Towards a Typology for Understanding Mobile Phone Victimisation in South African High Schools

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In partial fulfilment of the requirements for the Masters degree in Commerce (Information Systems)
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ABSTRACT

Mobile victimisation is one form of cyber aggression that is increasing and affecting many young people today. While several studies on cyberbullying and cyber victimisation have been done, the focus on mobile victimisation has been limited. In addition, findings presented in earlier studies have been inconclusive, and there is limited theory development to enhance conceptualisation and general understanding of this form of aggression. Calls have, therefore, been made to investigate mobile aggression and victimisation further.

The present study aims to create better understanding of the nature of mobile victimisation in South African high schools. This study will also identify significant factors that influence mobile victimisation. Through an extensive review of the literature and theoretical works on victimisation, the researcher was able to develop a mobile victimisation typology that would guide this research. This typology is based on the premise that the frequency of mobile phone use, the technological advancement of a mobile phone and the emotional attachment to a mobile phone are key predictors of mobile victimisation. In addition, it predicts that the extent to which victims contribute to their victimisation is dependent on the extent to which the victim engages in these predictors. The typology divides victims into three categories: (i) innocent victims (victims who do not contribute to their own victimisation), (ii) victims with low contribution (those who make limited contribution to their own victimisation), and (iii) victims with moderate to high contribution (those who contribute largely to their victimisation).

The proposed typology was tested empirically using a survey involving 2079 high school learners from nine high schools in the Western Cape of South Africa. The data collected was then analysed through statistical techniques which included regression analysis, correlation analysis and cluster analysis. The regression analysis results confirmed that the frequency of mobile use and attachment to the mobile phone were predictors of mobile victimisation. Cluster analysis was used to test the typology and the results obtained were able to identify and confirm all three categories of victims proposed in the mobile victimisation typology. The results of the cluster analysis also proved that the three assumed predictors could influence the abovementioned three categories of the typology differently. It was also found that category (i) was the most prevalent victim type in the Western Cape, with approximately 34% of the victimised learners identifying as innocent victims.
The findings affirmed that in one way or another, victims of mobile bullying passively contribute to this victimisation by frequently using their mobile phones and being attached to their mobile phones. In doing so, these findings have shed some light on the victims of mobile bullying and have given understanding of mobile victimisation among South African high school learners. This research may, therefore, improve the development of laws and policies as well as prevention and intervention programmes against mobile bullying. In doing so, mobile bullying justice and prevention may be ensured.

Keywords: Mobile bullying; Victimisation; Mobile victimisation; Victim contribution; Typology.
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I dedicate this dissertation to the Almighty God. My only hope at this point is to write in expression of Your Majesty, to excel in Your Excellence and to thrive in Your Grace.
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LIST OF ACRONYMS

ANOVA.................................Analysis of Variance
LRAT.................................Lifestyle Routine Activity Theory
MVT.................................Mobile Victimisation Typology
PBC.....................................Perceived Behavioural Control
RAT....................................Routine Activity Theory
SA........................................South Africa
TPB.....................................Theory of Planned Behaviour
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CHAPTER 1: INTRODUCTION

1.1 Background and Problem Statement

Online (cyber) victimisation is a serious problem facing many young people today. Between 2011 and 2013, Hinduja and Patchin (2013) found that cyber victimisation rates included in thirty-five peer reviewed articles ranged between 5.5 to 72%. In South Africa, research shows that over a third (37%) of the learners fall victim to this aggression and the perpetrators are difficult to identify (Popovac & Leoschut, 2012). This appears to be the trend in other parts of the world where research is increasingly being conducted (Hinduja & Patchin, 2008, 2013). Ybarra, Leaf and Diener-West (2004) found that one in three females and one in ten males experience unwanted sexual solicitation online. Tynes, Giang, Williams and Thompson (2008) also reported an increase in racial victimisation. Earlier research on cyberbullying focused mainly on the prevalence, the frequency among distinct groups, and the negative outcomes of the issue (Tokunaga, 2010). After some anecdotal cases unfolded in the media, cyber victimisation has recently become an issue of concern (Tokunaga, 2010). However, although cyber victimisation has become an issue of concern, there is still a noticeable lack of research on cyber victimisation (Tokunaga, 2010; Hinduja & Patchin, 2013).

The lack of consensus on the definition, cause, severity and coverage of cyber victimisation may contribute to the lack of research in this area. The broad coverage of cyber victimisation, for instance, has led to the impression that cyber victimisation risks contribute largely to overall youth victimisation (Mitchell, Finkelhor, Wolak, Ybarra & Turner, 2011). Mitchell et al. (2011) reported that youth are more at risk of being victimised by numerous forms of victimisation and it is unclear where exactly cyber victimisation is situated in terms of frequency and effect. According to Hinduja and Patchin (2009), cyber victimisation may be committed using disparaging remarks, symbols, images or behaviours that inflict harm through the use of computers, cell phones and other electronic devices. Tynes, Rose and Williams (2010: 1) state that the definition of online victimisation "includes hateful or sexual websites and images that an adolescent may inadvertently stumble upon while perusing the web as well as harm that may be wilful or deliberate". This definition also accounts for experiences that may be vicariously experienced by online peers and adults.

This inconsistency in meaning has led to the adoption of umbrella definitions for cyberbullying and cyber victimisation (Lipton, 2014). However, the use of umbrella terms also presents further problems as researchers tend to generalise the outcome of cyber aggression (Wolak, Mitchell & Finkelhor,
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Cyber aggression can be committed using different technologies (for example, mobile phones and Internet), which may have different influences on victims (Smith, Mahdavi, Carvalho & Tippett, 2006; Wolak et al., 2007). For this reason, it is necessary to examine the nature of victimisation resulting from the use of different technologies.

Cyber victimisation is considered to include mobile victimisation, yet the primary focus in most studies has been on aggression by use of a computer or the Internet and less on mobile forms of aggression. Serra and Venter (2011: 1) argue that the recent increase in mobile technologies and social networking applications has increased minors’ dangerous exposure to online bullying, especially on cell phones, which circumvent supervision. Other researchers, such as Kraft (2006) agree that mobile phones have become bullies’ new weapon of choice. With 78% of children now having mobile phones (Madden, Lenhart, Duggan, Cortesi & Gasser, 2013), the anonymity that technology provides users (Serra & Venter, 2011; Lipton, 2014), the slowness of service providers, and inadequate anti-bullying policies and prevention strategies (Cassidy, Brown & Jackson, 2012), bullies have the perfect means of attacking others without fear of being caught.

Not much is known specifically about mobile victimisation (Badenhorst, 2011) and Drennan, Brown and Mort (2011) claim that little research has focused on the negative aspects of mobile phone use among children. This applies in the South African context, as Badenhorst (2011) states that mobile bullying, and subsequently, mobile victimisation, have not extensively been examined in South Africa. This study, therefore, investigates mobile victimisation in high schools in South Africa with the intention of creating better understanding of the nature of this aggression. Research has found that the adverse effects of cyberbullying on learners are harmful and could have physical, emotional, psychological and financial implications (Canadian Resource Centre for Victims of Crime, 2005; Badenhorst, 2011). This, with the increased use of mobile technology, causes the large number of learner victims of this aggression suffering from its effects to rise (Dempsey, Sulkowski, Nichols & Storch, 2009).

These victims may also become contributors to their victimisation or share similar characteristics with their offenders (Li, 2007). Literature in criminology and victimology (the scientific study of physical, emotional and financial harm to people due to illegal activities (Karmen, 2012)), support Li (2007) in that victims, in one way or another, contribute to their victimisation (Wolfgang, 1957; Wilcox, 2010). To this effect, victim typologies have been developed to understand victim contribution and the
overall behaviour of the victim (Davis & Theron, 2000; Burgess, Regehr & Roberts, 2011; Doerner & Lab, 2011). The development of a typology tailored to understand mobile victimisation may, therefore, be necessary to understand victims of mobile bullying.

The problem statement: Technology, although beneficial to communication, has become a new medium by which young people bully others. Many studies conducted on cyberbullying have generalised cyberbullying as an aggression using many means of technology (for example, mobile phones and Internet) (Li, 2007; Smith, Mahdavi, Carvalho, Fisher, Russell, & Tippett, 2008; Slonje, Smith & Frisén, 2013). Also, these studies tend to generalise the populations that are affected by this aggression. Consequently, these studies have neglected the different characteristics of these technologies and have subsequently ignored the different effects each technology may have (Smith et al., 2006; Wolak, et al., 2007; Pyżalski, 2011). These studies have also ignored that cyberbullying, through different mediums, may affect populations differently. For example, Internet users and mobile phone users differ in some ways. Although they overlap in some instances, Rice and Katz (2003) reported that these populations do not necessarily constitute as one. Cyberbullying research has made generalisations with regards to technology that have led to the limited examination of the nature of mobile bullying, and, subsequently, mobile victimisation. (Lipton, 2014; Smith et al., 2006; Wolak et al., 2007).

Adolescent use of mobile phones has increased drastically (Downie & Glazebrook, 2007) and with the rise in bullying using mobile technology, mobile bullying has become an obvious problem. Kraft (2006) claims that mobile bullying has become the principal method of bullying. This trend has gone unnoticed and unidentified, leading to many learners falling victim to this aggression. As a result, they are left facing loneliness, peer rejection, lower self-esteem and self-efficacy, higher stress, anxiety, depressive symptoms and sometimes even suicide (Hinduja & Patchin, 2010; Collins, 2012; North Shore-Long Island Jewish (LIJ) Health System, 2015). Deakin (2006) and Ngo and Paternoster (2011) suggest that limited work has examined the theoretical factors that may influence cyber victimisation. They also suggest there is a definite need for empirical research on victims (particularly child victims) to investigate a variety of factors contributing to victimisation. Badenhorst (2011) further emphasises this, suggesting that in the South African context, mobile bullying and subsequently, mobile victimisation have not been extensively examined.
Therefore, this dissertation attempts to fill the gap in the understanding of the victimisation of learners through mobile bullying in South African high schools. It proposes a typology to facilitate this by identifying the potential factors that influence the possibility of a learner becoming a victim. In doing so, the body of research on cyberbullying and mobile bullying may be enriched.

The following section presents the research questions and objectives posed to address the problem stated above and to guide this study.

1.2 Research Questions and Research Objectives

1.2.1 Primary Research Question

What is the nature of mobile victimisation in the South African context?

1.2.1.1 Sub-questions
- What are the factors that influence learners to be victims of mobile bullying?
- To what extent do these factors convey that learners contribute to their mobile victimisation?
- To what extent can a mobile victimisation typology based on victim contribution aid in the understanding of mobile victimisation of South African high school learners?
- What are the characteristics of the individuals (victims) within each category of the proposed typology?

1.2.2 Primary Research Objectives

The two primary objectives of this dissertation are:
- To investigate mobile victimisation in order to understand how and why some learners are more likely than others to become victims of mobile bullying; and
- To develop a mobile victimisation typology that would aid in understanding mobile victimisation as a result of victim contribution.

1.2.2.1 Sub-objectives
- To examine literature to obtain the possible factors that influence victims to contribute to their mobile victimisation.
- To test the proposed typology so that the different victim categories and their characteristics are understood.
1.3 Importance of research

Research in mobile victimisation can play a fundamental role in ensuring mobile bullying justice and mobile bullying prevention (Lipton, 2014; Mitchell et al., 2011). It could provide information and create greater understanding of learners and their use of mobile phones. In developing and testing a typology for mobile victimisation, the combinations of behaviours that victimised learners engage in that make them susceptible to this aggression may be seen. Using the key findings of such analysis may, therefore, improve our understanding of mobile victimisation and the victimised learners. This will make it easier to identify learners that are at risk of becoming mobile victims and the extent to which they may be so victimised. Subsequently, this could be crucial to reducing children’s susceptibility to bullying through mobile phones and similar technologies (Drennan et al., 2011).

This study will also add to the current landscape of theory and knowledge in the research of mobile bullying and mobile victimisation. In a practical sense, this study may inform law and policy makers on the development of strategies that may be implemented to reduce the impacts of mobile victimisation. Policy makers can also focus resources towards those that are most likely to be or to become victims of mobile victimisation.

1.4 Limitations of the study

While this study will provide insight on mobile victimisation, it has had some limitations. The exploratory nature of this study requires research to continue developing greater understanding of mobile victimisation and those learners that are victimised by mobile bullying. This study used only quantitative methods to meet its aims. Therefore, future studies could include qualitative methods such as interviews with those learners that are mobile victimised. Interviews would help gain more depth in the knowledge of mobile victimisation among learners.

In addition to these limitations, this research was conducted using only nine schools from the Western Cape of South Africa and involved 2073 learners. However, after filtering the victimised learners, only 183 learners were identified. A larger sample size of victimised learners could have improved the accuracy of the study.
1.5 Dissertation Overview

Please refer to Figure 1 below for the dissertation overview.

Figure 1: Dissertation Overview

**Chapter 2:** This chapter presents the literature review which encompasses an examination of the literature on bullying; cyberbullying and mobile bullying; victimisation; theories of victimisation; and victim typologies. A typology that would tailor to mobile victimisation is then developed and presented. Lastly, the research propositions will be stated.

**Chapter 3:** The research design of this dissertation is presented in this chapter. The philosophical stance of this study will be adopted, upon which the research methodology will be discussed. Furthermore, the sampling strategy, data collection method and instrument, validity and reliability, ethical concerns and the time horizon will be presented and discussed.

**Chapter 4:** This chapter presents the results of the data analysis. The findings are also discussed.

**Chapter 5:** This chapter will conclude the dissertation and recommendations for future studies will be presented.
CHAPTER 2: LITERATURE REVIEW

This chapter presents the literature review. Please refer to Figure 2 below for the literature review overview.

Figure 2: Literature Review Overview

This literature review gives insight on bullying; cyberbullying and mobile bullying; victimisation; theories of victimisation; and victim typologies. A typology that would tailor to mobile victimisation is then developed using the conclusions drawn from the literature. The research propositions will then be stated.

Victimisation is the process of a person becoming a victim of a crime (a serious offence committed by breaking the law) (Canadian Resource Centre for Victims of Crime, 2005), which usually affects a person directly, making that person a ‘crime victim’. Many studies have examined victimisation in different areas such as peer victimisation, secondary victimisation and self-victimisation. It is important to start by examining the concepts of bullying to fully understand mobile victimisation as a result of mobile bullying (Lipton, 2014). This consideration offers a useful background to understanding mobile victimisation as a whole (Lipton, 2014). Evidence has shown that cyberbullies often become cyber victims themselves. In turn, cyber victimisation may also increase the likelihood of one becoming a cyberbully (Ybarra & Mitchell, 2004; Li, 2007a; Walrave & Heirman, 2011). It is, therefore, important to understand cyberbullying in order to understand cyber victimisation as the former contributes to the latter.

2.1 Bullying, Cyberbullying and Mobile Bullying

According to Olweus (1997: 497), bullying is defined as “the exposure to negative actions (aggressive behaviour or intentional harm doing) which are done repeatedly and over time in a relationship where there is an imbalance of strength”. Bullying can be conventional or cyber-based. According to Orpinas and Horne (2006), conventional bullying has been defined as the misuse of power by an aggressor
acted on a target. Many terms and definitions have been used in literature to capture cyberbullying (please refer to Table 1 below). What is certain, however, is that once given another method, in the form of computers, cell phones and other electronic devices, bullying becomes cyberbullying (O’Moore, 2012).

Table 1: Conceptual Definitions of Cyberbullying (Tokunaga, 2010)

<table>
<thead>
<tr>
<th>Study</th>
<th>Conceptual Definitions of cyber-bullying</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finkelhor et al. (2000)</td>
<td>Online harassment: Threats or other offensive behaviour (not sexual solicitation) sent online to the youth or posted online about the youth for others to see</td>
</tr>
<tr>
<td>Ybarra and Mitchell (2004)</td>
<td>Internet harassment: An overt, intentional act of aggression toward another person online</td>
</tr>
<tr>
<td>Patchin and Hinduja (2006)</td>
<td>Wilful and repeated harm inflicted through the medium of electronic text (p. 152)</td>
</tr>
<tr>
<td>Willard (2007)</td>
<td>Sending or posting harmful or cruel texts or images using the internet or other digital communication devices (p. 1)</td>
</tr>
<tr>
<td>Li (2007)</td>
<td>Bullying via electronic communication tools such as e-mail, cell phone, personal digital assistant (PDA), instant messaging, at the World Wide Web (p. 224)</td>
</tr>
<tr>
<td>Slonje and Smith (2007)</td>
<td>Aggression that occurs through modern technological devices and specifically mobile phones or the Internet</td>
</tr>
<tr>
<td>Belsey (2007) (as cited by Tokunaga, 2010)</td>
<td>The use of information and communication technologies to support deliberate, repeated, and hostile behaviour by an individual or group, that is intended to harm others</td>
</tr>
<tr>
<td>Smith (2008)</td>
<td>An aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly or over time against a victim who cannot easily defend him or herself (p. 376)</td>
</tr>
</tbody>
</table>

Many different forms of technology may be used to carry out cyberbullying. It has been said that mobile bullying is using a mobile phone to perform the act of bullying. According to Kowalski, Limber and Agatston (2008), ways in which a mobile phone may be used for bullying include the use of hurtful and threatening SMSs (Short Message Services) being sent to someone. It also includes the distribution of embarrassing recorded images or videos of people to the public through Multimedia Messaging Services (MMS); and harassing voice messages. Researchers such as Kowalski et al. (2008) have defined mobile bullying as a form of cyberbullying through email, chatrooms, instant messaging and small text messages using mobile phones. This definition of mobile bullying is the definition that will be used for the purpose of this paper.
2.1.1 Comparing Cyberbullying and Conventional Bullying

It has been argued that cyberbullying is the same as conventional bullying, only through a different medium. However, literature also argues this not to be true (Law, Shapka, Hymel, & Waterhouse, 2012; Lipton, 2014). For example, some researchers question the seriousness of cyberbullying or the extent to which cyberbullying could affect its victims. Kennedy and Taylor (2010) suggest that the cyber environment is less threatening than the media has reported and that the most serious dangers to internet users continue to exist offline. They found that the rates of victimisation initiated through online contact suggest that although cyber activity may provide opportunities for certain types of victimisation, learners are still at a greater risk from people they meet offline (Kennedy & Taylor, 2010). However, Mitchell et al. (2011) reported that youth are more at risk of being victimised by many different forms of victimisation and it is unclear where exactly cyber victimisation is situated in the larger scale of victimisation in terms of frequency and effect. Additionally, they suggest that cyber victimisation affects a small portion of the population with a comparison to conventional victimisation. Furthermore, it has been found that victimisation does not occur in isolation. Instead, most learners report having been victimised online as well as offline concurrently (Wells & Mitchell, 2008).

Due to the controversies that exist between conventional bullying and cyberbullying, it is, therefore, important to distinguish between them. Acknowledging the differences that do exist between offline and online crimes would create better understanding of cyberbullying, improve the development of laws and policies and prevention and intervention programmes against cyberbullying (Lipton, 2014). In addition to this, it would assist in targeting these prevention and intervention programmes towards the most efficient and relevant direction in terms of resource and impact management (Mitchell et al., 2011).

In defining bullying, Olweus (1997) mentions that traditional bullying has three key features: (i) aggressive behaviour or intentional "harm doing" that is carried out (ii) "repeatedly and over time" and in an (iii) "interpersonal relationship characterised by an imbalance of power". When considering Olweus' (1997) definition of bullying and its characteristics, it is not clear if these features are present in cyberbullying. If they are, they often function differently from that in traditional bullying (Law et al., 2012). In cyberbullying, the cyberbully may be physically removed from the victim (Lipton, 2014). Therefore, the power struggle is often not related to the physical stature of the individual as even the smallest or least physically powerful individual may victimise others online. More often than not, those that are ‘tech savvy’ and competent are the ones who hold the power in a cyber-environment (Law et
al., 2012). For example, Ybarra and Mitchell (2004) found that people that claim to be more competent in Internet knowledge environments were found to be more aggressive than those that said they were not. Zhang, Land and Dick (2010) also found that people who spent much of their time on the Internet showed mobile-bullying behaviours.

Repetition of aggressive behaviour is also often different online than it is traditionally. When online, victims and bullies have the opportunity to read, look at and watch offensive materials that have been sent to them repeatedly. Lipton (2014) refers to a “constant effect”, whereby online attacks are permanent. For example, even if postings about an individual are removed from one site, they may exist on another. In addition, online attacks may be done anytime and anywhere whereas traditional bullying often occurs in real time (Law et al., 2012). Search engines can also make searching for information easier, making damaging information more accessible to those looking for it (Lipton, 2014). Furthermore, cyber-bullies can attack on a larger scale than conventional bullies because of the immediate effect of their conduct and the speed and ease of the global distribution of online information (Lipton, 2014).

With regards to aggressive behaviour, researchers often discuss three forms of bullying: physical (for example, hitting); verbal (for example, shouting) and social (for example, spreading rumours) (Law et al., 2012). Social bullying, between conventional and cyberbullying, is different in that a cyber-environment provides a sense of privacy and protection for bullies, which gives them comfort and power to say things they would not say on a regular basis (Law et al., 2012). This is one of the characteristics of cyberbullying that suggests that it is more casual than conventional bullying. It is also believed that the social context of a cyber-environment within which most social interactions occur make the risk of being victimised higher than that of traditional bullying (Brighi, Guarini, Melotti, Galli & Genta, 2012). Furthermore, the option of a victim simply to turn off their device in cyberbullying as opposed to walking away in a conventional sense has been argued to be more achievable (Lipton, 2014). However, as today’s people are interconnected through technology, this action would mean that in some instances, personal and professional opportunities are relinquished (Lipton, 2014). Shying away from one’s devices also does not stop cyber-attacks from occurring.

Another significant difference between conventional and cyberbullying is that of anonymity (Serra & Venter, 2011; Lipton, 2014). The cyber-environment provides anonymity, unlike the physical environment. Therefore, anonymity potentially leads to an increase in the volume of abusive attacks.
on victims because those who fear being caught in a physical manner would not engage in bullying. Also, when one avoids being caught as a result of anonymity, engaging in bullying behaviour becomes more likely (Lipton, 2014). Also, anonymity gives offenders the opportunity to view or spy on their victims for extended periods of time without being detected (Lipton, 2014).

2.1.2 Cyberbullying and Mobile Bullying in South Africa

There is great concern in South Africa with regards to violence in schools as it has claimed many lives of both learners and educators (Burton & Mutongwizo, 2009). Bullying has also affected learners and educators and although it has recently gained media attention, it has not been studied extensively (Smit, 2015). Bullying is worsened by the anonymity associated with cyberbullying which increases the anti-social behaviour of South African learners (Smit, 2015). As a result of cyberbullying, South African learners are often affected negatively and go through effects such as depression, attachment to technological behaviours and extreme technology usage (Smit, 2015). It is, therefore, important to acknowledge cyberbullying as a problem in South Africa and realise the impacts it has on the youth (Popovac & Leoschut, 2012).

In their study, Burton and Mutongwizo (2009) found that there is a diverse range of technologies that may be used to commit cyberbullying in South Africa. Many of these technologies are available on a mobile phone; the most common of these through which learners are victimised were found to be voice calls and SMSs (Figure 3 below). This was no surprise as many young people carry their mobile phones with them, making this the most difficult form of aggression to escape (Popovac & Leoschut, 2012).

As the number of active mobile users is increasing, mobile bullying seems to be on the rise and has become a major concern, particularly in South African schools and communities (Oosterwyk & Parker,
Towards a Typology for Understanding Mobile Phone Victimisation in South African High Schools

2010). Many users of mobile phones are often unaware of this form of bullying and the consequences it presents. Even though some online articles exist, there is still limited research that has been conducted to uncover the nature of mobile bullying and its consequences in South Africa (Badenhorst, 2011). The remaining sections of this chapter present discussions on victimisation leading to the development of a mobile victimisation typology.

2.2 Victimisation
As stated earlier, victimisation is the process of a person becoming a victim of a crime (Canadian Resource Centre for Victims of Crime, 2005). Victimisation has also been studied as an act that stems from bullying. Coincidentally, Olweus (1997: 497) gives the same definition for victimisation as that of bullying. In essence, this means that those people who are bullied are victims of bullying as they would have been victimised through the process of bullying. As a result, victimisation can be said to be a result of the activity of bullying. To understand cyber victimisation, however, it is important to discuss peer victimisation in the physical sense (conventional bullying).

2.2.1 Peer Victimisation
Peer victimisation can take various forms including direct bullying behaviours (such as teasing or physical aggression) as well as more indirect behaviours such as group exclusion or malicious gossip (Crick, Kasas & Ku, 1999). There are two forms of peer aggression by which one may be victimised: overt and relational aggression (Sullivan, Farrell & Kliewer, 2006). Overt aggression involves physical behaviour such as touching, flicking, pushing and hitting; and verbal behaviour such as taunting and threatening others. Relational aggression involves the behaviour of harming someone by damaging or manipulating their relationships with others, for example by spreading rumours and instigating interpersonal peer conflicts (Crick et al., 1999; Sullivan et al., 2006). Peer victimisation in the cyber environment is a special case that occurs through the use of electronic devices and is called cyber victimisation (Dempsey et al., 2009). Mobile victimisation may, therefore, be considered a special case of peer victimisation as mobile phones may be one of the electronic devices used in peer victimisation to exercise bullying behaviours.

2.2.2 The Impacts of Victimisation in the Cyber Environment
While there may be differences in the types of victimisation, depending on its nature, there are some common aspects. Victims of any crime are often affected physically, emotionally, psychologically and financially (Canadian Resource Centre for Victims of Crime, 2005). Cyber victimisation is also harmful
Towards a Typology for Understanding Mobile Phone Victimisation in South African High Schools

to victims for several reasons including the aforementioned impacts. Sourander, Klomek, Ikonen, Lindroos, Luntamo, Koskelainen, Ristikari and Helenius (2010) reported that cyber victims (those who are victimised with the use of technology) were associated with perceived difficulties, lived in a family with other than two biological parents, had emotional and peer problems, had psychosomatic symptoms and did not feel safe at school. Hinduja and Patchin (2010) also found that the experience of school and electronic victimisation was associated with loneliness, peer rejection, lower self-esteem and self-efficacy, higher stress, anxiety, and depressive symptoms among youthful populations. These depressive symptoms are at times found to be at high levels (Perren, Dooley, Shaw & Cross, 2010). Victimisation is often unpredictable, unpreventable and unexpected. It frightens and unsettles victims, leaving them confused, frustrated, fearful and angry. In some case, especially among adolescents, cyberbullying has left victims feeling helpless, vulnerable and subsequently suicidal. According to Hinduja and Patchin (2010), there exists a relationship between bullying and suicide and they found that cyberbullying is related to high suicidal ideation among youth. As a result, victims of cyberbullying are more likely to consider suicide due to the negative impacts of bullying (Collins, 2012; North Shore-Long Island Jewish (LIJ) Health System, 2015).

The impacts of cyber victimisation show that there is a need to understand how people become victims. Although there has been a growth spurt in the research of cybercrimes, Ngo et al. (2011) suggest that there has been limited work that has examined the theoretical factors that may influence cyber victimization. In addition, Deakin (2006) suggests that there is a clear need for empirical research on victims, particularly child victims, to investigate a variety of factors that may contribute to victimisation. Criminology theories and perspectives are expected to be able to explain different types of crimes and different sub-types of cybercrime, but research concerning this is limited (Ngo et al., 2011). Assessing the theories of victimisation would contribute to the theoretical framework of cyber victimisation by highlighting the factors that contribute to it (Ngo et al., 2011). These theoretical frameworks that explain victimisation and its potential impact are discussed below.

2.3 Theories of Victimization

By the end of the 20th century, researchers started paying attention to crime as more than just the behaviour of the offender (Wilcox, 2010). Instead, crime became increasingly viewed as a system that involved an offender and a victim, as well as a time/place context that facilitates the victimisation of the victim by the offender. Viewing crime as a system led to the emergence of various theoretical perspectives (Wilcox, 2010). These perspectives are believed to help in understanding victimisation...
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and its causes and may range from routine daily activities and lifestyles to interpersonal interactional
dynamics (Siegel, 2006; Wilcox, 2010). There are three major theories of victimisation that are often
highlighted in the literature related to victimisation. These major theories are: the Victim Precipitation
Theory; Lifestyle Theory; and Routine Activities Theory (Wilcox, 2010).

2.3.1 Victim Precipitation Theory

According to Wolfgang (1957), in many cases, a victim is a major contributor to the criminal act unless
the victim is purely a bystander. Wolfgang (1957) investigated homicides in Philadelphia between
1948 and 1952 and found that in most cases, the victims of criminal homicides showed some of the
major characteristics of the offender. Therefore, Wolfgang suggested that many victims are not
merely innocent but sometimes suffer victimisation that is precipitated by their actions (Wilcox, 2010).
In other words, a victim may be one of the major precipitating factors to his victimisation (Wilcox,
2010). Victim Precipitation, therefore, measures the degree to which a victim has contributed or
handles their victimisation (Doerner, 2011). This contribution could either be active or passive
(Doerner, 2011). Passive precipitation occurs when a victim’s characteristics unintentionally motivate
or threaten the offender, while active precipitation occurs when the victim intentionally provokes the
offender (Siegel, 2006).

Jaishankar (2011) found that some of the victims of cybercrimes have precipitated their cyber
victimisation. An example of victim precipitation in the cyber environment may be the cases of
phishing and money mules, where the victims’ greed and innocent nature are exploited by cyber
criminals (Jaishankar, 2011). The reason victims are believed to precipitate their victimisation in
cyberspace is thought to be that in the physical space people tend to follow certain safety norms and
procedures, but they tend to ignore the same while they are in the cyberspace (Halder & Jaishankar,
2010; Halder, Jaishankar, Periyar & Sivkumar, 2011). In addition, some cyberspace (for example,
Internet) users are often not concerned about issues of privacy and often become victims of
cybercrimes (Jaishankar, 2011).

2.3.2 Lifestyle Theory

The Lifestyle Theory by Hindelang, Gottfredson and Garofalo (1978) attempted to address and
understand how a victim's lifestyle affected their chances of becoming a victim (Wilcox, 2010). They
proposed that victimisation was a function of the lifestyles or the routines associated with work,
school, or leisure activities (Nofziger & Kurtz, 2005; Wilcox, 2010). According to this theory, lifestyle
development is based on demographically based role expectations and structural constraints (Nofziger & Kurtz, 2005). Role expectations are “cultural norms that are associated with achieved and ascribed statuses” and structural constraints are the specific limitations on the opportunities to choose between alternative lifestyles (Hindelang et al., 1978: 242). Hindelang et al. (1978) suggested that the combination of role expectations and structural constraints results in individuals adapting in ways that would allow them to function in society within the imposed limitations. The adaptations they take up include a variety of skills and attitudes that develop into the routines or lifestyle of the individual (Nofziger & Kurtz, 2005). The lifestyle they adapt is what determines the following: the association of an individual with deviants; the exposure of an individual to criminal opportunities; and ultimately if an individual is victimised by crime (Nofziger & Kurtz, 2005).

2.3.3 Routine Activities Theory

Other theories of criminality tend to focus on the criminal and the biological, psychological or social factors that influenced the criminal act. The focus of Routine Activity Theory (RAT), however, is to study crime as an event, emphasising its relation to space and time and highlighting its ecological nature and implications (Miró, 2014). Routine activity theory explains a criminal event through the convergence of three essential elements in space and time in the course of daily activities. A criminal event occurs when: (i) a potential offender with the capacity to commit a crime and (ii) a suitable target or victim exist in the same space where (iii) there is an absence of guardians capable of protecting targets and victims from a crime (Cohen & Felson, 1979; Siegel, 2006; Marcum, Higgins & Ricketts, 2010; Wilcox, 2010; Miró, 2014). The simultaneous existence of these three elements explains how and why criminal activities occur (Cohen & Felson, 1979; Marcum et al., 2010).

Within victimology literature, these two theories (Lifestyle Theory and Routine Activities Theory) are often applied together and are recognised as the lifestyles/routine activities theory (LRAT) (Ngo et al., 2011). According to Holt and Bossler (2008), researchers have argued that the LRAT may be able to describe the increasingly significant phenomenon of computer and cybercrime. For example, according to Pratt, Holtfreter and Reisig (2010), LRAT predicts that differences in legitimate opportunity structures (for example, technology) can increase the likelihood of a motivated offender and suitable target converging in the absence of capable guardianship. Also, Marcum et al. (2010) claim that LRAT may explain online victimisation of youth. Routine activity such as more time spent online, especially using social network sites, may increase the likelihood of one being exposed to a motivated offender (Marcum et al., 2010). Also, the information that youth often provide while using
social network sites and their means of communication (for example, instant messaging, chat rooms or e-mail) may make them suitable targets for online victimisation (Marcum et al., 2010). Furthermore, since guardianship/supervision is lacking in cyberspace and there are ineffective formal and informal control mechanisms, especially to monitor phone and e-mail chat (Coyne, Chesney, Logan & Madden, 2009), victimisation may occur.

Victimisation is a complex phenomenon, which results from a multitude of influences (Wilcox, 2010) as shown by the theories discussed above. However, these theories imply that the victims, in one way or another, contribute to their victimisation. For instance, the Victim Precipitation Theory assumes that a victim’s behaviours trigger victimisation. The Lifestyle Theory asserts that a high-risk lifestyle increases the likelihood of victimisation, and the Routine Activity Theory shows that victim behaviour can influence victimisation. One way to explain this observation may be by assessing Freudian psychology which could be alleged to be operating in the propensity toward victimisation (Wolfgang & Singer, 1978).

2.3.4 Victim-proneness, Victim Contribution and Victim Provocation

Wolfgang and Singer (1978) consider victim contribution to be a topic that is intricately interrelated with victim-proneness and victim provocation. Victim-proneness assumes that when some bio-psycho-social personality traits converge in an individual, the individual is driven towards criminal situations or persons. Therefore, the individual has a higher probability of being victimised. Victims may contribute to their victimisation without exhibiting victim-proneness but if victim-proneness exists in criminal activity, it can be concluded that the victim contributed to their victimisation. A victim’s contribution may go beyond negligence to provocation. An example may be that of Wolfgang’s study whereby 26% of 588 homicides were described as victim-precipitated as the victim would have been the first to act in the deadly quarrels (Wolfgang & Singer, 1978).

Therefore, it can be seen that victim-proneness and provocation are factors of victim contribution, which in some instances may go as far as overlap. In addition, due to negligence and other circumstances, victim contribution may still exist without victim-proneness or provocation (Wolfgang & Singer, 1978) (Figure 4). This indicates that in one way or another, the victim contributes to their victimisation.
2.3.4.1 Criticism of Victim Contribution/Responsibility

The view of the victim as a contributor has had criticism (Kostić, 2010). Moriarty (2008) suggests that some of the weaknesses of implying that a victim contributes to his or her victimisation are tautological reasoning, conceptual difficulties, placing undue responsibility on victims and excusing the offenders' behaviour. However, Moriarty (2008) claims that the most significant criticism is that victim contribution implies that the victim may be blamed for his victimisation (Kostić, 2010). As pointed out by Mendelsohn (1937), this means that the offender could, therefore, defend himself by claiming that the victim is somewhat responsible for the victimisation (Moriarty, 2008; Kostić, 2010). This excuses the offender’s behaviour and diminishes responsibility from the offender to the victim.

As theory suggests that the victim contributes to their victimisation, it is necessary to look at victim typologies that classify victims by their contribution to their victimisation. Besides the theories discussed above, earlier research on victimisation has also provided some typologies to explain the extent of the victim’s contribution to their victimisation. These typologies help develop greater understanding of the victim and the possible ways he or she may contribute to their victimisation. The following section discusses these.

2.4 Victim Typologies

A typology is a classification scheme that groups people according to certain criteria (Davis & Theron, 2000). Typologies serve as a basis for identifying, describing, comparing, explaining and predicting phenomena (Davis & Theron, 2000). It has been found that a victim’s involvement in their victimisation varies according to personal, psychological and situational variables (Zannoni, 2009). Therefore, victim typologies have been categorised on the basis of victim involvement or contribution to the crime or lack thereof (Zannoni, 2009). The consideration of these typologies is necessary for aiding our understanding of victims and victimisation (Burgess et al., 2011). This section discusses crime
typologies relevant to this study. These typologies have been useful to researchers and have provided classification systems for victims as a result of their contribution to their victimisation. They have also formed the basis of theory (Davis & Theron, 2000).

2.4.1 The Development of Victim Typologies

The development of earlier typologies was based on a range of psychological, biological, sociological, psychiatric and demographic factors. They have also been based on the relationships that exist between the victims and their offenders (Burgess et al., 2011). The works of Benjamin Mendelsohn and Hans von Hentig (the acclaimed “father of victimology” and an early pioneer of victimology respectively) were concerned with the development of ways to think of the victim. In doing so, their work differentiated between the victim and non-victim (Walklate, 2006). These typologies are discussed below. In addition, the work of Schafer (1968) is also discussed because his work was based on the work of Mendelsohn and Von Hentig. The researcher also believes that it would offer a balance in our understanding of victim typologies. These three typologies are discussed because they have been found to form the foundation of most victim typologies (Davis & Theron, 2000; Doerner & Lab, 2011).

2.4.1.1 Benjamin Mendelsohn’s Typology

Benjamin Mendelsohn found that there existed a strong interpersonal relationship between victims and the offender. As early as 1937, Mendelsohn started work on categorising victims (Dietrich, 2008). In 1956, he classified victimisation taking into consideration the degree of which a victim may be blamed (Block, 1981). For this, he developed a typology that consisted of six categories and ranged from those who were guiltless to those who were fully guilty for their victimisation (Block, 1981; Sengstock, 1976). This typology was developed by classifying victims according to the relative degree of responsibility and power to control or affect situations (Burgess et al., 2011). These six categories are completely innocent victims; victims with minor guilt; voluntary victims; victims more guilty than the offender; victims who alone are guilty; and imaginary victims. Completely innocent victims do not behave in a manner that facilitates or provokes victimisation. Victims with minor guilt contribute to their victimisation through negligence or ignorance. Voluntary victims are those whose guilt is equal to that of the offender. Victims more guilty than the offender induce criminal activity upon themselves. Victims who alone are guilty are those that become victims while victimising. Lastly, imaginary victims are not victims at all but accuse others of victimising them (Block, 1981; Sengstock, 1976; Davis & Theron, 2000) (see Table 2 below).
Table 2: Benjamin Mendelsohn’s Typology (Doerner & Lab, 2011; Burgess et al., 2011)

<table>
<thead>
<tr>
<th>Type of Victim</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completely Innocent</td>
<td>No provocation or facilitating behaviour.</td>
</tr>
<tr>
<td>Victim with Minor Guilt</td>
<td>Victim inadvertently places himself in a compromising situation.</td>
</tr>
<tr>
<td>Victim as Guilty as Offender</td>
<td>Victim was engaging in vice crimes and was hurt, suicide victim.</td>
</tr>
<tr>
<td>Victim More Guilty than Offender</td>
<td>Victim provokes or instigates the casual act.</td>
</tr>
<tr>
<td>Most Guilty Victim</td>
<td>Started off as the offender and was hurt in turn.</td>
</tr>
<tr>
<td>Imaginary Victim</td>
<td>Those who pretend to be a victim.</td>
</tr>
</tbody>
</table>

According to Sengstock (1976), the six categories of victims give a sense that there is no "perfectly innocent victim" because five of the categories place partial or complete guilt on the victim. In addition, the examples that are used to describe the category of the "innocent" victim are children and unconscious people implying that an adult or someone who is rationally aware is partly guilty of their victimisation.

2.4.1.2 Hans von Hentig’s Typology

Hans von Hentig was one of the early pioneers of victimology (Walklate, 2006). He claimed that under closer inspection, a victim was a major contributor to his or her victimisation (Doerner & Lab, 2011) and that more attention should be paid to the crime-provocation function of the victim. He believed that victim contribution was as a result of characteristics or social positions beyond the individual’s control (Doerner & Lab, 2011). He, therefore, based his typology on psychological, social and biological factors, unlike Mendelsohn, whose typology was based on guilt and responsibility (Burgess et al., 2011). By examining the degree to which people were victim prone, he argued that victims were “born victims” as much as they were “born criminals” (Moriarty, 2008). This led to his classification of victims into thirteen categories depending on their propensity for victimisation (Doerner & Lab, 2011) (see Table 3 below).

Table 3: Von Hentig’s Typology (Doerner & Lab, 2011; Burgess et al., 2011)

<table>
<thead>
<tr>
<th>Type of Victim</th>
<th>Examples of Victim</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Young</td>
<td>The young are viewed as weak or inexperienced and vulnerable to attack. Examples are children and infants.</td>
</tr>
<tr>
<td>The Female</td>
<td>Von Hentig describes women as weak as they have less strength against an attacker.</td>
</tr>
<tr>
<td>The Old</td>
<td>Elderly persons are likely to be victims because of their accumulated wealth and wealth-giving power. In addition, they may be seen as weak as they have less physical strength than a younger person.</td>
</tr>
<tr>
<td>The Mentally Defective and Deranged</td>
<td>The feeble minded, the insane, drug addicts and alcoholics are described as handicapped in any struggle of crime.</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Immigrants</td>
<td>Foreigners unfamiliar with the culture are vulnerable to crime as they can suffer poverty, emotional difficulties and rejection in a foreign country. Criminals would often take advantage of this.</td>
</tr>
<tr>
<td>Minorities</td>
<td>Minorities suffer the same fate as immigrants. The lack of inequality increases their chances of being victimised (e.g. racially disadvantaged persons).</td>
</tr>
<tr>
<td>Dull normal</td>
<td>Simple minded persons.</td>
</tr>
<tr>
<td>The Depressed</td>
<td>Von Hentig believed that a depressed person is likely to become a victim due to their apathetic and submissive attitude. Their mental resistance is low and this opens them up to victimisation.</td>
</tr>
<tr>
<td>The Acquisitive</td>
<td>The greedy, those looking for quick gains such as gamblers and racketeers.</td>
</tr>
<tr>
<td>The Wanton</td>
<td>Von Hentig describes this victim as dimmed by the generalization of laws and obscures by social conventions. For example, promiscuous persons.</td>
</tr>
<tr>
<td>The Lonesome and the Heartbroken</td>
<td>These are victims that whose loneliness has been taken advantage of. For example, widows, widowers, and those in mourning.</td>
</tr>
<tr>
<td>The Tormentor</td>
<td>This victim strains a situation until he becomes a victim of the stressful environment that he has created. For example, an abusive person.</td>
</tr>
<tr>
<td>The Blocked, Exempted or Fighting</td>
<td>These are people who have been trapped in a losing situation where defensive moves become impossible. For example victims of blackmail, extortion.</td>
</tr>
</tbody>
</table>

The victim types reflect one's inability to resist an offender due to physical, social or psychological disadvantages. For instance, very young people and females are more likely to be physically disadvantaged and lack the power to resist an offender physically. Due to cultural differences, minorities and immigrants may feel out of place in society, which may lead them into situations where they are susceptible to criminals; those who are unable to understand what is happening around them, that is the mentally defective or deranged; the depressed; “dull normal”; lonesome; or “blocked”, may be susceptible to criminals. The acquisitive individual and the offender are individuals that are either directly involved in the criminal act or deliberately place themselves in situations in which susceptibility to victimisation is very strong (Doerner & Lab, 2011).
2.4.1.3 Stephen Schafer’s Typology

The work produced by Schafer is essentially a review of the work that was done by von Hentig and Mendelsohn (Davis & Theron, 2000). In his work, he critically noted that von Hentig and Mendelsohn’s list of victim types could be extended, but they would not serve any purpose. He believed that a more useful typology would be one that emphasised criminal-victim relationships and the social situations in which they occurred (Burgess et al., 2011). However, in his assessment of the victim’s role in victimisation, he came to similar conclusions as those of von Hentig and Mendelsohn. His conclusions were that victims are contributors to their victimisation (Doerner & Lab, 2011; Burgess et al., 2011). Schafer’s typology highlights the role of the victim’s responsibility in preventing victimisation (Doerner & Lab, 2011) (see Table 4 below).

Table 4: Schafer’s Typology (Doerner & Lab, 2011; Burgess et al., 2011)

<table>
<thead>
<tr>
<th>Type of Victim</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unrelated Victim (no victim responsibility)</td>
<td>Instances in which the victim is simply the unfortunate target of the offender.</td>
</tr>
<tr>
<td>Provocative Victims (victims share responsibility)</td>
<td>The offender is responding to some action or behaviour of the victim.</td>
</tr>
<tr>
<td>Precipitative Victims (some degree of victim responsibility)</td>
<td>Victims leave themselves open for victimisation by placing themselves in dangerous places or times, dressing inappropriately, acting, or saying the wrong things, etc.</td>
</tr>
<tr>
<td>Biologically weak Victims (no victim responsibility)</td>
<td>The aged, young, infirm, and others who, due to their physical conditions, are appealing targets for offenders.</td>
</tr>
<tr>
<td>Socially Weak Victims (no victim responsibility)</td>
<td>Immigrants, minorities, and others who are not adequately integrated into society are seen as easy targets by offenders.</td>
</tr>
<tr>
<td>Self-Victimising Victims (total victim responsibility)</td>
<td>Individuals who are involved in such crimes as drug use, prostitution, gambling, and other activities in which the victim and the criminal act are in concert with each other.</td>
</tr>
<tr>
<td>Political Victims (no victim responsibility)</td>
<td>Individuals who are victimized because they oppose those in power or are made victims in order to be kept in a subservient social position.</td>
</tr>
</tbody>
</table>

As has been shown by Mendelsohn’s, von Hentig’s and Schafer’s work, the victim could be a contributor to his or her victimisation. Their typologies, however, were all developed under different perceptions. Mendelsohn’s typology was developed regarding the relative degree of responsibility and power to control or affect situations. Von Hentig’s typology took into account a victim’s proneness to victimisation, while Schafer took into account the responsibility for preventing victimisation rather than risk factors (Moriarty, 2008). Also, these typologies have limitations. In order to understand
these, the researcher adopted Davis and Theron’s (2000) model for typology requirements. It is argued that these requirements have to be met in order for it to be appropriate, meaningful or relevant.

2.4.1.4 The Requirements of a Typology

Davis and Theron (2000) describe eight requirements that a typology must meet. These requirements are: uniformity; mutual exclusivity; simplicity; significance; measurability; universality; comprehensiveness; and pragmatism. Please refer to Table 5 below for the meanings of these requirements and whether or not these have been met by Mendelsohn’s, Von Hentig’s and Schafer’s Typologies.

Table 5: Meeting the Requirements of a Typology for Mendelsohn’s, Von Hentig’s and Schafer’s Typologies (Davis & Theron, 2000)

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Meaning of the Requirement</th>
<th>Mendelsohn’s Typology</th>
<th>Von Hentig’s Typology</th>
<th>Schafer’s Typology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uniformity</td>
<td>Implies that there is a criterion applied to the classification system.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mutual Exclusivity</td>
<td>Is met when the categories exists in a category without being identifiable in another.</td>
<td>✓</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Simplicity</td>
<td>Refers to how easily empirical data may be processed using the categories in the typology.</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Significance</td>
<td>Means that the typology meets the requirements for which it was designed</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Measurability</td>
<td>Refers to whether the categories of a typology can be measured.</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Universality</td>
<td>Implies that a typology should be able to be universally applied over time and space</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Comprehensiveness</td>
<td>Reflects on all forms of victims, crimes, criminal behaviours or generally, the relationships that exist between victims and criminals.</td>
<td>×</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Pragmatism</td>
<td>Refers to the practicality or usability of the typology.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

✓ = Meets requirement; × = Does not meet requirement

Although very useful, all three typologies have their own shortcomings (as shown in Table 5 above). An integrated approach, therefore, that includes the theories and typologies of victimisation could be used to direct research on mobile victimisation.
2.5 Development of a Mobile Victimisation Typology

As has been highlighted in the literature, typologies may be used as a fundamental part of understanding a phenomenon. As was the case with Davis and Theron (2000) in their study of motor vehicle hijacking, although an integrated approach that would include an array of typologies and theories of victimisation could be used, it is preferable to develop a typology that focuses exclusively on mobile phone victimisation. This would be advantageous in future studies on mobile phone victimisation as this typology would act as a classification system that would aid in understanding mobile victimisation.

2.5.1 Approach to Developing a Mobile Victimisation Typology

The approach taken in developing a typology that would best fit mobile victimisation is based on the literature of the theories and typologies of victimisation described in the previous sections. Theory suggests that people can contribute to their victimisation through victim precipitation by neglecting norms and procedures in cyberspace that they would follow in physical space (Halder & Jaishankar, 2010; Halder et al., 2011). According to Takao, Takahashi, and Kitamura (2009), problematic and excessive use of mobile phones (attachment to one's mobile phone) often leads to harassment of others through bullying or obscene calls. Also, people's routines in cyber space may cause them to contribute directly or indirectly to their mobile victimisation. "The convergence of motivated offenders and suitable targets in the absence of capable guardianship can be increased by legitimate opportunity structures (for example, technology)" (Pratt et al., 2010: 267) or the amount spent online/on one's phone. This means that with the increase in the use of mobile phones, there are more learners being victimised by mobile bullying.

Finally, time spent online participating in social networks and groups, self-exposing by way of providing information about oneself and others online using chatrooms, instant messaging, or e-mailing may expose learners to offenders and/or make the learners victims of mobile bullying (Coyne et al., 2009; Marcum et al., 2010). Therefore, it may be concluded that victims of mobile bullying are victims due to most likely the frequency of phone use (time spent using a mobile phone); one's attachment to their mobile phone; and the technology one uses and the opportunities it offers.

The frequency of mobile phone use, attachment to one's mobile phone and the technological advancement of their mobile phone were, therefore, used as the criteria for the Mobile Victimisation Typology (MVT) (please refer to Figure 5). It should be noted that these three criteria are behaviours
that victims of mobile bullying are believed to engage in that cause them to contribute in their victimisation. These criteria are discussed below.

![Figure 5: Criteria used in the development of a Mobile Victimisation Typology](image)

2.5.1.1 Frequency of Mobile Phone Use

As stated by Ybarra and Mitchell (2004), there is a possibility that adolescents that exhibit online aggressive behaviour do so as a result of spending an extensive amount of time on the Internet. They found that people who spend more time online on a weekly basis were 73% more likely to tend towards cyberbullying behaviours. In addition, the results of a study by Oosterwyk (2013) suggested that the frequency at which learners use their mobile phones has a significant effect on the degree of mobile bullying. This means that individuals who spend more time online and use mobile applications more frequently are more likely to show online aggressive behaviour.

Similarly, Li (2007) found that since mobile bullying occurs in cyberspace, it is reasonable to assume that if learners have limited opportunities to access technology, they should have fewer opportunities to be involved in cyber harassments. Li (2007) also found that the frequency of technology usage was a significant predictor to mobile bullying and mobile victimisation. As a result, the assumption made is that the frequency of mobile phone use will contribute to a victim's victimisation. This, therefore, makes the frequency of mobile phone use a criterion in the MVT. To understand why it is that people are frequent users of their mobile phones, it may be helpful to examine the Theory of Planned Behaviour.

2.5.1.1.1 Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (TPB) is a well-validated behavioural decision making model that can be used to investigate the variations in behaviour (White et al., 2010) such as the frequency of mobile phone use. The TPB posits that intention is the strongest determinant of behaviour. This intention is influenced by three factors: an individual’s opinion towards the behaviour; the individual's views of
how much others approve of behaviour (*subjective norms*); and their understanding of the level of control they have over factors that may affect their behavioural performance (*perceived behavioural control (PBC)*). Underlying the direct determinants of intentions (attitude, subjective norm, PBC) are the person’s beliefs about the behaviour (Ajzen, 1991; White et al., 2010). One of the major advantages of using the TPB is its ability to determine the differences that may exist between people’s frequent and infrequent behavioural performances (such as phone use) due to specific behavioural, normative and control beliefs (Ajzen, 1991; White et al., 2010; Oosterwyk, 2013).

TPB may, therefore, be used to assist in asserting that there are differences in the behaviour of frequent users and infrequent users of mobile phones with regards to mobile victimisation. In other words, the behavioural, normative and control beliefs of an individual, therefore, determine the frequency of use of their mobile phone.

### 2.5.1.2 Mobile Phone Advancement

The developments in information and communications technology (ICT) that have been used in bullying others in cyberspace have led to a diversification of bullying (Cuadrado-Gordillo & Fernández-Antelo, 2014). Ortega, Elipe, Mora-Merchán, Calmaestra, and Vega (2009) and Brighi et al. (2009) group the different means used into two categories: the Internet, and mobile telephony. The former include such actions as sending and receiving e-mails, online chats, sharing audio-visual material and being part of a virtual community. Telephony, on the other hand, is solely focused on making and receiving telephone calls and short messages. With the arrival and rapid spread of smartphones, these two categories can be combined into a single medium. Therefore, the above classification requires some reformulation to match current reality (Cuadrado-Gordillo & Fernández-Antelo, 2014). A smartphone is “a mobile phone with advanced features and functionality beyond traditional functionalities like making phone calls and sending text messages. The capabilities of smartphones range from its ability to "display photos, play games, play videos and send and receive e-mails, to having navigation, built-in cameras, audio/video playback and recording, built-in apps for social websites and surfing the Web, wireless Internet and much more" (Sarwar & Soomro, 2013: 216). Daily lives have improved vastly due to the always available presence of the internet on smartphones (Jang et al., 2014). People can even play games, use online maps, chat, and access valuable information at anytime from anywhere.
Although proving to be beneficial, smartphones affect many aspects of life (Sarwar & Soomro, 2013). According to Cuadrado-Gordillo and Fernández-Antelo (2014), smartphones can encourage bullying and hazing, which are very serious problems in schools across many countries. The advent of smartphones and the nature of being connected to the Internet anytime, anywhere makes this issue more severe. It enables learners to access irrelevant content while at schools highlighting the minimum control from parents and administration to prevent the users’ access to certain content on the Internet (Sarwar & Soomro, 2013).

The great variety of applications available on these mobile devices also make it easier not only to transmit information at any time and in any format, but also to manipulate that information to fit in with different intended purposes. For the cyber victim in particular, this adds to their feelings of uncertainty and helplessness as they may have no idea when or through which medium the next attack might occur, or how widely the abuse has been disseminated among their peers. The attacks become even more harmful when the perpetrators hide their identity by using the simple applications included in these technological resources so that the victim does not know why he or she is being attacked and who is doing it (Cuadrado-Gordillo & Fernández-Antelo, 2014).

The Lifestyles/Routine Activities Theory (LRAT) validates how advancements in technology avail many ways by which a person may be victimised. The development and accessibility of technology resources and virtual environments are changing not only how adolescents relate to each other. The victim and aggressor dynamics in bullying that occurs in young people’s everyday context are also changing (Cuadrado-Gordillo & Fernández-Antelo, 2014). Furthermore, the various applications that are available on a smartphone, compared to a feature phone or basic phone, make it so that a suitable target guardianship or protection against victimisation is present with a motivated offender. At such point, crime (mobile bullying) is likely to occur.

2.5.1.3 Attachment to Mobile Phone

Mobile phones have become indispensable tools in a person’s social and professional life as they are beneficial and appealing as a tool for communication and interpersonal interaction. However, there is a risk of its use becoming problematic or addictive and its users becoming over-attached (Takao et al., 2009; Takao, 2014). It has been found that there are similarities between the use of mobile phones by young people and addictive behaviour (for example smoking and drugs) (Cassidy, 2006; Takao et al., 2009; Takao, 2014). Bianchi and Phillips (2005) revealed that younger users were more addicted to
their mobile phones than older users. This has been no surprise as younger generations are ‘digital natives’ (individuals born in the technological era) who are naturally attracted to any technological gadgets including mobile phones (Zulkefly & Baharudin, 2009).

Mobile phone use has integrated into young people’s lives and has provided a large number of functions (for example use of tools and ease of contact) (Walsh, White & Young, 2008). To them, the mobile phone is not just a tool for communication, it has become one of the ways they express themselves (Ito, 2005) and fit in (Ling, 2001). A study by Abdulllah (2004) revealed that Malaysian youths believed that ownership of a mobile phone is an important part of their lives. In addition, Zulkefly and Baharudin (2009) found that learners that spent more time on their mobile phones were most likely to become intense mobile phone users. They also concluded that the time spent on and fascination with the features of a mobile phone would make learners more addicted to their mobile phones.

An addiction to one's mobile phone poses serious problems for an individual's social and work life. One of the problems of excessive mobile phone use is that of the harassment of others through bullying or obscene calls (Bianci & Phillips, 2005; Takao et al., 2009). For this reason, it is believed learners more attached to their mobile phones are more likely to spend more time on their mobile phones and subsequently become likely to be victimised through their mobile phones.

2.5.1.4 Mobile Victimisation Typology (MVT)

From a review of typologies, Moriarty (2008) created a scale which groups the different categories of Mendelsohn’s, von Hentig’s and Schafer’s typologies into four groups (No Victim Responsibility; Low Victim Responsibility; Moderate/High Victim Responsibility; and No Victimisation) according to the different levels of responsibility/contribution to their own victimisation. Table 6 below shows these groups while comparing Mendelsohn’s, von Hentig’s and Schafer’s typologies.

<table>
<thead>
<tr>
<th>Categories selected for MVT</th>
<th>Level of Responsibility</th>
<th>Von Hentig Concept: Victim Prone Individuals</th>
<th>Mendelsohn Concept: Victim Culpability</th>
<th>Schafer Concept: Functional Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No Victim Responsibility</td>
<td>• Young/Children • Females • Old/Elderly • Mentally defective/Mentally ill</td>
<td>• Completely Innocent Victims</td>
<td>• Unrelated victims • Biologically weak victims • Socially weak victims</td>
</tr>
</tbody>
</table>
For this dissertation, the researcher has adopted three of the major categories (i.e. Level of Responsibility) from Moriarty’s (2008) scale to guide the development of victim types in a mobile victimisation typology (i.e. No victim responsibility; Low victim responsibility and Moderate to high responsibility). It was unnecessary to consider the fourth category of No Victimisation because mobile victimisation was under investigation. Therefore, the data that would be analysed when testing the proposed typology would essentially be of victimised individuals only. Please refer to Table 7 below for the proposed Mobile Victimisation Typology.

<table>
<thead>
<tr>
<th>Low Victim Responsibility</th>
<th><strong>Immigrants</strong></th>
<th><strong>Minorities</strong></th>
<th><strong>Dull Normals</strong></th>
<th><strong>Political Victims</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td><strong>Depressed people</strong></td>
<td><strong>Wanton Individuals</strong></td>
<td><strong>Lonesome/Heartbroken</strong></td>
<td><strong>Blocked/Exempted/Fighting</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Victims with Minor Guilt</strong></td>
<td><strong>Victims as Guilty as the offender</strong></td>
<td><strong>Victims more guilty than the offender</strong></td>
<td><strong>Precipitative victims</strong></td>
</tr>
<tr>
<td>Moderate/High Victim Responsibility</td>
<td><strong>Acquisitive</strong></td>
<td><strong>Tormenter</strong></td>
<td><strong>Most guilty victim</strong></td>
<td><strong>Provocative victims</strong></td>
</tr>
<tr>
<td>✓</td>
<td><strong>Self-victimizing</strong></td>
<td><strong>Imaginary victim</strong></td>
<td><strong>Did not address</strong></td>
<td><strong>Did not address</strong></td>
</tr>
<tr>
<td>No Victimisation</td>
<td><strong>Did not address</strong></td>
<td><strong>Imaginary victim</strong></td>
<td><strong>Did not address</strong></td>
<td><strong>Did not address</strong></td>
</tr>
</tbody>
</table>
Table 7: Proposed Typology for Mobile Victimisation

<table>
<thead>
<tr>
<th>Level of Responsibility/Contribution</th>
<th>Victim Type</th>
<th>Mobile Phone Technological Advancement</th>
<th>Frequency of Phone Use</th>
<th>Attachment to Phone</th>
<th>Explanation of the Victim</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasoning for Criterion</td>
<td>No victim</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Innocent</td>
<td>Little access to technology &amp; Less advanced Mobile Phone (e.g. Standard/Basic Mobile Phones)</td>
<td>Less Frequent Use of Phone</td>
<td>No attachment to phone</td>
<td>These are students available almost 24/7 online but are not at all attached to their mobile phones; they do not spend a lot of their time using their mobile phones; they are not involved in group chats and; they do not expose information about themselves online.</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Average access to technology &amp; advanced Mobile Phone (e.g. Feature Mobile Phone)</td>
<td>Average use of phone</td>
<td>Average attachment to their phones</td>
<td>These are students that are between the extremes of victim contribution. They spent an “average” amount of time on their phones and they are neither attached nor detached to their mobile phones. For instance, they engage in social networks, chats, etc. but they do it sparingly.</td>
<td>Mid</td>
</tr>
<tr>
<td></td>
<td>Moderate/High</td>
<td>High access to technology &amp; More advanced Mobile Phone (e.g. Smartphone)</td>
<td>More Frequent Use of Phone</td>
<td>Strongly attached to their phones</td>
<td>Victims that have contributed to their victimisation by being very attached to their mobile phones; students who spend a lot of their time using their mobile telephones; students who are in social networks; students who are part of groups that exclude others in group chats and; expose Information about themselves online.</td>
<td>High</td>
</tr>
</tbody>
</table>
2.6 Summary of Literature Review

The literature review has given insight on the current landscape of the literature of mobile bullying. In doing so, some interesting results with regards to the mobile victimisation of learners in South Africa through the use of technology such as mobile phones were revealed. For instance, 37% of learners in South Africa fall victim to mobile bullying (Popovac & Leoschut, 2012). In addition, the victimisation that occurs from this aggression has not extensively been examined. Although studies exist that have explored cyberbullying and cyber victimisation, they lack consistency (Lipton, 2014). This has led to the generalisation of cyberbullying and the impacts that different technologies may have on victims.

Research also shows a general increase in the number of victims of cyberbullying through what is considered to be the new weapon of choice, the mobile phone, through what is termed ‘mobile bullying’. Those who suffer from mobile bullying are affected by its negative implications. This, therefore, highlighted the need for further exploration of victimisation as a result of mobile phones i.e. mobile victimisation.

From the review, theories of victimisation ( Victim Precipitation Theory; Routine Activities Theory; and Lifestyle Theory) suggest that the victim contributes to his/her victimisation and indeed numerous victim typologies are based on this assumption. The theories are ubiquitous in that they can be applied to the cyber-environment as well. While typologies that can aid our understanding of victimisation, in general, do exist, none is available for mobile victimisation. Victim typologies identify, describe, compare, explain and predict victimisation. Existing typologies may be used to understand and predict behaviours that could result in victimisation in the cyber environment. However, with the limitations in the existing typologies, it was necessary to develop a typology that can be used to understand mobile victimisation. The development of the typology included using frequency of mobile phone use, attachment to a mobile phone and the technological advancement of a mobile phone as criteria for mobile victimisation. Such a typology would aid in the development of the theory of mobile victimisation and its application, could help in identifying those learners who are susceptible to this aggression.

2.7 Research Propositions

With the development of the MVT, research propositions were posed to answer the research question, meet the research objectives and guide the testing of the typology. According to Li (2007), frequency of technology usage is a significant predictor to mobile bullying. This may be supported by
Marcum et al. (2010), who claim that routine activities such as more time spent online, especially using social network sites, may increase the likelihood of being exposed to a motivated offender. Additionally, Li (2007) found that traditional bullying occurs at a specific time and place while cyber-victims are more likely to suffer continuously as they receive SMSs, e-mails or see comments about them posted online. Based on this, it is therefore proposed that:

**Proposition 1**: *Frequency of Use of one’s mobile phone will influence the extent of their mobile victimisation.*

Problematic (addictive) use of mobile phones incurs considerable such as harassment of others through bullying or obscene calls (Takao et al., 2009). According to Vandebosch and van Cleemput (2009), the more dependent (attached to) a learner is on the internet, the more likely it is that the learner will become a victim of cyberbullying. Similarly, Seiler and Navarro (2014) found that children emotionally attached to Social Networking Services (SNS) were three times more likely to encounter bullying than children who less emotionally attached to SNS. As the internet and SNS (among other applications) are available on mobile phones, it is proposed that:

**Proposition 2**: *Attachment to one’s mobile phone will influence the extent of their mobile victimisation.*

Li (2007) found that since mobile-bullying occurs in cyberspace, it is reasonable to assume that if learners have limited opportunities to access to technology, fewer opportunities would be available for Cyber harassments. The implication of this is that the availability of a mobile phone and the type of mobile phone one has may determine the opportunities to be mobile victimised. For example, smartphones are believed to encourage bullying and hazing due to the many applications available on them (Cuadrado-Gordillo & Fernández-Antelo, 2014). For these reasons, it is proposed that:

**Proposition 3**: *Mobile phone advancement (the type of phone) will influence the extent of mobile victimisation.*

According to Davis and Theron (2000), typologies help in identifying, describing, comparing, explaining and predicting phenomena. Typologies are also able to create an origin to theory (Davis & Theron, 2000). Burgess et al. (2011) agree with this in that typologies are said to aid our understanding of the
victim and victimisation. In doing so, typologies are believed to be useful to researchers and provide a classification system for victims in accordance with their contribution to their victimisation. This being the case, it is proposed:

Proposition 4: The development of a mobile victimisation typology will aid in the understanding of victims of mobile bullying and mobile victimisation itself.
CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

This chapter presents the research design and methodology used in this study (Figure 6 below).

In this chapter, the philosophical stance of this study will be taken, upon which, the research methodology will be discussed highlighting the research approach, strategy and purpose. Additionally, the sampling strategy and the data collection method and instrument are presented. The ethical considerations taken in this study will also be discussed.

3.1 Introduction

According to Mingers (2001), designing a research methodology is a significant step in conducting a study. A research design consists of methods, plans, procedures or techniques that guide activities that assist in acquiring reliable and valid results of research (Cavana, Delahaye & Sekaran, 2001; Mingers, 2001). One’s choice of methodology determines how to behave as a researcher, what data is required and how to collect that data (Hatch, 2012). Figure 7 below shows the ‘research onion’. It indicates the layers or issues that underlie research. These layers must be explored to appreciate the investigation of phenomena. This section presents the research methodology used in this study considering the major layers shown in the research onion below.
3.2 Research Philosophy: Ontology and Epistemology

Research philosophy contains important assumptions about the way we view the world. These assumptions underpin research (Saunders et al., 2009). There are two ways through which research philosophy may be viewed: ontology and epistemology (Saunders, Lewis & Thornhill, 2009). Ontology and epistemology contribute to the explanation, appreciation, understanding and practical guidance of research (Hatch, 2012). Ontology is "a branch of philosophy that examines assumptions about existence and definitions of reality" (Hatch, 2012: 11). Epistemology is the study of "how we know and what counts as knowledge" (Hatch, 2012: 11). Epistemological assumptions determine the type of knowledge that will be used to address what our ontological assumptions define as real and this makes these two branches of philosophy interrelated. It is, therefore, of great importance to state both the ontological and epistemological stances that were taken within this research.

3.2.1 Ontology as Objectivism

There are two perspectives of ontology: objectivism and subjectivism (Saunders et al., 2009). The ontological stance adopted in this research is that of objectivism. Objectivism believes in a stable reality that exists without human interference/social actors (Saunders et al., 2009; Hatch, 2012).
Researchers that take on this stance objectify phenomena and refer to them as objects. Within this belief is that objects exist without our knowledge of them and so can be measured or verified using independent observations (Hatch, 2012). In addition, these observations are determined by theories that are then tested against objective observations of the real world (Hatch, 2012).

3.2.2 Epistemology as Positivism

There are three major epistemological stances that one may adopt in conducting research. These are the interpretivist, positivist, and critical realist stances. A positivistic stance was adopted in this study. Positivist epistemology assumes that the uncovering of the truth is through the use of scientific method (Hatch, 2012). Knowledge, in this instance, is acceptable if it is generated through the development of hypotheses and propositions on the basis of theory. This knowledge is then tested and confirmed or falsified through the gathering and analysis of data which allows for the comparison of the implication of theory to external reality (Orlikowski & Baroudi, 1991; Hatch, 2012). According to Lincoln and Guba (as cited in Orlikowski & Baroudi, 1991), positivism has the following principles when conducting research of phenomena:

1. The phenomenon under investigation and the researcher are independent and there is a clear separation between the “observation reports and theory statements”.
2. The phenomenon under investigation is a tangible and single entity that may be broken apart into fragments. Each aspect of the phenomenon has a unique, best description for it.
3. There are real unidirectional cause-effect relationships that are identifiable and testable through hypothetic-deductive reason and examination.
4. ‘Nomothetic statements’ (i.e. generalisations independent of time or context) may be made. This implies that scientific concepts are precise and have fixed and invariant meanings.
5. Inquiry is value-free.

3.2.3 Choice of Philosophical Stance

Orlikowski and Baroudi (1991) claim that positivistic information systems researchers assume an objective physical and social world that exists independently of them and whose nature could be understood, characterised and measured. Based on the claims of Orlikowski and Baroudi (1991) and the principles of the positivistic approach to research, this study adopted positivism as its philosophical stance. The phenomenon under investigation in this study is believed to exist in an objective world view. The researcher believes that mobile victimisation exists beyond the existence and actions of the
subjects that are under investigation in this study. The researcher’s role in studying this phenomenon is merely to ‘discover’ the objective physical and social reality of mobile victimisation. To do so, the researcher creates precise measures that will identify and measure those dimensions that are of interest in relation to mobile victimisation. Understanding mobile victimisation is, therefore, a matter of modelling and measuring mobile victimisation through the development of a set of constructs and instruments to capture the essence of mobile victimisation.

A similar case was that of Zhang et al. (2010) who explored key influences of cyberbullying among university learners in New Zealand. In adopting a positivistic stance, Zhang et al. (2010) used theory to explore and identify what factors influenced cyberbullying among university learners in New Zealand. In doing this, they were able to identify ‘technology usage’ and ‘people’s perceptions and attitudes towards technology’ as key influences of cyberbullying. These influences were then developed as constructs that were measured amongst university learners in New Zealand so as to capture the cyberbullying behaviour. In the same manner that Zhang et al. (2010) adopted positivism, the current study used victimisation theories and typologies to develop the MVT. Through this process, the researcher was able to identify factors that would influence mobile victimisation, i.e. frequency of mobile phone use, attachment to a mobile phone and the advancement of a mobile phone.

In addition, it was assumed that each of the identified factors had a one-to-one relationship with mobile victimisation (Li, 2007; Takao et al., 2009; Marcum, 2010; Zhang et al., 2010; Cuadrado-Gordillo & Fernández-Antelo, 2014; Lee, 2014). According to Lin (1998), being able to identify the significance of the causal relationships leads the researcher to think in terms of plausible causes. This keeps the researcher from settling on a single cause for the occurrence of a phenomenon and often leads to better understanding of that phenomenon. By thinking of many plausible causes, the researcher can obtain a better sense of the factors that are likely to cause a phenomenon. These relationships are shown in Figure 5. Furthermore, the researcher is said to play a passive role in the research and does not intervene with the phenomenon itself. By using quantitative methods through administering a survey questionnaire (as discussed in section 3.3.5), the researcher was able to maintain a passive role in the research of mobile victimisation.
3.3 Research Methodology

In addition to the ontological and epistemological stances, the research methods and techniques deemed appropriate for any research are further determined by the methodological assumptions of the research (Orlikowski & Baroudi, 1991). It is through the research methodology that one may justify the validity of their research (Ghauri & Grønhaug, 2002). The following sections present the research methodology applied in this study.

3.3.1 Research Approach

There are two main research approaches that may be taken up in research: deductive and inductive approaches. There are five stages in deductive research (Robson, 2002 as cited in Saunders et al., 2009). Deductive research involves: (i) stating hypotheses from theory (i.e. propositions about the relationships between variables) in; (ii) measurable terms which may show the relationships between variables that may be; (iii) tested to produce results that will; (iv) either confirm theory or indicate that there is a need to modify it. So if necessary, (v) theory may be modified based on these findings. This, therefore, confirmed that a deductive approach would best fit the present study as these five steps were applied in this research to reach the objectives of this dissertation. In addition, although sometimes misleading, it is important to attach research approaches to philosophy (Saunders et al., 2009). And since a deductive approach is more towards a positivistic philosophy, the research approach adopted in this study was a deductive approach.

3.3.2 Research Strategy

This section discusses the research strategy that was employed in the current study. While some research strategies belong to either a deductive or inductive approach, all strategies may be used for any research purpose (Saunders et al., 2009). The strategies include experiment, survey, case study, action research, design and creation, ethnography and archival research. According to Saunders et al. (2009), the choice of strategy depends on the research questions and objectives, the extent of existing knowledge and philosophical assumptions that underpin research.

The research strategy chosen for this study was a survey. This is in part due to the philosophical and methodological assumptions have been adopted in this research. Positivists often employ large-scale sample surveys as a suitable research strategy. Surveys allow the researcher to manipulate the parameters and statistical procedures of the research design so as to be able to control the data
collection and analysis (Orlikowski & Baroudi, 1991). In addition, according to Saunders et al. (2009), the survey strategy is associated with a deductive approach to research and is used for exploratory and descriptive research.

3.3.3 Purpose of Research
Runeson and Höst (2009) identify four types of research purposes: exploratory; descriptive; explanatory; and improving. The purpose of this research was both descriptive and exploratory. It is important to note, however, that survey research is different for each of the various types of research purposes (Pinsonneault & Kraemer, 1993). Survey research that is descriptive aims to discover what attitudes, events, opinions or situations are occurring in a population. It seeks to portray people's profiles, situations and events accurately (Saunders et al., 2009). Survey research that is exploratory aims to familiarise with a phenomenon and to test preliminary concepts about it (Pinsonneault & Kraemer, 1993). It also, finds out what is happening, seeks new insights and assesses phenomena (Saunders et al., 2009). It clarifies the understanding of a problem if uncertain of its nature and elicits a wide variety of responses that would mimic various viewpoints of the population (Pinsonneault & Kraemer, 1993).

The researcher believes that the current research has both a descriptive and exploratory nature because literature has so far offered descriptions of the relationships that exist between learners and their mobile phones. Using these descriptions, the researcher was able to explore, through the development and testing of a mobile victimisation typology, the relationships that exist between mobile victimisation and the frequency of mobile phone use; attachment to a mobile phone; and mobile phone advancement in a South African context. Testing and assessing this mobile victimisation typology, therefore, helps gain insight on mobile victimisation which, as indicated by literature, has not gained much recognition within research.

3.3.4 Sampling Strategy
To collect data that is manageable and sustainable, sampling techniques are employed. These techniques reduce the amount of data gathered by the researcher to a sub-group that may be considered for analysis rather than an entire population (Saunders et al., 2009). A population consists of all possible cases from which a sample is taken. The sub-group taken from the population is referred to as the sample. Within the sample are individual cases or elements (Saunders et al., 2009) (please refer to Figure 8). This section discusses the sampling strategy employed in the current study.
3.3.4.1 Sample
The sampling population for this research was South Africa. The target sample for this study was high school learners in the Western Cape of South Africa while the cases or elements were the learners themselves (Figure 8). This is because (according to Fleming and Jacobsen (2010)), bullying is common among adolescents. It has been reported that there are high numbers of adolescents that have been victimised through mobile phones on and off of school premises. Oosterwyk and Parker (2011) also found that 93% of learners in the Western Cape had cell phones and that electronic bullying inflicted one-third of those learners through their mobile phones. The researcher, therefore, believed that this target sample would be relevant in acquiring the data required for the present study. South African adolescents would offer information that would answer the research questions and meet the objectives of this study. In addition, with the high numbers of learners being victimised by mobile bullying, the specified target sample would give results that could be generalised for South African high school learners.

3.3.4.2 Sampling Technique and Sample Size
According to Saunders et al. (2009), there are two sampling techniques: probability (representative) sampling and non-probability (judgemental) sampling. For this research, non-probability sampling was used. Non-probability samples are samples in which the probability of an element being selected from a population is unknown. For non-probability sampling, the sample size is determined by the relationship between the purpose and focus of the research and the sampling selection technique. Subsequently, the sample size is dependent on what would be useful and what would create credible results (Saunders et al., 2009). The type of non-probability used in this research was purposive sampling. With purposive sampling, the sample chosen is based on the knowledge one has on the
population (Saunders et al., 2009). This allows the researcher to use his or her judgement to select elements (cases) that will best suit the research (Tongco, 2007).

The sample for this study included learners from nine high schools in the Western Cape of South Africa. The participants were between the ages of 14 years and younger and 18 years and older and included both males and females. In an attempt to best capture a fair sample of participants for this study, schools were approached considering three factors: the safety risk of the area in which the schools are, the amount of school fees paid to attend the school and the ownership of the school (private or public), safety risk being the priority factor in sampling. Two particular areas were chosen for this study. (Please refer to the Cape Town safety map presented in Figure 9 below).

![Cape Town Safety Map](image)

Figure 9: Cape Town Safety Map (Cape Town Safety, 2015)

Research shows that there is an association between crime and bullying. According to Aftab (as cited in Epstein & Kazmierczak, 2006) and Patchin and Hinduja (2006), cyberbullying is more prevalent in affluent suburbs, where learners often have more access to the Internet and are, therefore, more technologically advanced. Oosterwyk (2013), however, found that the highest prevalence of mobile bullying was in schools located in crime-ridden areas. These reports made it relevant to sample schools from both areas, i.e. affluent areas and crime-ridden areas. Figure 9 above shows the areas that were data acquisition took place for this study, i.e. the Southern Suburbs and Mitchells Plain. The Southern
Suburbs represent the affluent suburbs. According to the Western Cape Government (2012), besides these areas being served by private security organisations, they are well policed and the police to resident ratio is acceptable. Mitchells Plain represents the crime-ridden areas as it is one of the seventeen priority areas of crime in the Western Cape Provincial Government. The high prevalence of gang violence including drug and alcohol abuse identifies these as priority areas (Western Cape Government, 2012). Once the areas were established, schools within these areas were randomly chosen, and their school fees and the ownership of the schools were noted. Although many more schools were approached, only nine were responsive and accepted to participate in the current study.

As has been stated, this was a non-probabilistic study. Therefore, the sample size was dependent on what would produce useful and credible results. What was found in cyberbullying research was that researchers often emphasise that sample sizes need to be significant for research within this field. A large sample offers greater generalisability and more thorough exploration may be possible (Smith et al., 2006; Olweus, 2012). This being the case, there was no limit to the size of the sample. The sample size was merely dependent on obtaining as much data from high school learners within the Southern Suburbs and Mitchells Plain within the time frame of the current Masters programme.

The purpose of a sample is to collect information that represents an entire population. The following section discusses how information with regards to this study was obtained from the selected sample.

3.3.5 Data Collection and Research instruments

There are many methods in which data may be collected such as observation, interviews, documents and questionnaires. Any of these methods may be used for data collection. However, the research instrument used in this study was chosen based on the philosophical stance and research strategy taken in this study. Survey research is often conducted with the use of a questionnaire (Saunders et al., 2009). For this reason, the researcher believed that a questionnaire was a suitable data collection tool for this research. Administering a questionnaire is a data collection technique in which participants in a sample answer predetermined questions (Saunders et al., 2009). The data collected from these questionnaires is then standardized for easy comparisons. The type of questionnaire that was used in this research was a ‘delivery and collection’. This kind of questionnaire is given to each respondent by hand and collected from them later (Saunders et al., 2009). This questionnaire was used because the questions asked were closed-ended questions, and this type of questionnaire is believed to enhance respondent participation in the survey. In addition, an online questionnaire was
used. According to Wright (2005), online surveys have the ability to provide many individuals who may not, for example, be able to access the questionnaire through other channels. This, therefore, made the distribution of the questionnaire to some schools easier as learners took the questionnaire online. Furthermore, online surveys are time and cost efficient as they allow the researcher to reach many people in a short amount of time and to save on costs of printing questionnaires and data capturing (Wright, 2005).

The questionnaire used in this study will be referred to as the Mobile Victimisation Survey (MVS) (Appendix A). The MVS measured all the constructs that have been identified within this study, i.e. mobile phone advancement; attachment to a mobile phone; frequency of mobile phone use; mobile victimisation, and was divided into five sections. These are summarised as follows:

- **Section A**: Measured the demographic information of the participants. This information is valuable as literature (for example, lifestyle theory) shows that different demographic characteristics may influence the likelihood of one becoming a victim (Burgess et al., 2011). The questions in this section were adapted from research conducted by Oosterwyk (2013) and gathered information such as gender, grade, age, school and the area in which the learners reside.

- **Section B**: Measured information with regards to the mobile phone advancement. This section asked if the participant owns a mobile phone (yes/no). This question was adopted and modified from White, Hyde, Walsh & Watson, (2010). If answered yes, the type of phone (name and level of advancement) a participant had was to be specified. In addition, participants were asked if their mobile phones had certain features. From this, the researcher was able to determine the type of mobile phone the learner would have identified. It was designed this way because some learners might not have known what type of mobile phone they owned or used.

- **Section C**: Recorded information regarding Mobile Phone Usage, i.e. the frequency of mobile phone use. The questions in this section were adopted from Oosterwyk (2013) and White et al., (2010). This section also included questions about the Theory of Planned Behaviour. White et al. (2010) measured the frequency of mobile phone use while driving a motor vehicle and the behavioural, normative and control beliefs of drivers in order to understand what is influential in their behaviour to frequently use their mobile phones while driving. The measurement of these behaviours is described below.
To measure mobile phone use for any purpose while driving, a scale between 1 (more than once a day) and 7 (never) was used to measure the different behaviours drivers could engage in while driving using their mobile phones. The questions were then presented as “How often do you do the following on your mobile phone while driving?” followed by each behaviour, for example “answering calls” (White et al., 2010: 11). The current study did the same. However, the use of a mobile phone in general instead of while driving was considered.

To measure behavioural, normative, and control beliefs, White et al. (2010) assessed six items that were scored between (1) extremely unlikely and (7) extremely likely. Control factors were measured using six factors that participants had to rate as controls (for example, phone usage monitored by police) that would prevent them from using their mobile phones excessively. And for behavioural beliefs, participants were asked to rate how likely three advantages and three disadvantages would occur if they used their mobile phones excessively while driving. Finally, to assess normative beliefs, the approval of six referents of the excessive use of a mobile phone while driving were rated by the participants. These questions were adapted to capture the behavioural, normative, and control beliefs of the participants in the current study to understand behaviour with regards to the frequency of mobile phone use among high school learners.

- **Section D**: Measured mobile phone attachment. The questions in this section were adopted from Bianchi and Phillips (2005) and Oosterwyk (2013).

- **Section E** measured Mobile Phone Victimisation. These questions are adapted from Hamburger, Basile and Vivolo (2011) and Oosterwyk (2013). Please refer to Table 8 for the summary of the sources of the questions used in the questionnaire.

Table 8: Constructs and the Sources of Questions to capture the constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Questions Adopted from:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>Oosterwyk (2013)</td>
</tr>
<tr>
<td>Frequency of Phone Use</td>
<td>White et al. (2010); Cheung &amp; Huang (2005); Oosterwyk (2013)</td>
</tr>
<tr>
<td>Mobile Phone Attachment</td>
<td>Walsh et al. (2010); Oosterwyk (2013)</td>
</tr>
<tr>
<td>Mobile Phone Advancement</td>
<td>White et al. (2010)</td>
</tr>
<tr>
<td>Mobile Victimisation</td>
<td>Hamburger, Basile and Vivolo (2011); Oosterwyk (2013)</td>
</tr>
</tbody>
</table>

Although adopted from different studies with different Likert scales, the responses to these questions were given on a Likert scale ranging from 1 to 5. This was done to maintain consistency with Oosterwyk
Towards a Typology for Understanding Mobile Phone Victimisation in South African High Schools

(2013) as the current study exists within a large body of research alongside Oosterwyk (2013) concerning cyber and mobile bullying. These questions were in some instance rephrased and reworded to suit the current study. In addition, it was important to take careful consideration in compiling the questionnaire because the questions in the questionnaire were to be understood in the same manner by all possible respondents or participants.

3.3.5.1 Validity and Reliability

It is essential for the instrumentation used in a study to be precise, valid and reliable in order to collect accurate and appropriate information for the study (Arshad, 2014). Validity refers to the trustworthiness of the findings (Runeson & Höst, 2009), i.e. whether the results of the research are really what they appear to be about (Saunders et al., 2009). Reliability concerns the consistency of the results of the study due to the data collection methods and analysis procedures (Saunders et al., 2009). Threats to the validity may be influenced by participant error and participant bias (Saunders et al., 2009). Participant error is caused by how participants feel at different times or environments. Participant bias is when participants respond to questionnaires in order to fit a certain ideology or what they assume would be expected of them. For this, anonymity is often implemented. Anonymity ensures that the participants respond without being influenced to respond a certain way as their responses will not be traced back to them (Saunders et al., 2009). The questionnaire (Appendix A) indicated that the study is anonymous and assured the participant that the information given would only be used for this study. The survey cover letter written to the principals of the schools asking them for permission for their learners to participate in this study (Appendix C) also assured the principals of the anonymity of their learners. Validity can also be assured through the use of a panel of experts and a field study (Radhakrishna, 2007). For this, the questionnaire was piloted with the supervisor of this research and other experts and colleagues in the Department of Information Systems and went through several iterations in which the questions were modified and improved.

To test the reliability of the variables used in the study, Cronbach’s Alpha and standardised is often used. Cronbach’s alpha is one method to test reliability. For example, Arshad (2014) used Cronbach’s Alpha to assure reliability of a questionnaire. Cronbach’s Alpha ranges between 0 and 1. The closer to 1 Cronbach’s Alpha is, the greater the internal consistency and reliability of the data (Gliem & Gliem, 2003). According to George and Mallery (as cited in Gliem & Gliem, 2003: 87), generally Cronbach’s Alpha: “_ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and_ < .5 – Unacceptable”. Therefore, reliability tests were conducted for each of the constructs in this
study to obtain Cronbach’s Alpha for each of the constructs and the instrument itself. These results were used to assure reliability of the data collected.

3.3.6 Time Horizon
The time horizon indicates the amount of time in which the phenomenon under investigation will be studied and may either be longitudinal or cross-sectional. A cross-sectional time horizon pertains to the collection of data over a shorter period (for example, months) and are often employed in survey strategies (Saunders et al., 2009). Given the nature of this study, a cross-sectional time horizon was deemed more appropriate than a longitudinal time horizon. A cross-sectional study would capture mobile victimisation as it is occurring at present. This would give more insight on the phenomenon as it is currently happening in South African high schools.

3.4 Ethical Concerns
Within a research design, ethical considerations are to be made. Although built of trust between the researcher and participants, a research study must take explicit measures to avoid problems (Saunders et al., 2009; Runeson et al., 2009). These problems may be prevented by identifying, from the beginning, how information is handled and who handles the given information. This may be identified with the use of informed consent, review board approval, confidentiality and feedback.

**Informed consent:** Participants that partake in a study should explicitly agree to participate in that study (Runeson et al., 2009). Initially, in the present study, consent was asked for from the Western Cape Department of Education, the principals of the high schools that participated, as well as the learners of the respective schools. This was because the Western Cape Department of Education and the principals of the schools needed to grant the researcher permission to approach high schools within the Western Cape of South Africa. A consent form in the form of a ‘contract’ was compiled by the researcher for the Western Cape Department of Education and the principals of the schools to sign (Appendix C). This contract was accompanied by a consent letter in which the researcher approached the Department of Education and the principals for permission to conduct the research survey within high schools (Appendix B). In addition, it was important that the learners understood what they were participating in. However, it was noted throughout the data collection process that the principals of the participating schools did not want the learners of their schools to sign the
questionnaires. They feared that the learners could somehow be traced back. Learners were, therefore, not required to provide any personal information, including signatures.

**Review board approval:** It is recommended that research proposals be reviewed, accepted and approved with regards to ethical issues by a review board or a similar function at university level (Saunders et al., 2009; Runeson et al., 2009). The University of Cape Town Ethics Committee conducted such a review for this study. The Ethics form is shown in Appendix D. Only after approval from the University of Cape Town Ethics Committee did this research proceed to the data collection phase.

**Confidentiality:** As the information given by participants of research may be sensitive, the anonymity of participants may be maintained to protect the participants (Runeson et al., 2009). For this, the principals and the participants of this study were informed of anonymity in the questionnaire and the consent letter (Appendix A and Appendix B). They were also informed about the voluntary nature of their participation and their option to exit the study at any time.

**Feedback:** To build long-term trust with participants and to validate the research, it is important to give feedback (Runeson et al., 2009). Therefore, the results of this study will be reported back to the participants as it is important to inform them about how their behaviour may influence mobile victimisation. This will create awareness of influential factors regarding mobile bullying and victimisation. It will also build relationships with the principals from participating high schools for further research.

### 3.5 Summary of Research Design and Methodology

The aim of this study is to understand the nature of mobile victimisation in South African high schools. This chapter has highlighted the research design and methodology that was implemented to do so. This study adopted a positivistic stance and a deductive approach. It used a survey strategy in which a questionnaire was used to capture data that would describe and explore mobile victimisation among South African high school learners. The data captured was then analysed quantitatively through the use of statistical software such as Microsoft Excel and Statistica. In following this methodology, it was intended that the research questions, objectives and propositions stated earlier will be answered, met and validated respectively. Please refer to Table 9 below for the summary of the research design and methodology.
Table 9: Summary of Research Design and Methodology

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy</td>
<td>Positivism</td>
</tr>
<tr>
<td>Research Approach</td>
<td>Deductive</td>
</tr>
<tr>
<td>Research Strategy</td>
<td>Survey</td>
</tr>
<tr>
<td>Research Purpose</td>
<td>Descriptive and Exploratory</td>
</tr>
<tr>
<td>Target Population and sample</td>
<td>South African learners between the ages of 14 and 18</td>
</tr>
<tr>
<td>Type of Research</td>
<td>Quantitative</td>
</tr>
<tr>
<td>Data Collection Technique</td>
<td>Questionnaire (Paper based and Online Questionnaires).</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>Quantitative Analysis using Microsoft Excel and Statistica statistical analysis software.</td>
</tr>
<tr>
<td>Time Horizon</td>
<td>Cross-Sectional</td>
</tr>
</tbody>
</table>
CHAPTER 4: RESEARCH ANALYSIS, FINDINGS AND DISCUSSION

This chapter presents the research analysis and findings for this study. The findings are then discussed so as to answer the research questions; meet the research objectives; and prove or disprove the research propositions. Figure 10 below shows the overview of this chapter.

![Figure 10: Overview of Research Analysis, Findings and Discussion](image)

In this chapter, the results of the reliability tests are presented. The schools from which the data was collected and the demographic information of the learners that participated are then analysed and presented. The results of those learners who are victims of mobile bullying are then analysed and presented (i.e. demographic analysis and the influencing factors of mobile victimisation). Finally, the relationships between mobile victimisation and its predictors are analysed and discussed before the analysis of the MVT.

4.1 Introduction

After the data was collected, coded and recorded in Microsoft Excel, the data was cleaned by removing outliers and those entries that were amiss. After this, the final spreadsheet produced was exported to Statistica 12 for statistical analyses. The initial stage in processing the data was that of checking the reliability and internal consistency of the data and the factors recorded under each construct. After this had been done, common descriptive measures were produced to give a general view and feel of the data. These descriptive measures included the mean and median as measures of location, the standard deviation and interquartile range as measures of scale, and the frequency distributions as measures of the nature of the distribution. Knowing these descriptive measures gave the researcher the opportunity to familiarise herself with and understand the data. Once this was done, other statistical tests (i.e. regression analyses, t-tests, correlation analyses and cluster analysis) were run in order to test the MVT and the research propositions listed below.
**Proposition 1:** Frequency of use of one’s mobile phone will influence the extent of their mobile victimisation.

**Proposition 2:** Attachment to one’s mobile phone will influence the extent of their mobile victimisation.

**Proposition 3:** Mobile phone advancement (the type of phone) will influence the extent of mobile victimisation.

**Proposition 4:** The development of a mobile victimisation typology will aid in the understanding of victims of mobile bullying and mobile victimisation itself.

### 4.2 Reliability Testing

Reliability tests were conducted for mobile victimisation and each of the factors (i.e. frequency of mobile phone use, attachment to a mobile phone and the advancement of a mobile phone) that contribute to mobile victimisation. The values for each of the factors were obtained by averaging the values of the variables that were used to measure the factors. These averages were then run in a reliability test to get Cronbach’s Alpha, which gives the internal consistency of the variables. Cronbach’s Alpha for attachment to a mobile phone was 0.778; technological advancement was 0.835; victimisation was 0.769; and frequency of phone use was 0.580, with the standardised alpha being 0.592 (See Table 10 below). Also, the constructs of the Theory of Planned Behaviour: Behavioural, Normative and Control beliefs had Cronbach’s Alpha values of 0.577, 0.732 and 0.633 respectively and 0.710 collectively.

The overall instrument's reliability was then tested to assure the reliability of the instrument as a whole and produced a Cronbach’s Alpha of 0.783 and a standardised alpha value of 0.748. In addition to the reliability testing method of using Cronbach’s Alpha, a Split-Half reliability test was run. A Split-Half reliability test divides the variables in a random manner into halves. If the data is reliable, the halves will be perfectly correlated (Statsoft, 2013). The results of the Split-Half revealed that Cronbach’s Alpha of the instrument to be 0.783, which is similar to that of the Cronbach’s Alpha stated for the overall instrument above.
Table 10: Reliability Tests Results

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of phone use</td>
<td>0.58</td>
</tr>
<tr>
<td>Attachment to mobile phone</td>
<td>0.778</td>
</tr>
<tr>
<td>Technological advancement</td>
<td>0.835</td>
</tr>
<tr>
<td>Victimisation</td>
<td>0.769</td>
</tr>
<tr>
<td>Overall instrument</td>
<td>0.783</td>
</tr>
</tbody>
</table>

As stated earlier, generally Cronbach’s Alpha: “≥ .9 – Excellent, ≥ .8 – Good, ≥ .7 – Acceptable, ≥ .6 – Questionable, ≥ .5 – Poor, and < .5 – Unacceptable” (George and Mallery (as cited in Gliem & Gliem, 2003: 87). However, according to Moss, Prosser, Costello, Simpson, Patel, Rowe, Turner, and Hatton (1998), a value “≥ .6” is still acceptable. Ibrahim, Kelly, Challenor and Glazebrook (2010) also considered an Alpha of 0.5 or higher as a sign of acceptable internal consistency. For example, while establishing the reliability and validity of the Zagazig Depression scale (which assesses a broad range of depressive symptoms in a number of domains), Ibrahim et al. (2010) found Cronbach’s Alpha to be acceptable at 0.5. The reason for poor values of Cronbach’s alpha in their case was believed to be the homogeneity of their sample. This holds true as Spiliotopoulou (2009) states that heterogeneous samples yield higher reliability estimates than homogenous samples would.

For the current study, however, the relatively low values of Cronbach’s Alpha shown in the constructs “frequency of mobile phone use” and the “behavioral beliefs” of the Theory of Planned Behaviour are believed to be as a result of the skewness of the variables that were used to measure them. Both the frequency of mobile phone use and the behavioural beliefs were measured using six variables that were either positively or negatively skewed. For each of these two constructs, three of their six variables were extremely skewed. According to Spiliotopoulou (2009), testing the reliability of a construct using variables that are not normally distributed may yield a Cronbach’s alpha that underestimates the reliability of the outcome measure. For this, Brown (2002) suggests that special attention should be paid when interpreting Cronbach’s Alpha, especially when one has highly skewed observed variable responses.

4.3 Descriptive Statistics of All Learners that Participated

As stated earlier, nine schools participated in the current study. From those nine participating schools, data was collected from 2300 high school learners. However, due to some learners not completing the questionnaire or completing it incorrectly, only 2079 of the responses were used in data analysis.
The current section of this chapter presents the descriptive statistics of these nine schools and 2079 learners.

4.3.1 Analysis of the Schools that Participated

Of the nine schools that participated, schools F, C and D had the highest percentages of participants in the survey (42.6%, 20.8% and 9.3% respectively) (See Table 11 below). These three schools (schools F, C and D) were all located in high/extreme risk areas and were public schools in which school fees are low. Both of the private schools that took part in the survey had an equal proportion of learners that took part in the survey (8.7% each). Schools B and E were located in low and high/extreme risk areas respectively. They were both public schools in which the school fees were low. Schools G and R had the lowest numbers of learners that participated in the survey. Both these schools were public schools in which school fees were medium.

Table 11: Description of the Schools that Participated

<table>
<thead>
<tr>
<th>School</th>
<th>Safety Risk</th>
<th>School Fees</th>
<th>Ownership</th>
<th>Quantity of Learners (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Safe</td>
<td>High</td>
<td>Private</td>
<td>8.7</td>
</tr>
<tr>
<td>B</td>
<td>Low Risk</td>
<td>Low</td>
<td>Public</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>High/Extreme Risk</td>
<td>Low</td>
<td>Public</td>
<td>20.8</td>
</tr>
<tr>
<td>D</td>
<td>High/Extreme Risk</td>
<td>Low</td>
<td>Public</td>
<td>9.3</td>
</tr>
<tr>
<td>E</td>
<td>High/Extreme Risk</td>
<td>Low</td>
<td>Public</td>
<td>3.8</td>
</tr>
<tr>
<td>F</td>
<td>High/Extreme Risk</td>
<td>Low</td>
<td>Public</td>
<td>42.6</td>
</tr>
<tr>
<td>G</td>
<td>Low Risk</td>
<td>Medium</td>
<td>Public</td>
<td>0.55</td>
</tr>
<tr>
<td>H</td>
<td>Safe</td>
<td>High</td>
<td>Private</td>
<td>8.7</td>
</tr>
<tr>
<td>R</td>
<td>Safe</td>
<td>Medium</td>
<td>Public</td>
<td>0.55</td>
</tr>
</tbody>
</table>

*Safety Risk: Safe; Low Risk; High/Moderate Risk

*School Fees: Low (R0 - R9 999); Medium (R10 000 – R39 999); High (R40 000 +)

*Ownership: Private; Public

4.3.2 Demographic Analysis

The descriptive statistics showed that 52.1% of the learners that participated were females while 47.9% were males. The average age of the learners was between 15 and 16 years, with the mean grade of the learners falling between Grades 9 and 10 (see Table 12 below). The majority of the learners were aged 14 years and younger (30.6%).
Table 12: Descriptive Statistics for Age and Gender for Entire Data Set

<table>
<thead>
<tr>
<th>Variable</th>
<th>Descriptive Statistics – Age and Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Age</td>
<td>2047</td>
</tr>
<tr>
<td>Grade</td>
<td>2027</td>
</tr>
</tbody>
</table>

*Age: 1= 14 or younger; 2= 15; 3= 16; 4= 17; 5= 18 or older  
*Grade: 1= 8; 2= 9; 3= 10; 4= 11; 5= 12

Figure 11 and Figure 12 below show the percentage distributions of the learners by grade and age. Figure 11 shows that the majority of the learners belonged to Grade 8, Grade 9 and Grade 10 (which had 26%, 25% and 25% respectively) while Grades 11 and 12 had the least number of learners (13% and 11% respectively). Also, the majority of the learners that took the survey were 14 years old and younger (31%), 15 years old (28%) and 16 years old (18%). Fewer learners were 17 years old (15%) and 18 years old (8%).

![Descriptive Statistics - Grades of Learners](image1.png)

![Descriptive Statistics - Ages of Learners](image2.png)

4.4 Results of Victimised Learners

In this section, the results of the learners that are victims of mobile bullying are presented. The primary focus of this section is also to present and analyse the proposed relationships between mobile victimisation and the frequency of mobile phone use; the attachment to a mobile phone; and the advancement of a mobile phone. Mobile victimised learners were those learners whose mobile victimisation values were greater than or equal to 2.5. Values greater than or equal to 2.5 were chosen because the Likert scale measured mobile victimisation on a scale ranging from 1 to 5 and values less than 2.5 indicated that learners were ‘rarely’ victimised.
4.4.1 Demographic Analysis of Victimised Learners

Of the 2079 learners, it was found that 183 learners were victims of mobile bullying. These victims were mainly between the ages of 15 and 16 years and most of them were males (approximately 52%). Figure 13 below shows that 37% of the learners who were victimised were in Grade 8, 23% were in Grades 9 and 10 each while Grades 11 and 12 had 9% and 8% respectively. Figure 14 shows that the 16-year-olds, 15-year-olds, 14-year-olds and younger were the most victimised as 79% of the learners that are victimised are of these ages.

The average value for mobile victimisation for all victimised learners was approximately 3.397, indicating that these learners are sometimes victimised via their mobile phones (see Table 13 below).

Table 13: Descriptive Statistics for the Victimised learners

<table>
<thead>
<tr>
<th>Variable</th>
<th>Descriptive Statistics - All Victimised Learners</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N  Mean     Min     Max     Std.Dev.</td>
<td>N  Mean     Std.Dev.</td>
<td>N  Mean     Std.Dev.</td>
</tr>
<tr>
<td>Gender</td>
<td>176  1.483   1.000   2.000   0.501</td>
<td>91  1.000   0.000</td>
<td>85  2.000   0.000</td>
</tr>
<tr>
<td>Age</td>
<td>175  2.526   1.000   5.000   1.295</td>
<td>87  2.540   1.421</td>
<td>81  2.457   1.173</td>
</tr>
<tr>
<td>Frequency</td>
<td>183  3.193   1.143   5.000   0.757</td>
<td>91  3.113   0.755</td>
<td>85  3.225   0.742</td>
</tr>
<tr>
<td>Attachment</td>
<td>183  3.459   1.700   5.000   0.688</td>
<td>91  3.415   0.682</td>
<td>85  3.480   0.674</td>
</tr>
<tr>
<td>Advancement</td>
<td>181  1.406   1.000   4.000   0.911</td>
<td>90  1.433   0.925</td>
<td>84  1.387   0.929</td>
</tr>
<tr>
<td>Victimisation</td>
<td>183  3.397   2.500   5.000   0.699</td>
<td>91  3.438   0.713</td>
<td>85  3.339   0.663</td>
</tr>
</tbody>
</table>

*Gender: 1= Male; 2= Female | *Age: 1= 14 or younger; 2= 15; 3= 16; 4= 17; 5= 18 or older | *Frequency: 1= Never; 2= Rarely; 3= Sometimes; 4= Often; 5= Always | *Attachment: 1= Strongly disagree; 2= Disagree; 3= Sometimes; 4= Agree; 5= Strongly Agree | *Tech Advancement: 1= Smartphone; 2= Feature phone; 3= Basic phone; 4= Not Sure | *Victimisation: 1= Never; 2= Rarely; 3= Sometimes; 4= Often; 5= Always

The descriptive statistics of these learners (Table 13) also showed that although the males had a higher mean in victimisation (3.438), females had higher means for two of the predictors (frequency of mobile phone use and attachment to a mobile phone). Gender in mobile bullying research has been a heated issue, rallying many different conclusions from many researchers. For instance, according to...
Smith et al. (2008), it has been found that in some cases, girls are more likely to be cyberbullies and cyber-victims than boys. Girls are also believed to suffer more assault through other natures of attacks (such as sexual attacks) (Shariff, 2008). In addition, girls are found to prefer gossiping or spreading rumours, chats and instant messaging, excluding people, friendship betrayals and other behaviours that influence relationships (Viljoen, O’Neill & Sidhy, 2005). Their preferences in chats and instant messaging as methods of communication may explain the high mean in the frequency of mobile phone use that is observed in Table 13. Also, engaging in behaviours that influence relationships may explain why they tend to be more attached to their mobile phones than boys. In contrast, research has shown that boys have been perceived to be more aggressive than girls (Thomas & Allen, 2006). Boys also have more physical altercations; make online threats; and create hate websites than girls (Keith & Martin, 2005). This may explain the higher level of mobile victimisation shown.

Since literature has shown that gender may influence cyber victimisation differently, it became necessary to test whether or not this was the case for the current study. Therefore, a t-test was conducted to examine whether or not gender had an effect on the proposed predictors of mobile victimisation. According to Demšar (2006: 3), “pairwise t-tests are about the only method used for assessing the statistical significance of differences”. These tests validate whether the average difference in the performance of two classifiers over the data sets is significant (Demšar, 2006). The results for the t-test conducted in order to show significant gender differences in attachment to the mobile phone, frequency of mobile phone use, technological advancement and mobile victimisation are shown below (Please refer to Table 14).
Table 14: T-Test of Gender against the variables measuring the predictors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean 1</th>
<th>Mean 2</th>
<th>t-value</th>
<th>df</th>
<th>p</th>
<th>Valid N 1</th>
<th>Valid N 2</th>
<th>Std.Dev. 1</th>
<th>Std.Dev. 2</th>
<th>F-ratio</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thinking of Mobile Phone</td>
<td>2.640</td>
<td>3.008</td>
<td>-6.499</td>
<td>2013</td>
<td>0.000</td>
<td>990</td>
<td>1025</td>
<td>1.257</td>
<td>1.350</td>
<td>0.013</td>
<td>0.004</td>
</tr>
<tr>
<td>Using Mobile Phone For No Reason</td>
<td>2.964</td>
<td>3.060</td>
<td>-2.970</td>
<td>2013</td>
<td>0.003</td>
<td>990</td>
<td>1027</td>
<td>1.149</td>
<td>1.205</td>
<td>1.109</td>
<td>0.311</td>
</tr>
<tr>
<td>Arguments arising because of mobile phone</td>
<td>2.345</td>
<td>2.528</td>
<td>-3.322</td>
<td>2010</td>
<td>0.001</td>
<td>990</td>
<td>1022</td>
<td>1.221</td>
<td>1.264</td>
<td>1.055</td>
<td>0.369</td>
</tr>
<tr>
<td>Interrupt whatever I am doing</td>
<td>2.674</td>
<td>2.807</td>
<td>-2.466</td>
<td>2013</td>
<td>0.014</td>
<td>987</td>
<td>1028</td>
<td>1.209</td>
<td>1.223</td>
<td>1.023</td>
<td>0.715</td>
</tr>
<tr>
<td>Feel Connected when using my phone</td>
<td>3.385</td>
<td>3.523</td>
<td>-2.576</td>
<td>2012</td>
<td>0.010</td>
<td>989</td>
<td>1021</td>
<td>1.209</td>
<td>1.199</td>
<td>1.017</td>
<td>0.791</td>
</tr>
<tr>
<td>Unable To Control Usage</td>
<td>2.903</td>
<td>3.188</td>
<td>-5.191</td>
<td>2012</td>
<td>0.000</td>
<td>987</td>
<td>1027</td>
<td>1.250</td>
<td>1.228</td>
<td>1.084</td>
<td>0.578</td>
</tr>
<tr>
<td>Feel distressed when not using mobile phone</td>
<td>2.462</td>
<td>2.770</td>
<td>-5.134</td>
<td>2019</td>
<td>0.000</td>
<td>993</td>
<td>1027</td>
<td>1.312</td>
<td>1.380</td>
<td>1.103</td>
<td>0.217</td>
</tr>
<tr>
<td>Unable to Reduce Usage</td>
<td>2.438</td>
<td>2.629</td>
<td>-3.800</td>
<td>1999</td>
<td>0.000</td>
<td>990</td>
<td>1022</td>
<td>1.138</td>
<td>1.184</td>
<td>1.045</td>
<td>0.296</td>
</tr>
<tr>
<td>Comfortable when using mobile phone</td>
<td>4.182</td>
<td>4.064</td>
<td>3.433</td>
<td>2013</td>
<td>0.003</td>
<td>992</td>
<td>1021</td>
<td>1.215</td>
<td>1.074</td>
<td>1.087</td>
<td>0.268</td>
</tr>
<tr>
<td>Confident when using mobile phone</td>
<td>4.181</td>
<td>4.024</td>
<td>3.036</td>
<td>2015</td>
<td>0.000</td>
<td>993</td>
<td>1025</td>
<td>1.205</td>
<td>1.170</td>
<td>1.069</td>
<td>0.298</td>
</tr>
<tr>
<td>Received Insulting Messages</td>
<td>1.665</td>
<td>1.622</td>
<td>0.737</td>
<td>2022</td>
<td>0.461</td>
<td>964</td>
<td>1009</td>
<td>0.955</td>
<td>0.969</td>
<td>1.140</td>
<td>0.317</td>
</tr>
<tr>
<td>Received Threatening Call</td>
<td>1.322</td>
<td>1.289</td>
<td>0.925</td>
<td>2020</td>
<td>0.355</td>
<td>953</td>
<td>1029</td>
<td>0.835</td>
<td>0.775</td>
<td>1.162</td>
<td>0.017</td>
</tr>
<tr>
<td>Received Threatening Messages</td>
<td>1.378</td>
<td>1.366</td>
<td>0.315</td>
<td>2015</td>
<td>0.753</td>
<td>992</td>
<td>1021</td>
<td>0.950</td>
<td>0.793</td>
<td>1.089</td>
<td>0.003</td>
</tr>
<tr>
<td>Time Online</td>
<td>2.279</td>
<td>2.649</td>
<td>-5.914</td>
<td>1994</td>
<td>0.000</td>
<td>983</td>
<td>1013</td>
<td>1.346</td>
<td>1.444</td>
<td>1.151</td>
<td>0.167</td>
</tr>
<tr>
<td>Usage of SMS</td>
<td>2.710</td>
<td>2.704</td>
<td>0.114</td>
<td>2003</td>
<td>0.910</td>
<td>986</td>
<td>1019</td>
<td>1.403</td>
<td>1.415</td>
<td>1.038</td>
<td>0.398</td>
</tr>
<tr>
<td>Usage of MMS</td>
<td>1.705</td>
<td>1.665</td>
<td>0.866</td>
<td>1959</td>
<td>0.387</td>
<td>966</td>
<td>995</td>
<td>1.033</td>
<td>1.021</td>
<td>1.024</td>
<td>0.710</td>
</tr>
<tr>
<td>Usage of Email</td>
<td>2.551</td>
<td>2.458</td>
<td>1.126</td>
<td>1956</td>
<td>0.104</td>
<td>962</td>
<td>996</td>
<td>1.298</td>
<td>1.250</td>
<td>1.078</td>
<td>0.238</td>
</tr>
<tr>
<td>Usage of Chatrooms</td>
<td>2.740</td>
<td>2.525</td>
<td>2.909</td>
<td>1969</td>
<td>0.004</td>
<td>972</td>
<td>988</td>
<td>1.601</td>
<td>1.678</td>
<td>1.056</td>
<td>0.253</td>
</tr>
<tr>
<td>Usage of Social Networks</td>
<td>3.924</td>
<td>4.132</td>
<td>-3.724</td>
<td>1999</td>
<td>0.000</td>
<td>984</td>
<td>1017</td>
<td>1.287</td>
<td>1.216</td>
<td>1.129</td>
<td>0.573</td>
</tr>
<tr>
<td>Usage of Phone</td>
<td>3.763</td>
<td>3.819</td>
<td>-1.204</td>
<td>2014</td>
<td>0.229</td>
<td>994</td>
<td>1022</td>
<td>1.040</td>
<td>1.063</td>
<td>1.045</td>
<td>0.489</td>
</tr>
<tr>
<td>TechAdvancement</td>
<td>1.298</td>
<td>1.359</td>
<td>-1.637</td>
<td>2021</td>
<td>0.102</td>
<td>999</td>
<td>1029</td>
<td>0.791</td>
<td>0.884</td>
<td>1.244</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*Mean 1 = Male; Mean 2 = Female

The results of the t-test confirmed that gender affects all the variables that were used to measure attachment to a mobile phone with females having higher means than males for most of the variables. Therefore, attachment to a mobile phone varies by gender. For frequency of mobile phone use, only the time learners spend using their mobile phones, the usage of chatrooms and the usage of social networks varied by gender. Again, this verifies the results seen in Table 13 above because gender may play a role in some of the predictors of mobile victimisation. The results of the t-test also showed that the technological advancement of the mobile phone and mobile victimisation did not differ by gender.

4.4.2 The Influencing Factors of Mobile Victimisation

4.4.2.1 Technological Advancement of the mobile phone

The histogram below (Figure 15) shows that 145 victimised learners owned or used smartphones (~79% of victimised learners); 6.6% of these victimised learners indicated owning or using a feature phone while 4.4% indicated owning or using a basic phone. The mobile phone that was the least used was the basic phone with only eight victimised learners owning or using one. Fifteen learners (~8.2%), however, indicated that they were not sure what type of mobile phone they used. They also did not answer the questions that asked them to specify if they had access to certain mobile facilities on their mobile phones.
Towards a Typology for Understanding Mobile Phone Victimisation in South African High Schools

Figure 15: Histogram showing Technological Advancement of mobile phones owned or used by victimised learners

For those learners who were found to be victimised, the average for technological advancement was closer to smartphones than any other mobile phone (as shown by the Tech Advancement value of ~1.4 in Table 15 below). This means that on average, the victimised learners owned or used smartphones. Table 15 also shows which mobile phone facilities the learners had access to on their mobile phones. These results indicated that most of the learners could access some or all of these mobile facilities on their mobile phones. In fact, 102 of the victimised learners (55.7%) could access all the features on their mobile phones. The Internet and Advanced Applications were the least accessible facilities.

Table 15: Descriptive statistics of the Variables that measured Mobile Technology Advancement

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
<th>Std.Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tech Advancement</td>
<td>181</td>
<td>1.406</td>
<td>1</td>
<td>4</td>
<td>0.911</td>
</tr>
<tr>
<td>Access to Games</td>
<td>179</td>
<td>1.028</td>
<td>1</td>
<td>2</td>
<td>0.165</td>
</tr>
<tr>
<td>Access to Emails</td>
<td>174</td>
<td>1.149</td>
<td>1</td>
<td>2</td>
<td>0.358</td>
</tr>
<tr>
<td>Access to Internet</td>
<td>153</td>
<td>1.052</td>
<td>1</td>
<td>2</td>
<td>0.223</td>
</tr>
<tr>
<td>Access to High Res Camera</td>
<td>176</td>
<td>1.045</td>
<td>1</td>
<td>2</td>
<td>0.209</td>
</tr>
<tr>
<td>Access to GPS</td>
<td>175</td>
<td>1.120</td>
<td>1</td>
<td>2</td>
<td>0.326</td>
</tr>
<tr>
<td>Access to Social Networks</td>
<td>175</td>
<td>1.069</td>
<td>1</td>
<td>2</td>
<td>0.253</td>
</tr>
<tr>
<td>Access to Built-In Apps</td>
<td>172</td>
<td>1.140</td>
<td>1</td>
<td>2</td>
<td>0.348</td>
</tr>
<tr>
<td>Access to Advanced Apps</td>
<td>166</td>
<td>1.114</td>
<td>1</td>
<td>2</td>
<td>0.319</td>
</tr>
</tbody>
</table>

*Tech Advancement: 1= Smartphone; 2= Feature phone; 3= Basic phone; 4= Not Sure.
*Access to Facilities: 1= Yes; 2= no

4.4.2.2 Attachment to the mobile phone

With regards to attachment to the mobile phone, descriptive statistics revealed that learners who are victimised, are somewhat attached to their mobile phones. All the variables measuring attachment,
including attachment itself, had a mean that is greater than three. This suggested that these learners are sometimes attached to their mobile phones in some or all of the ways described below (please refer to Table 16). The variables that showed the highest means were feeling connected to others; being comfortable when using a mobile phone; and feeling confident when using their mobile phones.

Table 16: Descriptive Statistics of variables measuring Attachment to a Mobile Phone for Victimised Learners

<table>
<thead>
<tr>
<th>Variable</th>
<th>Valid N</th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
<th>Std.Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment</td>
<td>183</td>
<td>3.459</td>
<td>1.7</td>
<td>5.0</td>
<td>0.688</td>
</tr>
<tr>
<td>Thinking of Mobile Phone</td>
<td>182</td>
<td>3.280</td>
<td>1.0</td>
<td>5.0</td>
<td>1.306</td>
</tr>
<tr>
<td>Using Mobile Phone For No Reason</td>
<td>180</td>
<td>3.294</td>
<td>1.0</td>
<td>5.0</td>
<td>1.133</td>
</tr>
<tr>
<td>Arguments arising because of mobile phone</td>
<td>179</td>
<td>3.204</td>
<td>1.0</td>
<td>5.0</td>
<td>1.227</td>
</tr>
<tr>
<td>Interrupt whatever I am doing</td>
<td>181</td>
<td>3.390</td>
<td>1.0</td>
<td>5.0</td>
<td>1.299</td>
</tr>
<tr>
<td>Feel Connected when using my phone</td>
<td>180</td>
<td>3.728</td>
<td>1.0</td>
<td>5.0</td>
<td>1.241</td>
</tr>
<tr>
<td>Unable To Control Usage</td>
<td>177</td>
<td>3.395</td>
<td>1.0</td>
<td>5.0</td>
<td>1.253</td>
</tr>
<tr>
<td>Feel distressed when not using mobile phone</td>
<td>182</td>
<td>3.294</td>
<td>1.0</td>
<td>5.0</td>
<td>1.380</td>
</tr>
<tr>
<td>Unable to Reduce Usage</td>
<td>182</td>
<td>3.110</td>
<td>1.0</td>
<td>5.0</td>
<td>1.251</td>
</tr>
<tr>
<td>Comfortable when using mobile phone</td>
<td>177</td>
<td>3.929</td>
<td>1.0</td>
<td>5.0</td>
<td>1.114</td>
</tr>
<tr>
<td>Confident when using mobile phone</td>
<td>181</td>
<td>3.972</td>
<td>1.0</td>
<td>5.0</td>
<td>1.157</td>
</tr>
</tbody>
</table>

1= Strongly disagree; 2= Disagree; 3= Sometimes; 4= Agree; 5= Strongly Agree

A correlation analysis was then conducted to examine the association between attachment to the mobile phone and mobile victimisation. Correlation analysis measures how strong the relationships between variables with monotonic relationships are (Hauke & Kossowski, 2011). More specifically, a Spearman’s correlation analysis was run as it is a nonparametric (distribution-free) rank statistic that may be used to identify and test the strength of a relationship between two sets of data (Hauke & Kossowski, 2011; Mukaka, 2012). The results of Spearman’s correlation analysis are shown in Table 17 below.
Table 17: Spearman’s Rank Order Correlations: Variables of Attachment to the Mobile Phone and Mobile Victimisation

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Victimisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Thinking of Mobile Phone</td>
<td>0.130</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Using Mobile Phone For No Reason</td>
<td>0.022</td>
<td>0.234</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Arguments arising because of mobile phone</td>
<td>0.108</td>
<td>0.183</td>
<td>0.331</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Interrupt whatever I am doing</td>
<td>0.198</td>
<td>0.229</td>
<td>0.156</td>
<td>0.426</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Feel Connected when using my phone</td>
<td>0.184</td>
<td>0.141</td>
<td>0.225</td>
<td>0.144</td>
<td>0.238</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Unable To Control Usage</td>
<td>0.116</td>
<td>0.242</td>
<td>0.216</td>
<td>0.243</td>
<td>0.347</td>
<td>0.395</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Feel distressed when not using mobile phone</td>
<td>0.138</td>
<td>0.250</td>
<td>0.185</td>
<td>0.230</td>
<td>0.396</td>
<td>0.204</td>
<td>0.374</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Unable to Reduce Usage</td>
<td>0.056</td>
<td>0.171</td>
<td>0.144</td>
<td>0.155</td>
<td>0.281</td>
<td>0.346</td>
<td>0.301</td>
<td>0.365</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>10. Comfortable when using mobile phone</td>
<td>0.055</td>
<td>0.166</td>
<td>0.228</td>
<td>0.104</td>
<td>0.112</td>
<td>0.385</td>
<td>0.197</td>
<td>0.124</td>
<td>0.194</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Confident when using mobile phone</td>
<td>0.082</td>
<td>0.163</td>
<td>0.312</td>
<td>0.121</td>
<td>0.185</td>
<td>0.388</td>
<td>0.215</td>
<td>0.170</td>
<td>0.250</td>
<td>0.581</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Received Threatening Messages</td>
<td>0.593</td>
<td>0.095</td>
<td>0.112</td>
<td>0.185</td>
<td>0.208</td>
<td>0.108</td>
<td>0.105</td>
<td>0.126</td>
<td>0.156</td>
<td>-0.039</td>
<td>0.116</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Received Threatening Calls</td>
<td>0.644</td>
<td>0.146</td>
<td>-0.027</td>
<td>0.013</td>
<td>0.099</td>
<td>0.062</td>
<td>0.023</td>
<td>0.027</td>
<td>0.025</td>
<td>-0.024</td>
<td>0.007</td>
<td>0.158</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Received Insulting Messages</td>
<td>0.508</td>
<td>0.026</td>
<td>0.088</td>
<td>0.167</td>
<td>0.174</td>
<td>0.239</td>
<td>0.159</td>
<td>0.132</td>
<td>0.086</td>
<td>0.230</td>
<td>0.100</td>
<td>0.030</td>
<td>0.034</td>
<td></td>
</tr>
</tbody>
</table>

Table 17 shows that mobile victimisation has significant relationships only with those who indicated that they interrupt what they are doing when they are contacted and those who feel connected to others when they use their mobile phones. The individual mobile victimisation variables (receiving threatening messages and calls and receiving insulting messages), however, show significant relationships with many of the attachment variables than victimisation as a whole.

For instance, those who receive threatening messages tend to be those who have had arguments arise with others because of their phone use and they often interrupt what they are doing when they are contacted. In addition, they struggle to reduce the number of times they use their mobile phones. Those who receive threatening calls are those learners who often think about their mobile phones when they are not using them. And those who receive insulting messages are those learners who have had arguments arise with others because of their phone use. They indicated that they interrupt what they are doing when they are contacted. They also feel connected to others when they use their mobile phones and are unable to control their use of their mobile phone; and feel comfortable using technology. These results indicate that those learners that are attached to their mobile phones in many ways tend to be victimised more through receiving insulting messages more than through threatening calls and messages.

4.4.2.3 Frequency of Mobile Phone Use

The mobile facilities that victimised learners used frequently were social networks; chatrooms and the mobile phone for making or receiving calls. These were the most commonly used facilities as they had
Towards a Typology for Understanding Mobile Phone Victimisation in South African High Schools

the highest means of all the facilities (see Table 18 below). The mobile phone facilities that were used the least were MMS, e-mails and Short Message Service (SMS).

Table 18: Descriptive Data: Variables of Frequency of Use of a Mobile Phone

<table>
<thead>
<tr>
<th>Variable</th>
<th>Descriptive Statistics – Victimised learners – Frequency of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>TimeOnline</td>
<td>179</td>
</tr>
<tr>
<td>Usage of SMS</td>
<td>178</td>
</tr>
<tr>
<td>Usage of MMS</td>
<td>171</td>
</tr>
<tr>
<td>Usage of Email</td>
<td>166</td>
</tr>
<tr>
<td>Usage of Chatrooms</td>
<td>172</td>
</tr>
<tr>
<td>Usage of Social Networks</td>
<td>178</td>
</tr>
<tr>
<td>Usage of Phone</td>
<td>181</td>
</tr>
</tbody>
</table>

1= Never; 2= Rarely; 3= Sometimes; 4= Often; 5= Always

The learners were also asked about the amount of time they spent using their mobile phones on a daily basis: 52 of the victimised learners (28.4%) indicated that they spent more than 10 hours using their mobile phones on a daily basis; 39 learners (21.3%) indicated spending 3 – 5 hours; and 6 – 8 hours on their mobile phones. Moreover, 36 learners (20.0%) indicated spending 0 – 2 hours daily while 13 learners (7.1%) indicated 8 – 10 hours (please refer to Table 19 below).

Table 19: Amount of time spent by victimised learners on their mobile phone in a day

<table>
<thead>
<tr>
<th>Time Spent Using mobile phone</th>
<th>Number of learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 2hrs</td>
<td>36</td>
</tr>
<tr>
<td>3 - 5 hrs</td>
<td>39</td>
</tr>
<tr>
<td>6 - 8hrs</td>
<td>39</td>
</tr>
<tr>
<td>8 - 10hrs</td>
<td>13</td>
</tr>
<tr>
<td>More than 10 hrs</td>
<td>52</td>
</tr>
</tbody>
</table>

4.4.2.3.1 Theory of Planned Behaviour

As stated in Chapter 2, the assumption put forth in this thesis is that behavioural, normative and control beliefs determine the frequency of mobile phone use. Therefore, data regarding these beliefs was collected so that the frequency of mobile phone use may be assessed and understood. It should be noted that while assessing the frequency of mobile phone use using the Theory of Planned Behaviour, all data was used and not just data for the victimised learners. This is because the frequency of use is what is being investigated at this instance. Therefore, it would be useful to distinguish between the frequent users (who are assumed more likely to be bullied) and infrequent users of mobile.
First, a regression analysis was run to validate whether or not the beliefs had significant relationships with the frequency of mobile use. Regression analysis is useful when explaining the relationship between a dependent and independent variable (Faraway, 2002), i.e. it tests the causal effect of one variable upon another (Sykes, 1993). When \( p = 1 \), it is referred to as a simple regression but when \( p > 1 \), it is a multiple regression. If there are many dependent variables, it is then called a multivariate multiple regression. The objectives of running a regression analysis include predicting future observations and assessing the effect of or the relationship between independent variables on the dependent variable. It also gives a general description of the data (Faraway, 2002).

The frequency of mobile phone use was determined by averaging the values of the variables that measured the frequency of mobile phone use. Additionally, all behavioural, normative and control beliefs were averaged to give their mean value. Table 20 below presents the results of the regression analysis.

<table>
<thead>
<tr>
<th>Table 20: Regression Analysis: Frequency of phone use Vs. behavioural, normative and control beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=2032</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Intercept</td>
</tr>
<tr>
<td>AVG Behaviour Beliefs</td>
</tr>
<tr>
<td>AVG Normative Beliefs</td>
</tr>
<tr>
<td>AVG Control Beliefs</td>
</tr>
</tbody>
</table>

The results of the regression analysis revealed that the behavioural and normative beliefs have a significant relationship with the frequency of use of mobile phones. The control beliefs did not show a significant relationship with the frequency of mobile phone use. When run alone, however, the regression analysis shows a relationship (please refer to Table 21).

<table>
<thead>
<tr>
<th>Table 21: Regression Analysis: Frequency of phone use vs Control Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=2070</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Intercept</td>
</tr>
<tr>
<td>AVG Control Beliefs</td>
</tr>
</tbody>
</table>

A t-test was then run to compare the means between frequent users (where frequent users have frequency of use greater than or equal to 2.5) and infrequent users (where frequent users have frequency of use less than 2.5). The reason for running a t-test, in this case, is to determine whether
or not the differences in the means between frequent and infrequent users are of any significance. Once determined, the beliefs of frequent users of mobile phones will be determined thereby giving a possible explanation for why these learners are frequent users. Presented below are the results of the t-tests (see Table 22 below).

### Table 22: T-test results: The use of TPB on frequency of mobile phone use

<table>
<thead>
<tr>
<th>Variable</th>
<th>Infrequent Users</th>
<th>Frequent Users</th>
<th>t-value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attitude /Behavioural Beliefs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate how likely the following would occur if you constantly used a mobile phone or spent a lot of time on your mobile phone in the next week</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using time effectively</td>
<td>649 2.49</td>
<td>1376 2.977</td>
<td>-9.820</td>
<td>0.000</td>
</tr>
<tr>
<td>Being distracted</td>
<td>645 3.163</td>
<td>1360 3.331</td>
<td>-3.034</td>
<td>0.002</td>
</tr>
<tr>
<td>Being involved mobile misconduct</td>
<td>640 1.799</td>
<td>1349 2.093</td>
<td>-5.747</td>
<td>0.000</td>
</tr>
<tr>
<td>Receiving information (e.g., important news)</td>
<td>652 3.304</td>
<td>1378 3.792</td>
<td>-8.892</td>
<td>0.000</td>
</tr>
<tr>
<td>Receiving assistance in an emergency</td>
<td>649 2.986</td>
<td>1381 3.256</td>
<td>-4.360</td>
<td>0.000</td>
</tr>
<tr>
<td>Being caught using your phone for inappropriate behaviour</td>
<td>651 1.656</td>
<td>1382 1.85</td>
<td>-3.735</td>
<td>0.000</td>
</tr>
<tr>
<td><strong>Normative/Subjective Beliefs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate how likely it is that the following six referents would approve of you constantly using a mobile phone in the next week</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends</td>
<td>652 3.489</td>
<td>1408 3.895</td>
<td>-7.684</td>
<td>0.000</td>
</tr>
<tr>
<td>Family Members</td>
<td>653 2.921</td>
<td>1399 3.425</td>
<td>-8.413</td>
<td>0.000</td>
</tr>
<tr>
<td>Partner/Boyfriend/Girlfriend</td>
<td>634 2.871</td>
<td>1373 3.389</td>
<td>-7.742</td>
<td>0.000</td>
</tr>
<tr>
<td>Class Mates</td>
<td>650 3.106</td>
<td>1395 3.431</td>
<td>-5.797</td>
<td>0.000</td>
</tr>
<tr>
<td>Other learners</td>
<td>649 2.834</td>
<td>1392 3.198</td>
<td>-6.345</td>
<td>0.000</td>
</tr>
<tr>
<td>Teachers</td>
<td>649 1.724</td>
<td>1395 1.875</td>
<td>-2.721</td>
<td>0.007</td>
</tr>
<tr>
<td><strong>Perceived behavioural control/Control Beliefs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate how likely the following factors could prevent you from using a mobile phone in the next week.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk of being bullied</td>
<td>657 1.965</td>
<td>1408 2.051</td>
<td>-1.537</td>
<td>0.124</td>
</tr>
<tr>
<td>Parents/Guardians</td>
<td>654 2.847</td>
<td>1398 2.963</td>
<td>-1.939</td>
<td>0.053</td>
</tr>
<tr>
<td>Demanding academic schedule</td>
<td>647 3.158</td>
<td>1352 3.12</td>
<td>0.486</td>
<td>0.627</td>
</tr>
<tr>
<td>Lack of Airtime</td>
<td>655 3.118</td>
<td>1401 3.136</td>
<td>-0.317</td>
<td>0.751</td>
</tr>
<tr>
<td>Lack of interest/necessity to communicate with others</td>
<td>653 2.914</td>
<td>1397 2.844</td>
<td>1.156</td>
<td>0.248</td>
</tr>
<tr>
<td>Access to a mobile phone</td>
<td>648 2.785</td>
<td>1387 3.115</td>
<td>-4.648</td>
<td>0.000</td>
</tr>
</tbody>
</table>

1= Extremely Unlikely; 2= Unlikely; 3= Sometimes; 4= Likely; 5= Extremely Likely
4.4.2.3.1.1 Attitude /Behavioural Beliefs

The means of the t-test revealed that the behaviours that seemed most unlikely for both the frequent and infrequent users were being caught using the mobile phone for inappropriate behaviour, being involved in misconduct using the mobile phone and using time effectively. Whereas being distracted, receiving information and receiving assistance in an emergency seemed likely for both the groups. The averages for the frequent users were higher than those for the infrequent users on all six behavioural beliefs. Frequent users were more likely than infrequent users to report that all three advantages (using time effectively, receiving information and receiving assistance in an emergency) and, interestingly, all three disadvantages (being distracted, being caught using the mobile phone for inappropriate behaviour and being involved in misconduct using the mobile phone) were likely to occur if they used their mobile phones.

4.4.2.3.1.2 Normative/Subjective Beliefs

The results presented above show that for both frequent and infrequent mobile phone users, teacher where the least unlikely to approve of the constant use of mobile phones by learners during the week. For infrequent users, other learners, family members and the learners' partners (boyfriend or girlfriend) would also disapprove of the constant use of the mobile phone. Frequent users indicated that family members, partners (boyfriend or girlfriend), and other learners would sometimes support their constant use of their mobile phones during the week. For both the frequent and infrequent users, friends and classmates would sometimes approve of them constantly using their mobile phones, more especially their friends.

Frequent and infrequent users of mobile phones differed significantly on all six normative beliefs. The frequent users had higher means for all normative beliefs. This indicates that frequent users have more approval of constantly using their mobile phones during the week from friends, family members, partners, classmates, other learners and teachers than infrequent users.

4.4.2.3.1.3 Perceived behavioural control/Control Beliefs

Learners who used a mobile phone frequently and infrequently differed significantly on only one of the six control beliefs. Frequent users were more likely than infrequent users to report that access to a mobile phone would prevent them from using their mobile phone. The risk of being bullied, parents or guardians, academics, lack of airtime and the lack of interest in communicating with others did not have a significant effect on the frequency of use of a mobile phone.
These results have shown that there are significant differences between frequent and infrequent users of mobile phones. They have also given understanding of frequent users of mobile phones. For instance, frequent users have more approval to use their mobile phones constantly that infrequent users. They also find that using mobile phones is beneficial to them and their lives.

4.4.2.4. Mobile Victimisation
Victimised learners were victimised through the receiving of insulting messages, threatening phone calls and threatening messages. More learners indicated that they were victimised through threatening phone calls than through insulting messages or threatening messages (see Table 23 below). These results also showed that receiving insulting messages had the highest severity of all three methods (as indicated by the mean value of 3.525) while receiving threatening calls had the lowest (3.262).

The high incidence of insulting messages may be due to that there are many online mobile platforms that may be used to send messages. These include instant messaging platforms such as Mxit, WhatsApp or simple text messages. These platforms may also be used anonymously and may be used to share information almost anytime and anywhere making mobile bullying a more complicated form of aggression to grapple. Barlett (2015) found that anonymity (which is defined as “the inability of others to identify an individual or for others to identify one’s self” (Christopherson, 2007: 3040)) predicts cyberbullying frequency and mediates the relation between instant messaging frequency and cyberbullying behaviour. This may explain the results seen in Table 23, i.e., that learners are more frequently bullied through receiving insulting and threatening messages than phone calls.

<table>
<thead>
<tr>
<th>All Victimised Learners</th>
<th>N</th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
<th>Std.Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Received Insulting Messages</td>
<td>181</td>
<td>3.525</td>
<td>1</td>
<td>5</td>
<td>1.093</td>
</tr>
<tr>
<td>Received Threatening Call</td>
<td>183</td>
<td>3.262</td>
<td>1</td>
<td>5</td>
<td>1.194</td>
</tr>
<tr>
<td>Received Threatening Messages</td>
<td>179</td>
<td>3.391</td>
<td>1</td>
<td>5</td>
<td>1.113</td>
</tr>
</tbody>
</table>

1= Never; 2= Rarely; 3= Sometimes; 4= Often; 5= Always

4.4.3 Testing Mobile Victimisation and its Predictors
4.4.3.1 Regression and Correlation Analysis
To assess the relationships that exist between variables (i.e. the propositions), regression analyses were conducted. These were run in order to test and prove that indeed, the type of mobile phone one
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has, how attached they are to their mobile phone and how frequent they use their mobile phone (independent variables) will affect the extent to which they are victimised (dependent variable) through mobile bullying. The results of the regression analysis are presented Table 24 below.

Table 24: Regression Analysis: Mobile Victimisation vs predictors

<table>
<thead>
<tr>
<th>Regression Analysis - All Data</th>
<th>Regression Analysis - Victimised Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>R²</td>
<td>0.07</td>
</tr>
<tr>
<td>F(3,2069)=52.988 p</td>
<td></td>
</tr>
<tr>
<td>b*</td>
<td>Std.Err.</td>
</tr>
<tr>
<td>Intercept</td>
<td>3.70</td>
</tr>
<tr>
<td>Frequency</td>
<td>0.153</td>
</tr>
<tr>
<td>Attachment</td>
<td>0.169</td>
</tr>
<tr>
<td>Advancement</td>
<td>0.059</td>
</tr>
<tr>
<td>R²</td>
<td>0.116</td>
</tr>
<tr>
<td>F(3,177)=7.794 p</td>
<td>2.5</td>
</tr>
<tr>
<td>b*</td>
<td>Std.Err.</td>
</tr>
<tr>
<td>Intercept</td>
<td>2.180</td>
</tr>
<tr>
<td>Frequency</td>
<td>0.226</td>
</tr>
<tr>
<td>Attachment</td>
<td>0.177</td>
</tr>
<tr>
<td>Advancement</td>
<td>-0.071</td>
</tr>
</tbody>
</table>

The results shown in Table 24 verify that generally, all three predictors have a significant relationship with victimisation (results for “Regression Analysis – All Data”). However, R² (0.07) is low and this may be because the data that is used to conduct the regression analysis is that of the entire data set, including learners that are not victims of mobile bullying. In addition, the independent variables (frequency, attachment and advancement) may possibly have interactions between themselves that impact each other, in turn, affecting the dependent variable. This is seen as individually, each construct significantly explains mobile victimisation, but as a whole, R² reveals that this impact is not so great.

The results for just those learners who are victims of mobile bullying show that only attachment to a mobile phone and frequency of use of a mobile phone have significant relationships. When run separately, similar results were shown where mobile advancement showed no significant relationship with victimisation.

In an attempt to find variables between mobile victimisation and technological advancement that could have relationships between one another, a correlation analysis was run. This was done so that any correlations between some of the variables used to measure the two constructs may be seen and analysed. The results of Spearman’s correlation are presented in Table 25 below.

Table 25: Correlation Analysis results: Victimisation vs. variables of Technological Advancement

| Spearman Rank Order Correlations for victimised learners and variables used to measure Technological Advancement |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Variable | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. |
| 1. Victimisation | 1.000 | | | | | | | | | |
| 2. Tech Advancement | -0.086 | 1.000 | | | | | | | | |
The results shown in Table 25 indicate that the type of mobile phone that one may have may not have a significant effect on mobile victimisation as was proposed earlier. This is shown as there are no mobile facilities that show a significant relationship with mobile victimisation or the variables that measured mobile victimisation. This may be due to the high number of smartphone ownership than any other mobile phone being used by the learners.

More correlations were tested for the variables used to measure the frequency of mobile phone use and attachment to the mobile phone. The results presented in Table 26 below are those of the variables that showed significant relationships with mobile victimisation. For attachment, the interruption of what victims were doing when they were contacted and feelings of connectedness to others when they used their mobile phones showed significant relationships with mobile victimisation.

For Frequency of mobile phone use, the use of SMS and Chatrooms showed significant relationships with victimisation.

<table>
<thead>
<tr>
<th>Variable</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Victimisation</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Interruption</td>
<td>0.198</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Connected</td>
<td>0.284</td>
<td>0.238</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency of Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Usage of SMS</td>
<td>0.261</td>
<td>0.125</td>
<td>-0.015</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>5. Usage of Chatrooms</td>
<td>0.284</td>
<td>0.221</td>
<td>0.183</td>
<td>0.205</td>
<td>1.000</td>
</tr>
</tbody>
</table>

4.5 Testing the Mobile Victimisation Typology – Cluster Analysis

Often in literature, cluster analysis and mixture analysis may be conducted to test a typology. It was, therefore, important to consider both these methods as a way in which the proposed typology, i.e. the MVT, may be tested. An example where these methods have been used to test a typology is the case in which Holtzworth-Munroe and Stuart (1994) proposed a "metatypology" (typology with multiple criteria) for batterers. Their typology was based on three criteria that classified batterers into three groups based on the criteria and other factors. To test this typology, Hamberger, Lohr, Bonge
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and Tolin (1996) and Tweed and Dutton (1998) used cluster analysis while Waltz, Babcock, Jacobson and Gottman (2000) used mixture analysis. Mixture analysis and cluster analysis are similar in that they group similar elements together based on multiple variables. They differ in that mixture analysis explicitly tests a model and renders goodness-of-fit statistics to test how well the data analysed fits the model. In addition, mixture analysis requires the use of non-standardised variables (Waltz et al., 2000).

Although these methods are similar with few differences between them, the researcher found it necessary to test the MVT using cluster analysis. This was because the data collected for the different variables was measured on different Likert scales (for example, 1 to 5 and 1 to 4). Running the data collected as is (unstandardised) in mixture analysis would result in biases in the results as some variables would have more influence on the results than others. It was, therefore, necessary to standardise these variables so that all variables were on the same scale, thereby ensuring consistency and equal effect by all variables and cases to the results. According to Romesburg (2004), standardisation is important in a cluster analytic study as it equalises the size or magnitude of variables and the variability of these variables. Romesburg (2004) states that standardisation strips variables of their identity, changes their numerical values and recasts them in a dimensionless form thereby removing any arbitrary effect a variable may have on the data. Therefore, as data was to be standardised, cluster analysis was the better method to analyse the MVT.

Cluster analysis refers to grouped mathematical algorithms that perform two broad and distinct functions. Firstly, it quantifies similarities between individuals and their characteristics within a population based on multiple (specified) variables. Secondly, it groups these individuals into clusters so that the similarities between the individuals in the group are strong and minimal with those not in the group (Haldar, Pavord, Shaw, Berry, Thomas, Brightling, Wardlaw, & Green, 2008; Mulder, 2011). Cluster analysis is an exploratory data analysis tool that is said to be a useful tool in discovering structures in data without giving an explanation or interpretation (Statsoft, 2015). An advantage of cluster analysis is that being a numerical classifier maintains objectivity so that no one variable is considered more critical than the other (no bias). Cluster analysis also minimises a priori bias due to using a methodology that includes multiple variables with equal weights assumed (Haldar et al., 2008). There are three general categories of cluster analysis methods, i.e. joining (tree clustering), two-way joining (block clustering) and k-means clustering (Statsoft, 2015). For this study k-means clustering was used and is described briefly below.
4.5.1 K-means Clustering

K-means algorithm addresses research in which the number of clusters (k) one is looking for may be specified. This method produces exactly k different clusters of greatest possible distinction. When running the k-means algorithm, initially, there will be k random clusters. Each object in a cluster is then placed such that its distance is closest to the centre that shares the strongest similarities to itself (Kotsiantis & Pintelas, 2004). The process then moves and assigns objects between these clusters, the goal of this being to both minimise variability within each cluster and maximise variability between each cluster.

The benefits of k-means algorithm are that: it is effectively efficient in processing large data sets; it terminates at a local optimum when no other changes may be done to the clusters; and it is sensitive to noise (Kotsiantis & Pintelas, 2004). This method is thought to be the “opposite of Analysis of Variance (ANOVA)”. This is so because the significance test run in ANOVA evaluates the variability that exists between groups against the variability that exists within groups in order to prove that the differences between groups are significant (Statsoft, 2015). In turn, k-means clustering moves objects around groups to attain the most significant ANOVA results.

Due to the large data set (2079 learners) and the MVT grouping victims of mobile bullying into three categories (i.e., k is known and may be directly specified), k-means was an appropriate clustering method for the current study. The results produced by k-means clustering also offer a lot in that the ANOVA results it produces may be very useful in indicating what is significant or not.

4.5.1.1 Applying K-Means Clustering in Testing the Mobile Victimisation Typology

After the data was standardised to produce equalised magnitudes and variability of input variables, K-means clustering was run and produced the results shown in Table 27 below. The results of a k-means clustering are analysed by initially assessing the results of the ANOVA in order to indicate which results are significant or not. According to Pitman (1938) and Scott and Knott (1974), a p-value less than or equal to 0.05 indicates significance. Once the dimensions that are significant are noted, their means are examined for each cluster to determine whether or not there exist a true distinction between clusters (Statsoft, 2015).
Table 27: Results of Cluster Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Analysis of Variance</th>
<th>Cluster Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Between SS</td>
<td>Within SS</td>
</tr>
<tr>
<td><strong>Technological Advancement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tech Advancement</td>
<td>18.072</td>
<td>2</td>
</tr>
<tr>
<td>Access to Games</td>
<td>16.221</td>
<td>2</td>
</tr>
<tr>
<td>Access to Emails</td>
<td>6.117</td>
<td>2</td>
</tr>
<tr>
<td>Access to Internet</td>
<td>47.444</td>
<td>2</td>
</tr>
<tr>
<td>Access to High Res Camera</td>
<td>10.243</td>
<td>2</td>
</tr>
<tr>
<td>Access to GPS</td>
<td>18.376</td>
<td>2</td>
</tr>
<tr>
<td>Access to Social Network</td>
<td>17.985</td>
<td>2</td>
</tr>
<tr>
<td>Access to Built-In Apps</td>
<td>6.468</td>
<td>2</td>
</tr>
<tr>
<td>Access to Advanced Apps</td>
<td>19.077</td>
<td>2</td>
</tr>
<tr>
<td><strong>Frequency of mobile phone use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Online</td>
<td>15.217</td>
<td>2</td>
</tr>
<tr>
<td>Usage of MMS</td>
<td>6.726</td>
<td>2</td>
</tr>
<tr>
<td>Usage of Chatrooms</td>
<td>12.646</td>
<td>2</td>
</tr>
<tr>
<td>Usage of Social Networks</td>
<td>6.572</td>
<td>2</td>
</tr>
<tr>
<td><strong>Attachment to mobile phone</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thinking of Mobile Phone</td>
<td>12.827</td>
<td>2</td>
</tr>
<tr>
<td>Using Mobile Phone For No Reason</td>
<td>12.185</td>
<td>2</td>
</tr>
<tr>
<td>Arguments arising because of mobile phone</td>
<td>21.125</td>
<td>2</td>
</tr>
<tr>
<td>Interrupt whatever I am doing</td>
<td>25.679</td>
<td>2</td>
</tr>
<tr>
<td>Feel Connected when using my phone</td>
<td>44.940</td>
<td>2</td>
</tr>
<tr>
<td>Unable To Control Usage</td>
<td>30.700</td>
<td>2</td>
</tr>
<tr>
<td>Feel distressed when not using mobile phone</td>
<td>31.081</td>
<td>2</td>
</tr>
<tr>
<td>Unable To Reduce Usage</td>
<td>19.886</td>
<td>2</td>
</tr>
<tr>
<td>Comfortable when using mobile phone</td>
<td>19.445</td>
<td>2</td>
</tr>
<tr>
<td>Confident when using mobile phone</td>
<td>15.858</td>
<td>2</td>
</tr>
<tr>
<td><strong>Victimisation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receive Insulting Messages</td>
<td>7.869</td>
<td>2</td>
</tr>
<tr>
<td>Receive Threatening Messages</td>
<td>6.946</td>
<td>2</td>
</tr>
</tbody>
</table>

*Bold values represent positive values
The variables that had p-values greater than 0.05 were the use of SMS, use of e-mails, use of the mobile phone for making and receiving phone calls and receiving threatening phone calls. Thus, these variables were not significant and were excluded from the cluster analysis that was run to produce results where all the variables were significant (Table 27). Also, due to standardisation, the values of the means are either positive or negative values, where positive values represent responses that are above average and negative values are below average. The “bold” values in Table 27 represent the positive values. Cluster 2, for instance, is above average in all the variables measured except for access to resolution cameras.

4.5.1.2 Technological advancement across the clusters

For technological advancement, Cluster 1 learners had above average technological advancement as well as access to the features of a mobile phone. The results indicated that of all the mobile facilities that they had on their mobile phones, they had the most access to GPS (Global Positioning Systems) and advanced applications and the least access to games and built-in applications. Learners in Cluster 2 also had above-average technological advancement and access to the features of a mobile phone except high-resolution cameras whose access was below average. Cluster 3 learners had below average technological advancement and access to all the mobile features of a mobile phone, suggesting that their mobile phones were the least technologically advanced of all the clusters.

4.5.1.3 Frequency of mobile phone use across the clusters

Cluster 1 learners were the least frequent users of their mobile phones. These learners performed below average in the usage of all the mobile applications and in the amount of time they spent using their mobile phones. Cluster 2 learners were above average users of all mobile applications. These learners used chatrooms the most while MMS was used the least. In addition, these learners spent a lot of time on their mobile phones, suggesting that they were frequent users of their mobile phones. For Cluster 3, the amount of time the learners spent on their mobile phones and the use of mobile phone applications were below average except for the use of MMS, which was above average.

4.5.1.4 Attachment to a mobile phone across the clusters

In terms of attachment to a mobile phone, Cluster 1 learners seemed to be the least attached to their mobile phones. These learners mainly did not feel connected to others while using their mobile phones and they felt little distress when they were without their mobile phones. Cluster 2 learners
seemed to be strongly attached to their mobile phones as shown by all the measures of attachment being above average (Table 27 above). These learners felt strongly connected to others when they used their mobile phones, were unable to control the usage of their mobile phones and were very comfortable using their mobile phones. For Cluster 3, attachment to a mobile phone was above average for most of the measures of attachment except for thinking about their mobile phones, using their mobile phones for no reason, having arguments due to their mobile phone use and interrupting whatever they were doing to use their mobile phones which were below average.

4.5.1.5 Mobile victimisation across the clusters
Mobile victimisation for Cluster 1 learners was below average. For Cluster 2, mobile victimisation was above average, indicating that these learners suffered the most from mobile bullying, both through receiving both insulting and threatening messages. Cluster 3 learners also suffered from below-average mobile victimisation and were victimised less through receiving threatening messages than through receiving insulting messages.

4.5.5 Description of the Clusters
4.5.5.1 Cluster 1
Cluster 1 was the second least mobile victimised cluster of all the three clusters identified (Table 27). This cluster had 63 learners in which 51.7% of these learners were males and 48.2% were females. The learners in this cluster belonged to all the grades (Grade 8 – 12), with approximately 54% of these learners being in Grades 8 and 9 alone and the rest falling into the other grades. The average grade for the learners in this cluster was Grade 9. Furthermore, the learners in this cluster were of the average age of between 15 years and 16 years.

The learners in this cluster had the most technologically advanced mobile phones and had the most access to all the mobile applications of a mobile phone. This implied that the learners in this cluster were predominately owners and users of smartphones. These learners spent a below-average amount of time on their mobile phones and had below average usage of all the mobile features on their mobile phones. The learners in this cluster were also found to be the least attached to their mobile phones. Being distressed when they were without their mobile phones had the least impact on the attachment that they had to their mobile phones. The greatest forms of attachment that they showed towards their mobile phones were the comfort and confidence they had when using their mobile phones. With regards to victimisation, these learners received more insulting messages than threatening messages.
4.5.5.2 Cluster 2

Cluster 2 was the most mobile victimised cluster of the three clusters. Cluster 2 contained 50 learners of which 52% of the learners in this cluster were found to be females. The learners in this cluster belonged to all the grades (Grade 8 to 12) with the majority of these learners (~76%) belonging to Grades 8 to 10. The average grade for the learners was Grade 9. Furthermore, the average age of these learners was between 15 years and 16 years.

The learners in Cluster 2 had technologically advanced mobile phones. The access they had to most mobile features on their mobile phones was above average with advanced applications, the internet and e-mails being the most accessible applications. However, high-resolution cameras were the only mobile feature whose access was below average. Of the three clusters, these individuals spent the most amount of time on their mobile phones and had the most use of the mobile features of a mobile phone. While on their mobile phones, they used chatrooms and social networking applications more frequently than MMS. They were also the most attached to their mobile phones in all the measures of attachment. Their feelings of connectedness and their inability to control mobile phone usage were the strongest form of attachment they showed while thinking about their mobile phones was the weakest. These learners were the most victimised through both receiving threatening messages and receiving insulting messages.

4.5.5.3 Cluster 3

Cluster 3 was the least mobile-victimised cluster of the three clusters. It consisted of seven learners and was the smallest cluster. Three of these learners were males (42.8%) while four were females (57.2%). In this cluster, 85.7% of the learners (six out of the seven) were in Grade 8. The average grade for this cluster was grade 8 and the average age was between 15 years and 16 years.

The learners in Cluster 3 had the least technologically advanced mobile phones of all the clusters, suggesting that these learners were predominantly owners or users of basic mobile phones or mobile phones they were not certain what advancement they were. These learners had below-average access to all of the features on a mobile phone, most especially the internet and games. The results in Table 27 also indicated that these learners rarely used their mobile phones and that MMS was the most frequently used mobile application on their mobile phones while chatrooms were the least.
With regards to attachment to their mobile phones, these learners were only attached to their mobile phones through their strong feelings of connectedness to others when using their mobile phones. They also exhibited an inability to control or reduce their mobile phone usage, feelings of distress when they were not using their mobile phones and confidence and comfort when using their mobile phones.

With regards to mobile victimisation, these learners experienced below average mobile victimisation, indicating that they were the least mobile victimised learners of all the clusters (please refer to Table 28 below for the summary of the cluster analysis results).

<table>
<thead>
<tr>
<th>Cluster Number</th>
<th>Mobile Phone Advancement</th>
<th>Frequency of Mobile Phone Use</th>
<th>Attachment to Mobile Phone</th>
<th>Mobile Victimisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Most Advanced</td>
<td>Least Frequent</td>
<td>Least Attached</td>
<td>Average Victimisation</td>
</tr>
<tr>
<td>2</td>
<td>Advanced</td>
<td>Most Frequent</td>
<td>Most Attached</td>
<td>Most Mobile Victimisation</td>
</tr>
<tr>
<td>3</td>
<td>Least Advanced</td>
<td>Average Frequency</td>
<td>Average Attachment</td>
<td>Least Mobile Victimisation</td>
</tr>
</tbody>
</table>

4.5.6 Discussion of Cluster Analysis Results and the Mobile Victimisation Typology

When assessing the results of the cluster analysis, Cluster 1 had similar characteristics as those learners in the MVT who were the least victimised as a result of being "less frequent users of their mobile phones" and having "low attachment to their mobile phones". These learners have the characteristics of the "innocent victims" in the MVT. Learners in Cluster 2 were the most victimised as a result of "frequent mobile phone use" and "strong attachment" to a mobile phone. In addition, these learners used technologically advanced mobile phones, making them fit into the category of "high contributing victims" in the MVT. Finally, the learners in Cluster 3 exhibited the characteristics of "low contributing victims" in the MVT as they had below average frequency of mobile phone use and below-average attachment to a mobile phone.

The results of the cluster analysis confirmed the results of the regression analysis (Table 24), i.e. as the frequency of mobile phone use and the attachment to a mobile phone increase, mobile victimisation increases. This proves that the claims made by Li (2007) regarding frequency of mobile phone use as a significant predictor of mobile victimisation are true and that they apply in a South African context. It also confirms that the attachment to a mobile phone predicts mobile victimisation, as Takao et al. (2009) stated. The technological advancement of a mobile phone, however, did not show a simple and direct relationship with mobile victimisation as proposed. This is demonstrated in
the results of the cluster analysis where the technological advancement of the mobile phones of learners in Cluster 1 (innocent victims), Cluster 2 (high contributing victim) and Cluster 3 (low contributing victims) were essentially most advanced, advanced and least advanced respectively. This may be due to the misunderstanding that the learners may have had in the differences between the three types of mobile phones.

According to the Balancing Act (2014), a basic phone’s capability are simple and are that of voice calling and sending SMSs. A feature phone is a mobile phone that has similar capabilities of a basic phone but also incorporates features such as internet accessibility and stores and plays music but lacks the advanced capabilities of a smartphone. A smartphone is a mobile phone that functions in the same manner as a computer, typically having a large screen and an operating system that runs general purpose applications. These definitions show how the lines between the three categories of mobile phones available are blurred. In fact, according to the Balancing Act (2014), there is a blurred line already that exists between feature phones and smartphone and this may be seen between feature phones and basic phones too. This may have then led to the results that were observed in the technological advancement of all three clusters. However, although not the most advanced of all the clusters, learners in Cluster 2 (high contributing victims) seemed to have technologically advanced mobile phones and were the most mobile victimised. This was somewhat expected as the functionalities that are available on a technologically advanced mobile phone encourage bullying and hazing (Cuadrado-Gordillo & Fernández-Antelo, 2014; Lee, 2014). One of the main reasons for this is that the functionalities or abilities of technologically advanced mobile phones is that they allow abusers to stay anonymous on many applications that may be used for bullying. Longe and Danquah (2012) found that online offenders engage in aggressive behaviour due to anonymity. In some instances, anonymity has even been found to predict cyberbullying frequency (Barlett, 2015). The features that are available on technologically advanced mobile phones make the perpetrators of mobile bullying stay anonymous therefore increasing the level of aggression of bullying. For this reason, those learners who own a more technologically advanced mobile phone are likely to suffer more from mobile victimisation. The results of Cluster 3, where the learners in this cluster had the least advanced mobile phones of all three clusters and suffered the least mobile victimisation, support this.

For Cluster 1, it was also unexpected that mobile victimisation was below average when the technological advancement of the mobile phones was the highest. However, there is a possibility that
these learners’ applications on their mobile phones that protect them from bullying. Since these learners have high access to advanced applications, there is a possibility that they have applications that prevent bullying behaviours. Applications such as “Professor Garfield Cyberbullying” are applications available for mobile phones that helps identify bullying behaviour and suggests strategies to combat cyberbullying (D’Auria, 2014).

The technological advancement of each cluster may have also been affected by the demographic factors of the learners in the clusters themselves. For instance, Baglione (2014) states that smartphone purchases are primarily by the young and affluent. This may be so due to the significant cost implications that are associated with smartphones. Besides their cost, their maintenance and network infrastructure including Wi-Fi are not cheap especially when many of these features are in use (Lewis & Vohra, 2014). Considering that Cluster 1 and Cluster 2 were the most technologically advanced clusters having 90.5% and 86% of their learners being owners or users of smartphones respectively while Cluster 3 only had 28.6% and that Cluster 1 and Cluster 2 had 31.7% and 18% of their learners being from affluent areas respectively while Cluster 3 had none, it would appear as though where learners came from affected the technological advancement of their mobile phones in each cluster.

Another surprising finding in the cluster analysis was that learners in Cluster 1 had the most access to GPS and used chatrooms the least of all the features on a mobile phone. This is surprising because Zulkefly and Baharudin (2009) and Fallahchai (2012) found that high school learners mostly use their mobile phones for messaging and making and receiving phone calls. Fallahchai (2012) argues that this may be as a result of learners’ lack of knowledge and experience in using other functions and services on their mobile phones. Therefore, Cluster 1 having good access to GPS may be as a result of knowledge or experience with GPS. According to Breetzke, Eksteen and Pretorius (2011) and Kidman and Palmer (2006), South Africa has recently taken measures to introduce Geographic Information Systems (GIS) into its school syllabus as part of the geography curriculum in high schools. GIS are "systems that are designed and used to store, retrieve, manipulate and display geographic data" (Broda & Baxter, 2003: 158). However, there have been difficulties due to money, time and support from the broader school community in facilitating the integration of GIS within classrooms particularly among the country’s poorer schools. The profiles of the clusters showed that Cluster 1 had the largest proportion of learners from affluent schools and areas in any of the clusters (31.7%). And since GPS and its functionalities are introduced to these learners in their geography curriculum through GIS (as GIS often includes GPS) (Broda & Baxter, 2003; Carlson, 2007), its functionalities are most likely to be
better understood and appreciated by these learners. Moreover, this may increase the learners' interest or intrigue with and use of the feature on their mobile phones. This may also explain why these learners are not strongly attached to their mobile phones as they may often use their mobile phones and their features for exploratory reasons or learning.

As for the low attachment to a mobile phone shown by learners in Cluster 1, this may be due to Cluster 1 being predominantly male. Literature has highlighted that the predictors of problematic mobile phone use (attachment) are socio-demographic factors, personality traits and related psychological mechanisms and self-esteem and related psychological mechanisms (Billieux, 2012). Of these factors, the current study captured only the demographic factors that may influence attachment to a mobile phone such as gender and age. With regards to gender, there is no agreement on which is the highest risk group for mobile phone addiction is (Hong et al., 2012). However, literature has shown that women are more likely than men to be dependent on mobile phones. Women also use their mobile phones for texts and calling to maintain social relationships (Walsh, White, Cox & Young, 2011; Billieux, 2012). As the results in Table 14 showed that attachment to a mobile phone varies by gender, this may explain the attachment that Cluster 2 and Cluster 3 have since there are more females than males in these clusters. The fact that these clusters showed high attachment through feeling connected to others and feeling distressed when they were without their mobile phones validates this. These feelings may stem from them using their mobile phones to communicate with relatives and significant others. They also use their mobile phone to maintain indirect communication, keep in contact with family members and initiate and maintain close relationships (Hong et al., 2012).

Another interesting area that showed gender playing a role was mobile victimisation. As stated earlier, women are often victimised more than men (Shariff, 2008) and so with the most victimised cluster being Cluster 2, this was no surprise. What was surprising about Cluster 2, however, was that high-resolution cameras were the only mobile feature whose access was below average. According to Kappas and Krämer (2011) and Biney and Sellahewa (2013), mobile phones with high-resolution cameras are a serious threat to privacy and can open the way to extremely damaging forms of bullying. So, with mobile victimisation being high within this cluster, it was expected that the use of high-resolution cameras would be high as well.
CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

This chapter concludes this dissertation by summarising the answers obtained in the study for the research questions and objectives. The importance of the study and some recommendations for further research in the area of mobile victimisation are also presented.

5.1 Introduction
The primary objective of this dissertation was to investigate mobile victimisation in order to understand how and why some learners are more likely to be victims than others. In doing so, it sought to discover what behaviours high school learners engage in that make them susceptible to mobile victimisation. Through an extensive review of literature, it was found that many authors and researchers in the field of victimology believe that the victim contributes to their victimisation. Literature on mobile bullying and mobile victimisation also indicated this in that it was found that the technological advancement of a mobile phone one may have or have use of; the frequency at which they use their mobile phone; and the degree of attachment to that mobile phone may influence the extent to which an individual may be victimised through mobile bullying. In establishing this, a typology that best suits the issue at hand, i.e. mobile victimisation, was developed (MVT). Three categories were established in which victim contribution was determined by the technological advancement of a mobile phone one may have or have use of; the frequency at which they use their mobile phone; and the degree of attachment to that mobile phone. This was measured alongside with mobile victimisation itself so as to get a feel of the relationship between the criteria used and mobile victimisation.

5.2 Summary of Results
The study confirmed earlier observations that the frequency at which learners use their mobile phone and the degree of attachment to that mobile phone may influence the extent to which an individual may be victimised through mobile bullying (Li, 2007; Takao et al., 2009). This was not the case for the technological advancement of the mobile phones used. However, the results of the cluster analysis that was run to test the MVT showed that a combination of these three influencing factors could have an effect on mobile victimisation. In addition, although showing interesting and varying results, all the three categories proposed in the MVT were revealed. Table 27 revealed that learners in Cluster 3 had the least advanced mobile phones and were the least frequent users of their mobile phones (except for their use of MMS). These learners were also fairly attached to their mobile phones and were the
least mobile victimised learners. Learners in Cluster 1 owned advanced mobile phones and were
infrequent users of their mobile phones. These learners were the least attached to their mobile
phones and had below average mobile victimisation. The most representative cluster of the cluster
analysis results was Cluster 2. Cluster 2’s mobile phone advancement was above average, frequency
of mobile phone use was high and attachment to a mobile phone was strong. The result of this was
high mobile phone victimisation.

In revealing such trends, some behaviours of highly mobile victimised learners were revealed. For
instance, highly victimised learners are predominantly in Grades 8 to 10 and are of the ages between
15 years and 16 years. They have goods access to many of the features of a mobile phone and are able
to use them well. Additionally, they tend to be very attached to their mobile phones as they strongly
felt connected to others when they used their mobile phones and were unable to control their mobile
phone usage.

5.3 Importance of the Study
This study could have both theoretical and practical contributions. Through the development and
testing of: (i) the proposed relationships between mobile victimisation and the technological
advancement of the mobile phone one may have or have use of, the frequency at which they use their
mobile phone and the degree of attachment to that mobile phone; and (ii) the MVT, this study was
able to reveal the nature of mobile victimisation among South African high school learners. In doing
so, this study has proven that a ‘tool’ such as a typology could aid in the understanding of a
phenomenon such as mobile victimisation. This is shown by the results of the test of the MVT, which
have revealed some of the behaviours of learners that are mobile victimised and the extent to which
these behaviours will intricately influence mobile victimisation.

The results presented in this dissertation may also be very informative in the development of laws and
policies as well as prevention and intervention programmes against mobile bullying. According to
Popovac and Leoschut (2012), there is insufficient information on which to base bullying policy
decisions in South Africa. This thesis has given some essential information that may be relevant to
policy decisions. For instance, the results presented in this thesis may be used in targeting prevention
and intervention programmes towards the most efficient and relevant direction in terms of resource
and impact management. For example, it was found that mobile victimisation is mainly prevalent
among adolescents, females and those learners from crime-ridden areas. Therefore, policies and
measures that focus specifically on these young people who have just joined high school (paying more attention to females) and learners from schools in crime-ridden areas will be necessary. And since the behaviours (with regards to the technological advancement, frequency of mobile phone use and attachment to the mobile phone) of mobile victimised learners have been revealed, knowing them may be beneficial in detecting and preventing mobile victimisation from potentially occurring in learners’ lives.

5.4 Recommendations for Future Research
While this study has given insight on mobile victimisation, this study had some limitations. The exploratory nature of this study requires research to continue developing greater understanding of mobile victimisation and those learners that are victimised by mobile bullying. Future studies may, therefore, implement qualitative methods (such as interviews) with those learners that are victims of mobile bullying. This would help gain more insight on how these learners are victimised, the experiences the victimised learners go through when being victimised and the perceptions that they have about their experiences. This may give more insight into the nature of mobile victimisation; the victims themselves and complement the quantitative findings of this thesis by probing into some of the results presented. Further, these interviews may be with people that observe mobile victimisation occur in learners’ lives or people that may have an influence on the learners’ behaviours toward their mobile phones. This could include parents, educators, school principals, school counsellors, and law enforcement.

In addition, since cyberbullying is a complex phenomenon (Slonje et al., 2013), other areas of mobile victimisation may be investigated such as anonymity and anti-bullying policy in schools. As mentioned earlier, anonymity predicts cyberbullying behaviour (Longe & Danquah, 2012; Barlett, 2015). It is also assumed that the existence of regulations and policies on bullying behaviour within schools could impact the extent and rate of bullying and subsequently victimisation. The existence of regulations and policies do so by helping learners understand what is acceptable and what is not. This is important as learners have mixed reactions about what actions are regarded as bullying in general as well as mobile bullying (Oyewusi & Orolade, 2014). Looking into these areas may, therefore, add value to understanding mobile victimisation.

Also, although the entire sample was large (2073 learners), only 183 learners were identified as victims of mobile bullying. Future studies could, therefore, look into using larger sample sizes (i.e. sample sizes
greater than 183 mobile victimised learners). These samples could also include other regions within South Africa as it could improve and hence yield more interesting results. Future studies are also recommended to conduct pilot studies with the samples and not be limited to experts. This would give the researcher the opportunity to ‘fine-tune’ the data collection methodology and tool so that the data collected is necessary and relevant to the study of the phenomenon under investigation.

As to the researcher’s knowledge, the proposed mobile victimisation typology is the first of its kind and it will require more attention to be paid to it in future studies. Doing so will further develop and establish it both theoretically and in practice and confirm its contributions to the studies of mobile victimisation.
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Towards a Typology for Understanding Mobile Phone Victimisation in South African High Schools


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Towards a Typology for Understanding Mobile Phone Victimisation in South African High Schools


APPENDICES
Appendix A - Mobile Victimisation Survey (MVS)

Mobile Victimisation Survey

Mobile bullying can be defined as a form of electronic online bullying through email, chat rooms, instant messaging and small text messages using mobile phones (Kowalski et al. 2007).

This is a confidential questionnaire. Therefore, no one will have access to it and the information you have given. It is also anonymous, so please avoid putting your name on it and no one will know you answered it.
Answering this questionnaire is completely voluntary and you may, at any time, decide to exit. Please mark with an X in the relevant box provided.
### A. General Information - Demographics

**What is the name of the school you attend?**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>14 or younger</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18 or older</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Where do you live?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Suburb or Area)</td>
</tr>
</tbody>
</table>

### B. Mobile Phone Advancement

5. Do you own/have access to a Mobile Phone?  
   | Yes | No |

6. If yes, what type of phone do you use?  
   | Smartphone | Feature Phone | Basic Phone | Not Sure |

7. Please indicate the technological advancement of your mobile phone (or the phone you often use)  
   | Smartphone | Feature Phone | Basic Phone | Not Sure |

8. Can you access the following features on your phone? (X where appropriate)  
   | Yes | No |

   - Games
   - Emails
   - Internet capability
   - High resolution Camera (Pictures and Video)
   - GPS Navigation (e.g. Google maps)
   - Social Networking (e.g. Facebook/Twitter)
   - Built-in apps
   - Advanced Apps (e.g. YouTube)

### C. Mobile Phone Usage

5. How often do you use your mobile phone for any purpose (send or receive text messages, answer or make a call) in a day?  
   | 0-2hrs | 3-5hrs | 6-8hrs | 8 or 10 | More than 10hrs |

10. Rate how often you use the following mobile facilities?  

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMS</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>MMS</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Email</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Chat rooms</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Social Networks (Facebook, Twitter)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Phone (Making/Receiving Calls)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
### Behavioural Beliefs

11. Rate how likely the following would occur if you constantly used a mobile phone or spent a lot of time on your mobile phone in the next week.

<table>
<thead>
<tr>
<th></th>
<th>extremely unlikely</th>
<th>Unlikely</th>
<th>Sometimes</th>
<th>Likely</th>
<th>extremely likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using time effectively</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Being distracted</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Being involved in misconduct</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Receiving information (e.g.,</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>important news</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receiving assistance in an</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>emergency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being caught using your phone for</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>inappropriate behaviour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Normative Beliefs

12. Rate how likely it is that the following six referents would approve of you constantly using a mobile phone in the next week.

<table>
<thead>
<tr>
<th></th>
<th>extremely unlikely</th>
<th>Unlikely</th>
<th>Sometimes</th>
<th>Likely</th>
<th>extremely likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Family Members</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Partner/Boyfriend/Girlfriend</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Class Mates</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Other students at school</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Teachers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

### Control Beliefs

13. Rate how likely the following factors could prevent you from using a mobile phone in the next week.

<table>
<thead>
<tr>
<th></th>
<th>extremely unlikely</th>
<th>Unlikely</th>
<th>Sometimes</th>
<th>Likely</th>
<th>Extremely likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of being bullied</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Parents/Guardians</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Demanding academic schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Lack of Airtime</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Lack of interest/necessity to</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>communicate with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to a mobile phone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
### D. Mobile Phone Attachment

<table>
<thead>
<tr>
<th>Feelings about my Mobile Phone</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Sometimes</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. I often think about my mobile phone when I am not using it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. I often use my mobile phone for no particular reason</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. Arguments have arisen with others because of my mobile phone use</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. I interrupt whatever else I do when I am contacted on my mobile phone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. I feel connected to others when I use my mobile phone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. I lose track of times I use my mobile phone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. The thought of being without my mobile phone makes me feel distressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. I have been unable to reduce the number of times I use my mobile phone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. I am comfortable using mobile phone technology</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. I feel confident using mobile phone technology</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

### E. Mobile Phone Victimisation

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>24. I have received insulting messages on my mobile phone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Question</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>25. I have received threatening calls from someone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. I have received a threatening message on my mobile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. If any of the threats identified above happened to you, which mobile facility was used? (Check all that apply)</td>
<td>SMS/MMS</td>
<td>Email</td>
<td>Instant Messaging (BBM, WhatsApp)</td>
<td>Social Network (Facebook, Twitter)</td>
<td>Voice Calls</td>
</tr>
<tr>
<td>28. What is the likelihood that you would get back at them using your mobile phone?</td>
<td>Definitely would not do</td>
<td>Would not consider</td>
<td>Unsure</td>
<td>Would consider</td>
<td>Definitely would do</td>
</tr>
<tr>
<td>29. Who mobile bullied you?</td>
<td>Fellow peer(s) from your school</td>
<td>Fellow peer(s) not from your school</td>
<td>I don't know who it was</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. The person(s) who mobile bullied you was: (Check all that apply)</td>
<td>Female</td>
<td>Male</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Where were you mobile bullied?</td>
<td>On the school premises</td>
<td>Outside of school premises</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Have you seen or heard of anyone else being bullied in the last 3 months?</td>
<td>I haven’t seen or heard of anyone else</td>
<td>It has only happened once or twice</td>
<td>I’m not sure</td>
<td>About once a week</td>
<td>Two or three times a month</td>
</tr>
<tr>
<td>33. Your school has an anti-mobile bullying policy</td>
<td>Yes</td>
<td>Not sure</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete
Appendix B – Survey Consent Letter

University of Cape Town
Department of Information Systems
Leslie Commerce Building
Upper Campus
Private Bag X3 - Rondebosch - 7701
Tel: +27 (0) 21 650 2261  Fax: +27 (0) 21 650 2280
Internet: http://www.commerce.uct.ac.za/informationsystems

29 October 2014

Dear Principal,

I am a full time Masters student under the supervision of Professor Michael Kyobe at the University of Cape Town (Department of Information Systems). I would like to invite you to participate in an academic research on understanding mobile victimisation in South African High Schools. This research has been approved by the University of Cape Town (UCT)’s Commerce Faculty Ethics in Research Committee.

The aim of this study is to gain understanding and insight into the causes of mobile victimisation and the factors that influence it. This will be done by assessing the responses of high school students to a questionnaire related to mobile victimisation.

Within this form, we request your permission/consent to conduct this research in your school. The participation of your students in this research is voluntary. Students may withdraw from the research at any time for whatever reason, in accordance with ethical research requirements. All information gathered from the students will be treated confidentially and used only for the purpose of this study. Student names or any identifiable information will not be recorded or published, ensuring anonymity of their responses. The results from this study will then be made known to the school so that students may benefit from them. Additionally, these results may be used to improve the development of laws and policies as well as prevention and intervention programs against cyberbullying.

The anonymous survey questionnaire will take approximately 20 minutes to complete.

Your time and participation in this is greatly appreciated. If you are willing to participate in this study, kindly sign the consent form below.

Should you have any questions regarding this research, please feel free to contact us on the details specified below.

Sincerely,

Shallen Lusinga
M.Com Masters Student
Department of Information Systems
University of Cape Town
E-mail: LSNSHA002@myuct.ac.za  Phone: 0794294564

Professor Michael Kyobe
Research Supervisor
Department of Information Systems
University of Cape Town
E-mail: michael.kyobe@uct.ac.za  Phone: 0216502597
Letter to the Department of Education

Dear Sir/Madam,

I am a full time Masters student under the supervision of Professor Michael Kyobe at the University of Cape Town (Department of Information Systems). I would like to request your permission to conduct an academic research on understanding mobile victimisation in South Africa High Schools. This research has been approved by the University of Cape Town (UCT)’s Commerce Faculty Ethics in Research Committee.

The aim of this study is to gain understanding and insight into the causes of mobile victimisation and the factors that influence it. This will be done by assessing the responses of high school students to a questionnaire related to mobile victimisation.

Within this form, we request your permission/consent to conduct this research in schools within South Africa. Students’ participation is voluntary. Students may withdraw from the research at any time for whatever reason, in accordance with ethical research requirements. All information gathered from the students will be treated confidentially and used only for the purpose of this study. Student names or any identifiable information will not be recorded or published, ensuring anonymity of their responses. The results from this study will then be made known to the schools and the Department of Education so that students may benefit from them. Additionally, these results may be used to improve the development of laws and policies as well as prevention and intervention programs against cyberbullying.

The anonymous survey questionnaire will take approximately 20 minutes to complete.

Your time and participation in this is greatly appreciated. If you are willing to grant us permission to conduct this study, kindly sign the consent form below.

Should you have any questions regarding this research, please feel free to contact us on the details specified below.

Sincerely,

Shallen Lusinga  
M.Com Masters Student  
Department of Information Systems  
University of Cape Town  
E-mail: LSNSHADOZ@myuct.ac.za  Phone: 0794294564

Professor Michael Kyobe  
Research Supervisor  
Department of Information Systems  
University of Cape Town  
E-mail: michael.kyobe@uct.ac.za  Phone: 0216502597
Appendix C – Consent Form

I hereby consent Shallen Lusinga to conduct a survey on mobile bullying and victimisation in my school.

I am aware that participation is voluntary and that I may choose to withdraw from this study at any time, should I choose to do so.

I also give Shallen Lusinga permission for my results to be used in the write up of this study.

Name: __________________________
Name of Organisation: __________________________
Signature: __________________
Date: __________________________
Appendix D – Ethics Form

**Updated Ethics Form March 2013**

Any individual in the Faculty of Commerce at the University of Cape Town undertaking any research that involves the use of human subjects, or research that may hold ethical consequences for the University of Cape Town, is required to complete this form and obtain approval before conducting research. The completed form should be submitted as an electronic document to departmental Ethics Committee representatives for submission to the Commerce Faculty Ethics in Research Committee. Please also submit electronic copies of your research proposal, informed consent form or other information used to obtain consent, and any questionnaires other material shown to subjects.

### 1. PROJECT DETAILS

<table>
<thead>
<tr>
<th>Project title:</th>
<th>Towards a Typology for Understanding Mobile Phone Victimisation in South African High Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Researcher/s:</td>
<td>Shallen Lusinga</td>
</tr>
<tr>
<td>Email address(es):</td>
<td><a href="mailto:I3NSH40032@myuct.ac.za">I3NSH40032@myuct.ac.za</a></td>
</tr>
<tr>
<td>Research Supervisor:</td>
<td>Michael Kyobe</td>
</tr>
<tr>
<td>Email address(es):</td>
<td><a href="mailto:Michael.kyobe@uct.ac.za">Michael.kyobe@uct.ac.za</a></td>
</tr>
<tr>
<td>Co-researcher(s):</td>
<td>N/A</td>
</tr>
<tr>
<td>Email address(es):</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Brief description of the project:** The project intends to develop and test a typology created for conceptualizing and understanding the cause of mobile bullying as a result of the victims of this phenomenon contributing to their own victimisation. A questionnaire will be used to collect data related to the conceptual model designed for this from high school students in South Africa.

**Data collection:**

- [ ] Interviews
- [x] Questionnaire
- [ ] Experiment
- [ ] Secondary data
- [ ] Observation

- [ ] Other (please specify): __________

**Procedure:**

A questionnaire will be administered to high students and collected when they are done.
2. PARTICIPANTS

Characteristics of participants:

- Gender: ALL
- Race / Ethnicity: ALL
- Age range: 13 – 18 YEARS
- Location: EASTERN AND WESTERN CAPE
- Other:

Race / Ethnicity:
Have you included a “Prefer not to Answer” response category in your questionnaire? [please select]

☐ Yes ☑ No ☐ Not applicable

If you answered ‘No’, why not?

It has not been included because the study does not consider race. It assumes that all races are victimised through mobile bullying.

Affiliations of participants (please select):

☐ Company employees ☑ UCT staff ☑ General public ☐ UCT Students
☐ Other (please specify): South African High school students

If your sample includes children (aged 18 and below), mentally incompetent persons, or legally restricted groups please explain below why it is necessary to use these particular groups. If subjects are minors or mentally incompetent, please describe how and by whom permission will be granted? If you are including children under the age of 18 and are not getting parental consent, please explain why you believe that their parents would consent if it was possible to contact them.

Minors are used for this study, it is important that the participants be used in this study because literature dictates that mobile bullying is high amongst adolescents. It would therefore be beneficial to sample adolescents for this study in order to obtain the relevant information for this study.

For using these students, the consent form attached is addressed to the principals of the high schools from which the data will be collected. In addition, the questionnaire requires the participants’ signatures in order to affirm their participation in the study.

3. ORGANISATIONAL PERMISSION

If your research is being conducted within a specific organisation, please provide organisational permission or explain how permission will be obtained.

The data is to be collected from High Schools. Permission to conduct this research will be through the consent form and cover letter attached.

Are you making use of UCT students as respondents for your research? [please select] ☐ Yes ☑ No

If yes, have you contacted Executive Director: Student Affairs for permission? [please select] ☐ Yes ☐ No

Was approval granted? [please select] ☐ Yes ☐ No Awaiting a response

Are you making use of UCT staff as respondents for your research? [please select] ☐ Yes ☑ No

If yes, have you contacted Executive Director: Human Resources for permission? [please select] ☐ Yes ☑ No

Was approval granted? [please select] ☐ Yes ☐ No Awaiting a response

Contact Emails: Executive Director: Human Resources: Mireia.Moorin@uct.ac.za
Executive Director: Student Affairs: Mireia.Moorin@uct.ac.za
4. INFORMED CONSENT

What type of consent will be obtained from study participants?

- written consent
- anonymous survey
- oral consent (please justify)
- other (please specify)

☐ Oral Consent
☐ Written Consent
☐ Anonymous survey questionnaire (covering letter required, no consent form needed)
☐ Other (please specify)

How and where will consent/permission be recorded?

As the researcher will present at the time of data collection, the consent attached will be presented to the particular principal who would sign it. The researcher would then collect the consent form.

5. CONFIDENTIALITY OF DATA

What precautions will be taken to safeguard identifiable records of individuals? Please describe specific procedures to be used to provide confidentiality of data by you and others, in both the short and long run. This question also applies if you are using secondary sources of data that is not anonymous.

Anonymity has been assured in the questionnaire attached.

However, to safeguard identifiable records, the researcher intends to protect the questionnaires from third parties. This will be done as the questionnaire will not be available to anyone outside of the project.

6. RISK TO PARTICIPANTS

Does the proposed research pose any physical, psychological, social, legal, economic, or other risks to study participants you can foresee, both immediate and long range? (please select)

☐ Yes
☐ No

If yes, answer the following questions:
1. Describe in detail the nature and extent of the risk and provide the rationale for the necessity of such risks
2. Outline any alternative approaches that were or will be considered and why alternatives may not be feasible in the study
3. Outline whether and why you feel that the value of information to be gained outweighs the risks

1.

2.

3.
What authorship agreement have you reached with your co-researchers or supervisor?

- This research is not intended for publication
- Standard authorship agreement (principal researcher first author, co-researcher(s) and supervisor(s) co-authors)
- Customised agreement (please specify below):

I certify that we have read the UCT Authorship Policy, and Commerce Faculty Authorship Guidelines
(http://www.commerce.uct.ac.za/Commerce/Information/research.asp)

I certify that the material contained herein is truthful and that all co-researchers and supervisors are aware of the contents thereof.

I understand that it is my responsibility to conduct research in accordance with the ethical requirements of UCT.

[Signature]

Applicant’s signature:

Date: 27 October 2014
<table>
<thead>
<tr>
<th>CHECKLIST</th>
<th>SELECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A full copy of a research proposal or a literature review with methodology is attached</td>
<td>☒</td>
</tr>
<tr>
<td>Research proposal/ interview schedules / cover letters / questionnaires / forms and other materials used in the study are attached/ consent form</td>
<td>☒</td>
</tr>
<tr>
<td>Organisational consent letter / UCT student or staff approval letter</td>
<td>☒</td>
</tr>
<tr>
<td>On your cover letter to your questionnaire have you included the following?</td>
<td>NA</td>
</tr>
</tbody>
</table>

The following UCT Logo

A sentence explaining the aim of the research
Sentences of a similar nature to below must be included in the cover letter or consent form:
This research has been approved by the Commerce Faculty Ethics in Research Committee.

Your participation in this research is voluntary. You can choose to withdraw from the research at any time.
The questionnaire will take approximately X minutes to complete

You will not be requested to supply any identifiable information, ensuring anonymity of your responses.

Due to the nature of the study you will need to provide the researchers with some form of identifiable information however, all responses will be confidential and used for the purposes of this research only.
Should you have any questions regarding the research please feel free to contact the researcher (insert contact details).
Have you scanned in your signature for the last section of the form?

For Ethics committee representative only

Recommendation(s):

Signature:

Date:

For Ethics committee chairperson only

Recommendation:

Signature:

Date: