of danger; however, only one victim wrote what this sign of danger was. The victim detailed that the perpetrators "gently" bumped their vehicle to imitate an accident; thus, forcing the victim to bring the vehicle to a stop. Table 10 shows the distribution of the signs of danger reported.

Table 10. Distribution of Signs of Danger Reported

Variable	*n*	Category	Overall	
			n	%
Signs of danger: Type	57	Person loitering	35	61
		Being blocked in	7	12
		Followed by car	7	12
		Distracted	5	9
		Other	3	6
Total			57	100

A majority of the respondents (88% of n = 272 [**H7**]) reported that their vehicle had some type of security device. This is shown in Table 11.

Table 11. Distribution of Security Devices

Variable	*n*	Category	Overall	
			n	%
Vehicle had security device	272	Yes	240	88
		No	32	12
Total			272	100

Hypothesis 7 is confirmed: Majority of the victims had a security device in their vehicle.

Only 46% (of n = 268 [**H8**]) reported that they had been asked to help assist and deactivate their security device; this was lower than expected. It was thought that a higher percentage of victims would have been asked to assist in deactivating the security devices for the perpetrators. This is shown in Table 12.

Table 12. Distribution of Victims Role in Deactivating Security Devices

Variable	*n*	Category	Overall	
			n	%
Asked about deactivation	268	Yes	124	46
		No	144	54
Total			268	100

Hypothesis 8 is falsified: Most victims were not asked where the deactivation switches were or how to deactivate them.

Majority of the respondents (80% of n = 268 [**H9**]) reported that the carjacking had been successful, meaning the perpetrators drove away with the victims' vehicle. This is shown in Table 13.

Table 13. Distribution of Whether the Vehicle was Taken or Not

Variable	*n*	Category	Overall	
			n	%
Vehicle taken	268	Yes	213	80
		No	55	20
Total			268	100

Hypothesis 9 is confirmed: Majority victims had their vehicle taken in the incident.

The most common reason given for the carjackings remaining in the attempted phase (not successful) was that an approaching vehicle and/or bystander (51% of n = 55) startled the carjackers. A small percentage of victims noted that they had "fought back" (18% of n = 55), which was why their carjacking remained in the attempted phase. Table 14 shows these results.

Table 14. Distribution of Reason Vehicle not Taken

Variable	*n*	Category	Overall	
			n	%
Reason vehicle NOT taken	55	Fought back	10	18
		Approaching vehicle/ bystander startled carjackers	28	51
		Police interrupted	1	2
		Other	16	29
Total			55	100

Almost all of the respondents (92% of $n = 267$ [$\mathbf{H_{10}}$]) reported that the most upsetting aspect was that their safety and security were threatened. The remaining 8% were more upset that someone attempted to or stole their vehicle. This shows that the material losses were less important to these victims and that the psychological damage of this victimization is of greater concern to the victim (see Table 15).

Table 15. Distribution of What Was More Upsetting for the Victim

Variable	*n*	Category	Overall	
			n	%
Most upsetting	267	Safety and security threatened	245	92
		Attempted to or stole vehicle	22	8
Total			267	100

Hypothesis 10 is confirmed: Majority of the victims stated: "It was more upsetting to have my safety and security threatened".

Practically all of the respondents (93% of n = 267 [**H11**]) reported their incident to the police. Table 16 shows this result.

Table 16. Distribution of Reporting to Police

Variable	*n*	Category	Overall	
			n	%
Incident reported to police	267	Yes	249	93
		No	18	7
Total			267	100

Of these respondents, 60% (of n = 249 [**H11**]) indicated that they were satisfied with the way the police handled their report. This is shown in Table 17.

Table 17. Distribution of Satisfaction with Reporting to Police

Variable	*n*	Category	Overall	
			n	%
If incident reported, was it handled satisfactorily?	249	Yes	150	60
		No	99	40
Total			249	100

Hypothesis 11 is confirmed: Majority of the victims reported their incident to the police (93%), with most of the victims satisfied with the way the police dealt with their report (60%).

The main reasons given for satisfaction with reporting to the police were meeting expectations (72% of n = 150) and being treated politely and correctly (69% of n = 150). These findings support the theoretical literature on expectations of victims reporting to the police (van Kesteren & van Dijk, 2010). These reasons are shown in

Table 18. (Note that the percentages do not add up to 100% since respondents could indicate more than one reason.)

Table 18. Distribution of Reasons for Satisfaction with Reporting to Police

Variable	*n*	Category	Overall	
			n	%
Reasons for satisfaction*	150	They did what I expected them to do	108	72
		They treated me politely and correctly	104	69
		They were interested in helping me	83	55
		They were quick to arrive at the scene	45	30
		They showed interest in recovering my property	43	29
		They kept me properly informed	43	29
Note: *Indicates that percentages do not add up to 100%; respondents could indicate more than one reason.				

Forty percent (*n* = 99 of *n* = 249) of the victims who were dissatisfied with the way the police handled their report indicated that the two main reasons for their dissatisfaction were lack of interest (81% of *n* = 99) and slow response (70% of *n* = 99). These reasons are shown in Table 19. (Note that the percentages do not add up to 100% since respondents could indicate more than one reason.)

Table 19. Distribution of Reasons for Dissatisfaction with Reporting to Police

Variable	*n*	Category	Overall	
			n	%
Reasons for dissatisfaction*	99	Do you think they were not interested?	80	81
		They were slow to arrive	69	70
		Didn't do enough	58	59
		They didn't treat me correctly/were impolite	54	55
		They didn't keep me properly informed	47	48
		They didn't recover my property or goods	45	46
Note: *Indicates that percentages do not add up to 100%; respondents could indicate more than one reason.				

4.3 Physical Damages Hypotheses

In 91% of the incidents (n = 263 [**H12**]), aggressive language was used by the carjackers. This is shown in Table 20.

Table 20. Distribution of Aggressive Language

Variable	*n*	Category	Overall	
			n	%
Aggressive language	263	Yes	239	91
		No	24	9
Total			263	100

Hypothesis 12 is confirmed: The majority of victims had aggressive language used against them.

Almost every respondent (98% of *n* = 263) reported that the carjackers were armed with a gun (87% of *n* = 258 [**H13**]). In some incidences victims did report that the perpetrator/s were armed with weapons other than a gun; these included a knife, a blunt object (i.e. knobkierie[16]) or a sharp object (i.e. machete) (see Table 21).

Table 21. Distribution of Armed Perpetrator/s and Weapon Used

Variable	*n*	Category	Overall	
			n	%
Armed	263	Yes	258	98
		No	5	2
Total			263	100
Weapon type	258	Gun	225	87
		Knife	22	9
		Blunt object	2	1
		Sharp object	9	3
Total			258	100

Hypothesis 13 is confirmed: In the majority of carjackings the perpetrators were armed with a gun.

Fifty-three percent (*n* = 138 of *n* = 263 [**H14a**]) reported the use of physical violence by the carjackers. This is an alarming finding. It shows that these victims experienced a more violent form of robbery, highlighting the consequential nature of this victimization (see Table 22).

[16] A stick with a round knob at the end, used as a club or missile by South African tribesman.

Table 22. Distribution of Physical Violence

Variable	*n*	Category	Overall	
			n	%
Physical violence	263	Yes	138	53
		No	125	47
Total			263	100

Hypothesis 14a is confirmed: Most victims experienced physical violence.

Of the victims who reported physical violence, 68% (n = 138 [**H**$_{14b}$]) were injured as a result of the physical violence. This, too, is a concerning find, attesting to the statement made in Hypothesis 14a (see Table 23).

Table 23. Distribution of Injury

Variable	*n*	Category	Overall	
			n	%
Physical injury (overall)	263	Yes	94	36
		No	169	64
Total			263	100

Hypothesis 14b is confirmed. Most victims experiencing physical violence sustained an injury.

A widespread belief is that more males are the targets of this victimization and are easier to inflict violence upon (Zinn, 2002). Therefore, it was necessary to test if there was, indeed, an association between gender and physical violence, and gender and injury. This was done using a X^2 (Chi-Squared) test.

The results showed there was a significant, weak association between whether or not physical violence was used and gender (p = 0.0020; phi coefficient = 0.19): a higher proportion of males reported the use of physical violence compared with females (see Table 24).

Table 24. Physical Violence with Gender

Physical violence	Female	Male	Total
Yes	50	88	138
No	69	56	125
Total	119	144	263
Note: X^2 = 9.5254; p = 0.0020; phi coefficient = 0.19; df =1			

Furthermore, there was a significant, weak association between whether or not respondents were physically injured and gender (p = 0.0030; phi coefficient = 0.18): A higher proportion of males reported physical injury compared with females. This is shown below in Table 25:

Table 25. Physical Injury with Gender

Physical injury (overall)	Female	Male	Total
Yes	31	63	94
No	88	81	169
Total	119	144	263
Note: X^2 = 8.8874; p = 0.003; phi coefficient = 0.18; df =1			

Physical injuries varied but were most common to the face or eyes (29% of n = 94). Other injuries reported varied from minor injuries such as cuts and bruises, to severe injuries such as being shot with a gun. In one incident a victim was raped.

The distributions of the type of injuries sustained are below in Table 26. (Note that the percentages do not add up to 100% since respondents could indicate more than one injury.)

Table 26. Distribution of Type of Injury

Variable	***n***	**Category**	**Overall**	
			N	%
Injury type*	94	Face/eye injury	27	29
		Cuts	20	21
		Bruises	18	19
		Head injury	16	17
		Shoulder/arm/hand injury	13	14
		Gunshot wound	10	11
		Ribs/chest injury	7	7
		Leg/ankle injury	5	5
		Neck/back injury	4	4
		Unspecified stab injury	1	1
		Rape	1	1
Note: *Indicates that figures do not add up to 100%; respondents could indicate more than one option.				

Of the victims sustaining physical injury (n = 94) (see Table 10), 81% required medical treatment (see Table 27). This attesting to the violent characteristic of carjacking and the potential implications it has for the victims.

Table 27. Distribution of Required Medical Treatment

Variable	*n*	Category	Overall	
			N	%
Required medical treatment	94	Yes	76	81
		No	18	19
Total			94	100

More than half of the victims (59% of $n = 76$ [**H**$_{14c}$]) who required medical treatment received it at a hospital. Receiving treatment at a hospital demonstrates the severity of the violent characteristics of carjacking. Other locations where victims received treatment for their injuries included at home or on the roadside (i.e. paramedics) (see Table 28).

Table 28. Distribution of Location of Medical Treatment Received

Variable	*n*	Category	Overall	
			n	%
Medical treatment location	76	Hospital	45	59
		Hospital overnight	12	16
		Home	11	14
		Roadside	8	11
Total			76	100

Hypothesis 14c is confirmed: Most victims who sustained injuries required medical treatment "at a hospital".

In 93% (of n = 260 [**H15**]) of the carjackings the victims were let go immediately. Meaning that once the victims were removed from the vehicle, and the perpetrators had possession of the vehicle they no longer worried about the presence of the victim (see Table 29).

Table 29. Distribution of Victims Released Immediately or not

Variable	*n*	Category	Overall	
			n	%
Let go immediately	260	Yes	241	93
		No	19	7
Total			260	100

Hypothesis 15 is confirmed. Majority of the victims were "let go immediately".

Of the victims not released immediately, slightly more than half (53% of n = 19) were released within 30 minutes. In some instances victims were held for longer periods of time ranging from 30minutes to an-hour-and-a-half. In a rare case one victim was held for a period longer than an-hour-and-a-half (see Table 30).

Table 30. Distribution of Duration of Victims Not Let Go Immediately

Variable	*n*	Category	Overall	
			n	%
Duration kept by carjackers	19	5-30 min	10	53
		30-60 min	4	21
		1-1.5h	4	21
		Longer than 1.5h	1	5
Total			19	100

4.4 Psychological Damage Hypotheses

The psychological damage hypotheses are separated into three sections. Section 1 presents results for the TSQ (first month after the incident), which is labeled as (first month); TSQ (some time after the incident), which is labeled as (now); and TSQ (first month vs. now), which is labeled as (change). Tables Table 31 to 46 contain these results. Section 2 presents the analysis of the PAS (see Tables 47 to 54). A factor analysis was run to test the reliability of the PAS in order to determine if the scale could be simplified. These results are in Table 55. Finally, Section 3 presents the results for counseling (see Tables 56 to 67).

4.4.1 TSQ Results

The results for the TSQ (first month) follow: The mean TSQ score was 6.8 (n = 248 [**H16**]), a notably high mean score, indicating the level of stress carjacking victims initially experienced (see Table 31).

Table 31. TSQ Score (First Month)

Variable	*n*	*M*	*SD*
TSQ (first month) score	248	6.8	2.3

Hypothesis 16 is confirmed: The mean score of the stress scores of the victims on the TSQ "within the first month" after the incident—was above the criteria point 6.

It was then tested to see if there was any significance in the scores among gender, number of victimizations, and those physically injured. To do this a *t*-test was preformed.

A significant difference was found in the mean TSQ (first month) regarding gender ($p < 0.0001$; Cohen's $d = 0.61$; moderate effect size): Females had a higher mean TSQ score than males. There was additionally a significant, weak association between TSQ (first month) and gender ($p = 0.0058$; phi coefficient = 0.18): More females (82% of $n = 129$) had a score of 6 or more compared with males (66% of $n = 151$) (see Table 32).

Table 32. TSQ Score (First Month) with Gender

TSQ (first month) score	*n*	*df*	Male ($n = 140$)		Female ($n = 108$)		*t*-value
			M	*SD*	*M*	*SD*	
	248	246	6.3	2.2	7.6	2.1	$t = 4.83$
Note: $p < 0.0001$; Cohen's $d = 0.61$							

The results revealed no significant difference in the mean TSQ (first month) with regards to number of victimizations ($p = 0.73$) (see Table 33).

Table 33. TSQ Score (First Month) with Number of Victimizations

TSQ (first month) score	*n*	*df*	Once ($n = 219$)		More than once ($n = 29$)		*t*-value
			M	*SD*	*M*	*SD*	
	248	246	6.9	2.3	6.7	2.4	$t = 0.35$
Note: $p = 0.73$							

There was however, a significant difference found in the mean TSQ (first month) regarding physical injury ($p < 0.0001$; Cohen's $d = 0.58$; moderate effect size): Those with a physical injury had a higher mean TSQ score than those without (see Table 34).

Table 34. TSQ Score (First Month) with Physical Injury

TSQ (first month) score	*n*	*df*	Yes (*n* = 91)		No (*n* = 157)		*t*-value
			M	*SD*	*M*	*SD*	
	248	246	7.7	2	6.4	2.4	$t = 4.36$
Note: $p < 0.0001$; Cohen's $d = 0.58$							

Furthermore, a X^2 test was run to determine if there was an association between the TSQ (first month) and those who were injured with a TSQ score of 6 or more compared with those not injured. The data revealed that there was a significant, weak association and physical injury ($p < 0.00027$; phi coefficient = 0.23): More victims injured had ($n = 79$ of $n = 91$) a score of 6 or more compared with those not injured ($n = 103$ of $n = 157$) (see Table 35).

Table 35. TSQ Score (First Month) ≥ 6 with Physical Injury

TSQ (first month) ≥ 6	Physical injury		Total
	Yes	No	
Yes	79	103	182
No	12	54	66
Total	91	157	248
Note: $X^2 = 13.2672$ *;* $p < 0.00027$*;* phi coefficient = 0.23; *df* =1			

These findings from the data were not unexpected. This is because research indicates that females are more likely to suffer greater levels of stress than males after victimization, and that the greater the trauma experienced, the higher the stress levels (Brewin et al., 2002).

The researcher then tested to see if there was a difference between TSQ scores with whether the vehicle was taken or not. This was done using a *t*-test. The results showed that a significant association existed between whether or not the vehicle was taken and TSQ (first month) ($p < 0.0001$; Cohen's $d = 0.69$; moderate effect size). For TSQ (first month), the mean score was higher for those whose vehicle had been taken

(see Table 36). This finding seems understandable, as those who lost their vehicle had to deal with the inconvenience of not having one and finding alternative transport, replacing other material items stolen (i.e., handbag/ wallet) (see section 4.5), and dealing with the police and insurance companies.

Table 36. TSQ Score (First Month) with Vehicle Taken

TSQ (first month) score	*n*	*df*	Yes (*n* = 200)		No (*n* = 48)		*t*-value
			M	*SD*	*M*	*SD*	
	248	246	7.1	2.1	5.6	2.5	*t* = 4.16
Note: $p < 0.0001$; Cohen's $d = 0.69$							

The TSQ (now) results follow: Of the sample, *n* = 248, that took the first TSQ (first month), five victims dropped out and did not answer the second TSQ (now). This left a sample of *n* = 243 for the TSQ (now). The mean score was 4.0 (*n* = 243 [**H17**]). This is shown in Table 37 below:

Table 37. TSQ Score (Now)

Variable	***n***	***M***	***SD***
TSQ (now) score	243	4	1.7

Hypothesis 17 is confirmed: For "sometime after the incident" ("now") the mean score of the stress scores of the victims on the TSQ was 4, and not as high as the criteria point 6.

Using a *t*-test, the researcher wanted to see if there was any significance among gender, number of victimizations, and those physically injured with the TSQ (now). Results showed that there was no significant difference in the mean TSQ (now)

regarding gender ($p = 0.35$), or number of victimizations ($p = 0.38$). These figures are shown in Tables 38 and 39 below:

Table 38. TSQ Score (Now) with Gender

TSQ (now) score	*n*	*df*	Male ($n = 136$)		Female ($n = 107$)		*t*-value
			M	*SD*	*M*	*SD*	
	243	241	3.9	1.7	4.1	1.7	$t = 0.94$
Note: $p = 0.35$							

Table 39. TSQ Score (First Month) with Number of Victimizations

TSQ (now) score	*n*	*df*	Once ($n = 215$)		More than once ($n = 28$)		*t*-value
			M	*SD*	*M*	*SD*	
	243	241	4	1.7	4.3	1.7	$t = 0.87$
Note: $p = 0.38$							

There was significance in the mean TSQ (now) with regards to physical injury ($p = 0.0003$; Cohen's $d = 0.54$; moderate effect size): Those with a physical injury had a higher mean score than those without (see Table 40).

Table 40. TSQ Score (Now) with Physical Injury

TSQ (now) score	*n*	*df*	Yes ($n = 89$)		No ($n = 154$)		*t*-value
			M	*SD*	*M*	*SD*	
	243	241	4.6	1.8	3.7	1.6	$t = 3.71$
Note: $p < 0.0031$; Cohen's $d = 0.54$							

Additionally, using a X^2 test it was found that there was a significant, weak association between TSQ (now) and physical injury ($p = 0.019$; phi coefficient = 0.15): More victims who were injured ($n = 19$ of $n = 89$) had a score of 6 or more compared with those not injured ($n = 16$ of $n = 147$) (see Table 41). This is supported by the theoretical literature that states that the greater the trauma experienced, the higher the stress levels remain over time (Brewin et al., 2002).

Table 41. TSQ Score (Now) ≥ 6 with Physical Injury

TSQ (now) ≥ 6	Physical injury		Total
	Yes	No	
Yes	19	16	35
No	70	138	208
Total	89	154	243
Note: X^2 =5.4942 *; p* = 0.019*;* phi coefficient = 0.15; *df* =1			

Furthermore, it was found that 14% of the respondents (*n* = 243) had a TSQ (now) score of 6 or more (figure not shown in any table). This study measures stress; it does not measure the likelihood of developing PTSD.

However, given their high stress score, it is reasonable to suggest that these victims may suffer from PTSD and should seek professional counseling. This finding indicates the severity of the psychological damage of this victimization.

Further testing (using a *t*-test) focused on any potential differences found between the TSQ scores (now) and whether the vehicle was taken or not. There was no significant association between TSQ (now) and whether or not the vehicle was taken (*p* = 0.76) (see Table 42).

Table 42. TSQ Score (First Month) with Vehicle Taken

TSQ (now) score	*n*	*df*	Yes (*n* = 196)		No (*n* = 47)		*t*-value
			M	*SD*	*M*	*SD*	
	243	241	4	1.5	3.9	2.4	*t* = 0.30
Note: *p* = 0.76							

The comparison results between the TSQ (first month vs. now) labeled as (change) follow: The mean TSQ (change) score was -2.8 (*n* = 242) (sd 1.9) (see Table 43).

Table 43. TSQ Score (Change) (First Month vs. Now)

Variable	*n*	*M*	*SD*
TSQ (change) score	242	-2.8	1.9

Using a *t*-test the researcher tested to see if there was any significance between TSQ (change) scores and gender, number of victimizations, and those physically injured.

It was shown that there was a significant difference in the mean TSQ (change) with regards to gender ($p < 0.0001$; Cohen's $d = 0.65$; moderate effect size): Females had a greater mean change in TSQ than males. The stress scores for females reduced more than males between TSQ (first month) and TSQ (now) (see Table 44).

Table 44. TSQ Score (Change) (First Month vs. Now) with Gender

TSQ (change) score	*n*	*df*	Male ($n = 136$)		Female ($n = 106$)		*t*-value
			M	*SD*	*M*	*SD*	
	242	240	-2.3	1.8	-3.5	1.9	$t = 4.83$
Note: $p < 0.0001$; Cohen's $d = 0.65$							

The data showed that there was no significant difference in the mean TSQ (change) regarding number of victimizations ($p = 0.36$), or physical injury ($p = 0.11$). Tables 45 and 46 summarize these results.

Table 45. TSQ Score (Change) (First Month vs. Now) with Number of Victimizations

TSQ (change) score	*n*	*df*	Once ($n = 214$)		More than once ($n = 28$)		*t*-value
			M	*SD*	*M*	*SD*	
	242	240	-2.8	1.9	-2.5	1.9	$t = 0.91$
Note: $p = 0.36$							

Table 46. TSQ Score (Change) (First Month vs. Now) with Physical Injury

TSQ (change) score	*n*	*df*	Yes (*n* = 89)		No (*n* = 154)		*t*-value
			M	*SD*	*M*	*SD*	
	242	240	-3.1	2	-2.7	2	$t = 1.62$
Note: $p = 0.11$							

The next section turns to the Posttraumatic Anger Scale (PAS) results.

4.4.2 PAS Results

Two hundred and forty-nine ($n = 249$) victims began taking the PAS, but one victim dropped out after only answering one of the dimensions (anger at the perpetrator). Thereafter the sample was $n = 248$ for the PAS results. **F**ive dimensions comprise this scale: anger at the perpetrator, desire for revenge, anger at the criminal justice system, anger at third persons, and anger at the self. It was tested to see if there were any differences between the mean scores within these dimensions. The results showed that the mean scores for these were all significantly different from each other ($p < 0.0001$ in all cases for paired t-tests with p_{crit} adjusted for multiple comparisons), meaning victims experienced significantly different levels of anger towards each of the different targets (see Table 47).

Table 47. PAS Paired T-Tests for Anger Towards Different Targets

Difference	*df*	*t*-value	Pr > |*t*|*	*M*	95% Cl		*SE*
Perpetrator-revenge	247	5.9	<. 0001	0.4	0.27	0.53	0.068
Perpetrator-criminal justice	247	18.06	<. 0001	1.49	1.33	1.66	0.083
Perpetrator-third persons	247	30.67	<. 0001	2.21	2.07	2.35	0.072
Perpetrator-self	247	11.27	<. 0001	0.71	0.58	0.83	0.063
Revenge-criminal justice	247	12.2	<. 0001	1.09	0.92	1.27	0.09
Revenge-third persons	247	21.9	<. 0001	1.81	1.65	1.98	0.083
Revenge-self	247	4.15	<. 0001	0.31	0.16	0.45	0.074
Criminal justice-third persons	247	10.28	<. 0001	0.72	0.58	0.86	0.07
Criminal justice-self	247	-8.62	<. 0001	-0.79	-0.97	-0.61	0.092
Third persons-self	247	-20.61	<. 0001	-1.51	-1.65	-1.36	0.073
Note: $*p < 0.0001$ in all cases							

The order of mean descending PAS scores is perpetrator > revenge > self > criminal justice system > third parties. The mean PAS scores with regards to the midpoint (3) were as follows (see Table 48).

- Anger towards the perpetrator: mean score 3.6 (**H_{18a}**)
- Desire for revenge: mean score 3.2 (**H_{18b}**)
- Anger towards the self: mean score 2.8 (**H_{18c}**)
- Anger towards third parties: mean score 1.3 (**H_{18d}**)
- Anger towards the criminal justice system: mean score 2.1(**H_{18e}**)

Table 48. PAS (Mean) Scores

Variable	*n*	*M*
PAS (perpetrator)	249	3.6
PAS (revenge)	248	3.2
PAS (self)	248	2.8
PAS (criminal justice system)	248	2.1
PAS (third parties)	248	1.3

Hypothesis 18a is confirmed: The mean score of "anger at the perpetrator" was above the mid-point of 3.

Hypothesis 18b is confirmed: The mean score for a "desire for revenge" was above the mid-point of 3.

Hypothesis 18c is confirmed. The mean score of "anger towards the police, courts, or administration" was below the mid-point of 3.

Hypothesis 18d is confirmed: The mean score of "anger at third persons" was below the mid-point of 3.

Hypothesis 18e is falsified. The mean score of "anger at themselves", was not above the mid-point of 3.

Given the aggressive and violent experience of these victims (see section 4.3), it is not unnatural to see that victims had higher levels of anger towards the perpetrators and a desire for revenge, particularly when a person's life was threatened.

Indeed, respondents noted that what was most upsetting to them was that their safety and security had been threatened (see section 4.2).

Each of the five dimensions was examined (using a *t*-test) for gender, number of victimizations, and those physically injured. Regarding gender, there were significant differences in the mean scores for revenge and anger at the criminal justice system (p = 0.0002 and 0.0028; Cohen's d = 0.53 and 0.38; moderate and small effect size, respectively): Males had a higher mean score than females in both cases. There were no other significant differences among the other dimensions regarding gender (see Table 49 and 50) (Note only tables with significant values are presented here[17].)

Table 49. PAS Between-Group Differences for Gender with Desire for Revenge

PAS (revenge)	*n*	*df*	Male (*n* = 140)		Female (*n* = 108)		*t*-value
			M	*SD*	*M*	*SD*	
	248	246	3.4	1.1	2.8	1.2	*t* = 3.74
Note: p = 0.0002; Cohen's d = 0.53							

Table 50. PAS Between-Group Differences for Gender with Anger at the Criminal Justice System

PAS (criminal justice system)	*n*	*df*	Male (*n* = 140)		Female (*n* = 108)		*t*-value
			M	*SD*	*M*	*SD*	
	248	246	2.2	1.1	1.8	1	*t* = 3.02
Note: p = 0.0028; Cohen's d = 0.38							

The data further revealed that there were no significant differences between number of victimizations and any of the other dimensions. With respect to those physically injured, there were significant differences in the mean anger score towards the perpetrator, desire for revenge, anger at the criminal justice system, and anger towards the self (p < 0.0001, <0.0001, < 0.0059, and <0.0001; Cohen's d = 0.86, 0.78, 0.35,

[17] To avoid over burdening the reader with tables this section only provides significant values. The non-significant values can be found in Appendix J.

and 0.83; large, moderate, small, and large effect size, respectively) (see Tables 51-54). Those who had been injured had a higher mean anger score than those who had not been injured, in all four cases. Similar to the findings on stress, that the greater the trauma experienced by victims, the higher their levels of anger (Chemtob, Hamada, Roitblat, & Muraoka, 1994; Novaco & Chemtob, 2002; Orth, Cahill, Foa, & Maercker, 2008; Orth & Maecker, 2009; Winkel, 2007). Tables 13.2 to 13.5 summarize the PAS results.

Table 51. PAS Between-Group Differences for Physical Injury with Anger at the Perpetrator

PAS (perpetrator)	*n*	*df*	Yes (*n* = 91)		No (*n* = 158)		*t*-value
			M	*SD*	*M*	*SD*	
	249	247	4.1	0.8	3.3	1	*t* = 6.24
Note: *p* < 0.0001; Cohen's *d* = 0.86							

Table 52. PAS Between-Group Differences for Physical Injury with Desire for Revenge

PAS (revenge)	*n*	*df*	Yes (*n* = 90)		No (*n* = 158)		*t*-value
			M	*SD*	*M*	*SD*	
	248	246	3.8	1.1	2.9	1.2	*t* = 6.50
Note: *p* < 0.0001; Cohen's *d* = 0.78							

Table 53. PAS Between-Group Differences for Physical Injury with Anger at the Criminal Justice System

PAS (criminal justice system)	*n*	*df*	Yes (*n* = 90)		No (*n* = 158)		*t*-value
			M	*SD*	*M*	*SD*	
	248	246	2.4	1.2	2	1.1	*t* = 2.78
Note: *p* < 0.0059; Cohen's *d* = 0.35							

Table 54. PAS Between-Group Differences for Physical Injury with Anger Towards the Self

PAS (self)	*n*	*df*	Yes (*n* = 90)		No (*n* = 158)		*t*-value
			M	*SD*	*M*	*SD*	
	248	246	3.4	0.9	2.6	1	*t* = 6.64
Note: $p < 0.0001$; Cohen's $d = 0.83$							

A factor analysis was run in order to test the reliability of the PAS and also to find out if the scale could be simplified. The results from four of the items (questions) relating to each of the five PAS dimensions (by averaging them) were combined to produce a single measure for each dimension (see Appendix C for the full PAS). To accomplish this, two things needed to be done:

1. Assess the internal consistency (reliability) of the items making up each dimension, to see if it can be justified to take the mean of these items for further analysis. The reliability of each group of variables was assessed by means of Cronbach's α, defined as:

   $$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum_{i=1}^{K}\sigma_{Y_i}^2}{\sigma_X^2}\right)$$

   where K is the number of indicators, σ_X^2 is the variance of the observed total scores, and $\sigma_{Y_i}^2$ is the variance of indicator *i*. Typically, Cronbach's α should be greater than or equal to 0.80 for adequate reliability, although some experts cite 0.70 as a reliability cutoff (Nunnally & Bernstein, 1994).
2. A theoretical construct measured by certain items is valid if it is *actually* measured by those indicators. Among many types of validity, most important is to establish construct validity as determined by reliability (done earlier) and unidimensionality. Unidimensionality is assessed by factor analysis: All items should load onto one factor. In this case the number of factors was selected by

the eigenvalue criterion: those factors with eigenvalue > 1.0 (see Table 55 below).

The results of the factor analysis revealed the following: for the first three dimensions (anger at the perpetrator, desire for revenge, and anger at the criminal justice system), the Cronbach alphas are greater than 0.80 and comparable with (or higher than) those from the literature (see Table 55). Further, the items loaded onto one factor and all factor loadings are high (>0.70). Thus, there are no problems here. The Cronbach alpha for anger at third persons is acceptable (just below 0.80) and higher than the literature value; however, it was found that it can be increased substantially by the elimination of item 1 in the set of four questions under this dimension (anger at third persons) (see Appendix C for the full PAS). Although all four items are loaded onto one factor, the factor loading for item 1 is low (0.54). Elimination of this item increases the factor loadings of all three remaining items to above 0.80. Inspecting the four items making up this dimension, it may be argued that item 1 is different as it relates to prevention of the event, whereas the other three items relate to post-event perceptions.

The Cronbach alpha for anger at the self is 0.75, which is acceptable and comparable with the literature value. The factor analysis results show that the items load onto two factors, and inspection of the items reveals why this might be the case: Items 1 and 2 relate to pre-event perceptions, and items 3 and 4 relate to post-event perceptions. While the factor loadings for the two-factor model are high, factor loadings for the one-factor model are acceptable.

Therefore, for the purposes of analyzing these study data, we can accept the PAS instrument as it is and only suggest that the scale be used in further studies to test its

possible simplification. The simplification of PAS using the results of this study was not possible.

The results of the factor analysis are presented in Table 55 below.

Table 55. PAS Factor Analysis Results

PAS construct	*N*	Cronbach alpha		Number of factors	Range of factor loadings
		Literature	Data		
Anger at perpetrator	247	0.74	0.87	1	0.82-0.87
Desire for revenge	248	0.88	0.91	1	0.84-0.92
Anger at criminal justice system	246	0.86	0.85	1	0.77-0.87
Anger at third persons	246	0.68	0.79	1	0.54-0.90
Anger at third persons WITHOUT item 1	246		0.85	1	0.84-0.90
Anger at self	246	0.78	0.75	2	Factor 1 (items 1&2): 0.91-0.91 Factor 2 (items 3&4): 0.94-0.95
Anger at self	246	0.78	0.75	1 (forced)	0.71-0.80

The next section addresses the counseling results of the study.

4.4.3 Counseling Results

When it came to counseling, 48% of the respondents (*n* = 249 [**H19a**]) reported that they had received counseling. This result was expected; however, it was not expected that the difference between those who received counseling and those who did not would be so marginal, which is a positive find (see Table 56).

Table 56. Distribution of Counseling Received

Variable	***n***	**Category**	**Overall**	
			n	%
Received counseling	249	Yes	119	48
		No	130	52
Total			249	100

Hypothesis 19a is confirmed: Most victims did not receive counseling after the incident.

Counseling was correlated (using a X^2 test) with the variables of gender, number of victimization, and those physically injured and counseling.

There was a significant, weak association between whether or not respondents had received counseling and gender (p = 0.0052; phi coefficient = 0.18): A higher proportion of females reported that they had received counseling, compared with males (see Table 57).

Table 57. Counseling Results with Gender

Received counseling	Female	Male	Total
Yes	63	56	119
No	46	84	130
Total	109	140	249
Note: X^2 =7.7806 *;* p = 0.0052*;* phi coefficient = 0.18; *df* = 1			

Additionally, there was a significant, weak association between whether or not respondents had received counseling and physical injury (p = 0.025; phi coefficient = 0.14): A higher proportion of those injured reported that they had received counseling, compared with those who had not been injured (see Table 58).

Table 58. Counseling Results with Physical Injury

Received counseling	Physical Injury		Total
	Yes	No	
Yes	52	67	119
No	39	91	130
Total	91	158	249
Note: X^2 =5.0266 *;* p = 0.0025*;* phi coefficient = 0.14; *df* = 1			

There was no significant association between whether or not respondents had received counseling and number of victimizations ($p = 0.214$) (see Table 59).

Table 59. Counseling Results with Number of Victimizations

Received counseling	Number of Victimizations		Total
	Once	More than Once	
Yes	102	17	119
No	118	12	130
Total	220	29	249
Note: $X^2 = 1.5428$; $p = 0.214$; $df = 1$			

With regards to the type of counseling received, 57% of the respondents ($n = 119$) had received counseling at a victim support center (free counseling service). This is a positive finding, showing that victims are making use of the free counseling services at police stations. Forty percent (of $n = 119$) had made use of professional counseling. Only 3% (of $n = 119$) received their counseling at a trauma center (these are free counseling services not situated in police stations) (see Table 60).

Table 60. Distribution of Type of Counseling Received

Variable	***n***	**Category**	**Overall**	
			n	%
Type of counseling received	119	Victim Support	68	57
		Trauma Centre	4	3
		Professional	47	40
Total			119	100

Testing for an association (using a X^2 test) between type of counseling and gender, number of victimizations, and those physically injured revealed (trauma centers were excluded from this analysis based on its small sample size) that there was no

significant association between type of counseling and gender (p = 0.34), or number of victimizations (p = 0.18; Fisher's exact test) (see Table 61 and 62).

Table 61. Type of Counseling Received with Gender

Type of counseling received	Female	Male	Total
Victim Support	32	36	68
Professional	27	20	47
Total	59	56	115
Note: X^2 =1.2004 *;* p = 0.273; df = 1			

Table 62. Type of Counseling Received with Number of Victimizations

Type of counseling received	Number of Victimizations		Total
	Once	More than Once	
Victim Support	55	13	68
Professional	43	4	47
Total	98	17	115
Note: p = 0.18; A Fisher's exact test was used as the observed frequencies did not meet the criteria for a X^2 test. Fisher's exact test does not have a "test statistic", but only computes the p-value directly.			

There was a significant, weak association between type of counseling and physical injury (p = 0.0037; phi coefficient = 0.27): A higher proportion of those injured reported that they had made use of professional counseling, compared with those not injured (see Table 63). It was found that injured victims were more likely to suffer higher levels of stress and anger (see sections 4.4.1 and 4.4.2). Therefore, it may be reasonable to suggest that they preferred professional counseling to help them deal with their trauma, rather than using a free counseling service staffed by volunteers (Nel & van Wyk, 2013).

Table 63. Type of Counseling Received with Physical Injury

Type of counseling received	Physical Injury		Total
	Yes	No	
Victim Support	22	46	68
Professional	28	19	47
Total	50	65	115
Note: X2 = 8.38 *; p* = 00037.*;* phi coefficient = 0.27; *df* = 1			

Among those victims who did not receive counseling, most noted that they would not have liked to receive any (62% of *n* = 127 [**H19b**]). The remaining 38% (of *n* = 127) indicated that they would have like (desired) to have received counseling. These figures are shown in Table 64 below:

Table 64. Distribution of No Counseling, But Would Have Liked to Have Received Counseling

Variable	***n***	**Category**	**Overall**	
			n	%
No counseling, but would have liked to have received counseling	127	Yes	48	38
		No	79	62
Total			127	100

Hypothesis 19b is confirmed: Most would not have liked to have received counseling.

This finding was further tested to see if there was any association between desire for counseling and gender, number of victimizations, and those physically injured. This analysis was done using a X^2 test.

There was a significant, moderate association between desire for counseling and gender (p = 0.0005; phi coefficient = 0.31): A higher proportion of females reported that they would like to have had counseling, compared with males (see Table 65).

Table 65. Desire for Counseling with Gender

No counseling, but would have liked to have received counseling	Female	Male	Total
Yes	26	22	48
No	19	60	79
Total	45	82	127
Note: X^2 =11.837 *;* p = 0.0005*;* phi coefficient = 0.31; *df* = 1			

There was a significant, weak association between desire for counseling and physical injury (p = 0.013; phi coefficient = 0.22): A higher proportion of those injured reported that they would have liked counseling, compared with those not injured (see Table 66). These findings show a similar pattern between the groups of victims (females and those physically injured) more likely to receive counseling and those who would have liked to receive counseling but did not.

Table 66. Desire for Counseling with Physical Injury

No counseling, but would have liked to have received counseling	Physical Injury		Total
	Yes	No	
Yes	21	27	48
No	18	61	79
Total	39	88	127
Note: X^2 =6.1677 *;* p = 0.013*;* phi coefficient = 0.22; *df* = 1			

There was no significant association between desire for counseling and number of victimizations (p = 0.33). This is shown in Table 67 below:

Table 67. Desire for Counseling with Number of Victimizations

No counseling, but would have liked to have received counseling	Number of Victimizations		Total
	Once	More than Once	
Yes	42	6	48
No	74	5	79
Total	116	11	249
Note: $p = 0.33$; A Fisher's exact test was used as the observed frequencies did not meet the criteria for a X^2 test. Fisher's exact test does not have a "test statistic", but only computes the p-value directly			

The results now turn to the financial damages hypotheses.

4.5 Financial Damages Hypotheses

As revealed in section 4.2, the most upsetting element of the carjacking for the victims was their safety and security being threatened, not that someone attempted to steal or actually stole their vehicle. Nonetheless, financial damages are an aspect of carjacking that should be considered and described. The results from the data reveal that these victims suffer both direct and indirect costs (see Table 68).

In this study, 80% (n = 213 of n = 268) of the victims reported that their vehicle was taken during the incident (see section 4.2 in Table 13 [**H9**] and Table 68). In the follow-up question in the financial damages section of the questionnaire (see Appendix C), only 91% (n = 193 of n = 213) answered whether their vehicle was recovered or not. This means that 20 (9% of n = 213) victims did not answer this question. Twenty-nine percent (of n = 193) reported that their vehicle had been recovered, showing that the majority of these victims endured the inconvenience of having to replace their vehicle (**H20**).

In terms of vehicle insurance, 93% (of n = 137) of the vehicles not recovered were insured (**H21a**). Only a very small percentage of victims did not have the safeguards of an insurance policy. For those victims insured, the personal cost of

replacing a vehicle depends on their personal preference and financial status. In this study exactly half (50% of *n* = 128) reported that their personal cost for replacing their vehicle was less than ZAR30, 000 (less than JPY309, 861[18]). The same argument can be made for those victims not insured; the cost of replacing a vehicle is a personal preference and based on financial status. However, the results showed that the majority (56% of *n* = 9) not insured spent more than those victims insured to replace their vehicle. They spent between ZAR60,000 and ZAR90,000 (JPY619,722 and JPY939,583).

When it came to victims whose vehicle was not recovered but insured, 47% (of *n* = 128) reported that their premiums had increased. More than half of those insured did not have their premiums increase (53% of *n* = 128; [**H**$_{21b}$]). Although this supports the hypothesis made, it is only marginal. For those victims whose insurance premiums did increase (*n* = 60 of *n* = 128), the majority (83% of *n* = 60) stated that it increased by less than ZAR1,000 (JPY10,328) per month.

During a carjacking the vehicle is not the only material loss victims may incur; they may have other items stolen, too. The results from the data prove this. Eighty-six percent (of *n* = 235; [**H**$_{22}$]) of the victims had one or more items stolen during the incident. Only 14% (of 235) did not report any other items stolen. The most common items stolen were mobile phones (78%) and handbags/wallets (80%). The majority of victims (86% of *n* = 199) reported that it cost them less than ZAR30,000 (less than JPY309,861) to replace their stolen items. Again, this cost is a personal choice of the victims but does give an indication of the costs incurred due to carjacking.

It was then asked if they had installed any type of security device after their victimization. More than half did not install a security device (59% of *n* = 232; [**H**$_{23}$]).

[18] The conversion rate was on 8 December 2014 from Oanda (2014). ZAR1 = JPY10.33

Of those who did (41% of *n* = 232), the most popular ones were satellite tracking systems (53% of *n* = 95) and anti-hijack devices (43% of *n* = 95). The majority (43% of *n* = 95) noted that it cost between ZAR1,000 and ZAR2,000 (between JPY10,328 and JPY20,657) to do so.

Regarding those victims who had their vehicle taken and not recovered, 60% (of *n* = 137 [**H25a**]) noted that it took more than 1 month to replace their vehicle. The majority of these victims (98% of *n* = 137 [**H25b**]) said that this time did not have any effect on their employment. Of the remaining 2% (*n* = 3 of *n* = 137), two victims noted a loss of some income and one victim noted that it affected the number of hours he or she was able to work.

Of the victims injured (*n* = 94, see Tables 23 and 68), 90% (*n* = 85 of *n* = 94) answered the question: "if you were injured, did it have an effect on your employment?" This means that 10% (*n* = 9 of *n* = 94) did not answer this question. Eighty-six percent (of *n* = 85 [**H26**]) said that their injuries had no effect on their employment, although the remaining 14% (*n* = 12 of *n* = 85) stated that it did have an effect. Seven (58% of *n* = 12) said the injuries forced them into early retirement, with the remaining five (42% of *n* = 12) reporting a loss of some income, as they were self-employed[19] and unable to work.

Table 68 summarizes the distribution of financial damages.

[19] These victims identified themselves as "self-employed" in the comments section in the questionnaire. The demographic variable of "employment status" was not tested for in this study.

Table 68. Summary of Financial Damages Results

Variable	*n*	Category	Overall	
			n	%
Vehicle taken	268	Yes	213	80
		No	55	20
Vehicle recovered*	193	Yes	56	29
		No	137	71
Vehicle insured	137	Yes	128	93
		No	9	7
Vehicle insured: personal cost	128	Less than R30k	64	50
		R30-60k	46	36
		R60-90k	16	12
		R90-110k	1	1
		More than R110k	1	1
Vehicle insured: effect of monthly premium	128	Yes	60	47
		No	68	53
Vehicle insured and premium changed: magnitude of change	60	Less than R 1000	50	83
		R1000-2000	10	17
Vehicle NOT insured: personal cost	9	R30-60k	1	11
		R60-90k	5	56
		R90-110k	2	22
		More than R110k	1	11
Items stolen	235	Yes	202	86
		No	33	14
Items stolen**	202	None	33	14
		Mobile phone	184	78
		Handbag/wallet (incl. cash/credit cards)	187	80
		Laptop/tablet computer	55	23
		Sports equipment	40	17
		Groceries	24	10
		Jewelry/sunglasses/reading glasses	18	8
		Clothing/shoes	12	5
		Small appliances	11	5
		Other	17	7
Items stolen: personal cost***	199	Less than R30k	171	86
		R30-60k	21	10
		R60-90k	4	2
		R90-110k	1	1
		More than R110k	2	1
Installed security device	232	Yes	95	40
		No	137	60
Security device type installed ****	95	Satellite tracking system	50	53
		Alarm system	21	22
		Immobilizer	27	28
		Anti-hijack device	41	43
Security device: personal cost	95	Less than R 1000	17	18
		R1000-2000	41	43
		R2000-3000	19	20
		R3000-4000	11	12
		More than R4000	7	7
Vehicle replacement time	137	Less than 1 week	3	2
		1-2 weeks	4	3
		2 weeks to 1 month	48	35
		More than 1 month	82	60
Vehicle replacement time: effect on employment	137	Yes	3	2
		No	134	98
Vehicle replacement time: effect on employment	3	Loss of some income	2	67
		Affected working hours	1	33
Physical injury (of those who experienced physical violence)	138	Yes	94	68
		No	44	32
Physical injury: effect on employment *****	85	Yes	12	14
		No	73	86
Physical injury: effect on employment	12	Early retirement	7	58
		Loss of some income	5	42

Note: * Indicates that 20 victims did not answer this question. ** Indicates that figures do not add up to 100; respondents could select more than one option. *** Indicates that three victims did not answer this question. **** Indicates that figures do not add up to 100; respondents could select more than one option. ***** Indicates that nine victims did not answer this question.

Hypothesis 20 is confirmed: Majority of the victims did not have their vehicle recovered.

Hypothesis 21a is confirmed: Majority of the victims whose vehicles were taken had vehicle insurance**.**

Hypothesis 21b is confirmed: Most victims' monthly insurance premium was not affected.

Hypothesis 22 is confirmed: The majority of victims had other items stolen during the incident.

Hypothesis 23 is confirmed. Most victims did not install a security device**.**

Hypothesis 24 cannot be answered: This was due to a methodological mistake in the construction of the questionnaire where a response option "no cost" was not included.

Hypothesis 25a is confirmed: Most of the victims who had their vehicle taken were only able to replace it "more than 1 month" after the incident.

Hypothesis 25b is confirmed: Majority of the victims reported that the time it took to replace the vehicle did not have any effect on their employment.

Hypothesis 26 is confirmed: Majority of the victims who were injured reported that the injuries they sustained did not have any effect on their employment.

4.6 Behavioral Changes Hypotheses

A list of widely publicized precautions by government officials and the mass media was presented to the victims to ask if they took any of these precautions before the incident, how many they took directly after, and how many they still take "today". The three most popular precautions taken were:

1. Maintain a safe distance between myself and the vehicle in front of me (before: 48%; after: 75%; today: 83% of $n = 217$)

2. Notify people when I leave and/or have reached my destination (before: 30%; after: 76%; today: 83% of $n = 217$)
3. I try avoid stopping at traffic lights and stop streets when possible (before: 22%; after: 67%; today: 73% of $n = 217$).

Table 69 shows the frequency of the precautions taken.

Table 69. Frequency of Precautions Taken

Variable	***n***	(a) I always try to travel during the busy hours of the day.		(b) I try to avoid stopping at traffic lights and stop streets when possible.		(c) I always maintain a safe distance between myself and the vehicle in front of me.		(d) I always try to make sure someone serves as a "lookout" when entering and exiting my home.		(e) I employed the services of a security company to escort me entering and exiting my home.		(f) I always notify people when I leave and/or have reached my destination.		(g) I alternate my route home.		(h) I always travel past my house first to scan the area before entering.		(i) I try to travel in a convoy when possible.	
		n	%	*n*	%	*N*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Number of precautions: before	217	21	10	48	22	103	48	20	9	1	1	64	30	5	2	1	1	15	7
Number of precautions: after	217	93	43	146	67	162	75	102	47	13	6	164	76	34	16	58	27	33	15
Number of precautions: today	217	106	49	159	73	179	83	108	50	14	7	181	83	41	19	50	23	40	18
Note: Figures do not add up to 100% because respondents could indicate more than one option.																			

The results were tested to see if there were any differences between the mean scores of the precautions taken by the victims. The results showed that the mean scores were significantly different between the three categories ($p < 0.0001$ before-directly after and before-today; $p = 0.0023$ for directly after-today of $n = 217$) (paired t-tests with p_{crit} adjusted for multiple comparisons) (see Table 70). This revealed that the victims did take a number of precautions before the incident, but that as a result of the incident and after a period of time, the number of precautions they took changed. The mean precaution scores for each were:

- Number of precautions taken before the incident: mean score 1.2 (**H_{27a}**)
- Number of precautions taken directly after the incident: mean score 3.6 (**H_{27b}**);
- Number of precautions taken today: mean score 4 (**H_{27c}**)

The low number of precautions taken before the incident was expected (below five precautions). For "after the incident" and "today", it was expected that the victims would have taken more than five precautions to avoid re-victimization. This was not the case.

Table 70. Precautions Paired T-Tests

Difference	*df*	*t*-value	Pr > |*t*|*	*M*	95% Cl		*SE*
before - directly after	217	-17.09	<.0001	-2.41	-2.68	-2.13	0.14
directly after - today	217	-3.09	0.0023	-0.33	-0.55	-0.12	0.11
before - today	217	-19.16	<.0001	-2.74	-3.02	-2.46	0.24
Note:* $p < 0.0001$; $p = 0.0023$							

Hypothesis 27a is confirmed: The mean score of precautions taken by the victims "before" the incident was below 5.

Hypothesis 27b is falsified: The mean score of precautions taken by the victims "directly after" the incident was below 5.

Hypothesis 27c is falsified: The mean score of precautions taken by the victims "today" was below 5.

It was further tested (using a *t*-test) to investigate whether there were any between-group differences of gender, number of victimizations, and those physically injured.

There were significant differences in all three scores with regards to gender (p = 0.0011, <0.0001, and 0.0003; Cohen's d = 0.50, 0.57, and 0.49; moderate, moderate, and small effect sizes, respectively): Females took more precautions than males in all cases (see Table 71-73).

Table 71. Precaution Taking with Gender (Before)

Number of precautions: before	*n*	*df*	Male (*n* = 118)		Female (*n* = 99)		*t*-value
			M	*SD*	*M*	*SD*	
	217	215	1	1	1.6	1.4	$t = 3.32$
Note: $p = 0.0011$; Cohen's $d = 0.50$							

Table 72. Precaution Taking with Gender (Directly After)

Number of precautions: after	*n*	*df*	Male (*n* = 118)		Female (*n* = 99)		*t*-value
			M	*SD*	*M*	*SD*	
	217	215	3.1	1.9	4.2	2	$t = 4.21$
Note: $p < 0.0001$; Cohen's $d = 0.57$							

Table 73. Precaution Taking with Gender (Today)

Number of precautions: today	*n*	*df*	Male (*n* = 118)		Female (*n* = 99)		*t*-value
			M	*SD*	*M*	*SD*	
	217	215	2.5	2	3.6	1.7	$t = 3.67$
Note: $p < 0.0003$; Cohen's $d = 0.49$							

Nothing significant was found for the between-group differences of age, number of victimizations, and those physically injured with the number of precautions taken (Note non-significant values are not presented[20]).

Regarding the effect of taking precautions and the feeling of the likelihood of being re-victimized, only a small percentage (24% of n = 217) felt that by taking any number of these precautions they were less likely to be re-victimized.

[20] To avoid over burdening the reader with tables, the non-significant values can be found in Appendix J.

This means that the majority (76% of n = 217 [**H28**], see Tables 74) felt that, regardless of the number of precautions they took, they did not feel safer from the potential of being carjacked again.

Table 74. Distribution of Precaution Taking/ Feelings of Re-victimization

Variable	*n*	Category	Overall	
			n	%
Feel less likely to be re-victimized by taking precautions	217	Yes	53	24
		No	164	76
Total			217	100

Hypothesis 28 is confirmed: Despite taking any number of precautions, the majority of victims still feel likely to be re-victimized.

It was further, tested (using a X^2 test) to see if there was any association between taking precautions and the likely feeling of being re-victimized with gender, number of victimizations, and those physically injured. The results showed that there was no significant association among the opinion and gender (p = 0.62), number of victimizations (p = 0.33; Fisher's exact test), or physical injury (p = 0.23) (see Tables 75-77).

Table 75. Precaution Taking/Feelings of Re-Victimization with Gender

Feel less likely to be re-victimized by taking precautions	Female	Male	Total
Yes	25	27	52
No	73	92	165
Total	98	119	217
Note: X^2 =0.2345*;* p = 0.62; df = 1			

Table 76. Precaution Taking/Feelings of Re-Victimization with Number of Victimizations

Feel less likely to be re-victimized by taking precautions	Number of Victimizations		Total
	Once	More than Once	
Yes	48	4	52
No	143	22	165
Total	191	26	217
Note: p = 0.33; A Fisher's exact test was used as the observed frequencies did not meet the criteria for a X^2 test. Fisher's exact test does not have a "test statistic", but only computes the p-value directly			

Table 77. Precaution Taking/Feelings of Re-Victimization with Physical Injury

Feel less likely to be re-victimized by taking precautions	Physical Injury		Total
	Yes	No	
Yes	16	36	52
No	66	99	165
Total	82	135	217
Note: X^2 =1.4331 *;* p = 0.231; df = 1			

It was then asked of these victims to state whether they believed taking precautions imposed restrictions on their lives. Restrictions are limiting conditions or measures. In this sense the precautions act as measures that restrict victims' lives and confine them to living under new conditions (Janoff-Bulman & Frieze, 1983). Seventy-three percent (of n = 219 [**H29**], see Table 78) of the victims stated that their precautions had imposed restrictions on their lives.

Table 78. Distribution of Precaution-Taking Restrictions

Variable	*n*	Category	Overall	
			n	%
Precautions impose restrictions	219	Yes	160	73
		No	59	27
Total			219	100

Hypothesis 29 is confirmed: Regardless of the number of precautions victims take, the majority feel that the precautions impose some form of restriction on their lives.

Comparing the data using a X^2 test, there was a significant, weak association between the opinion and gender (p = 0.0022; phi coefficient = 0.16): a higher proportion of females felt that the precautions imposed restrictions on them compared with males (see Table 79). It was shown earlier that females use more precautions.

Table 79. Precaution-Taking Restrictions with Gender

Precautions impose restrictions	Female	Male	Total
Yes	80	80	160
No	19	40	59
Total	99	120	219
Note: X^2 =5.5116; p = 0.018; df = 1			

There was no significant association between the opinion and number of victimizations, or physical injury (Note non-significant values are not presented[21]).

[21] To avoid over burdening the reader with tables, the non-significant values can be found in Appendix J.

Furthermore, of these victims (73% of n = 219) it was asked of them to what extent these precautions imposed restrictions on their lives. Three fifths (63% of n = 160, see Table 80) felt that the precautions were 'much' or 'a great deal' of an imposition on their lives.

Table 80. Precaution-Taking Restrictions and Extent of Restriction

Variable	*n*	Category	Overall	
			n	%
Extent of restrictions	160	Little	12	8
		Somewhat	47	29
		Much	63	39
		A great deal	38	24
Total			160	100

It was tested (using a X^2 test) to see if there were any associations between the extent of the restrictions imposed on the victims' lives and gender, number of victimizations, and those physically injured. For these tests the results for 'little and 'somewhat' were combined. The data revealed that there was a significant, moderate association between the extent and gender ($p < 0.0001$; phi coefficient = 0.34): females had a higher proportion of respondents who felt that the precautions imposed a great deal of restrictions compared with males (see Table 81). Again, it must be taken into consideration that females take more precautions.

Table 81. Precaution-Taking Restrictions with Gender

Extent of restrictions	Female	Male	Total
Little/ Somewhat	28	31	59
Much	22	41	63
A great deal	30	8	38
Total	80	80	160
Note: X^2 =18.62*; p* = 0.0001; phi coefficient = 0.34; *df* = 2			

No associations were found between number of victimizations, and those physically injured (Note non-significant values are not presented[22]).

The final question posed to the victims was about which impact (damage) they considered was the most severe after their carjacking—psychological, physical, or financial. The result of this question was to provide further support for the argument that psychological damage is the most severe form of victimization after a carjacking. This, too, is the main theoretical proposition that victimizations are invasions into the self of the victim. A majority (81% of *n* = 218 [**H30**] see Table 82) responded that the psychological damage was the most severe.

Table 82. Most Severe Impact (Damage)

Variable	***n***	**Category**	**Overall**	
			n	%
Impact	218	Psychological	177	81
		Financial	30	5
		Physical	11	14
Total			218	100

[22] See footnote 20 (Appendix J).

Hypothesis 30 is confirmed: Majority of the victims indicated that the psychological damage is the most severe impact following a carjacking.

It was then tested (using a X^2 test) to determine if there was an association between the extent of the impact and gender, number of victimizations and physical injury. There was a significant, weak association between the impact and gender ($p = 0.0013$; Cramer's $V = 0.25$): Females had a higher proportion of respondents who felt that the most severe impact was psychological, compared with males (see Table 83).

This finding corresponds with the fact that females showed higher levels of stress in the psychological damages of this victimization (see section 4.4).

Table 83. Most Severe Impact (Damage) with Gender

Impact	Female	Male	Total
Psychological	90	87	177
Financial	6	24	30
Physical	2	9	11
Total	98	120	218
Note: $X^2 = 13.22$; $p = 0.0013$; *Cramer's* $V = 0.25$; $df = 2$			

Additionally, there was a significant, weak association between the impact and physical injury ($p = 0.041$; Cramer's $V = 0.17$): Those who had been injured were more likely to feel that the most severe impact was physical, compared with those who had not been injured (see Table 84). This supports the finding found in section 4.4 where those victims with physical injuries recorded higher levels of stress (see section 4.4).

Table 84. Most Severe Impact (Damage) with Physical Injury

Impact	Physical Injury		Total
	Yes	No	
Psychological	60	111	171
Financial	9	21	30
Physical	8	3	11
Total	77	135	212
Note: X2 =6.48; *p* = 0.041; *Cramer's V* = 0.17; *df* = 2			

There was no significant association between the extent of the impact and number of victimizations (Note non-significant values are not presented[23]).

4.7 Summary

The data collected in this study were statistically analyzed, and the results were presented. The results of the study yielded a tremendous amount of information. They indicate that the review of the literature and theory are comprehensive, in that no results stand out or stray from the hypotheses constructed. These findings demonstrate support for the propositions of the theory that victimizations are invasions into the self. The next task is to conclude these findings to determine how they contribute to the knowledge of victimology and may pave the way for further research on carjacking victims.

[23] See footnote 20 (Appendix J).

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

In this chapter a consolidation of the research, along with indications for further investigation, is presented. In accordance with the data analysis of the preceding chapter, it is within the bounds of reason to make certain summations about the victimization of carjacking and its contribution to the knowledge of victimology. Withal, the data harnessed from this research provide a basis from which further research can be conducted. This is especially so, given the deficiency in scientific and victimological research on carjacking victims and the impact it has on their lives. In the next sections, conclusions in regard to the consequences of carjacking victimization in South Africa are detailed.

5.1 Demographics and Victimization

Hypothesis 1 is falsified: The majority of people victimized by carjacking are not in the category "Middle aged: 36-55".

Hypothesis 2 is confirmed: Most of those victimized by carjacking were male.

Carjacking is a consequential victimization. The majority of carjacking victims in this study were not concentrated into one age category (36 to 55 years) (**H_1**), as was assumed based on labor market information in the country. Instead, a more or less even distribution of ages was found among these victims. More males were victimized by carjacking than females, supporting the criminological literature, which states that perpetrators prefer to carjack males over females (**H_2**).

However, to yield a more satisfactory answer as to whom is victimized more in this demographic, more research is needed. The garnering of this demographic information was important to demonstrate that victimization responses from carjacking are not distributed equally between the genders. The next section reviews the details provided by the victims of their carjacking.

5.2 Incident Details

Hypothesis 3 is confirmed: Majority of the victims had only been victimized once by carjacking.

Hypothesis 4 is confirmed: Most victimizations took place "At home", or "10 km around your home" (66%); and if not at home, most took place "On a road at a traffic light or stop street" (48%).

Hypothesis 5 is confirmed: The majority of carjackings took place during the week (78%) and, most took place during the busy hours of the day, "16:01pm–19:00pm" (37%).

Hypothesis 6 is confirmed: Majority of the victims did not have any signs of danger to warn them they were about to be carjacked.

On average, 9,000 people are victimized every year by carjacking in South Africa. The majority of the victims in this study had been victimized once (**H3**), indicating that carjacking victimization does not typically belong to the group of repeat victimizations. Further research should be done to support this finding, as caution is given to the sampling method of this study.

Most of the victimizations took place at victims' homes or within a 10-km radius of their homes, on a road, at a traffic light, or stop street (**H4**). Research indicates that

perpetrators have identified these as preferable locations (Davis, 2003; Zinn 2002). The findings of this study confirm this statement and are explained by the fact that perpetrators can only carry out the victimization once the vehicle is stopped, which is a characteristic of these locations. Furthermore, the majority of victimizations took place during the week, and most took place during the busy hours of the day (**H_5**), which may be because these are the times most people use their vehicles.

The prevalence of this form of victimization in the country has prompted government organizations and other concerned authorities to publish crime awareness information for the public. The information is aimed at making people more aware of certain situations and indicators that may alert them about a possible victimization, particularly a carjacking. The victims in this study indicate that the majority of them did not notice any signs of danger that could have warned them about their impending victimization (**H_6**). Because no such information has been collected before, this finding provides a useful insight into the reality of the situation for these victims. The element of surprise utilized by perpetrators (Zinn, 2002, 2013) and the level of concentration that driving itself requires makes it difficult for victims to be aware of signs of danger.

Hypothesis 7 is confirmed: Majority of the victims did have a security device in the vehicle.

Hypothesis 8 is falsified: Most victims were not asked where the deactivation switches were or how to deactivate them.

A plethora of security devices have been developed and introduced into South Africa to help prevent both theft of a vehicle and a carjacking (Davis, 2002; Jacobs, 2010;

Urquhart, 2014). Majority of the victims do use such devices (**H7**). Given that these devices require deactivating and are hidden in the vehicle for the owners' knowledge only, it was expected that more victims would be "asked" (forced) to assist the perpetrator(s) to override their "security devices". Nonetheless, just under half of the victims were asked to assist in deactivating their security devices (**H8**). This evidence suggests that a victim is more than just an obstacle in this victimization, countering the argument made in the criminological literature (Davis, 1999, 2005; Zinn, 2002).

Hypothesis 9 is confirmed: Majority of the victims had their vehicle taken during the incident.

Hypothesis 10 is confirmed: Majority of the victims stated: "It was more upsetting to have my safety and security threatened".

Researchers have argued that victimizations in which there is a close, physical proximity between victim and perpetrator are more likely to remain in the attempted phase—in other words, to be unsuccessful (Karmen, 2010). Carjacking demands such close proximity; however, the data indicate that the majority of carjackings are successful and did not remain in the attempted phase (**H9**). Encountering an aggressive/motivated perpetrator (Zinn, 2010, 2013) with a life-threatening weapon (shown in section 5.3) is perhaps one reason most carjackings are "successful". In cases where the carjacking remained in the attempted phase, the majority of victims noted that it was because an approaching vehicle or bystander startled the perpetrators. A small amount of cases remained in the attempted phase because victims fought their attackers. All those who fought back reported being physically injured, showing that resistance is not advisable to victims and increases the potential for injury (Arrive Alive, 2013; Zinn, 2002, 2010; 2013).

As demonstrated in this study in a manner that supports the theoretical argument (Janoff-Bulman, 1992; Kirchhoff, 2005), almost all the victims noted that the material losses were less of a concern to them than their safety and security (**H_{10}**). One victim's comment captures this argument:

> "*As South Africans we live in fear, but what can you do if someone wants to take your* [vehicle]*—they will take it at any cost. They,* [the] *criminals, have no regard for life and that's what makes it even worse. I was lucky to only have minor injuries. My best friend was not so lucky; 3 years ago he was shot and killed. Senseless.*"

Hypothesis 11 is confirmed: Majority of the victims reported their incident to the police (93%), with most of the victims satisfied with how police dealt with their report (60%).

Carjacking is arguably one of the most accurate figures in South African crime statistics (Holtman & Domingo-Swarts, 2008). This is due in part to the financial safeguards of having an insurance policy. In order to be compensated for their loss, victims need to present a case number to their insurance companies. This can only be given once a report is filed with the police (Arrive Alive, 2013). Practically all victims in this study reported their incident to the police as they had vehicle insurance (see section 5.5 below) (**H_{11}**).

Research on police reporting suggests that victims are more concerned with how they are treated by police than in what the police are doing to recover their property (van Kesteren & van Dijk, 2010). Results support this finding: more than half of the

victims who reported their carjacking to the police were satisfied with the police handling of the report (**H11**). The victims indicated that the main reasons for their satisfaction were that the police met the victim's expectations and treated the victim politely and correctly. Those victims who were not satisfied with the police reported that a lack of interest and slow response on behalf of the police were the main reasons for their discontent.

5.3 Physical Damages

Hypothesis 12 is confirmed: Majority of the victims had aggressive language used against them.

Hypothesis 13 is confirmed: In the majority of carjackings the perpetrators were armed with a gun.

Hypothesis 14a is confirmed: Most victims experienced physical violence.

Hypothesis 14b is confirmed: Most victims who experienced physical violence sustained injuries.

Hypothesis 14c is confirmed: Most of the victims who sustained injuries required medical treatment "at hospital".

Hypothesis 15. Majority of the victims were "let go immediately".

Criminological research states that carjackers are motivated perpetrators armed with deadly weapons (Davis, 2002; Zinn, 2002). The victims provided overwhelming support for this statement because almost all of them encountered a perpetrator using aggressive language and a life-endangering weapon, most often a firearm (**H12**; **H13**). The violent nature of this victimization was demonstrated by the fact that more than half the victims experienced physical violence and sustained an injury as a result

(**H_{14a}**; **H_{14b}**). Furthermore, support was found for the argument that more males than females are likely to have physical violence used against them and sustain an injury as a result.

The injuries the victims sustained were wide ranging but most commonly to the face or eyes. As a result of the severity of their injuries received, most victims required treatment at a hospital (**H_{14c}**). Recent research into robbery in South Africa suggests that violence against victims is increasing (Lutchminarain & Minnaar, 2012; Pretorius, 2008; Steyn, de Beer & Fouche, 2009; van der Merwe, 2008). This study cannot support such a statement which in itself is difficult to verify; however, the experiences detailed by carjacking victims in this study can be used to demonstrate the reality and severity of the violence used against these victims. Expressing the consequences of such violence, a victim wrote:

> "*This incident has changed my life completely. I used to play a lot of sports, but being shot in the leg has damaged my nerves and I cannot play sports anymore.*"

Mass media reports and research on carjacking perpetrators indicated that on rare occasions victims might be held by the carjackers for extended periods of time (News24, 2014; Zinn, 2013). Gaining information directly from the victims revealed that these instances happen rarely (**H_{15}**). Only a small number of victims were kept longer by the perpetrators, in most cases for less than 30 minutes. Because this was a very small group of victims, qualitative research would provide a more useful way of detailing the impact of this victimization on these victims.

5.4 Psychological Damages

Hypothesis 16 is confirmed: The mean score of the stress scores of the victims on the TSQ "within the first month" after the incident—was above the criteria point 6.

Hypothesis 17 is confirmed: For "sometime after the incident" "now" the mean score of the stress scores of the victims on the TSQ was 4, and not as high as the criteria point 6.

It was shown that carjacking victims react emotionally and suffer stress. Although stress levels are undoubtedly at their highest during the period immediately after victimization (Brewin et al., 2002), carjacking victims appear to exhibit particularly high levels of stress within this period (mean TSQ score 6.8) (**H_{16}**). The aggressive and violent nature of carjacking suggests why their stress levels are high (see section 5.3).

In the case of these victims, it was found that females, persons physically injured, and those who lost their vehicles all had higher levels of stress. Regarding females experiencing higher levels of stress, this finding coincides with previous research on gender factors and stress after victimization (Brewin et al, 2000; Norris & Krzysztof, 1991; Wolfe & Kimberling, 1997). The results for those physically injured and victims losing their vehicles having higher stress scores are supported by the argument that the greater the trauma experienced, the higher the stress levels (Brewin et al., 2002). It was interesting to find that the levels of stress between victims carjacked more than once and those victimized once did not differ. This study therefore concludes that the victimization was equally traumatic for these victims irrespective of the amount of times they had been carjacked.

The theoretical literature additionally notes that the vast majority of victims' stress levels decreased over time (Bonanno, 2004; Janoff-Bulman, 1985, 1992). The intensity of the initial trauma cannot continue, and as victims' lives slowly return to their normal routines, stress levels decrease. Evidence for this reduction in stress levels was found with these victims, where the levels of stress on the TSQ "first month" reduced from a mean score of 6.8 to a mean score of 4 in the TSQ "now" (**H17**). The only significance in the stress scores for TSQ (now) was between those who were injured and those not. Even though those victims' stress scores decreased, they were still higher than those of uninjured persons, showing that physical injuries have a more lasting impact on victims' stress levels (Brewin, et al., 2002; Kirchhoff, 2012; Winkel, 2007).

Overall, the study found that 14% (n = 243) of the victims had a TSQ (now) score of 6 or more. Since the TSQ is designed to be a likely predictor of PTSD and suggests that those who score 6 or more potentially suffer from the disorder, victims should seek professional assistance to help them deal with their stress.

Hypothesis 18a is confirmed: The mean score of "anger at the perpetrator" was above the mid-point 3.

Hypothesis 18b is confirmed: The mean score for a "desire for revenge" was above the mid-point 3.

Hypothesis 18c is confirmed: The mean score of "anger towards the police, courts, or administration" was below the mid-point of 3.

Hypothesis 18d is confirmed: The mean score of "anger at third persons" was below the mid-point of 3.

Hypothesis 18e is falsified: The mean score of "anger at themselves" was not above the mid-point of 3.

Coupled with stress is the psychological reaction of anger. Like stress, anger is a (physiological and psychological) response to a perceived threat to the self or important others (Clausen, 2007, p. vii). The results from the study showed that these victims reacted emotionally, expressing feelings of anger. These expressions of anger were further revealed when the victims indicated that they had different levels of anger towards different targets. The greatest amount of anger was expressed towards the perpetrators and a desire for revenge (**H_{18a}**; **H_{18b}**). This is not surprising given that victims encounter a person(s) who verbally and physically threatens their life (see section 5.3). However, it would be interesting to determine if, like the stress scores over time, the desire for revenge decreases. Research on criminal victimization indicates that victims are often not interested in revenge but instead want as much as possible to return to their normal routines (Goodell, 2001; Karmen, 2010; Lipkins, 2006). The anger victims expressed towards the criminal justice system was, as expected, not high (**H_{18c}**). Victims arguably are less concerned with what the police are doing to recover the victims' property (see section 5.2) and more concerned that they are treated politely and that the police meet the expectations of their needs (i.e., receiving their case number for insurance purposes). The second explanation for the lower anger scores towards the criminal justice system may be connected with the growing acceptance of the inefficiency of the police and responsible authorities to address and prevent the high rates of victimization in the country (Economist, 2012; Sergeant, 2008). One victim reiterates this point:

> *"The police cannot cope with the volume of crime. Time and money are not used for crimes such as carjacking, so what can you do? Getting angry only makes make me more depressed about the situation in SA. You just have to deal with it and look out for yourself as much as possible.*"

The PAS further revealed that levels of anger towards third persons were not high (**H18d**). This was anticipated; the violence associated with carjacking is reason enough to suggest that people would not expect others to put their lives in danger to assist them. Moreover, someone trying to assist and prevent an incident may increase the levels of danger for both.

The level of anger directed at the victims themselves was lower than expected (**H18e**). The prevalence of carjacking and awareness of certain factors made public for citizens to be aware of (Arrive Alive, 2013) was thought to have an influence on the victims' anger scores toward themselves. However, because most victims did not notice any signs of danger before their victimization (see section 5.2), they did not have higher levels of anger towards themselves. More males than females had higher anger scores for a desire for revenge and anger at the criminal justice system. The fact that more males experienced physical violence and were injured could explain why they would be inclined to exact revenge against their perpetrator and be angry with those expected to protect them.

Finally, the PAS showed that victims injured had higher anger scores than those who were not injured at four of the five targets (anger at third persons showed no difference between the two groups). This is not unexpected; the more intense the trauma, the greater the levels of anger experienced by victims were (Chemtob,

Hamada, Roitblat, & Muraoka, 1994; Novaco & Chemtob, 2002; Orth, Cahill, Foa, & Maercker, 2008; Orth & Maecker, 2009; Winkel, 2007).

Testing the anger of carjacking victims has never been done before. This study's inclusion of angry feelings provides further insight into the psychological damage suffered. It additionally indicates that anger needs to be researched further in victimology and on the psychological reactions to violent victimizations. Moreover, for this aspect to be further explored, a factor analysis was run to determine if the PAS could be simplified for future research on anger at various targets. It was concluded from the data that this was not possible (see section 4.4).

Hypothesis 19a is confirmed: Most victims' did not receive counseling after the incident.

Hypothesis 19b is confirmed: Most would not have liked to have received counseling.

Access to counseling in South Africa is argued to be poor (Nel & van Wyk, 2013); therefore, it was thought that fewer victims would have received counseling after their incident. Despite the findings of this study, the results for this hypothesis were marginal, as just less than half received counseling. It was also proven that most of the victims who did not receive any type of counseling did not want to receive any (**H$_{19a}$**; H$_{19b}$).

It was positive to find that most of the victims who received counseling received it from victim services. The convenient location of victim services in police stations may suggest why more victims made use of this type of counseling, although it was found that more victims who suffered injuries received counseling from a professional. Victims who were injured were more likely to suffer from higher levels

of stress and anger; therefore, it may be reasonable to suggest that these victims thought they would benefit more from professional counseling. It was also found that more females sought counseling than males. Females were more likely to have higher levels of stress than males, but not anger at certain targets. Coincidently, the findings showed a similar pattern between those victims (females and injured persons) more likely to receive counseling and those who did not but wanted to.

5.5 Financial Damages

Hypothesis 20 is confirmed: Majority of the victims did not have their vehicle recovered.

Hypothesis 21a is confirmed: Majority of the victims whose vehicle was taken had vehicle insurance.

Hypothesis 21b is confirmed: Most victims' carjacking did not affect their monthly insurance premium.

Hypothesis 22 is confirmed: Majority of the victims did have other items stolen during the incident.

Hypothesis 23 is confirmed: Most victims did not install a security device.

Hypothesis 24 could not be answered: Most victims who received medical treatment and professional counseling paid for their treatment: This was due to a methodological error in the construction of the questionnaire, where a response option "no cost" was not included (see section 4.5 and Appendix C). Future research should avoid this mistake to possibly yield further valuable information to the financial damages of this victimization.

Hypothesis 25a is confirmed: Most of the victims who had their vehicle taken were only able to replace it "more than one month" after the incident.

Hypothesis 25b is confirmed: Majority of the victims reported that the time it took to replace the vehicle did not have any effect on the victims' employment.

Hypothesis 26 is confirmed: Majority of the victims who where injured reported that the injuries they sustained did not have any effect on their employment.

Financial losses are a consequence of carjacking victimization; this study shows that although it is not the most damaging element of the victimization, the losses incurred contribute to the invasions into the self the victims suffer. The victims detail both direct and indirect costs.

The direct costs of carjacking were proven when the majority of victims had their vehicle stolen during the incident and had to replace it (**H_{20}**). The financial burden of doing so was lessened because almost all victims had vehicle insurance and did not suffer increases in their monthly premiums (**H_{21a}**; **H_{21b}**). Increases in premiums were a factor for some victims, however, and must be considered as a financial burden of this victimization.

It is difficult to quantify the actual financial losses incurred for replacing the vehicle, as these costs depend on the personal preference and financial status of the victim. To gain more reliable information on the actual financial loss of this victimization, future studies should ask the victims to detail the value of the property stolen versus asking them what it cost them to replace their property, as a measure of this loss.

This study did give some indication of the direct costs of carjacking victimization. For those insured, the majority spent less than ZAR30,000 (less than JPY309,861) to replace their vehicle. For the victims who did not have insurance, their costs were understandably greater, with the majority spending between

ZAR60,000 and ZAR90,000 (between JPY619,722 and JPY939,583). The magnitude of the financial burden for those not insured is highlighted in the statements of three victims:

> "*This crime has really changed my life. My parents could not afford to help me replace my car, which you need in SA. I am not even 20 and I have so much debt from this crime, plus I am scared to go anywhere.*"

> "*Jobs are already so hard to get in this country, then you have the added disadvantage of someone taking your car. It's hard to catch a break. I was also not insured, so not having a job plus having to find money to pay for a new car was so difficult.*"

> "*It has been so difficult since I was [carjacked]. Emotionally I am always scared plus my car was not insured. I thought I was saving money by not insuring my car, but it has cost me so much more now to replace it. Crime in South Africa is everywhere.*"

These statements highlight the importance of the safeguards of an insurance policy in South Africa but demonstrate the reality of the impact carjacking has on those not able to afford insurance.

The direct costs were compounded when the majority of the victims had other items stolen (**H22**), most commonly mobile phones and handbags/wallets, which are common items a person possesses. However, people do transport many other items in their vehicle. Victims reported laptops, sports equipment, groceries, jewelry, and

clothes being taken. The majority of victims reported that they spent less than ZAR30,000 (JYP309,861) to replace these stolen items.

The indirect costs of this victimization relate to the cost of adding security devices and the loss of earnings and productivity from victims taking time off of work to either replace their vehicle and/or recover from their injuries (Dolan, Loomes, Peasgood, & Tsuchiya, 2005).

One of these indirect costs was proven when less than half the victims went to the added expense of adding a security device to their vehicle after their incident (**H23**). For most of those, this came at the added cost of ZAR1,000 to ZAR2,000 (between JPY10, 328 and JPY20, 657).

The indirect costs of carjacking multiplied when it was proven that most victims were only able to replace their vehicle "more than a month after their incident" (**H25a**). Practically all the victims who replaced their vehicle reported that the time it took to do so did not affect their employment (**H25b**). Additionally, the majority of the victims who were injured reported that their injuries did not have any effect on their employment (**H26**). This is because labor laws in the country prevent employers from discriminating against persons victimized for time away from work. However, this was not the case for those who identified themselves as self-employed.[24] Two self-employed victims describe the financial impact of their incident on their employment:

> "*Because I was shot in the arm, I was not able to work for 1 month. I am self-employed, and I lost two contracts to another company, as I could not fulfill my responsibilities.*"

[24] Victims in this study were not asked to identify their employment status in the demographic variables sections of the questionnaire (see section 3.6.1 of Chapter 3). These victims self-identified themselves as self-employed in the additional comments section of the questionnaire (see Appendix C).

"*I am a building contractor and own my own business. Because I was badly hit in the eye and could not see, I could not work for nearly 3 months—no work means no money!*"

This study found support for previous research on the financial impact of this victimization (taken from secondary sources, see Chapter 1) (Davis, 1999, 2001; James & Barkhuizen, 2013; Zinn, 2003, 2013). However, collecting the information on this damage provides a detailed insight into the intensity of the financial damage of this victimization. It further provides the most credible information, directly from the victims.

5.6 Behavioral Damages

Hypothesis 27a is confirmed: The mean score of precautions taken by the victims "before" the incident was below 5.

Hypothesis 27b is falsified: The mean score of precautions taken by the victims "directly after" the incident was below 5.

Hypothesis 27c is falsified: The mean score of precautions taken by the victims "today" was below 5.

Hypothesis 28 is confirmed: Despite taking any number of precautions, the majority of victims still feel likely to be re-victimized.

Hypothesis 29 is confirmed: Regardless of the number of precautions victims take, the majority feel that the precautions impose some form of restriction on their lives.

Hypothesis 30 is confirmed: Majority of the victims indicated that the psychological damage is the most severe impact following a carjacking.

Research suggests that after victimization, victims take precautions to either avoid victimization and/or regain some feeling of safety and security (Janoff-Bulman, 1992; Spalek, 2006). Using the most common carjacking precautions publicized (Arrive Alive, 2013) (see section 4.6 of Chapter 4) in South Africa, this study proved that the victims did take some of the advised precautions before their victimization and directly after it and still do "today". The victims took fewer than five precautions (mean score of 1.2 [**H27a**]) before the incident. This was not unexpected. However, with carjacking being such a well-known victimization, it was a surprise to see so few precautions taken before the incident. Moreover, it was expected that directly after the incident and "today", victims would have taken a higher number of precautions than they indicated. The mean scores were below 5 for both after the incident: mean score 3.6 (**H27b**) and "today": mean score 4 (**H27c**). In this study females took more precautions than males in all cases. This may be explained in conjunction with the finding that females experienced higher levels of stress (see section 5.4).

The most common precautions taken by the victims were maintaining a safe distance between themselves and the vehicle in front of them, notifying people when they leave and/or arrive at their destinations, and trying to avoid stopping at traffic lights and stop streets when possible. These may be the most common precautions taken because most victims were carjacked at home, on a road, and at a traffic light or stop street ([**H4**] see section 5.2).

When it came to providing feelings of safety and security, these precautions appear to be of limited utility; the majority of victims noted that despite taking any number of precautions they still felt likely to be re-victimized (**H28**). Two victims wrote:

"*We take all these precautions and we think they make us feel safer, but in reality we don't feel safer. And what can we do, if someone wants your car they will take it.*"

"*I really don't feel that anything can protect you from crime anymore in South Africa. We are really at the criminals' mercy; if they want your vehicle, they will find a way of taking it! Even if that means killing you.*"

The majority of the victims noted that the precautions they take to avoid re-victimization actually impose restrictions on their lives (**H29**). This is understandable in that the precautions taken to avoid this victimization 1) require in most cases elaborate planning (e.g., having someone watch you enter and leave your property, travel in a convoy, alternate your route home); 2) they take away independence and privacy (e.g., having to notify people when you leave for or reach your destination); and 3) increase the likelihood of having an accident (e.g., avoid stopping at traffic lights and stop streets when possible). Moreover, more females than males felt that the precautions imposed restrictions on their lives; however, more females used more precautions.

The main theoretical argument of this dissertation and of the theory "victimizations are invasions into the self" is that psychological damage is the most severe effect of victimization. The data collected have supported this effect, most notably in the following:

1. The majority of the victims reported that it was more upsetting for them that their safety and security was threatened, not that someone attempted to or stole their vehicle ([**H10**] see section 5.2);

2. The victims did react emotionally with stress and anger ([**H16, 17**; **H18a-e**] see section 5.4); and
3. Despite making behavioral changes such as taking precautions, the fear of being victimized again remains (**H28**).

However, it was postulated that asking victims to determine exactly which damage they felt was the most severe would eliminate any ambiguity for this proposition. The majority of victims stipulated that the psychological damage is the most severe damage after carjacking victimization (**H30**). More females than males indicated that this damage was the most severe. The result is supportive of the earlier findings in this study, with females reporting greater levels of stress (see section 5.4) and taking more precautions than males.

5.7 Discussion of the Results

This study has used Sarah Ben-David's (2000, p. 56) 'victim's victimology' approach to investigate the impacts of carjacking victimization. It has done this by placing the victim at the center of considerations and, most importantly, collected information directly from the source—the victims. It has challenged the "old" theoretical constraints that exist between criminology and victimology (Elias, 1986, p. 195; Groenhuijsen, 2009) by arguing that the traditionally used theories in explanations of victimization are not applicable to victimology and the study of victims. Many theories used in victimology inherently criminological; they explain the context in which victimization takes place but neglect to focus on the period after victimization. Therefore, this study used the victimological theory **Victimizations are Invasions into the Self of the Victim,** which details that victims suffer psychological, physical, and financial damages after victimization (Kirchhoff, 2005).

This study on the consequences of carjacking victimization is the first in South Africa to comprehensively explore all three damages of victimization. It challenges the assumptions of previous research, which has predominantly used secondary sources to derive its information on these victims (Davis, 1999; 2001a; 2001b; 2005; Zinn, 2002; 2013). It has also increased the much-needed victimological literature in South Africa and provided a clearer understanding of the victimizing event; repeat victimization; psychological, physical, and financial damages; and behavioral reactions to carjacking.

Carjacking victimization is a pervasive problem in the country; the results of this study show that this victimization is not age specific, and although a marginally greater number of males than females were included in the study, both are victimized. Despite its common occurrence, it is not a victimization that typically strikes the same person more than once. It is inherently violent. Victims are threatened with life-endangering weapons and are likely to suffer an injury that requires medical treatment, in most cases at a hospital. Furthermore, the research shows that carjacking victims react emotionally, experiencing both stress and anger after this victimization.

Although it is the form of damage of least consequence to victims, they do incur both direct and indirect financial losses. Lastly, this study showed that carjacking victims take precautions in order to avoid re-victimization; however, the victims state that the precautions place restrictions on their lives and do little to reduce the fear of being carjacked again. When reflecting on their victimization, the victims indicated that the psychological damage is the most severe form of damage.

This study has shown that it is possible to do direct research with victims despite the impediments that often limit or deter researchers. However, the limitations of this study should be heeded and improved upon in further research with carjacking

victims. Much can still be done to better understand the impact of this victimization and the needs of these victims, particularly when its occurrence in the country shows no sign of dissipating. Moreover, it is only with this information and future information that is collected directly from victims that programs can be developed to better help them in their time of need.

5.8 Recommendations for Future Research

This dissertation has strived to shed light on the consequences to victims of carjacking. However, scientific inquiry posits that research should use the same or different approaches to build and/or expand on the already acquired scientific knowledge (Neuman, 2000). For this reason, the following recommendations for future research on carjacking victimization are suggested.

Larger Sample Size

When considering the many obstacles that affect direct research with victims, along with those that have been highlighted in the conducting of this study; it is strongly suggested that research be conducted with larger sample sizes. Gaining access to the databases of carjacking victims held by insurance companies would constitute a major step forward for researchers. Working in cooperation with insurance companies could potentially yield greater results beneficial to all parties affected by this victimization. Greater dissemination of information garnered from such research arguably would help victims and those who work with victims.

Comparative Studies

The prevalence of carjacking in the country is odious; however, the victimization is not endemic to South Africa. Carjackings are increasing in Australia (Young & Borzycki, 2008), have for many years been reported in parts of the USA and the UK (Donahue et al., 1994; Jacobs et al., 2003; Klaus, 2004), and have been reported more recently in Brazil (Latin American Herald Tribune, 2013). What do carjacking victims experience in other countries? Are there marked differences in the levels of violence, stress, and anger reported? What can be learned from each of these countries to improve the assistance provided to victims in South Africa? Such research would greatly increase the victimological knowledge on carjacking and violent victimization in general.

Stress and Anger Research

This was the first study to explore and obtain knowledge on the psychological damage of carjacking victimization. It showed that victims do react emotionally and suffer different levels of stress and anger at various targets. However, the limitations of the study mean that the "door has only been opened" to the psychological reactions of this victimization. Further research is needed to substantiate these findings using either the same instruments (TSQ and PAS) or alternative instruments to increase the understanding of these reactions affecting the lives of carjacking victims.

5.9 Summary

This chapter has provided a consolidation of the results and referrals to the theoretical literature and reasoned summations about carjacking victimization. Furthermore, it has provided recommendations for further research. The addition of this research has

increased the much-needed victimological literature on carjacking in South Africa. It has provided a clearer understanding of the victimizing event; repeat victimization; psychological, physical, and financial damages; and behavioral reactions of this victimization.

More importantly, using a 'victim's victimology' approach and collecting information directly from victims, this study has challenged the assumptions about the consequences of this victimization.

REFERENCES

Akers, R. L, & Sellers, C. S. (2009). *Criminological Theories: Introduction, Evaluation, and Application* (5th ed.). Oxford: Oxford University Press.

Altech Netstar Satellite Tracking System (2013). Retrieved 12 November, 2013, from http://www.netstar.co.za

American, Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Washington D.C: Author.

Andrews, B, Brewin, C. R, Philpott, R, & Stewart, L (2007). Delayed-onset PTSD: a systematic review of the evidence. *American Journal of Psychiatry, 164*(9), 1319-1326.

Andrews, B, Brewin, C. R, Rose, S, & Kirk, M. (2000). Predicting PTSD symptoms in victims of violent crime: the role of shame, anger, and childhood abuse. *Journal of Abnormal Psychology, 109*, 69-73.

Arrive Alive (2013). *Hijack Prevention Guidelines* Retrieved 9th July, 2013, from http://www.arrivealive.co.za/pages.aspx?i=1188

ArriveAlive. (2013). Car Insurance and Road Safety. Retrieved 12th April, 2013, from http://www.arrivealive.co.za

Atkinson, R, & Flint, J. (2001). Accessing hidden and hard-to-reach populations: snowball research strategies *Social Research Update*(33), 1-4.

Babbie, E. (2001). *The Practice of Social Research* (9th ed.). California: Wadsworth Thomson.

Barkhuizen, J. (2007a). *Sexual Molestation on Public Transportation: A Victimological Approach.* (Doctorate of Philosophy), Tokiwa University, Unpublished.

Barkhuizen, J. (2007b). Victimology and the creation of social reality: victimology-victim-victimization-branches of victimology and creation of social reality. *Tokiwa Journal of Human Science, 15*, 71-82.

Baum, A, Gatchel, R, & Krantz, D. S. (1997). *An Introduction to Health Psychology*. New York: McGraw-Hill.

Ben David, S. (2000). Needed: victims victimology. In P. C. Friday & G. F. Kirchhoff (Eds.), *Festschrift for Hans Joachim Schneider: Victimology at the Transition from the 20th to the 21st Century*. Moenchengladbach: WSV Publishing.

Bisson, J. I. (2007). Post-traumatic stress disorder. *Occupational Medicine, 57*, 399-403.

Breslau, N, Peterson, E. L, & Shultz, L. R. (2008). A look at prior trauma and the post-traumatic disorder effects of subsequent trauma. *Archives of General Psychiatry, 65*(4), 431-437.

Brewin, C. R, Andrews, B, & Rose, S. (2003). Diagnostic overlap between acute stress disorder and PTSD in victims of violent crime. *American Journal of Psychiatry, 160*, 783-785.

Brewin, C. R, Andrews, B, Rose, S, & Kirk, M. (1999). Acute stress disorder and post traumatic stress disorder in victims of violent crime. *American Journal of Psychiatry, 156*(3), 360-367.

Brewin, C. R, Andrews, B, & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults *Journal of Consulting and Clinical Psychology, 68*, 748-766.

Brewin, C. R, Rose, S, Andrews, B, Green, J, Tata, P, McEvedy, C, . . . Foa, E. B. (2002). Brief screening instrument for post-traumatic stress disorder. *British Journal of Psychiatry, 181*, 158-162.

Buys, J. J. (2003). *Hijacking of Trucks with Freight: A Criminological Analysis.* (Master of Arts Masters Dissertation), UNISA, Pretoria. Retrieved from http://encore.unisa.ac.za/iii/encore/search/C__SHijacking+of+trucks+with+freight__Orightresult__U1?lang=eng&suite=cobalt

Chemtob, C. M, Hamada, R. S, Roitblat, H. L, & Muraoka, M. Y. (1994). Anger, implusivity and anger control in combat-related posttraumic stress disorder. *Jounral of Consulting and Clinical Psychology, 62*, 827-832.

Clausen, E. I. (2007). *Psychology of Anger*. New York: Nova Science Publishers, Inc.

Cohen, L. E, & Felson, M. (1979). Social changes and crime rate trends: a routine activites approach. *American Sociological Review, 44*, 588-608.

Cohen, L. E, Kluegel, J. R, & Land, K. C. (1981). Social inequality and predatory criminal victimization: an exposition and test of a formal theory. *American Sociological Review, 46*, 505-524.

Conklin, J. (1972). *Robbery*. Philiadelphia: JB Lippincott.

Cougle, J. R, Resnick, H. S, & Kilpatrick, D. G. (2009). Does exposure to interpersonal violence increase risk of PTSD. *Behavior Research and Therapy, 47*(12), 1012-1017.

Cressey, D. R. (1982). Concluding remarks. In H. J. Schneider (Ed.), *The Victim in International Perspective: Paper and Essays given at the Third International Symposium on Victimology 1979 Munster/Westfalia* (pp. 503-504). Berlin: Walter de Gruyter.

Cressey, D. R. (1992). Research implications of conflicting conceptions of victimology. In E. A. Fattah (Ed.), *Towards a Critical Victimology* (pp. 57-73). New York: St. Martians Press.

Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (3rd ed.). London: SAGE Publications Ltd.

Davis, L. (1999a). Carjacking: reasons for the increase in methods to curb it. *Acta Criminologica, 15*(1), 31-41.

Davis, L. (1999b). *'n Kriminologise ondersoek na motor-voertuigkaping met spesifike verwysing na slagoffervatbaarheid, slagofferaandadigheid en die modus operandi van die oortreder.* (Doctoral Dissertation), University of Pretoria, Pretoria. Retrieved from http://www.upetd.up.ac.za/thesis/available/etd-03242004-103416

Davis, L. (2001a). An application of the rational choice perspective on vehicle hijacking. *Acta Criminologica, 14*(3), 102-113.

Davis, L. (2001b). Consequences of vehicle hijacking. *Acta Criminologica, 14*(1), 71-76.

Davis, L. (2001c). Victimization risk of vehicle hijacking victims: a routine activity approach. *Acta Criminologica, 14*(2), 108-116.

Davis, L. (2002). Planning a carjacking: positive and negative factors that are taken into consideration when hijacking a vehicle is considered. *Acta Criminologica, 15*(1), 31-41.

Davis, L. (2003). Carjacking - insights from South Africa to a new crime problem. *The Australian and New Zealand Journal of Criminology, 36*(2), 173-191.

Davis, L. (2005). Victims of vehicle hijacking. In L. Davis & R. Snyman (Eds.), *Victimology in South Africa* (pp. 228-239). Pretoria: Van Schaik Publishers.

Davis, L, & Snyman, R. (2004). A precis of victimology research in South Africa. *International Perspectives in Victimology, 1*(1), 109-128.

Denkers, A. (1996). *Psychological Reactions of Victims of Crime: The Influence of Pre-Crime, Crime, and Post-Crime Factors.* Vrije Universiteit, Amsterdam.

Dixon, R. (2013). Violent crime on the rise again in South Africa, *Los Angeles Times*. Retrieved 12th April 2014, from http://www.latimes.com/world/worldnow/la-fg-wn-south-africa-crime-20130919,0,510579.story - axzz2ydBCV2sQ,

Doerner, W. G, & Lab, S. P. (2012). *Victimology* (6th ed.). Massachusetts: Elsevier.

Dolan, P, Loomes, G, Peasgood, T, & Tsuchiya, A. (2005). Estimating the intangible victim costs of violent crime. *British Journal of Criminology, 45*, 958-967.

Donahue, M. E, McLaughlin, C. V, & Damm, L. V. (1994). Accounting for carjackings: an analysis of police records in a South Eastern city. *American Journal of Police, XIII*(4), 91-111.

Dussich, J, Underwood, T, & Peterson, D. (2003). New definitions for victimology and victim services: a theoretical note. *The Victimologist, 7*(2), 1-2.

Dussich, J. P. J. (1988). Social coping: a theoretical model for understanding victimization and recovery. In Z. P. Separovic (Ed.), *Victimology: International Action and Study of Victims*. Zagreb: Somobar.

Economist. (2012). Sad South Africa: Cry, the beloved country. Retrieved 22 December, 2014, from http://www.economist.com/news/leaders/21564846-south-africa-sliding-downhill-while-much-rest-continent-claws-its-way-up

Ehlers, A, & Clark, D. (2003). Early interventions for adult survivors of trauma: a review. *Biological Psychiatry, 53*(9), 817-826.

Elias, R. (1986). *The Politics of Victimization, Victims, Victimology, and Human Rights*. Oxford Oxford University Press.

Ellis, S. (1999). The new frontiers of crime in South Africa. In J. F. Bayart, S. Ellis & B. Hibou (Eds.), *The Criminalization of the State in Africa* (pp. 49-68). Oxford: International Africa Institute in Association with James Currey.

Fattah, E. A. (1991). *Understanding Criminal Victimization: An Introduction to Theoretical Victimology*. Ontario: Prentice Hall.

Fattah, E. A. (2000). Victimology today: recent theoretical and applied developments. *UNAFEI Resource Material Series, 56*, 60-70.

Faugier, J, & Sargeant, M. (1997). Sampling hard to reach populations. *Journal of Advanced Nursing, 26*, 790-797.

Faull, A, & Mphuthing, P. (2009). Victim support. In C. Gould (Ed.), *Criminal (In)justice in South Africa: A Civil Society Perspective* (pp. 124-141). Pretoria: Institute for Security Studies.

Frank, E, & Stewart, B. D. (1984). Depressive symptoms in rape victims: a revisit. *Journal of Affective Disorders, 7*, 77-85.

Goenjian, A. K, Molina, L, Steinberg, A. M, Fairbanks, L. A, & Alvarez, M. L. (2001). Posttraumatic stress and depressive reactions among Nicaraguan adolescents after hurrican Mitch. *American Journal of Psychiatry, 158*, 788-794.

Gold, M. (1970). *Undetected Delinquent Behavior in an American City*. Bellmont: Brooks/ Cole Publishing Co.

Goodell, J. (2006). Letting go of McVeigh. *New York Times Magazine,* 40-44.

Gorard, S. (2003). *Quantitative Methods in Social Science*. London: Continuum.

Gottfredson, M. R. (1981). On the etiology of criminal victimization. *Journal of Criminal Law and Criminology, 72*, 714-727.

Gottfredson, M. R, & Hirschi, T. (1990). *A General Theory of Crime*. California: Stanford University Press.

Green, D, & Kane, M. (2009). Does type of crime affect stress and coping process? Implications of intimate partner violence. *Victims and Offenders, 4*(3), 249-264.

Groenhuijsen, M. (2009). Does victimology have a theoretical leg to stand on? Victimology as an academic disciplince in its own right? In P. C. F. F. W. Winkel, G. F. Kirchhoff, & R. M. Letschert (Ed.), *Victimization in a Multidisciplinary Key: Recent Advances in Victimology* (pp. 313-331). Nijmegen: Wolf Legal Publishers

Harris, B. (2005). *Between a Rock and a Hard Place: Violence, Transition and Democratisation - A Consolidated Review of the Violence and Transition Project*. Johannesburg: Centre for the Study of Violence and Reconciliation.

Hindelang, M. J, Gottfredson, M. R, & Garofalo, J. (1978). *Victims of Personal Crime: An Empirical Foundation for a Theory of Personal Victimization*. Cambridge: Ballinger.

Hoffman, H. (1992). What did Mendelsohn really say? . In S. Ben David & G. F. Kirchhoff (Eds.), *International Faces of Victimology* (pp. 89-104). Moenchengladbach: WSV Publishing.

Holtman, B, & Domingo-Swarts, C. (2008). Current trends and responses to crime in South Africa. In A. v. Niekerk, S. Suffla & M. Seedat (Eds.), *Crime, Violence and Injury Prevention in South Africa: Data to Action* (pp. 97-121). Tygerberg: Medical Research Council.

Honda-Tech: What is an Immobiliser? (2002). Retrieved 5 December, 2013, from http://www.honda-tech.com

Horowitz, M. J. (2001). *Stress Response Syndromes* New Jersey: Jason Aronson.

Indermaur, D. (1995). *Violent Property Crime*. New South Wales: Federation Press.

Institute for Security Studies Africa. (2010). *The Crime Situation in South Africa.* Retrieved 25th May, 2013, from http://www.issafrica.org/crimehub/uploads/3_crime_situation.pdf

Jabavu, V. (2011). Confessions of a car hijacker. Retrieved 25th September, 2013, from http://www.sowetanlive.co.za/news/2011/10/13/confessions-of-a-car-hijacker

Jacobs, B. A, Topalli, V, & Wright, R. (2003). Carjacking, streetlife and offender motivation. *British Journal of Criminology, 43*, 673-688.

Jacobs, B. A, & Wright, R. (2006). Stick-up, street culture, and offender motivation. *Criminology, 37*(1), 149-174.

James, C. (2010). *Victimological Impacts of Victims of Vehicle Hijacking.* (Unpublished master's thesis), University of Leicester, Leicester, UK.

James, C, & Barkhuizen, J. (2013). Financial, Physical, and Social Impacts on Victims of Carjacking. *Tokiwa Journal of Human Science, 21*, 53-64.

Janoff-Bulman, R. (1992). *Shattered Assumptions: Towards a New Psychology of Trauma*. New York: The Free Press.

Janoff-Bulman, R, & Frieze, I. (1983). A theoretical perspective for understanding reactions to victimization. *Journal of Social Issues, 39*(2), 1-17.

Jerin, R. A. (2004). The status of victimological research and victims' rights in the United States. *International Perspectives in Victimology, 1*(1), 129-149.

Karmen, A. (2010). *Crimes Victims: An Introduction to Victimology* (7th ed.). California: Brooks Cole.

Kemp, G, Walker, S, Palmer, R, Baqwa, D, Gevers, C, Leslie, B, & Steynberg, A. (2012). *Criminal Law in South Africa*. Cape Town: Oxford University Press Southern Africa (Pty) Ltd.

Kilpatrick, D. G, Ruggiero, K. J, Acierno, R. S, Benjamin, E, Resnick, H. S, & Best, C. L. (2003). Violence and risk of PTSD, major depression, substance abuse/ dependence, and comorbidity: results from the national survey of adolescents. *Jounral of Consulting and Clinical Psychology, 71*(4), 692-700.

Kirchhoff, G. F. (1975) *Selbstberichtete Delinquenz*. Gottingen: Otto Schwartz and Co.

Kirchhoff, G. F. (2005). *What is Victimology?* Tokyo: Seibundo Publishing Co., Ltd.

Kirchhoff, G. F. (2006). Perspectives on victimology: the science, the historical context, the present *Tokiwa Journal of Human Science, 10*, 37-62.

Kirchhoff, G. F. (2010). History and a theoretical structure of victimology. In S. G. Shoham, P. Knepper & M. Kett (Eds.), *International Handbook of Victimology* (pp. 95-126). London: CRC Press.

Kirchhoff, G. F. (2013). Foreword. In R. Peacock (Ed.), *Victimology in South Africa* (2nd ed., pp. vii-ix). Pretoria: Van Schaik Publishers.

Kuhn, T. S. (1962). *The Structure of Scientific Revolutions*. Chicago: The University of Chicago Press.

Kushner, M. G, Riggs, D. S, Foa, E. B, & Miller, S. M. (1993). Perceived controllability and the development of posttraumatic stress disorder in crime victims. *Behavior Research and Therapy, 31*(1), 105-110.

Latin American Herald Tribune. (2013). *Baby survives violent carjacking in Brazil*. Retrieved 24th June 2013, from http://www.laht.com/article.asp?CategoryId=14090&ArticleId=332784,

Laub, J. (1990). Paterns of criminal victimization in the United States. In A. J. Lurigio, W. G. Skogan & R. C. Davis (Eds.), *Victims of Crime: Problems, Policies and Programs* (pp. 23-49). London: SAGE.

Lehohla, P. J. (2013). *Mid-year Population Estimates* Pretoria:

Lipkins, S. (2006). *Preventing Hazing: How Parents, Teachers, Coaches Can Stop The Violence, Harrassent and Humiliation*. California: Wiley Publishers.

Lutchminarain, N, & Minnaar, A. (2012). Safety at shopping centres in Gauteng: a review of security measures. *Acta Criminologica*(Special Edition No.2), 67-75.

Maguire, M. (1982). *Burglary in a Dwelling: The Offence, The Offender and The Victim*. London: Heinemann.

Maguire, M. (1987). *The Effects of Crime and the Work of Victim Support Services*. Aldershot: Gower Publishing Company, Ltd.

Mawby, R. I, & Walklate, S. (1994). *Critical Victimology*. London: SAGE Publications, Inc.

Mayer, M. J. (2011). *Towards a youth employment strategy for South Africa.* Pretoria: D. B. o. S. Africa.

McKendrick, B, & Hoffman, W. (1990). Towards the reduction of violence. In B. McKendrick & W. Hoffman (Eds.), *People and Violence in South Africa*. Cape Town: Oxford University Press.

McNally, R. J, Bryant, R. A, & Ehlers, A. (2003). Does early psychological intervention promote recovery from posttraumatic stress? . *Psychological Science in the Public Interest, 4*(2), 45-79.

Mendelsohn, B. (1963). The origin of the doctrine of victimology. *Excerpta Criminologica, 3*, 239-244.

Meyerson, L. (1995). *Hijackng, Burglaries and Serious Crimes*. Sandton: LAD Publishers.

Milton, M, & Alison, T. (1990). Crisis intervention after an armed hold-up: guidelines for counsellors *Journal of Traumatic Stress, 3*(4), 507-522.

Minnaar, A, & Zinn, R. (2000). *Vehicle hijacking in South Africa: an examination of victimization patterns and an evaluation of current prevention/interventionist strategies with specific reference to Gauteng Province, South Africa*. Paper presented at the 10th International Symposium on Victimology: Beyond Boundaries: Research and Action for the Third Millennium, Monreal, Canada 6-11 August.

Neuman, E. (1994). *Victimologia Supranacional: El Acoso A La Soberania*. Buenos Aires: Editorial Universidad S.R.I.

Neuman, W. L. (2000). *Social Research Methods: Qualitative and Quantitative Approaches* (4th ed.). Boston: Allyn & Bacon

News24. (2014). Hijackings. Retrieved 10 July, 2014, from http://www.news24.com/Tags/Topics/hijackings

Norris, F. H, & Krzysztof, K. (1991). The psychological experience of crime: a test of the mediating role of beliefs in explaining the distress of victims. *Journal of Social and Clinical Psychology, 10*(3), 239-261.

Novaco, R. W, & Chemtob, C. M. (2002). Anger and combat-related postraumatic stress disorder. *Journal of Traumatic Stress, 15*, 123-132.

Nunnally, J. C, & Bernstein, I. H. (1994). *Psychometric Theory* (3rd ed.). New York: McGraw-Hill.

Oanda. (2014). Currency Converter. Retrieved 8 December, 2014, from http://www.oanda.com/currency/converter/

Orth, U, Cahill, S. P, Foa, E. B, & Maercker, A. (2008). Anger and posttraumatic stress disorder symptoms in crime victims: a longitudinal analysis *Jounral of Consulting and Clinical Psychology, 76*, 208-218.

Orth, U, & Maercker, A. (2009). Posttraumatic anger in crime victims: directed at the perpetrator and at the self. *Journal of Traumatic Stress, 22*(2), 158-161.

Orth, U, Montada, L, & Maercker, A. (2006). Feeling of revenge, retaliation motive, and posttraumatic stress reactions in crime victims. *Journal of Interpersonal Violence, 21*, 229-243.

PFK Electronics Autowatch - Anti-Hijacking Systems. Retrieved 5 December, 2013, from http://autowatch.pfk.co.za/autowatch/catalogue/anti_hijacking_systems.htm

Piquero, A. R, & Hickman, M. (2003). Extending Tittle's control balance theory. *Criminal Justice and Behavior, 30*(3), 282-301.

Popper, K. (2005). *The Logic of Scientific Discovery*. London: Taylor & Francis

Pretorius, R. (2008). Armed robbery, violent assult and precpetions of personal insecurity and society as a risk. *Acta Criminological, 21*(2), 81-91.

Pretorius, Z, & Louw, B. (2005). Victim empowerment and support in South Africa In L. Davis & R. Snyman (Eds.), *Victimology in South Africa* (pp. 74). Pretoria: Van Schaik Publishers.

Roth, S, Newman, E, Pelcovitz, D, van de Kalk, B, & Mandel, F. S. (1997). Complex PTSD in victims exposed to sexual abuse and physical abuse: results from the DSM-IV field trial for posttraumatic stress disorder. *Journal of Traumatic Stress, 10*(4), 539-555.

Rovai, A. P, Baker, J. D, & Ponton, M. K. (2013). *Social Science Research Design and Statistics: A Practitioner's Guide to Research Methods and IBM SPSS Analysis*. Virginia: Watertree Press LLC.

Saponaro, A. (2013). Theoretical approaches and perspectives in victimology. In R. Peacock (Ed.), *Victimology in South Africa* (2nd ed., pp. 11-30). Pretoria: Van Schaik Publishers.

SAPS. (2012). Crime Statistics Overview RSA 2011/2012. Retrieved 25th May, 2013, from http://www.saps.gov.za/statistics/reports/crimestats/2012/crime_stats.htm

Schafer, S. (1977). *The Victim and His Criminal* Virginia: Prentice Hall.

Schneider, A. L. (1981). Methodological problems in victim surveys and their implications for research in victimology. *Journal of Criminal Law and Criminology, 72*(2), 818-838.

Schreck, C. J. (1999). Criminal victimization and low self-control: an extension and test of a general theory of crime. *Justice Quartly, 16*(3), 633-655.

Separovic, Z. P. (1985). *Victimology: Studies of Victims*. Zagreb: Pravni Fakultet.

Sergeant, H. (2008). *The Public and the Police*. London: Civitas: Institute for the Study of Civil Society London.

Shaw, M. (2002). *Crime and Policing in Post-apartheid South Africa: Transforming Under Fire*. London: Hurst.

Skogan, W. G. (1986). Methodological issues in the study of victimization. In E. A. Fattah (Ed.), *From Crime Policy to Victim Policy* (pp. 81-116). London: The Macmillan Press Ltd.

Spalek, B. (2006). *Crime Victims: Theory, Policy and Practice*. New York: Palgrave Macmillan.

Stanko, E, & Hobdell, K. (1993). Assault on Men. *British Journal of Criminology, 33*(3), 400-540.

Stebbins, R. A. (1999). *Exploratory Research in the Social Sciences*. California: SAGE Publications.

Steenkamp, D. G. (1999). *Motor Vehicle Theft: A Comparative Study.* (Masters Masters Dissertation), University of Zululand, Richards Bay. Retrieved from http://uzspace.uzulu.ac.za/handle/10530/1035

Steyn, J. (2013). Assessing the extent and the nature of victimization in South Africa. In R. Peacock (Ed.), *Victimology in South Africa* (pp. 35-43). Pretoria: Van Schaik Publishers.

Steyn, J, de Beer, M, & Fouche, H. (2009). In anticipation of the 2010 soccer world cup in South Africa: occurance of street robberies on Durban's "Golden Mile" *Acta Criminologica, 22*(3), 98-117.

Strydom, H. (2002). The pilot study. In A. S. De Vos (Ed.), *Research at Grass Roots for Social Science and Human Science Professions* (pp. 63). Pretoria: Van Schaik Publishers.

Strydom, H, & Schutte, S. C. (2005). A theoretical perspective on farm attacks in the South African farming community *Acta Criminologica, 18*(1), 115-125.

Sutherland, E. H, Cressey, D. R, & Luckenbill, D. F. (1992). *Principles of Criminology* (11th ed.). Oxford: General Hall.

Tittle, C. R. (1995). *Control Balance: Toward a General Theory of Deviance*. Colorado: Westview.

Tracker Tracking Devices. (2013). Retrieved 12 November, 2013, from http://www.tracker.co.za

UN. (1948). Universal Declaration of Human Rights. Retrieved 3 December, 2014, from http://www.ohchr.org/en/udhr/documents/udhr_Translations/eng.pdf

Urquhart, W. (2014). Detroit cracks down on carjackers. Retrieved 22 July, 2014, from http://www.bbc.com/news/world-us-canada-27553409

van der Merwe, N. (2008). Empirical phenomenological reseaech on armed robbery at residential premises: for victims' experiences. *Acta Criminologica, 2*, 139-161.

van Dijk, J. J. M, van Kesteren, J. N, & Smit, P. (2008). *Criminal victimization in international perspective, key findings from the 2005-2005 ICVS and EU ICS*. The Hague: Boom Legal.

van Kesteren, J. N, & van Dijk, J. J. M. (2010). Key victimological findings from the international crime victims survey. In S. G. Shoham, P. Knepper & M. Kett (Eds.), *International Handbook of Victimologi* (pp. 151-180). London: CRC Press.

van Meter, K. (1990). Methodological and design issues: techniques for assessing the representatives of snowball samples, NIDA *Research Monograph*, 31-43.

Vogt, W. P. (1998). *Dictionary of Statistics and Methodology: A Nontechnical Guide for the Social Sciences* (2nd ed.). London: SAGE Publications.

von Hentig, H. (1948). *The Criminal and His Victim: Studies in the Sociobiology of Crime*. Connecticut: Yale University Press.

Walklate, S. (2003). *Understanding Criminology: Selected Classical Readings*. Buckingham: Open University Press.

Walklate, S. (2007). *Imagining the Victim of Crime*. Berkshire Open University Press.

Walsh, A, & Ellis, L. (2007). *Criminology: An Interdisciplinary Approach*. California: SAGE Publications, Inc.

Walters, J. T. R, Bisson, J. I, & Shepherd, J. P. (2006). Predicting post-traumatic stress disorder: validation of the TSQ in victims of assault. *Psychological Medicine, 10*, 1-8.

Wemmers, J. (2009). A short history of victimology. In O. Hagemann, P. Schafer & S. Schmidt (Eds.), *Victimology, Victim Assistance and Criminal Justice: Perspectives Shared by International Experts at the Inter-University Centre of Dubrovnik* (pp. 33-42). Moenchengladbach: Hochschule Niederrhein.

Wertham, F. (1948). *The Show of Violence*. New York: Doubleday and Comp.

Wilcox, P. (2010). Theories of victimization. In B. S. Fisher & S. P. Lab (Eds.), *Encyclopedia of Victimology and Crime Prevention* (pp. 978-986). California: SAGE Publications.

Winkel, F. W. (2007). *Post Traumatic Anger: Missing Link in the Wheel of Misfortune*. Nijmegen: Wolf Legal Publishers.

Wohlfarth, T, Winkel, F. W, & Van Den Brink, W. (2002). Identifying crime victims who are at high risk for post traumatic stress disorder: developing a practical referral instrument *Acta Psychiatrica Scandinavica, 105*, 451-460.

Wolfe, J, & Kimberling, R. (1997). Gender issues in the assessment of posttraumatic stress disorder. In J. P. Wilson & M. Keane (Eds.), *Assessing Psychological Trauma and PTSD* (pp. 192-238). New York: Guildford Press.

Young, L. J, & Borzycki, M. (2008). Carjacking in Australia: recording issues and future directions. *Trends and Issues in Crime and Criminal Justice, 352*, 1-6.

Zinn, R. (2003). Sentenced Motor Vehicle Hijackers Imprisoned in Gauteng as a Source of Crime Intelligence. Retrieved 4th June, 2010, from http://www.eisf.eu/resources/library/car_jacking/pdf

Zinn, R. (2013). Victims of motor vehicle hijacking. In R. Peacock (Ed.), *Victimology in South Africa* (2nd ed., pp. 183-194). Pretoria: Van Schaik Publishers.

APPENDICES

Appendix A: Preliminary Questionnaire

Research on Victims of Carjacking

This study's aim is to understand the impact carjacking has on its victims. The study is conducted by Chadley James, a South African PhD student at Tokiwa University in Japan. The results of the study are to be included in a dissertation that forms part of a postgraduate degree. Your participation in this study is completely voluntary and your completed questionnaire will only be included into the study with a signed informed consent form. Your anonymity is assured, as you do not need to provide your name.

Instructions:

Please allow 20 -25 minutes to complete this questionnaire

Please answer all the questions by checking your choice and where necessary write down your answer in the space provided

For Example: Have you driven a vehicle before? Yes (✓) No ( )

Section A: About yourself

1. Age: _____ years **2. Gender:** Male ( ) Female ( )

Section B: About the incident

3. How many times have you been carjacked? _____ (If you have been carjacked more than once, the following questions refer to your last incident)

4. Did the carjacking take place?

At home ( )

Near your home ( )

Elsewhere in your city ( )

Elsewhere in the country ( )

Other ( )

5. If your carjacking incident was not at your home, was it at?

A parking area of a shopping center ( )

A petrol station ( )

On a road at a traffic light or stop street ( )

Other ( )

6. What time did the carjacking take place?

06:01am – 09:00am (Morning) ( ) 09:01am – 12:00pm (Mid-morning) ( )

12:01pm – 16:00pm (Afternoon) ( ) 16:01pm – 19:00pm (Evening) ( )

19:01pm – 12:00am (Late-evening) ( ) 12:01am – 06:00am (Early-morning) ( )

1

7. When did the carjacking take place?

During the week (Mon. - Fri.) ( )

OR

On the weekend (Sat. – Sun.) ( )

8. Was there anything that could have warned you? Yes ( ) No ( )

9. If Yes, what? (Select only the one most appropriate to your incident)

A person loitering ( )

Being blocked in ( )

Followed by a car ( )

Distracted (i.e. rocks in the road) ( )

Other ( )

10. Did your vehicle have any type of security device? Yes ( ) No ( )

11. Did the carjacker/s need your assistance to deactivate any of the security devices or did s/he ask you where any of the deactivation switches were? Yes ( ) No ( )

12. Did the carjacker/s succeed in taking your vehicle? Yes ( ) No ( )

13. If No, what do you think stopped the carjackers from taking your vehicle? (Select only one)

You fought back ( )

Approaching vehicle/s startled the carjacker/s ( )

Approaching bystanders startled the carjackers/s ( )

Police could have interrupted the attempted carjacking ( )

Other ( )

14. What was scarier for you?

That you're your security was threatened? ( )

OR

That someone attempted to/ or stole your vehicle? ( )

15. Did you report the incident to the police? Yes ( ) No ( )

2

16. If Yes, were you satisfied with way the police dealt with your incident? Yes ( ) No ( )

17. If you answered No to question 16, what reasons were you dissatisfied with the police?

Didn't do enough Yes ( ) No ( )

Were not interested Yes ( ) No ( )

Did not find or apprehend the offender Yes ( ) No ( )

Didn't recover my property or goods Yes ( ) No ( )

Didn't keep me properly informed Yes ( ) No ( )

Didn't treat me correctly/ were impolite Yes ( ) No ( )

Were slow to arrive Yes ( ) No ( )

Other reasons Yes ( ) No ( )

Section C: Physical aspect of the incident

18. Did the carjacker/s use aggressive language (i.e. I'm going to kill you!)? Yes ( ) No ( )

19. Was/were the carjacker/s armed? Yes ( ) No ( )

20. If Yes, what weapon did they have.

Gun ( )

Knife ( )

Blunt object (i.e. Knobkierie) ( )

Sharp object (i.e Machete) ( )

Other ( )

21. Was physical violence used? Yes ( ) No ( )

22. Did you sustain any injuries due to the physical violence used? Yes ( ) No ( )

23. If Yes, please describe the injuries. _____

_____

24. Did the injuries sustained require medical treatment? Yes ( ) No ( )

25. If Yes, where was the medical treatment received? (Select only the place where you received the most medical treatment)

At the roadside (i.e. paramedics)	( )
At home	( )
At a doctors consulting room	( )
At hospital	( )
At hospital over night	( )
Other	( )

26. Did the carjackers let you go immediately? ( )

OR

Did the carjackers only let you free sometime later? ( )

27. From the first contact with the carjackers till the moment they let you free, how long did it take?

Less than 5 minutes	( )
Between 5 and 30 minutes	( )
Between 30 minutes and an hour	( )
Longer than an hour	( )

28. If you where let free somewhat later, what do you think was the reason for that? (Select only one)

To prevent you from contacting the police immediately	( )
To prevent you activating any security device	( )
To prevent you from drawing the attention of any bystanders	( )
To drive the vehicle	( )
Other	( )

Section D: Psychological aspect of the incident

29. Please consider the following reactions, which sometimes occur after a traumatic event. These questions are concerned with your personal reactions to the traumatic event, which happened to you. Please indicate (Yes/No) whether or not you have experienced any of the following <u>within the first month</u>.

(a) Upsetting thoughts or memories about the event that has come into your mind against your will	Yes ( ) No ( )
(b) Upsetting dreams about the event.	Yes ( ) No ( )
(c) Acting or feeling as though the event were happening again.	Yes ( ) No ( )
(d) Feeling upset about reminders of the event.	Yes ( ) No ( )

(e) Bodily reactions (such as fast heartbeat, stomach churning, sweatiness,

(f) Difficulty falling or staying asleep. Yes ( ) No ( )

(g) Irritability or outbursts of anger. Yes ( ) No ( )

(h) Difficulty concentrating. Yes ( ) No ( )

(i) Heightened awareness of potential dangers to yourself and others. Yes ( ) No ( )

(j) Being jumpy or being startled at something unexpected. Yes ( ) No ( )

30. Below is a list of questions that relate to feelings of anger people sometimes have after stressful life events. Please read each item, and then indicate how angry you were <u>within the first month</u> after your carjacking incident. (Please select the response that best describes how you felt)

"I was angry at the perpetrator…"

(a) …because he caused so much harm in my life.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(b) …because my well-being was so unimportant to the perpetrator.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(c) …because the perpetrator fails to accept his guilt.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(d) …because he behaved badly even in the time after the incident.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

"I imagined…"

(e) …how the perpetrator would be a victim one day.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(f) …how the perpetrator will once really have to suffer.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(g) …how I would pay back the perpetrator for what s/he did to me.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(h) …how I would get even with the perpetrator.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

"I was angry at the police, courts, or administration…"

(i) …because they did not prevent the assault.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(j) …because they did not do their work well enough.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(k) …because they dealt with me with out compassion.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(l) …because they only care about the perpetrators and not the victims.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

"I was angry at other people…"

(m) …because they did not prevent the assault.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(n) …because they treated me badly in the time since the incident.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(o) …because they did not show understanding for my situation.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(p) …because they had the fortunate not to become a victim of this crime.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

"I was angry at myself…"

(q) …because I did not prevent the assault.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(r) …because I should have behaved differently when the assault happened.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(s) …because I still feel weak and vulnerable because of the assault.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

(t) …because I cannot cope with the incident as well as I would expect myself to.

Never ( ) Rarely ( ) Sometimes ( ) Often ( ) Very often ( )

31. Did you receive counseling from victim support, a trauma centre, or a professional (psychologist/psychiatrist)?

Yes ( ) No ( )

32. If Yes, Please specify which one. _____

33. If No, would you like to have received counseling Yes ( ) No ( )

Section E: Financial aspect of the incident

34. Was your vehicle recovered? Yes ( ) No ( ) Vehicle not taken ( ) (see Question **12)**

35. Was your vehicle insured? (If Yes please answer question **36**, **37** and **38**; If No please answer question **39**)

Yes ( ) No ( )

36. If Yes, how much did it cost you personally to replace your vehicle? (Cost not covered by insurance)

Less than R30,000 ( )

From R30,000 to R60,000 ( )

From R60,000 to R90,000 ( )

From R90,000 to R110,000 ( )

More than R120,000 ( )

37. Did the carjacking affect your monthly premium? Yes ( ) No ( )

38. If Yes, how much did it affect your premium?

Less than R1000 ( )

From R1000 to R2000 ( )

From R2000 to R3000 ( )

From R3000 to R4000 ( )

More than R4000 **( )**

39. If No, how much did it cost you to replace your vehicle?

Less than R30,000 ( )

From R30,000 to R60,000 ( )

From R60,000 to R90,000 ( )

From R90,000 to R110,000 ( )

More than R120,000 ( )

40. What other items were stolen in the incident that may have been in your vehicle at the time? (Select all those that apply)

Mobile Phone	Yes ( )	No ( )
Handbag or Wallet	Yes ( )	No ( )
Laptop	Yes ( )	No ( )
Sports Equipment	Yes ( )	No ( )
Groceries	Yes ( )	No ( )
Other	Yes ( )	No ( )

41. If you had vehicle insurance did it cover the contents in your vehicle? Yes ( ) No ( )
(If No, please still answer Question **42**)

42. What did it cost you personally to replace any of these items? (Cost not covered by insurance)

Less than R30,000	( )
From R30,000 to R60,000	( )
From R60,000 to R90,000	( )
From R90,000 to R110,000	( )
More than R120,000	( )

43. If your vehicle did not already have one, have you since installed a security device? Yes ( ) No ( )

44. If Yes, which devices did you install? (Select all those that apply)

Satellite tracking system	Yes ( )	No ( )
Alarm system	Yes ( )	No ( )
Immobiliser	Yes ( )	No ( )
Anti-hijack device	Yes ( )	No ( )
Other	Yes ( )	No ( )

45. How much did this cost you personally?

Less than R1000	( )
From R1000 to R2000	( )
From R2000 to R3000	( )
From R3000 to R4000	( )
More than R4000	( )

46. If you received any medical treatment for injuries or professional counseling, how much did it cost you personally? (Cost not covered by medical insurance)

Less than R30,000	( )
From R30,000 to R60,000	( )
From R60,000 to R90,000	( )
From R90,000 to R110,000	( )
More than R120,000	( )

47. If you lost your vehicle, how long did it take you to replace it?

Less than one week	( )
Between one and two weeks	( )
Between two weeks and one month	( )
More than one month	( )

48. Did the time it took to replace your vehicle have any effect on your employment? Yes ( ) No ( )

49. If Yes, what effect did it have. (Please specify) _____

_____

50. If you were injured, did it have any effect on your employment? Yes ( ) No ( )

51. If Yes, what effect did it have. (Please specify) _____

_____

Section F: After the incident

52. Within the first month after the incident, what precautions did you take to avoid re-victimization? (Please answer Yes/No to each question)

(a) I always tried to travel during the busy hours of the day.	Yes ( )	No ( )
(b) I tried to avoid stopping at traffic lights when possible (i.e. at night or early hours of the morning).	Yes ( )	No ( )
(c) I always maintained a safe distance between myself and the vehicle in front of me (i.e. avoid being blocked in).	Yes ( )	No ( )
(d) I always tried to make sure someone serves as a "lookout" when I entered and exited my home.	Yes ( )	No ( )
(e) I employed the service of a security company to escort me entering and exiting your home.	Yes ( )	No ( )
(f) I always notify people when I leaving and/or have reached my destination.	Yes ( )	No ( )
(g) I alternated my route home.	Yes ( )	No ( )
(h) I always traveled past my house first to scan the area before entering.	Yes ( )	No ( )
(i) I tried to travel in a convoy when possible.	Yes ( )	No ( )

53. Do you still take these precautions today? Yes ( ) No ( )

54. By taking these precautions do you feel less likely to be re-victimized by carjacking? Yes ( ) No ( )

55. Do these precautions impose restrictions on your life? Yes ( ) No ( )

56. If Yes, how much of a restriction do they impose on your life.

Little ( ) Somewhat ( ) Much ( ) A Great Deal ( )

57. Victims speak of the impact carjacking had on them. Carjacking may cause fear and loss of feelings of security. It may cause serious bodily injury. It may result in financial losses. What was for you personally the most severe impact? (Select only one)

Psychological impact ( )

Physical impact ( )

Financial impact ( )

If you wish to supply any further information or elaborate on some of your answers, please feel free to do so on a separate sheet of paper and attach it to the back of the questionnaire. You may also contact Mr. James (gjames@tokiwa.ac.jp**) or Prof. Dr. Kirchhoff** (gerd@tokiwa.ac.jp) **at anytime should you have any questions or comments about the research.**

Thank you for completing the questionnaire, we appreciate your cooperation and value your time. Please send the questionnaire back to the following address: P.O. Box 90391 Bertsham, Johannesburg, South Africa 2091. **For you convenience a prepaid envelope is provided. You may also email the completed questionnaire to Mr. James (**gjames@tokiwa.ac.jp**).**

THANK YOU FOR YOUR PARTICIPATION IN THIS RESEARCH!

10

Appendix B: Preliminary Questionnaire Pilot Study Telephonic Questions

Consequences of Carjacking in South Africa: An Empirical Study on its Victims

Pilot Study: Respondent Telephonic Interview Questions (September 5 – 12, 2013)

Questions:	**Answers**		
	Yes	No	Response
1. How long did it take you to complete the questionnaire?			
1.1 Was this a comfortable length of time for you?			
2. Was the layout of the questionnaire clear?			
2.1 Were the headings of the sections clear and in a logical order for you to follow?			
2.2 Was the font easy to read?			
2.3 Was the "language" used, easy to understand? (Not too much scientific jargon)			
3. Were the questions worded clearly? (The sentence structure was not too complicated)			
4. Were the questions that asked about "Trauma Reactions" and "Feelings of Anger" clear and uncomplicated to answer? (Provide example of question, and explanation of scales)			
5. Did you think the questionnaire covered all the points of your carjacking experience?			
5.1 Did the questions give an adequate range of responses?			
6. What questions could be added to the questionnaire?			

Appendix C: Final Questionnaire

TOKIWA

Research on Victims of Carjacking

Thank you for taking the time to fill out this questionnaire. Your participation in this study is completely voluntary and your anonymity is assured.

Instructions:

Please allow 20 - 25 minutes to complete this questionnaire

You can answer all the questions by checking your choice and where necessary write down your answer in the space provided.

Example: Have you driven a vehicle before? Yes ☐ No ☐

Section A: About yourself

1. Age: _____ years 2. Gender: Male ☐ Female ☐

Section B: About the incident

3. How many times have you been carjacked? _____

(*If you have been carjacked more than once, the following questions refer to your last incident*)

4. Did the carjacking take place?

- At Home ☐ (*go to question 6*)
- 10km around your home ☐
- Elsewhere in your city ☐
- Elsewhere in your country (but not your city) ☐

5. If the carjacking was not at your home, was it at?

- A parking area of a shopping center ☐
- A petrol station ☐
- On a road at a traffic light or stop street ☐
- Other (*please specify*) ☐ _____

6. What time did the carjacking take place? (*please see pg 2. for more options*)

- 06:01am - 09:00am (morning) ☐
- 09:01am - 12:00pm (mid-morning) ☐

1

12:01pm – 16:00pm (afternoon) ☐

16:01pm – 19:00pm (evening) ☐

19:01pm – 12:00am (late-evening) ☐

12:01am – 06:00am (early-morning) ☐

7. When did the carjacking take place?

During the week (Mon. – Fri.) ☐

On the weekend (Sat. – Sun.) ☐

8. Were there any signs of danger that could have warned you?

Yes ☐ No ☐ (*go to question 10)*

9. If Yes, what? (*select only the one most appropriate to your incident*)

A person loitering ☐

Being blocked in ☐

Followed by a car ☐

Distracted (i.e. rocks in the road) ☐

Other (*please specify*) ☐ _____

10. Did your vehicle have any type of security device?

Yes ☐ No ☐

11. Did the carjacker/s ask you where any of the deactivation swiches were or ask you how to deactivate them?

Yes ☐ No ☐

12. Did the carjacker/s succeed in taking your vehicle?

Yes ☐ (*go to question 14*) No ☐

13. If No, what do you think stopped them from taking your vehicle? (*select only one*) (*please see pg 3. for more options*)

You fought back ☐

2

Approaching vehicle/s startled the carjacker/s ☐

Approaching bystanders startled the carjacker/s ☐

Police interrupted the attempted carjacking ☐

Other *(please specify*) ☐ _____

14. What was more upsetting for you? (*select only one*)

That your safety and security was threatened ☐

That someone attempted to/or stole your vehicle ☐

15. Did you report the incident to the police?

Yes ☐ No ☐ (*go to question 19*)

16. How did the police handle your report: were you satisfied?

Yes ☐ No ☐ (*go to question 18*)

17. If Yes, what were the reasons why you were satisfied?

They did what I expected them to do ☐

They were interested in helping me ☐

They showed interest in recovering my property ☐

They kept me properly informed ☐

They treated me politely and correctly ☐

They were quick to arrive at the scene ☐

Other (*please specify*) ☐ _____

18. If No, what were the reasons why you were dissatisfied with the police?

Do you think they didn't do enough ☐

Do you think they were not interested ☐

They didn't recover my property or goods ☐

They didn't keep me properly informed ☐

They didn't treat me correctly/ were impolite ☐

They were slow to arrive ☐

Other (*please specify*) ☐ _____

3

Section C: Physical aspect of the incident

19. Did the carjacker/s use aggressive language (i.e. I'm going to kill you!)?

Yes ☐ No ☐

20. Was/ were the carjacker/s armed?

Yes ☐ No ☐ (*go to question 22*)

21. If Yes, what type of weapon did they have?

Gun ☐

Knife ☐

Blunt object (i.e. knobkierie) ☐

Sharp object (i.e. machete) ☐

Other (*please specify*) ☐ _____

22. Was physical violence used?

Yes ☐ No ☐ (*go to question 27*)

23. If Yes, did you sustain any injuries as a result of the physical violence?

Yes ☐ No ☐ (*go to question 27*)

24. If Yes, please describe the injuries.

_____

_____

25. Did your injuries require medical treatment?

Yes ☐ No ☐ (*go to question 27*)

26. If Yes, where did you receive your treatment? (*select the place you received the most treatment*)

At the roadside (i.e. paramedics) ☐

At home ☐

At hospital ☐

At hospital over night ☐

4

27. Did the carjacker/s let you go immediately?

Yes ☐ (*go to question 30*) No ☐

28. If No, how long did the carjacker/s keep you?

Between 5 and 30 minutes ☐

Between 30 minutes and an hour ☐

Between an hour and an 1hr30 ☐

Longer than an 1hr30 ☐

29. Why do you think the carjacker/s did not let you go immediately? (*select only one*)

Prevent you from contacting the police immediately ☐

Prevent you from drawing the attention of bystanders ☐

Prevent you from activating security devices ☐

They needed you to drive the vehicle ☐

Other (*please specify*) ☐ _____

Section D: Psychological aspect of the incident

30. Please consider the following reactions, which sometimes occur after a traumatic event. These questions are concerned with your personal reactions to the traumatic event, which happened to you. Please check (Yes or No) whether you experienced any of the following within the first month.

Reactions	Yes	No
(a) Upsetting thoughts or memories about the event that have come into your mind against your will.		
(b) Upsetting dreams about the event.		
(c) Acting or feeling as though the event were happening again.		
(d) Feeling upset about reminders of the event.		
(e) Bodily reactions (i.e. fast heart rate, stomach churning, sweatiness, dizziness).		
(f) Difficulty falling asleep.		
(g) Irritability or outbursts of anger.		
(h) Difficulty concentrating		
(i) Heightened awareness of potential dangers to yourself and others		
(j) Being jumpy or startled at something unexpected		

5

31. Below is a list of questions that relate to feelings of anger people sometimes have after stressful life events. Please read each item, and then check how angry you were after your carjacking. (*Select the response that best describes how you felt*).

"I was angry at the perpetrator…"

(a) …because he caused so much harm in my life

Never		Rarely		Sometimes		Often		Very often	

(b) …because my well-being was so unimportant to the perpetrator

Never		Rarely		Sometimes		Often		Very often	

(c) …because the perpetrator fails to accept his guilt

Never		Rarely		Sometimes		Often		Very often	

(d) …because he behaved badly even in the time after the incident

Never		Rarely		Sometimes		Often		Very often	

"I imagined…"

(e) …how the perpetrator would be a victim themselves one day

Never		Rarely		Sometimes		Often		Very often	

(f) …how the perpetrator will themselves really have to suffer

Never		Rarely		Sometimes		Often		Very often	

(g) …how I would pay back the perpetrator for what s/he did to me

Never		Rarely		Sometimes		Often		Very often	

(h) …how I would get even with the perpetrator

Never		Rarely		Sometimes		Often		Very often	

"I was angry at the police, courts, or administration…"

(i) …because they did not prevent the assault

Never		Rarely		Sometimes		Often		Very often	

(j) …because they did not do their work well enough

Never		Rarely		Sometimes		Often		Very often	

6

(k) …because they dealt with me without compassion

Never		Rarely		Sometimes		Often		Very often	

(l) …because they only care about the perpetrators and not the victims

Never		Rarely		Sometimes		Often		Very often	

"I was angry at other people…"

(m)…because they did not prevent the assault

Never		Rarely		Sometimes		Often		Very often	

(n) …because they have treated me badly in the time since the incident

Never		Rarely		Sometimes		Often		Very often	

(o) …because they did not show understanding for my situation

Never		Rarely		Sometimes		Often		Very often	

(p) …because they were fortunate not to become a victim of this crime

Never		Rarely		Sometimes		Often		Very often	

"I was angry at myself…"

(q) …because I did not prevent the assault

Never		Rarely		Sometimes		Often		Very often	

(r) …because I should have behaved differently when the assault happened

Never		Rarely		Sometimes		Often		Very often	

(s) …because I still feel weak and vulnerable because of the assault

Never		Rarely		Sometimes		Often		Very often	

(t) …because I cannot cope with the incident as well as I would expect myself to

Never		Rarely		Sometimes		Often		Very often	

32. Did you receive counseling from victim support (at police), a trauma center, or professional (psychologist/ psychiatrist)?

Yes ☐ No ☐ (*go to question 34*)

33. If Yes, please specify which one _____

7

34. If No, would you like to have received counseling?

Yes ☐ No ☐

35. Now that some time has passed since your traumatic event, please consider the following reactions. Do you still have these reactions while filling out this questionnaire?These are the same questions found in Question 30. Please check (Yes or No) to each.

Reactions	Yes	No
(a) Upsetting thoughts or memories about the event that have come into your mind against your will.		
(b) Upsetting dreams about the event.		
(c) Acting or feeling as though the event were happening again.		
(d) Feeling upset about reminders of the event.		
(e) Bodily reactions (i.e. fast heart rate, stomach churning, sweatiness, dizziness).		
(f) Difficulty falling asleep.		
(g) Irritability or outbursts of anger.		
(h) Difficulty concentrating		
(i) Heightened awareness of potential dangers to yourself and others		
(j) Being jumpy or startled at something unexpected		

Section E: Financial aspect of the incident

36. Was your vehicle recovered?

Yes ☐ No ☐ Vehicle not taken ☐ (*see question 12*)

37. Was your vehicle insured?

Yes ☐ No ☐ (*go to question 41*)

38. If Yes, how much did it cost you personally to replace your vehicle (cost not covered by insurance)?

Less than R30 000	
From R30 000 to R60 000	
From R60 000 to R90 000	
From R90 000 to R110 000	
More than R110 000	

39. Did the carjacking affect your monthly premium?

Yes ☐ No ☐ (*go to question 42*)

40. If Yes, by how much did it affect your premium?

Less than R1000	
From R1000 to R2000	
From R2000 to R3000	
From R3000 to R4000	
More than R4000	

8

41. How much did it cost you to replace your vehicle if you did not have insurance?

Less than R30 000	
From R30 000 to R60 000	
From R60 000 to R90 000	
From R90 000 to R110 000	
More than R110 000	

42. What other items were stolen in the incident that was in your vehicle at the time?

Mobile phone ☐

Handbag or wallet ☐

Laptop/ tablets (i.e. iPad) ☐

Sports Equipment ☐

Groceries ☐

Other (*please specify*) ☐ _____

43. What did it cost you personally to replace any of these items?

Less than R30 000	
From R30 000 to R60 000	
From R60 000 to R90 000	
From R90 000 to R110 000	
More than R110 000	

44. If your vehicle did not already have one, have you since installed a security device?

Yes ☐ No ☐ (*go to question 47*)

45. If Yes, which devices did you install? (*select all those that apply*)

Satellite tracking system ☐

Alarm system ☐

Immobiliser ☐

Anti-hijack device ☐

46. How much did this cost you personally?

Less than R1000	
From R1000 to R2000	
From R2000 to R3000	
From R3000 to R4000	
More than R4000	

9

47. If you received any medical treatment for your injuries or professional counseling, how much did it cost you personally?

Less than R30 000	
From R30 000 to R60 000	
From R60 000 to R90 000	
From R90 000 to R110 000	
More than R110 000	

48. If your vehicle was taken, how long did it take you to replace it?

Less than one week ☐

Between one and two weeks ☐

Between two weeks and one month ☐

More than one month ☐

49. Did the time it took to replace your vehicle have any effect on your employment?

Yes ☐ No ☐ (*go to question 51*)

50. If Yes, what effect did it have? _____

_____

51. If you were injured, did it have any effect on your employment?

Yes ☐ No ☐ (*go to question 53*)

52. If Yes, what effect did it have? _____

_____

Section F: After the incident

53. Below is a list of precautions people may take to prevent themselves from being carjacked. Please check the list and mark which ones you may have taken before the carjacking, directly after it, and what precautions you still take today. (*please see pg. 11 for more options*)

Precautions	Before	Directly after	Today
(a) I always try to travel during the busy hours of the day.			
(b) I try to avoid stopping at traffic lights when possible.			
(c) I always maintain a safe distance between myself and the vehicle in front of me.			

10

Precautions	Before	Directly after	Today
(d) I always try to make sure someone serves as a "lookout" when entering and exiting my home.			
(e) I employed the services of a security company to escort me entering and exiting my home.			
(f) I always notify people when I leave and/or have reached my destination.			
(g) I alternate my route home.			
(h) I always travel past my house first to scan the area before entering.			
(i) I try to travel in a convoy when possible.			

54. By taking these precautions do you feel less likely to be re-victimized by carjacking?

Yes ☐ No ☐

55. Do these precautions impose restrictions on your life?

Yes ☐ No ☐ (*go to question 57*)

56. If Yes, how much of a restriction do they impose on your life?

Little		Somewhat		Much		A great deal	

57. Carjacking may cause fear and loss of feelings of security. It may cause serious physical harm. It may result in financial losses. What was the most severe impact for you personally? (*select one*)

Psychological impact ☐

Physical impact ☐

Financial impact ☐

Thank you for completing the questionnaire. Please feel free to supply any further information you would like on a separate sheet of paper. We appreciate your cooperation and time. Please send the questionnaire back to the following address: P.O. Box 90391 Bertsham, JHB, South Africa, 2091. For your convenience a prepaid envelope is provided. Please feel free to contact Mr. James (gjames@tokiwa.ac.jp) or Prof. Dr. Kirchhoff (gerd@tokiwa.ac.jp) at anytime should you have any questions or comments about the research.

Thank you for your participation in this research!

11

Appendix D: Letter of Invitation

Tokiwa University, Graduate School of Victimology

Letter of Invitation

Title of Research: Consequences of Carjacking in South Africa: An Empirical Study on its Victims

Principal Researcher:
Chadley James, PhD Student
Graduate School of Victimology
1 430 1 Miwa, Mito-shi, Ibaraki Ken
Japan, 310-8585
+81 80 4807 2413
gjames@tokiwa.ac.jp

Mentor:
Professor Dr. Gerd Ferdinand Kirchhoff
Graduate School of Victimology
1 430 1 Miwa, Mito-shi, Ibaraki Ken
Japan, 310-8585
+81 29 232 2865
gerd@tokiwa.ac.jp

Dear Participant,

I am a doctoral student at Tokiwa University in the Graduate School of Victimology, Mito, Japan. I am conducting a research study on Victims of Carjacking in South Africa.

Carjacking is a serious problem in South Africa. Over the last decade there have been over 9000 cases reported each year. The psychological, physical, financial, and social damages of carjacking on its victims are not fully understood. Neither are the effects the changes victims make to their daily lives to gain control over their lives from this event. Therefore, the aim of this study is to better understand the effects carjacking has on its victims.

Therefore, as you have been a victim of carjacking, I would like to take this opportunity to kindly invite you to participate in this research study by answering a questionnaire. By participating in this study, you will have the opportunity to provide information on your experience of being a victim of carjacking, provide answers to how carjacking affects people's lives, and how they avoid becoming a victim again.

I want to stress that your participation in this study is voluntary and all information is kept confidential.

I have enclosed an informed consent form and written oath for your review. Please read the form and feel free to contact me (the researcher), or my Mentor if you have any questions about the study. If you choose to participate, please sign and date the informed consent form and return it along with the completed questionnaire in the prepaid envelope provided.

Your responses will be highly valued and so will your contribution to the knowledge on victims of crime. Your participation in this research study is greatly appreciated.

Yours in Research,

_____ _____

Chadley James (PhD Student) Date

Appendix E: Informed Consent Form

Tokiwa University, Graduate School of Victimology

Informed Consent Form

Title of Research: Consequences of Carjacking in South Africa: An Empirical Study on its Victims

Principal Researcher:
Chadley James, PhD Student
Graduate School of Victimology
1 430 1 Miwa, Mito-shi, Ibaraki Ken
Japan, 310-8585
+81 80 4807 2413
gjames@tokiwa.ac.jp

Mentor:
Professor Dr. Gerd Ferdinand Kirchhoff
Graduate School of Victimology
1 430 1 Miwa, Mito-shi, Ibaraki Ken
Japan, 310-8585
+81 29 232 2865
gerd@tokiwa.ac.jp

Invitation to Participate: As someone who has been a victim of carjacking, you are kindly invited to participate in this research study by answering a questionnaire. Before you decide to participate, please take the time to read the following to understand what the research involves and what is asked of you.

Purpose of the Study: Carjacking is a serious problem in South Africa. Over the last decade there have been over 9000 cases reported each year. The psychological, physical, and financial damages of carjacking on its victims are not fully understood. Neither are the effects the changes victims make to there daily lives to gain control over their lives from this event. Therefore, the aim of this study is to better understand the effects carjacking has on its victims.

Procedures to be followed: You will be asked to fill out a questionnaire that will take approximately 20-25 minutes to complete. Should you agree to participate, please use the prepaid envelope to post the questionnaire and signed informed consent form back to the researcher.

Questionnaire: The questionnaire you will be answering consists of questions relating only to the carjacking you experienced. You will not be asked to provide any personal information other than your age and gender.

Potential Risks and Discomforts: There are no physical, social or economic risks by participating in this research study. There is a potential that you may experience some emotional discomfort. If you experience any emotional discomfort beyond which you feel you can handle, please do not continue. Use the contact information provided for Victim Support and LifeLine South Africa. These organizations provide professional counseling to assist victims of crime. You are also free to contact the Researcher or the Mentor at anytime should you have any questions, complaints or concerns about this research.

Potential Benefit: By participating in this study, you will have the opportunity to provide information on your experience of being a victim of carjacking, provide answers to how carjacking affects people's lives, and how they avoid becoming a victim again. Your responses will be highly valued and so will your contribution to the knowledge on victims of crime.

Statement of Confidentiality: Your participation in this research is confidential. All the data will be held in accordance with data protection legislation and Tokiwa University's Code for Research Ethics. All questionnaires will be filed in a locked filling cabinet stored in the Mentor's office. All electronic files will be safely stored on a password-protected computer. Only the researcher and Mentor will have access to the information.

Voluntary Participation: Your decision to participate in this research study is completely voluntary. You may stop or withdraw at anytime without prejudice.

I have read and understand the information above, and hereby give my consent to participate in this research study.

_____ _____

Participants Signature Date

Appendix F: Written Oath

Tokiwa University, Graduate School of Victimology
Written Oath
Title of Research: Consequences of Carjacking in South Africa: An Empirical Study on its Victims

Principal Researcher:
Chadley James, PhD Student
Graduate School of Victimology
1 430 1 Miwa, Mito-shi, Ibaraki Ken
Japan, 310-8585
+81 80 4807 2413
gjames@tokiwa.ac.jp

Mentor:
Professor Dr. Gerd Ferdinand Kirchhoff
Graduate School of Victimology
1 430 1 Miwa, Mito-shi, Ibaraki Ken
Japan, 310-8585
+81 29 232 2865
gerd@tokiwa.ac.jp

I, Chadley James, Phd student in the Graduate School of Victimology at Tokiwa University, hereby certify that I will strictly adhere to the rules and conditions of the Tokiwa University's Code for Research Ethics in conducting this research study:

- No information other than the information stated in the 'Purpose of this Study' found on the Letter of Invitation and Informed Consent Form will be included into this study.
- Participation in this study is completely voluntary, and participants may stop or withdraw at anytime without prejudice.
- Only questionnaires that are returned with a signed informed consent form will be included into the study.
- All paper questionnaires and signed informed consent forms will be stored in a locked filing cabinet in the Mentors office, with electronic data stored on a password-protected computer. Only the researcher and Mentor will have access to this data.
- Participants are free to contact the researcher and Mentor at anytime with any questions, concerns, or complaints about the research.
- A Victim Support and LifeLine South Africa pamphlet will be attached to every questionnaire to provide participants with any emotional support they may require.
- The participants will incur no financial expense, as a prepaid envelope will be provided with each questionnaire for return postage.

_____ _____

Chadley James (PhD Student) Date

Appendix G: Victim Support / LifeLine South Africa Pamphlet

Post-Traumatic Stress Disorder (PTSD)

Description

- Post-Traumatic Stress Disorder arises as an immediate, delayed and/or protracted response to a traumatic or stressful event of an exceptionally threatening or catastrophic nature.
- The person encountering the stress does not have to be the one who was directly threatened. This stress can also be experienced by witnesses to a traumatic incident.
- Examples of life-threatening traumas that can cause post-traumatic stress include natural disasters, serious accidents and acts of violence.
- Trauma debriefing with a qualified professional 24 to 72 hours after a traumatic event can help prevent the onset of PTSD.

The trauma involves direct personal experience of an event that involves actual or threatened death or serious injury, or a threat to one's physical integrity, or witnessing an event that involves death, injury, or a threat to the physical integrity of another person.

Stressors that might trigger PTSD would normally be outside the range of typical human experience. Problems such as grieving the loss of a loved one or marital conflict are not considered severe enough on their own to lead to PTSD. People who have PTSD are those who:

- Have experienced, witnessed or were confronted with a traumatic event that involved the threat of death or serious injury to themselves or others, causing them to respond with intense fear, helplessness or horror.
- Persistently re-experience the event through intrusive thoughts, dreams, acting or feeling as if the event were reoccurring, and/or intense distress and emotion when exposed to cues that symbolise or resemble the event.
- Avoid stimuli associated with the event and attempt to numb their general responsiveness by avoiding thoughts, feelings, conversation, activities, places or people associated with the trauma.
- Experience an inability to recall important aspects of the trauma and loss of interest in participating in activities.
- Feel detached from others, have a restricted range of emotions and are often unable to have loving relationships.
- Feel little hope for their future.
- Experience symptoms of increased emotional stimulation such as difficulty sleeping, irritability or angry outbursts, difficulty concentrating, increased vigilance and exaggerated or startled responses.

The above-mentioned disturbances will continue for at least a month and can cause significant distress or impairment in social, occupational or other important areas of functioning.

In general, people with PTSD respond to situations more intensely than those who do not have the disorder. Whereas others may respond with denial, a person with PTSD will respond by withdrawing and may turn to alcohol, drugs or suicide. Unable to work through their feelings, they become incapable of love and work.

These feelings of distress may lead to anxiety disorders such as obsessive-compulsive disorder, panic disorder, generalised anxiety disorder, acute stress disorder and depression.

Symptoms

The symptoms of PTSD fall into three categories:

- Intrusion
- Avoidance
- Hyperarousal

Intrusion

Memories of the trauma can recur unexpectedly, and episodes called "flashbacks" intrude into their current lives. This happens in sudden, vivid memories accompanied by painful emotions that hold the victim's attention completely. The flashback may be so strong that individuals almost feel as if they are experiencing the trauma again or seeing it unfold before their eyes. They may also have nightmares of the traumatic incident.

Avoidance

Avoidance symptoms often affect relationships with others: the person with PTSD often avoids close emotional ties with family, colleagues and friends. At first, the person feels emotionally numb and can complete only routine, mechanical activities. Later, when re-experiencing the event, the individual may alternate between the flood of emotions caused by re-experiencing the trauma and the inability to feel or express emotions at all. The person with PTSD avoids situations or activities that are reminders of the original traumatic event because such exposure may cause symptoms to worsen. Depression is a common product of the inability to resolve painful feelings. Some people also feel guilty because they survived a disaster while others - particularly if these were friends or family - did not.

Hyperarousal

PTSD can cause its sufferers to act as if they are constantly threatened by the trauma that caused their illness. They can become suddenly irritable or explosive, even when they are not provoked. They may have trouble concentrating or remembering current information, and, because of their terrifying nightmares, they may develop insomnia. The constant feeling that danger is near causes exaggerated startle reactions.

Many people with PTSD also attempt to rid themselves of their painful re-experiences, loneliness and panic attacks by abusing alcohol or other drugs as "self-medication". A person with PTSD may show poor control over his or her impulses and may be at risk for suicide.

Course

There are usually three phases of response to traumatic stress:

One – Impact Phase (first few days after the trauma)
Responses include:

- Shock
- Feeling emotionally numb
- Dissociation and disorganised thinking
- Increased arousal and hyper-vigilance
- Feeling repressed and helpless

Phase Two – Recoil Phase (lasts two to four weeks)

- Mood swings (anger, sadness, anxiety)
- Flashbacks and intrusive thoughts such as 'am I going crazy?'
- The individual begins to adapt

Phase Three – Reorganisation Phase

- Symptoms subside
- Social and occupational functioning improve

The above is the normal course after having experienced a trauma. Should the symptoms of phase one and two persist beyond four to six weeks, it is advised that you seek professional assistance.

Risk factors

It is impossible to predict who will get PTSD; however, several factors are known to contribute to the development of the condition. These include, but are not limited to:

- Personal identification of the event, through both witnessing a traumatic event or personally experiencing it.
- Witnessing a traumatic occurrence in which you know the victim
- Lack of knowledge of the event ahead of time
- The severity and intensity of the event
- Cumulative exposure to traumatic events
- Chronic exposure to traumatic incidents
- Pre-existing PTSD or other psychiatric disorder
- Feelings of helplessness

LifeLine
Southern Africa

How we can help you

- 24 hour telephone counselling service
- Rape counselling
- Face-to-Face counselling (by appointment)
- Trauma counselling
- Training and outreach programmes for other Welfare organisations and the broader community
- Life skills division: Communication courses for corporate business

Our Outreach centres:

Contact Numbers
Crisis: (011) 728-1347
Fax: (011) 728-3497
Office: (011) 728-1331
Physical Address:
2 The Avenue
Cnr Henrietta Street
Norwood
Johannesburg
Postal Address:
P.O. Box 95135
Grant Park
2051
LifeLine Alexandra Outreach Centre
Crisis: (011) 443-3555
Fax: (011) 882-1148
Physical Address:
Cnr 12th & Selbourne Street
Alexsan Resource Centre
Alexandra
2014
Postal Address:
P.O. Box 570
Bergvlei
2090
LifeLine Clinix Soweto Outreach centre
Physical Address:
C/o Clinix Soweto Hospital
Dobsonville
Soweto
Postal Address:
P.O. Box 95135
Grant Park
2051

Email: lifeline@lifelinejhb.org.za
Our people
Director: Arlene Bernstein (C) 082-880-5562
Chairperson: Billy Joubert (T) 011- 806-5352 / 082-779-3609
Website
http://www.lifelinejhb.org.za

Appendix H: Thame Times Advertisement

Appendix I: Data Coding

Coding of Variables in SAS/Sat		
Question	Variable	Coding
1. Age	Age	open response
2. Gender	Gender	Female=1 Male=2
3. How many times carjacked	Htcar	open response
4. Where did the carjacking take place	Loc1	At home=1 10km arou home=2 Elsewhe in city=3 Elsewhe in cou=4
5. If not at home where	Loc2	Parking Shop Cen=1 Petrol station=2 Traffic/Stop street=3 Other=0
6. What time did the carjacking	Time	06:01-09:00=1 09:01-12-00=2 12:01-16:00=3 16:01-19:00=4 19:01-00:00=5 00:01-06:00=6
7. When did carjacking take place	Day	Mon.-Fri.=1 Sat.-Sun.=2
8. Were there signs that may have warned you	SigWarn1	Yes=1 No=2
9. If, yes, what sign	SigWarn2	Person loitering=1 Being blocked in=2 Followed by car=3 Distracted=4 Other=0
10. Did you vehicle have a security device	SecDev	Yes=1 No=2
11. Did the carjackers ask you where the deactivation switches were	AskDeacSwi	Yes=1 No=2
12. Did the carjackers succeed in taking vehicle	SucVeh1	Yes=1 No=2
13. If, No, what do you think stopped them	SucVeh2	Fought back=1 App vehicle=2 App bystanders=3 Police interrupted=4 Other=0
14. What was more upsetting for you	Upset	Safety and security=1 Attempt/Stole=2
15. Did you report the incident to the police	RepPol	Yes=1

		No=2
16. How did the police handle your report: Satisfied	PolSat1	Yes=1 No=2
17. If Yes, what were the reasons: Satisfied	PolSat2	Did what expected=1 Interested in help=2 Showed interest=3 Kept me informed=4 Treated pol/cor=5 Quick to arrive=6 All=7
18. If No, what were the reasons: Dissatisfied	PolSat3	Not enough=1 Not interested=2 Didn't recov property=3 Didn't keep me informed=4 Not treated pol/cor=5 Slow to arrive=6 All=7
19. Did the carjackers use aggressive language	AggLang	Yes=1 No=2
20. Were the carjackers armed	CarArm1	Yes=1 No=2
21. If Yes, what type of weapon did they have	CarArm2	Gun=1 Knife=2 Blunt object=3 Sharp object=4 Other=0
22. Was physical violence used	PhyVio1	Yes=1 No=2
23. Did you sustain injuries as a result…	PhyVio2	Yes=1 No=2
24. If Yes, type of injuries	PhyVio3	open response
25. Did your injuries require medical treatment	MedTrea1	Yes=1 No=2
26. If Yes, where did you receive your treatment	MedTrea2	At roadside=1 At home=2 At hospital=3 At hospital overnight=4
27. Did the carjackers let you go immediately	GoImm1	Yes=1 No=2
28. If No, how long did they keep you	GoImm2	Bt 5-30minutes=1 Bt 30-1hr=2 Bt 1hr -1hr30=3 Longer than 1hr30=4
29. Why do you think they did not let you go immediately	GoImm3	Prevent contact police=1 Prevent drawing att of bys=2 Prevent from acti sec dev=3

		Needed you to drive veh=4 Other=0
30. (a) TSQ Upsetting thoughts or memories	TSQutm1	Yes=1 No=2
30. (b) TSQ Upseting dreams	TSQud1	Yes=1 No=2
30. (c) TSQ Acting or feeling as though it were happening again	TSQhag1	Yes=1 No=2
30. (d) TSQ Feeling upset about reminder	TSQurem1	Yes=1 No=2
30. (e) TSQ Bodily reactions	TSQbr1	Yes=1 No=2
30. (f) TSQ Difficulty falling asleep	TSQdfa1	Yes=1 No=2
30. (g) TSQ Irritabilty or outbursts of anger	TSQioa1	Yes=1 No=2
30. (h) TSQ Difficulty concentrating	TSQdc1	Yes=1 No=2
30. (i) TSQ Hightened awareness	TSQha1	Yes=1 No=2
30. (j) TSQ Being jumpy or startled	TSQjs1	Yes=1 No=2
31. (a) PASpr Harm in my life	PASprHL	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (b) PASpr Unimpottant to perpetrator	PASprUP	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (c) PASpr Falis to accept guilt	PASprFG	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (d) PASpr Behaved badly after incident	PASprBBA	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (e) PASdr perpetrator victim themselves	PASdrPVT	Never=1 Rarely=2 Sometimes=3 Often=4

		Very often=5
31. (f) PASdr perpetrator have to suffer	PASdrPS	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (g) PASdr payback the perpetrator	PASdrPBP	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (h) PASdr get even with perpetrator	PASdrGEP	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (i) PAScj Did not prevent the assault	PAScjPA	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (j) PAScj They did not do their work well enough	PAScjWWE	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (k) PAScj Dealt without compassion	PAScjDWC	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (l) PAScj Only care about perpetrator not victims	PAScjCPNV	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (m) PAStp Did not prevent assault	PAStpPA	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (n) PAStp Treated me badly since the incident	PAStpTB	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (o) PAStp Did not show understaning for my situation	PAStpUS	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5

31. (p) PAStp Were fortunate to not become a victim	PAStpNBV	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (q) PASas Did not prevent assault	PASasPA	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (r) PASas Behaved differently when assault happened	PASasBD	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (s) PASas Feel weak and vulnerable	PASasWV	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
31. (t) PASas Cannot cope with incident as well as expected	PASasCE	Never=1 Rarely=2 Sometimes=3 Often=4 Very often=5
32. Did you receive counseling	RecCou1	Yes=1 No=2
33. If Yes, from where	RecCou2	Victim support=1 Trauma center=2 Psychologist/Psychia=3
34. If No, would like to have received counseling	RecCou3	Yes=1 No=2
35. (a) TSQ Upsetting thoughts or memories	TSQutm2	Yes=1 No=2
35. (b) TSQ Upseting dreams	TSQud2	Yes=1 No=2
35. (c) TSQ Acting or feeling as though it were happening again	TSQhag2	Yes=1 No=2
35. (d) TSQ Feeling upset about reminder	TSQurem2	Yes=1 No=2
35. (e) TSQ Bodily reactions	TSQbr2	Yes=1 No=2
35. (f) TSQ Difficulty falling asleep	TSQdfa2	Yes=1 No=2
35. (g) TSQ Irritabilty or outbursts of anger	TSQioa2	Yes=1 No=2

35. (h) TSQ Difficulty concentrating	TSQdc2	Yes=1 No=2
35. (i) TSQ Hightened awareness	TSQha2	Yes=1 No=2
35. (j) TSQ Being jumpy or startled	TSQjs2	Yes=1 No=2
36. Was your vehicle recovered	VehRec	Yes=1 No=2 Vehicle not taken=3
37. Was your vehicle insured	VehIns1	Yes=1 No=2
38. If Yes, how much did it cost you personally to replace	VehIns2	Less R30000=1 R30000-R60000=2 R60000-R90000=3 R90000-R110000=4 More R110000=5
39. Did the carjacking affect your monthly insurance premium	MonInsPre1	Yes=1 No=2
40. If Yes, how much	MonInsPre2	Less R1000=1 R1000-R2000=2 R2000-R3000=3 R3000-R4000=4 More R4000=5
41. How much did it cost you to replace your vehicle (no insurance)	CosRepNoIns	Less R30000=1 R30000-R60000=2 R60000-R90000=3 R90000-R110000=4 More R110000=5
42. What other items were stolen during the incident	OthItmStol	Nothing was taken =1 Mobile phone=2 Handbag/wallet=3 Laptop/Tablet=4 Sports Equip=5 Groceries=6 Other=0
43. What did it cost you personally to replace these item	CosRepItm	Less R30000=1 R30000-R60000=2 R60000-R90000=3 R90000-R110000=4 More R110000=5
44. If your vehicle did not already have one, have you installed a security device	InsSecDev1	Yes=1 No=2
45. If Yes, which security devices did you install	InsSecDev2	Satelite Track=1 Alarm sys=2 Immobiliser=3 Anti-hijack=4 All=5
46. How much did this cost you personally	InsSecDev3	Less R1000=1

		R1000-R2000=2 R2000-R3000=3 R3000-R4000=4 More R4000=5
47. If you received medical treatment/ counseling how much did it cost	TreCouCos	Was not injured/no counseling=1 Did not cost=2 Less R30000=3 R30000-R60000=4 R60000-R90000=5 R90000-R110000=6 More R110000=7
48. If your vehicle was taken how long did it take to replace	TimRepVeh	Vehicle was recovered=1 Vehicle not taken=2 Less 1 week=3 Bt 1wk and 2 wks=4 Bt 2wks and 1 month=5 More than 1 month=6
49. Did the time it took to replace vehicle effect employment	TimRepVehEmp1	Yes=1 No=2
50. If Yes, what effect	TimRepVehEmp2	open response
51. If you were injured did it effect your employment	InjEfEmp1	Yes=1 No=2 Was not injured=3
52. If Yes, what effect	InjEfEmp2	open response
53. (a) Precautions, travel busy hours of the day	PREbhd	Before=1 Directly After=2 Today=3 All=4 Never taken=5 No response=999
53. (b) Precautions, avoid stopping at traffic light/ stop streets	PREast	Before=1 Directly After=2 Today=3 Never taken=4
53. (c) Precautions, safe distance between vehicle	PREsdbv	Before=1 Directly After=2 Today=3 Never taken=4
53. (d) Precautions, someone serves as a lookout	PREslo	Before=1 Directly After=2 Today=3 Never taken=4
53. (e) Precautions, security company escort	PREsce	Before=1 Directly After=2 Today=3 Never taken=4
53. (f) Precautions, notify people when leaving and arriving	PREnpla	Before=1 Directly After=2 Today=3

		Never taken=4
53. (g) Precautions, alternate route home	PREarh	Before=1 Directly After=2 Today=3 Never taken=4
53. (h) Precautions, travel past house first	PREtph	Before=1 Directly After=2 Today=3 Never taken=4
53. (i) Precautions, travel in a convoy when possible	PREtcp	Before=1 Directly After=2 Today=3 Never taken=4
54. By taking these precautions do you feel less likely to be revictimized	PreReVic	Yes=1 No=2
55. Do these precautions impose restrictions on your life	PreImpResLif1	Yes=1 No=2
56. If Yes, how much of a restriction do they impose	PreImpResLif2	Little=1 Somewhat=2 Much=3 A great deal=4
57. Most severe impact	SevImp	Psychological impact=1 Physical impact=2 Financial impact=3

Appendix J: Additional Tables

Psychological Damages Hypotheses

Table 85: Summary of TSQ Results with Age

Variable	*n*	Category	Overall		Age										*p* value for H0: no significant difference w.r.t. age group
					18-25y (*n* = 50; 18%)		26-35y (*n* = 72; 26%)		36-45y (*n* = 72; 26%)		46-55y (*n* = 46; 16%)		56y+ (*n* = 40; 14%)		
			n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	
TSQ (first month) score	248	mean (sd)	248	6.8 (2.3)	44	6.4 (2.1)	65	7.0 (2.3)	65	7.1 (2.4)	37	6.5 (2.2)	37	7.1 (2.3)	0.53
		median (IQR)	248	7 (5-9)	44	7 (5.5-8)	65	7 (6-9)	65	7 (5-9)	37	6 (5-8)	37	7 (5-9)	
TSQ (now) score	243	mean (sd)	243	4.0 (1.7)	41	4.1 (1.9)	64	4.3 (2.1)	65	3.8 (1.3)	38	4.0 (1.7)	35	3.8 (1.3)	0.45
		median (IQR)	243	4 (3-5)	41	4 (3-5)	64	4 (3-5)	65	4 (3-4)	38	4 (3-5)	35	4 (3-4)	
TSQ (change) score	242	mean (sd)	242	-2.8 (1.9)	41	-2.3 (1.7)	64	-2.6 (2.0)	65	-3.3 (1.9)	37	-2.5 (1.8)	35	-3.2 (2.1)	0.08
		median (IQR)	242	-3 (-4 to-1)	41	-2 (-4 to-1)	64	-2 (-4 to-1)	65	-3 (-5 to-2)	37	-2 (-3 to-1)	35	-3 (-5 to-2)	
TSQ (first month) >= 6	248	Yes	182	73.4	33	75	50	76.9	48	73.8	24	64.9	27	73	0.76
		No	66	26.6	11	25	15	23.1	17	26.2	13	35.1	10	27	
TSQ (now) >= 6	243	Yes	35	14.4	7	17.1	12	18.8	6	9.2	7	18.4	3	8.6	0.38
		No	208	85.6	34	82.9	52	81.3	59	90.8	31	81.6	32	91.4	

Table 86: PAS Between-Group Differences with Age

Variable	*n*	Category	Overall		Age										*p* value for H0: no significant difference w.r.t. age group
					18-25y (*n* = 50; 18%)		26-35y (*n* = 72; 26%)		36-45y (*n* = 72; 26%)		46-55y (*n* = 46; 16%)		56y+ (*n* = 40; 14%)		
			n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	
PAS (perpetrator)	249	mean (sd)	249	3.6 (0.9)	44	3.5 (1.0)	65	3.4 (0.9)	65	3.7 (1.0)	38	3.6 (1.0)	37	3.6 (0.9)	0.42
		median (IQR)	249	3.8 (2.8-4.5)	44	3.5 (2.8-4.6)	65	3.3 (2.8-4.3)	65	4 (3-4.8)	38	3.9 (2.8-4.5)	37	4 (2.8-4.3)	
PAS (revenge)	248	mean (sd)	248	3.2 (1.2)	44	3.3 (1.2)	64	3.1 (1.3)	65	3.2 (1.0)	38	3.1 (1.2)	37	3.0 (1.3)	0.87
		median (IQR)	248	3.3 (2.3-4)	44	3.3 (2.3-4.5)	64	3.3 (2-4.4)	65	3.3 (2.5-4)	38	3.4 (2.5-3.8)	37	3.3 (2-4)	
PAS (criminal justice system)	248	mean (sd)	248	2.1 (1.1)	44	2.2 (1.2)	64	2.1 (1.1)	65	1.9 (1.0)	38	2.0 (1.0)	37	2.1 (1.1)	0.84
		median (IQR)	248	1.8 (1-3)	44	2.5 (1-3)	64	2 (1-3)	65	1.8 (1.3-2.5)	38	1.8 (1.3-2.5)	37	1.8 (1-3)	
PAS (third parties)	248	mean (sd)	248	1.3 (0.6)	44	1.3 (0.7)	64	1.6 (0.8)	65	1.3 (0.5)	38	1.3 (0.5)	37	1.2 (0.4)	0.053
		median (IQR)	248	1 (1-1.5)	44	1 (1-1)	64	1.3 (1-2)	65	1 (1-1.5)	38	1 (1-1.5)	37	1 (1-1.3)	
PAS (self)	248	mean (sd)	248	2.8 (1.0)	44	2.6 (1.0)	64	2.9 (1.0)	65	3.0 (0.9)	38	2.8 (1.0)	37	2.8 (1.0)	0.35
		median (IQR)	248	3 (2-3.8)	44	2.5 (1.9-3.4)	64	2.9 (2-3.8)	65	3.3 (2.5-3.8)	38	3 (2-3.8)	37	2.8 (2-3.5)	

Table 87: Summary of Counseling Results with Age

Variable	*n*	Category	Overall		Age										*p* value for H0: no significant difference w.r.t. age group
					18-25y (*n* = 50; 18%)		26-35y (*n* = 72; 26%)		36-45y (*n* = 72; 26%)		46-55y (*n* = 46; 16%)		56y+ (*n* = 40; 14%)		
			n	%	*n*	%	n	%	n	%	n	%	n	%	
Received counseling	249	Yes	119	47.8	16	36.4	28	43.1	30	46.2	21	55.3	24	64.9	0.087
		No	130	52.2	28	63.6	37	56.9	35	53.8	17	44.7	13	35.1	
Type of counseling received	119	Victim Support	68	57.1	7	43.8	15	53.6	17	56.7	17	81	12	50	0.23
		Trauma Centre	4	3.4	2	12.5	1	3.6	1	3.3	0	0	0	0	
		Professional	47	39.5	7	43.8	12	42.9	12	40	4	19	12	50	
No counseling, but would have liked to have received counseling	127	Yes	48	37.8	10	38.5	16	44.4	11	31.4	5	29.4	6	46.2	0.7
		No	79	62.2	16	61.5	20	55.6	24	68.6	12	70.6	7	53.8	

Behavioral Changes Hypotheses

Table 88: Precaution Taking with Age

Variable	*n*	Category	Overall		Age										p-value for H0: no significant difference w.r.t. Age group
					18-25y (*n* = 50; 18%)		26-35y (*n* = 72; 26%)		36-45y (*n* = 72; 26%)		46-55y (*n* = 46; 16%)		56y+ (*n* = 40; 14%)		
			n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	
Number of precautions: before	217	mean (sd)	217	1.2 (1.3)	33	1.6 (1.6)	55	1.2 (1.4)	61	1.2 (1.0)	34	1.1 (1.0)	34	1.2 (1.1)	0.62
		median (IQR)	217	1 (0-2)	33	1 (0-3)	55	1 (0-2)	61	1 (0-2)	34	1 (0-2)	34	1 (0-2)	
Number of precautions: after	217	mean (sd)	217	3.6 (2.0)	33	3.6 (2.1)	55	3.3 (1.8)	61	4.0 (1.9)	34	3.5 (2.2)	34	3.6 (2.0)	0.52
		median (IQR)	217	4 (2-5)	33	4 (3-5)	55	3 (2-4)	61	4 (3-5)	34	3 (2-5)	34	4 (2-5)	
Number of precautions: today	217	mean (sd)	217	4.0 (1.9)	33	3.6 (2.0)	55	3.8 (2.1)	61	4.2 (1.7)	34	4.3 (1.7)	34	3.9 (1.8)	0.46
		median (IQR)	217	4 (3-5)	33	4 (3-5)	55	4 (2-5)	61	4 (3-5)	34	4 (3-5)	34	4 (3-5)	

Table 89: Precaution Taking with Number of Victimizations and Physical Injury

Variable	*n*	Category	Overall		Number of victimizations				*p* value for H0: no significant difference w.r.t. no of victimizations	Physical injury				*p* value for H0: no significant difference w.r.t.phys injury
					Once (*n* = 249; 89%)		More than once (*n* = 31; 11%)			Yes (*n* = 94; 36%)		No (*n* = 169; 64%)		
			n	%	*n*	%	*n*	%		*n*	%	*n*	%	
Number of precautions: before	217	mean (sd)	217	1.2 (1.3)	190	1.3 (1.3)	27	1.2 (1.2)	0.91	82	1.2 (1.3)	135	1.3 (1.3)	0.6
		median (IQR)	217	1 (0-2)	190	1 (0-2)	27	1 (0-2)		82	1 (0-2)	135	1 (0-2)	
Number of precautions: after	217	mean (sd)	217	3.6 (2.0)	190	3.6 (2.0)	27	3.9 (2.3)	0.43	82	3.9 (1.9)	135	3.5 (2.1)	0.1
		median (IQR)	217	4 (2-5)	190	3.5 (2-5)	27	4 (2-6)		82	4 (3-5)	135	3 (2-5)	
Number of precautions: today	217	mean (sd)	217	4.0 (1.9)	190	3.9 (1.9)	27	4.3 (1.8)	0.3	82	4.3 (1.6)	135	3.8 (2.0)	0.1
		median (IQR)	217	4 (3-5)	190	4 (3-5)	27	5 (3-6)		82	4 (3-5)	135	4 (2-5)	

Table 90: Precaution Taking / Feelings of Re-Victimization with Age

Variable	*n*	Category	Overall		Age										*p* value for H0: no significant difference w.r.t. age group
					18-25y (*n* = 50; 18%)		26-35y (*n* = 72; 26%)		36-45y (*n* = 72; 26%)		46-55y (*n* = 46; 16%)		56y+ (*n* = 40; 14%)		
			n	%	n	%	n	%	n	%	n	%	n	%	
Feel less likely to be re-victimized by taking precautions	219	Yes	54	24.7	11	33.3	22	39.3	9	14.8	6	17.1	6	17.6	0.011
		No	165	75.3	22	66.7	34	60.7	52	85.2	29	82.9	28	82.4	

Table 91: Precaution Taking Restrictions with Age

Variable	*n*	Category	Overall		Age										*p* value for H0: no significant difference w.r.t. age group
					18-25y (*n* = 50; 18%)		26-35y (*n* = 72; 26%)		36-45y (*n* = 72; 26%)		46-55y (*n* = 46; 16%)		56y+ (*n* = 40; 14%)		
			n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	
Precautions impose restrictions	219	Yes	160	73.1	25	75.8	38	67.9	47	77	25	71.4	25	73.5	0.84
		No	59	26.9	8	24.2	18	32.1	14	23	10	28.6	9	26.5	
Extent of restrictions	160	Little	12	7.5	2	8	1	2.7	5	10.4	3	12	1	4	0.12
		Somewhat	47	29.4	9	36	13	35.1	12	25	4	16	9	36	
		Much	63	39.4	6	24	19	51.4	21	43.8	7	28	10	40	
		A great deal	38	23.8	8	32	4	10.8	10	20.8	11	44	5	20	

Table 92: Precaution Taking Restrictions with Number of Victimizations and Physical Injury

Variable	*n*	Category	Overall		Number of victimizations				*p* value for H0: no significant difference w.r.t. no of victimizations	Physical injury				*p* value for H0: no significant difference w.r.t. phys injury
					Once (n=249; 89%)		More than once (n=31; 11%)			Yes (n=94; 36%)		No (n=169; 64%)		
			n	%	*n*	%	*n*	%		*n*	%	*n*	%	
Precautions impose restrictions	219	Yes	160	73.1	139	72.4	21	77.8	0.65	63	75.9	97	71.3	0.5
		No	59	26.9	53	27.6	6	22.2		20	24.1	39	28.7	
Extent of restrictions	160	Little	12	7.5	12	8.7	0	0	0.53	3	4.8	9	9.3	0.2
		Somewhat	47	29.4	40	29	7	31.8		17	27	30	30.9	
		Much	63	39.4	52	37.7	11	50		30	47.6	33	34	
		A great deal	38	23.8	34	24.6	4	18.2		13	20.6	25	25.8	

Table 93: Most Severe Impact with Age

Variable	*n*	Category	Overall		Age									*p* value for H0: no significant difference w.r.t. age group
					18-25y (*n* = 50; 18%)		26-35y (*n* = 72; 26%)		36-45y (*n* = 72; 26%)		46-55y (*n* = 46; 16%)		56y+ (*n* = 40; 14%)	
			n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	
Impact	218	Psychological	177	81.2	27	81.8	42	76.4	51	83.6	30	85.7	27	79.4	0.41
		Physical	11	5	0	0	4	7.3	1	1.6	3	8.6	3	8.8	
		Financial	30	13.8	6	18.2	9	16.4	9	14.8	2	5.7	4	11.8	

Table 94: Most Severe Impact with Number of Victimizations

Variable	*n*	Category	Overall		Number of victimizations				*p* value for H0: no significant difference w.r.t. no of victimizations
					Once (*n* = 249; 89%)		More than once (*n* = 31; 11%)		
			n	%	*n*	%	*n*	%	
Impact	218	Psychological	177	81.2	159	83.2	18	66.7	0.08
		Physical	11	5	9	4.7	2	7.4	
		Financial	30	13.8	23	12	7	25.9	