



**Examining the extent to which mobile bully-victim behaviour is a
consequence of social integration or aggressive behaviour**

by

Nombulelo Jokazi (JKZNOM003)

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Supervisor: Prof. M.E Kyobe

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ABSTRACT

The absence of a framework or policy to address bullying in South Africa compels the country to rely on pieces of legislation that are closely related to anti-bullying laws such as the Child Justice Act 75 of 2008 and Protection from Harassment Act 71 of 2011. Over-reliance on pieces of legislation creates challenges for victims of these bullying crimes because most of the relational aggression exerted towards victims goes unpunished. Some of the adolescents take the law into their own hands, thus, exacerbate and increases the complexity of bullying crimes. Due to advancements in Information and Communications Technology, bully-victim behaviour does not only take place in physical environments such as schools, but it takes place anywhere, anytime (24/7) on Mobile Social Networks. In 2011, a cyberbullying study by the Centre of Justice and Crime Prevention reported that 69.7% of the youth in South Africa falls in the category of bully-victims. This is alarming given that few studies focus on the role of bully-victims in South Africa.

The exact cause for mobile bully-victim behaviour is unclear, and previous studies have highlighted it is between aggressive behaviour and social integration. Therefore, this study examined aggressive behaviour and social integration to determine which of these two factors contribute the most to mobile bully-victim behaviour. Additionally, mobile social network features that enable this behaviour were investigated. The factors that lead to aggressive behaviour and social integration, resulting in mobile bully-victims, were identified through a literature review.

Paper-based surveys were issued to Johannesburg high school adolescents. Johannesburg was mainly selected based on finding by previous studies, which highlighted that most of the online bullying and victimisation happens amongst adolescents in Johannesburg. After data was collected, the results were analysed using Statistica version 13.5. The analysis revealed that, indeed, both aggressive behaviour and social integration cause mobile bully-victim behaviour, however, social integration contributed more than aggressive behaviour. The findings also revealed that WhatsApp and Instagram were the most utilized social networks by mobile bully-victims. There were no differences between males and females when it comes to mobile bully-victim behaviour. The causes of mobile bully-victim behaviour that have been identified in this study can be used as a starting point to develop legislation/framework aimed at combating mobile bully-victim behaviour. Given that mobile bully-victims are more suicidal and suffer

from depression, psychologists and therapists can use the knowledge obtained from this study to develop psychological treatments specifically for mobile bully-victims.

Keywords: Adolescents, Aggressive Behaviour, Bully-Victim, Causes, General Aggression Model, level, Mobile Social Networks (MSNs)

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Table of Contents

Plagiarism Declaration.....	2
ABSTRACT	3
Acknowledgement	5
Chapter One: Introduction and Background of the study	9
1.1. Introduction.....	9
1.2. Background of study	10
1.3. Problem statement.....	11
1.4 Research Aim/Purpose	11
1.4. Research questions and propositions.....	12
1.5. Research objectives.....	12
1.6. Significance of the Study	13
1.7. Organisation of the Study	13
Chapter Two: Literature Review	15
2.1. Introduction.....	15
2.2. Mobile bully-victim behaviour of adolescents in South Africa	16
2.3. Mobile bully-victim behaviour studies in other developing African countries	18
2.4. Characteristics of bully-victims	19
2.5. Traditional bully-victims, Cyberbullying bully-victim, and mobile bully-victims	20
2.6. Causes of mobile bully-victim behaviour (Aggression vs Social integration)	22
2.6.1. Aggressive behaviour	22
2.6.2. Social integration	27
2.7. Integrative model.....	37
2.8. Conceptual model and propositions.....	39
Chapter Three: Research Design and Methodology	42
3.1. Introduction.....	42
3.2. Research purpose.....	43
3.3. Research philosophy	44
3.3.1. Research ontology.....	44
3.3.2. Research epistemology	46
3.4. Research approach.....	46
3.5. Research methodology	47
3.5.1. Research strategy	48
3.5.2. Research instrument	49

3.5.3. Research timeframe.....	53
3.5.4. Target population and sample	54
3.5.5. Data analysis	56
3.5.6. Reliability and validity	57
3.6. Ethics: privacy and confidentiality	57
Summary	58
Chapter 4: data analysis	60
Introduction.....	60
4.1. Demographics of study participants	60
4.2. Reliability & Validity tests	62
4.3. Descriptive statistics	63
4.4. Multiple regression: what causes mobile bully-victim behaviour between social integration and aggressive behaviour?	65
4.5. Age and gender differences	69
4.6. Descriptive statistics: number of mobile bully-victims per mobile social network	72
Chapter Five: Discussion, Recommendations and Limitations.....	75
5.1. Discussion	75
5.2. Conclusion and Recommendations for future research.....	79
5.3. Limitations.....	79
References	80
APPENDICES	93
Appendix 1: Mobile bully-Vitim questionnaire	93
Appendix 2: Principal consent letter	96
Appendix 3: Pant/Gaudian consent letter	98
Appendix 4: Faculty of Commerce ethics approval letter	100
Appendix 5: Gauteng Department of Education Research approval letter	101

List of figures:

Figure 2.1: Chapter Overview (Literature Review)

Figure 2.2: General Aggression Model (DeWall et al., 2011)

Figure 2.3: Bronfenbrenner's ecological model (Leonard, 2011)

Figure 2.4: Integrative Mobile Bully-Victim Model

Figure 2.5: Mobile Bully-Victim Conceptual Model (Jokazi and Kyobe, 2017)

Figure 3.1: Chapter Overview (research design and methodology)

Figure 3.2: Raosoft calculator

Figure 4.1: Demographics of study participants

Figure 4.2: Number of learners per mobile bullying role

Figure 4.3: Mobile bully-victim demographics

Table 2.1: Literature review gaps (SA literature)

Table 3.3: Research design and methodology

Table 4.2.1: Cronbach Alpha for variables that measure mobile bully-victim behaviour

Table 4.3.1. Descriptive Data – Only Bully-Victims

Table 4.4.1: multiple regression (aggressive behaviour and social integration factors)

Table 4.4.2: multiple regression excluding age and gender (R square 0.38 vs 0.33)

Figure 4.5.1 Gender distribution

Figure 5.1. Updated conceptual model

List of Tables:

Table 4.5.1. Chi-square results

Figure 4.5.2 Age distribution

Table 4.5.2 descriptive statistics -gender

Table 4.5.3 ANOVA-age differences

Table 4.5.4 descriptive statistics -age

Table 4.6: Number of mobile bully-victims per social network

Table 4.7: results summary

Chapter One: Introduction and Background of the study

1.1. Introduction

Advancements in mobile devices have resulted in increased use of social network sites. Such devices include smartphones and tablets, amongst others. As a result, majority of popular social networks such as Facebook and Twitter are now accessible on mobile devices, and these are now called Mobile Social Networks (MSNs) (Quinn & Oldmeadow, 2013). MSNs are popular amongst adolescents since they provide benefits such as connecting with friends "on the go" (anywhere, anytime), and portable entertainment (Okeeffe & Clarke, 2011). Even though there are benefits that Mobile Social Networks bring to society, MSNs have created another wave of problems, such as enabling inappropriate content to be available to under-age individuals and bullying. Previous research on bullying that takes place on social networks mainly focused on the roles of pure bullies and pure victims and not on bully-victims (Kyobe, 2016). According to Kabiawu and Kyobe (2015), bully-victims are victims of bullying, and at the same time, they bullying others. Bully-victims have been reported to be more aggressive and depressed than bullies, and they are most likely to experience maladaptation. Existing literature has shown that usually, one out of five adolescents are bully-victims (Wegge et al., 2014). Even though bully-victims are usually few, they are seen as a crucial group that calls for more empirical research (Unnever, 2005).

Bully-victims were first acknowledged and studied in 1978 by Olweus (Schwartz, 2000). Unnever (2005) opined that bully-victims are more disliked than bullies and victims in social spaces because of their behaviour. One of the most common behaviours of this group includes excessive aggression and lack of remorse. There are inconsistencies on whether this behaviour is a result of social integration or aggressive behaviour (Cuadrado-Gordillo & Fernández-Antelo, 2016). At the same time, there is a dearth of literature regarding bully-victim behaviour in developing countries like South Africa (Liang, 2007). Therefore, this research focused on adolescents in South African and the causes of mobile bully-victim behaviour.

1.2. Background of study

Bullying amongst adolescents used to take place in schoolyards, however, due to the advancement in Information Communication Technology (ICT), it now takes place anywhere, and any time (Chatzakou et al., 2017). The advancements in ICT include mobile phones, which are now capable of more than enabling users to make voice calls and send text messages. However, they have advanced features such as cameras, video recording features, and access to the internet (Sarwar & Soomro, 2013). These capabilities led to these advanced mobile phones being referred to as smartphones. Majority of teenagers in South Africa own smartphones due to their affordability (Popovac & Leoschut, 2012). Smartphones are mostly used to access social networks such as Facebook, WhatsApp, and Instagram (Burton, Leoschut & Phyfer, 2016). As much as these social networks provide advantages such as connecting with family members and friends, they also create an opportunity for bullying through retweets, shares, and likes. The fact that smartphones are portable, meaning they can be accessed anywhere and anytime, has also made bullying severe. Previous research has noted that the capabilities of smartphones, such as cameras, also promote bullying because humiliating incidents are captured on videos or cameras, which can be distributed online.

Mobile phones and social networks do not only enable bullying, but they also enable retaliation. According to Li (2007), about half of cyber victims are also perpetrators of bullying. Researchers are currently not sure why this is the case. A school of thought believed it is because high schools do not have anti-bullying policies they can follow and enforce (Li, 2007). While another school of thought believed mobile bullying is becoming severe in terms of scope. At the same time, previous research has shown that victims misinterpret context as a threat and end up bullying others. Thus, the literature on the causes of mobile bully-victim behaviour is inconclusive. What is known is that bully-victim behaviour online is either motivated by aggression or social interactions (Cuadrado-Gordillo & Fernández-Antelo, 2014). It is also important to note that according to Mahon (2014), even though causality cannot be inferred between technology that enables bullying, it is crucial to include the technology component in theoretical frameworks. Therefore, this study did not only focus on the causes of mobile bully-victim behaviour, but it also provides literature on how technologies such as Mobile Social Networks facilitate mobile bully-victim behaviour.

1.3. Problem statement

According to Parker (2011), adolescents in the middle and at the top of the social hierarchy are often mobile bully-victims because of continually attempting to improve their social status. In these attempts for better social status, adolescents bully others online who are already at the top and those they bully retaliate in order to maintain their status (Parker, 2011). This contradicts the fact that mobile bully-victims behaviour is a result of aggression. Additionally, researchers and adolescents have different viewpoints when it comes to bully-victim behaviour. For instance, researchers consider bully-victim behaviour as a form of aggression, while adolescents perceive it as a form of social interaction and integration into the social cycle on social network sites (Cuadrado-Gordillo & Fernández-Antelo 2016). Currently, the exact cause of mobile bully-victim behaviour is unknown. However, based on previous studies, it is either through social integration or aggressive behaviour or both. Therefore, in this paper, both social integration and aggressive behaviour were investigated as the leading causes of mobile bully-victim behaviour in order to determine which factor contributes to this behaviour.

1.4 Research Aim/Purpose

The purpose of the study was to examine the factors that lead to mobile bully-victim behaviour. Actions and behaviours of mobile bullies were only compared to bully-victims, but they were not investigated in this study, and the same applied for mobile victim's behaviour. The study focused only on mobile bully-victims that were still in high school (Grade 8-11), between the ages of twelve and seventeen, since this is the age group with the most bullying incidents (Burton, Leoschut & Phyfer, 2016).

The research focused on mobile bully-victim behaviour that occurs on the top four social networks that are used in South Africa, which are WhatsApp, Facebook, Instagram, and Twitter. The main reason for this is because these Mobile Social Networks are used by 95% of adolescents in South Africa, and at the moment, that is where most of the bully-victim behaviour takes place (Burton et al., 2016). The mobile bully-victim behaviour that was investigated is the one that takes place on mobile devices such as smartphone, tablet, laptop, and iPad. Lastly, this research was based on adolescents who are high school students in South Africa because currently, there is limited literature on the disadvantages of mobile social networks on teenagers. Thus, leading to a lack of a theoretical framework that is specifically

dedicated to reducing and preventing cyberbullying as well as its sub-categories such as mobile bullying (Popovac & Leoschut, 2012).

1.4. Research questions and propositions

The purpose of this research was to examine which factor contributes to mobile bully-victim behaviour between aggressive behaviour and social integration. Therefore, in order to fulfil the research purpose, the main research question that guided this study was: what causes mobile-bully-victim behaviour on MSNs between aggressive behaviour and social integration? Below are the sub research questions followed by propositions:

1. Which of the two factors (social integration and aggressive behaviour) contribute the most to mobile bully-victim behaviour?
2. Which social integration factors influence mobile bully-victim behaviour?
3. Which factors influence the aggressive behaviour of mobile bully-victims?

Propositions

- a) Proposition 1: Mobile bully-victim behaviour is a result of social integration.
- b) Proposition 2: Exposure to violence increases the likelihood of being a mobile bully-victim.
- c) Proposition 3: Females are more likely to become mobile bully-victims than males.
- d) Proposition 4: Powerless adolescents are more likely to become mobile bully-victims.
- e) Proposition 5: Instagram is a MSN venue where most of the mobile bully-victim behaviour takes place than on WhatsApp, Facebook, and Twitter.
- f) Proposition 6: There are significant differences between age groups of mobile bully-victims.

1.5. Research objectives

The main objective of this research was to examine which factor causes mobile bully-victim behaviour between social integration and aggressive behaviour. Existing theories were used to

examine and explore mobile bully-victim behaviour from these two aspects. Below are sub-objectives of this research:

- To establish the factor that contributes the most to mobile bully-victim behaviour between social integration and aggressive behaviour.
- To ascertain how social integration leads to mobile bully-victim behaviour on mobile social networks.
- To assess how aggression results in bully-victim behaviour on mobile social networks.

1.6. Significance of the Study

Previous studies have highlighted that not much is known about the aggressive behaviour of bully-victim as compared to pure bullies (Parren & Alsaker, 2006). This calls for research on the aggressive behaviour of bully-victims. Therefore, this study aimed to provide a clear understanding of how aggression caused mobile bully-victim behaviour. On the other hand, previous researchers have also highlighted that social integration components, such as social status and popularity, lead to bully-victim behaviour (Closson, 2006). Hence, this study also examined the impact of social integration on mobile bully-victim behaviour.

The knowledge that has been obtained from conducting this study can be used to assist school psychologists, government policymakers, and school governing bodies to have a better understanding of the root causes of bully-victim behaviour. Having an understanding of the causes of this type of behaviour will be useful when developing frameworks and policies that are aimed at reducing and preventing mobile bully-victim behaviour. At the moment, a comprehensive framework that adequately addresses all angles of cyberbullying, including mobile bullying, does not exist (Smit, 2015). At the same time, less is known about bully-victims on current Mobile Social Network platforms.

1.7. Organisation of the Study

The structure of this study is as follows:

Chapter one: the first chapter of the study provided an introduction and gave an insight into the research that was being undertaken. Key issues discussed in this chapter focused on the background, statement of the problem that was investigated, research questions, objectives, and the aim of conducting the study.

Chapter two: is the literature review, which provided a critical analysis and evaluation of the existing knowledge regarding each of the research questions that the study evaluated and statistically analysed. Various sources of information were consulted to augment ideas and information presented in the present study.

Chapter three: is the study methodology, which highlighted how the information and variables were collected and prepared for analysis. The plan of action for conducting this research was clearly discussed in the methodology chapter.

Chapter four: is for analysis and interpretation of the results. Tables and diagrams were used to communicate the results of each statistical test that was conducted.

Chapter five: is for discussion, conclusions, recommendations, and limitations. The findings from both primary and secondary studies were concluded, and appropriate recommendations were made showing how the research problem and questions were resolved.

Chapter Two: Literature Review

2.1. Introduction

This chapter presented the literature review on the causes of mobile bully-victim behaviour. Firstly, the current state of mobile bully-victim behaviour in South Africa was discussed, followed by a review of cyberbullying and mobile bully-victim related studies from other African countries. The next section of the chapter provided the general characteristics of bully-victim. This is followed by a comparison between various types of bully-victims (traditional bully-victims, cyberbully-victims, and mobile bully-victims). The next section focused on examining the main causes of mobile bully-victim behaviour, that is, social integration and aggressive behaviour. Both aggressive behaviour and social integration consist of various factors, which were explained through theories and models such as the General Aggression model and Socio-Ecological model. After the examination of the causes of mobile bully-victim, a summary of the gaps that were identified on the South African based literature was provided and how this study aimed to overcome these gaps. Based on the gaps identified, an integrated model was presented. The last section of this chapter provided a conceptual model and propositions based on the integrative model and literature. Figure 2.1 below provides an overview of how the literature review chapter was structured.

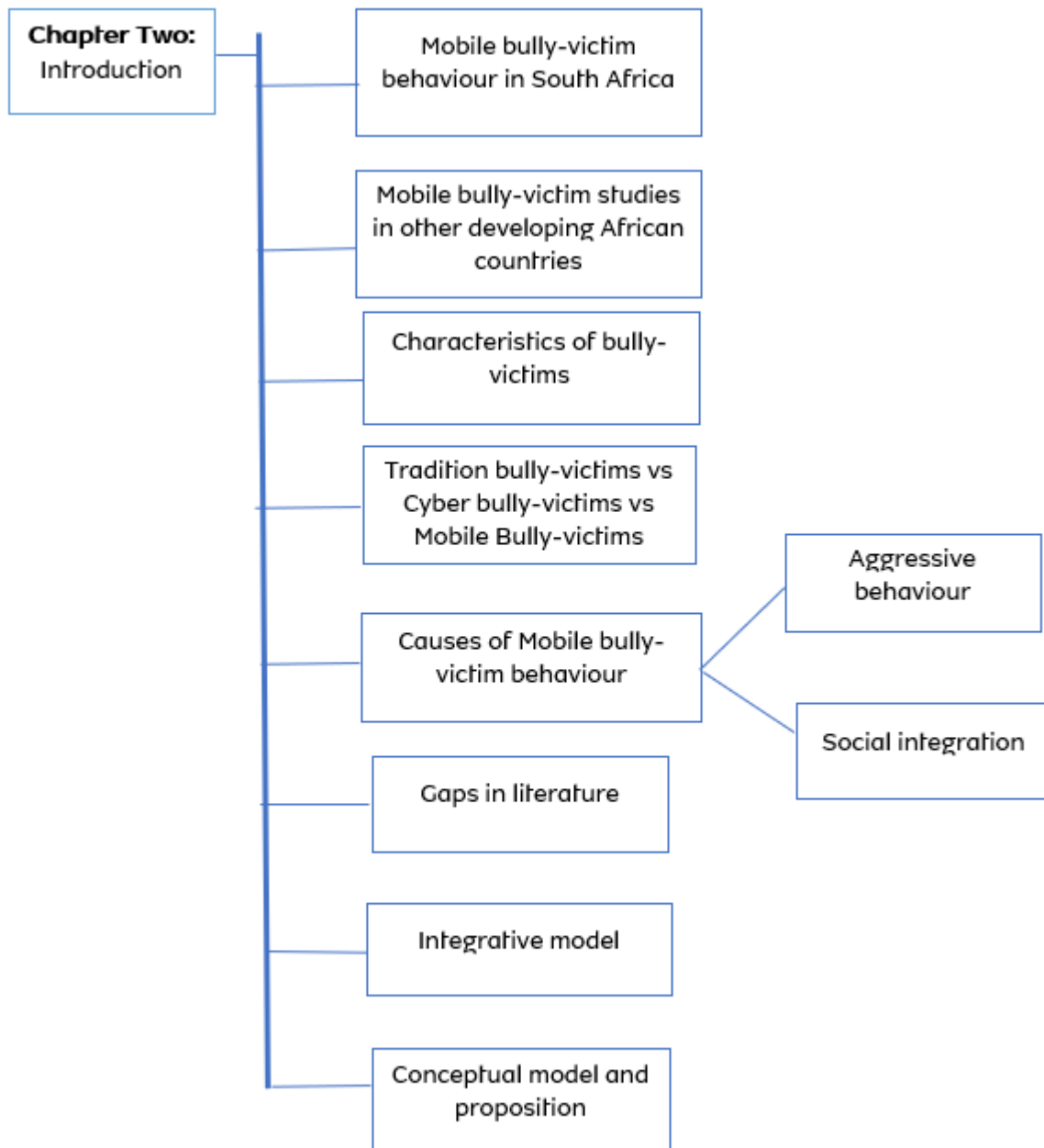


Figure 2.1: Chapter Overview (Literature Review)

2.2. Mobile bully-victim behaviour of adolescents in South Africa

Previous studies stated that South Africa has the highest rate of smartphone usage and MSNs (Badenhorst, 2011). The high rate of smartphone usage is attributable to continuous affordability for internet connection and mobile phones. The majority of internet and MSN users are below the age of twenty. About 62% of these internet users are from rural areas, whilst 78% are from urban areas (Phyfer, Burton & Leoschut, 2016). Having internet access and a

smartphone has both positive and negative consequences for a developing country like South Africa. Learners are now able to use computers at school for educational purposes. On the other hand, one of the negative impacts of smartphones is that these electronic gadgets provide bullies with an opportunity to bully others while they remain anonymous. Since adolescents always have their phones, this means there is a possibility of 24/7 victimisation, which can lead to tragic results such as depression and suicide, especially when it comes to sensitive adolescents (Alfreds, 2017). However, there are limited studies that have focused on the technology that is being used to conduct bullying. Hence, Mahon (2014) highlighted that it is crucial to research these new technologies which provide instant messaging as they have become venues for mobile bullying. It is also important to note that MSNs and smartphones do not only provide an opportunity to bully, but they also provide an opportunity for victims of mobile bullying to retaliate (Mahon, 2014). In South Africa, about 69.7% of South African youths fall into the cyber bully-victims' role (Burton & Mutongwizo, 2009)

Even though mobile bullying is one of the significant social challenges in South African high schools faced by adolescents, few studies have been conducted on this issue (Alfreds, 2015; Grimbeek, 2017). Studies about mobile bully-victims are few, even though statistics clearly show the growing number of bully-victims. Currently, the anti-bullying policies and South African laws are not comprehensive enough to mitigate or address mobile bullying. For example, South African schools rely on laws such as the Promotion of Equality and Prevention of Unfair Discrimination Act 4 of 2000 and the Films and Publication Act, though these laws both forbid distribution of hate speech, however, it is not clear whether hate speech is punishable or a criminal offence if it is conducted online or at school by a minor (Smith, 2015).

Given the weaknesses of cyberbullying legislation and laws, the causes of mobile bully-victim behaviour were examined, from both social integration and aggressive behaviour. The main reason for this was to provide an understanding of this phenomenon and help policymakers align their efforts to the actual causes. As part of investigating social integration as a cause of mobile bully-victim behaviour, this study also examined how ineffective policies and growing up in a violent society leads to negative social encounters that cause mobile bully-victim behaviour. Previous research on aggression has excluded the impact of the country's determinants such as income inequality and weak social controls over violence; and mainly focused on the bullying that takes place in schools and online (Elgar et al., 2009). The eNCA (2017) stated that about 80% of South Africans get away with violence without reprisals. Given

that South Africa is amongst the top ten countries in the world, with the highest rate of violence, it is essential to investigate whether violence in this country is also one of the factors that cause mobile bully-victim behaviour (BusinessTech, 2016).

2.3. Mobile bully-victim behaviour studies in other developing African countries

There are more studies that have focused on various types of bullying and different roles in bullying when it comes to Western countries. This is not the case when it comes to developing African countries. Even though there is a growing number of internet users and the adoption of mobile devices, the side effects of information technology such as bullying have not been thoroughly investigated. While this is the case, few studies on cyberbullying studies were conducted in Ghana, Kenya, and Tanzania, which highlighted the prevalence of mobile bully-victims. These countries have the highest smartphone penetration and internet users as compared to other African countries as per the July report by BusinessTech (BusinessTech, 2018). Therefore, the prevalence of mobile bully-victim behaviour is expected to be more compared to other developing African countries such as Rwanda, Liberia, Malawi, Somalia, etc.

A study that investigated various types of bullying that took place in Ghanaian high schools was conducted by Antiri (2016). Amongst other findings from this study, it was noted that cyberbullying and its various forms were growing even though there is limited research on this type of bullying (Antiri, 2016). This is in line with the findings of another study by Sam et al. (2018). Both studies highlighted the high prevalence of cyber victims. On the other hand, the number of cyber-victims is still unknown; however, the researchers stated that the sample for the studies might have included cyberbully-victims (Sam et al., 2018).

Another bullying study was also conducted in Kenya by Okoth (2014). The purpose of the study was to identify forms of bullying amongst learners in Kenya and to determine the prevalence of bullying. The study found that the most common forms of cyberbullying included spreading rumours and sharing embarrassing images of other learners. It was also noted that mobile phones were used during school hours to spread rumours.

In a cyberbullying study that was conducted on adolescents in Tanzania, in order to gain perspective on how cyber-victims coped with bullying online, it was noted that victims of cyberbullying used retaliation as a coping mechanism (Onditi, 2017). The study also highlighted the harmful effects of cyber-victimisation, such as poor academic performance and emotional distress. However, the causes of cyberbully-victim behaviour were not investigated.

Similarities were noted between the cyberbullying studies conducted in Ghana, Kenya, and Tanzania. The majority of the studies highlighted the adverse psychological effects of online victims, such as suicide and depression. The existence of mobile bully-victims was also highlighted; however, their role was not examined by any of the studies. This indicated that research on mobile bully-victim behaviour is indeed limited in developing countries (Kabiawu & Kyobe, 2015)

2.4. Characteristics of bully-victims

Bully-victims are not only unique because they have problematic behavioural issues as compared to bullies. However, they also tend not to show remorse for bullying others, which is very problematic and dangerous (Ragatz et al., 2011). Bully-victims are characterized as having higher levels of both emotional and behavioural issues (Ball et al., 2008). They usually have a higher display of depression, anxiety, and attention deficit reactivity disorder (ADHD). Ball et al. (2008), posited that males who grew up in hostile homes watching and experiencing aggressive behaviour are likely to become bully-victims. Previous research has also reported that children also become bully-victims mostly because of genetic factors such as attention deficit hyperactivity disorder (Ball et al., 2008). While other researchers also say bully-victims have high levels of low self-control, and they have issues with temper. As a result, bully-victims tend to engage in anti-social and problematic activities (Ragatz et al., 2011). However, Rodkin et al. (2015), argued that bully-victims could develop through social integration. For example, adolescents in average social ranks become motivated to use negative social interactions such as relational aggression to move up in the social hierarchy while they are marginalizing their victims (Rodkin et al., 2015). Some succeed in their quest for social status, whilst others fail. The adolescents who fail to obtain the desired social status end up being harassed and rejected. As a result, they end up being bully-victims.

From the characteristics of bully-victims, it is clear that this particular group of adolescents engage in bully-victim behaviour not only because of aggression but due to social goals and social interactions, which also lead to this behaviour. Aggressive behaviour leads to mental health issues over time, while negative social interactions result in maladaptive issues (Rodkin et al., 2015).

2.5. Traditional bully-victims, Cyberbullying bully-victim, and mobile bully-victims

A traditional bully-victim is anyone who is a bully and a victim at the same time. (Wilson, Celedonia & Kamala, 2013) Traditional bully-victims, also known as aggressive or provocative victims, tend to use physical and verbal aggression (Hynie et al., 2001). Physical aggression includes hitting and kicking, while verbal aggression includes name-calling, threatening, and mean comments (Wang, Iannotti, and Nansel, 2009). Bully-victims also use relational aggression to gain resources or to retaliate. The use of relational aggression leads to rejection and exclusion of bully-victims (Hynie, 2009). Rejection stems from the fact that bully-victims tend to irritate their peers in the process of attempting to recruit allies by displaying high levels of aggressive behaviour. Bully victims also annoy bullies when they react in a hostile manner while they are being victimised (Campfield, 2008). Bully-victims have been identified as the most disturbed group because of the behavioural problems they demonstrate, such as hyperactivity and externalising aggression (Campfield, 2008).

Due to the increase in the number of adolescents connected to the Internet via computers and mobile phones, cyberbullying has also increased. Bully-victims do not only exist on physical environments such as schools, but they also exist online. Cyberbullying is defined as a deliberate and repeated harm that is caused by using an electronic device such as a mobile phone and a computer (Smith, 2008). This definition excludes the context of power imbalance as compared to the definition of traditional bullying that takes place in a physical environment. The reason for this is that power in the cyber-space shifts often. Online power is related to having the knowledge and online content such as pictures, and videos that others do not have (Hinduja & Patchin, 2005). Unlike in traditional environments where power tends to be static such as the physical stature of the bully, which makes the bully powerful than the victims. About 12% of adolescents perpetrating online bullying are also victims of online bullying (Campfield, 2008). The strain that victims of bullying experience is likely to result in bully-victim behaviour

when adolescents adopt aggressive behaviour (Cullen et al., 2008). Cyberbully-victims have characteristics that are similar to those of traditional bully-victims (Fahy, 2016). The difference is that the number of cyberbully-victims is larger than the number of traditional bully-victim, and the majority are females (Görzig, 2016). The main reason for this is that online power imbalance is unclear as compared to traditional settings such as physical schools. Researchers have also stated that adolescents who are cyber-victims or cyberbullies are at risk of being cyberbully-victims (González-Cabrera et al., 2017). Furthermore, cyberbully-victim have behavioural conduct problems that are approximately four times higher than those of cyberbullies and cyber-victims (Görzig, 2016).

Cyberbullying has subtypes, such as mobile bullying and chatroom bullying. For the purpose of this research, the focus was on mobile bullying amongst other subtypes. Mobile bullying is a subtype of cyberbullying that is conducted through Instant Messaging Apps, and Short Message Service (SMSs) using a mobile phone (Kyobe, 2015). Smartphones have become very popular among adolescents because of their affordability and the features they offer (Sarwar & Soomro, 2013). Even though these devices have advantages, they also have psychological disadvantages. For example, the cameras and video technology on smartphones are not only used to capture family pictures and notes in the classroom. However, they are also used to record bullying events, and these incidents are shared on social media in order to humiliate the victim. The fact that adolescents are able to connect to the internet anytime, anywhere due to smartphone capabilities, also makes the number of users that share the video to increase in seconds. The victim faces psychological challenges such as depression because they have to relive the incident as the video or an image continues to be shared (Underwood & Rosen, 2011). In this case, the victim of the incident that took place in a school environment is no longer a traditional victim only, but also a mobile victim.

The behaviour of mobile bullies and victims has been investigated before, while the behaviour of mobile bully-victims is limited, especially in South Africa. This is a concern because international studies have linked this behaviour to suicidal tendencies (Popovac & Leoschut, 2012; Kyobe, 2017). Klomek et al. (2009), stated that bully-victims have the highest percentage of suicide attempts as compared to pure bullies and victims. This percentage might even be higher as compared to traditional and cyberbully-victims, given the presence of smartphones, which can be used to engage in this behaviour 24/7. The main reason is that it has a larger audience, content spreads fast, and it is more severe as compared to bullying at

school, on chatroom and desktop websites. Based on these findings from previous studies, it is clear that mobile bully-victim behaviour and its causes should be investigated.

2.6. Causes of mobile bully-victim behaviour (Aggression vs Social integration)

Ahn (2011) stated that even though technology plays a role in negative experiences as well as bullying behaviour, there are social and emotional characteristics that play a role in causing mobile bully-victim behaviour, of which technology is a facilitator and an avenue for this behaviour. Therefore, this section focused on social integration and aggressive behaviour, specifically on how they lead to bully-victim behaviour. Additionally, features of MSNs that facilitated mobile bully-victim behaviour were also investigated.

2.6.1. Aggressive behaviour

According to Merriam-Webster's dictionary (2011), "Aggression is any behaviour intended for harming another person who does not want to be hurt". Aggression in physical environments such as schools includes kicking, taking one's belongings, and demolishing someone else's property in order to inflict pain (Antiri, 2016). On mobile platforms, aggressive behaviour differs as compared to physical environments. The presence of physical power which comes in the form of the physical statue does not exist online; instead, power is depicted by the number of followers who like and share the rude comments (Modecki et al., 2014). Therefore, on mobile social networks, aggressive behaviour is portrayed through rude comments, insults, and threats (Zimmerman & Ybarra, 2016). According to the General Aggression Model, aggression is caused by both distal and proximate factors, as shown in Figure 2.2 below (Allen et al., 2018). The general aggression model is a framework that explains aggression through learning theories and processes (Kowalski et al., 2014).

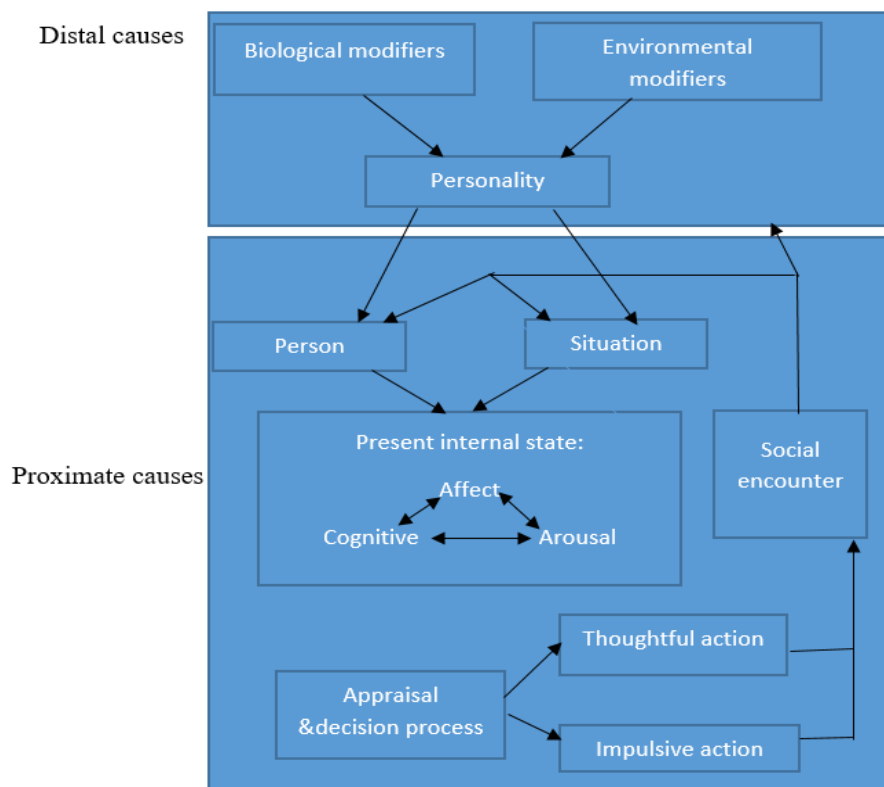


Figure 2.2: General Aggression Model (DeWall et al., 2011)

Proximate causes are variables that are active during the current social interaction episode, which includes situational and personal factors. Situational causes are features of the present scenario that triggers aggression, such as insults, rejection, and threats. As shown in Figure 2.2 above, distal causes feed to proximate causes. GAM has three aspects, namely, inputs, routines, and results. Inputs include a particular situation and distal causes of aggression, such as self-control and self-esteem. Routines explain a persons' internal state of mind and emotions such as schemes and rehearsed scripts, while the outcome is the actual aggressive behaviour towards others (Kowalski et al., 2014). GAM considers aggressive behaviour as an event episode, which is a result of one's experiences, background, and an arousing event, which leads to activation of scripts and schemes. According to Cuadrado- and Fernández (2016), bully-victims tend to mimic their victimisation experiences, meaning they replay their experiences of events in order to cause pain to others. At this stage, the bully-victim's main aim is to cause pain with the same mode of bullying they have experienced. This shows the internal state of mind of a bully-

victim, which is characterized by frustration and revenge (Cuadrado & Fernández, 2016). The bully-victim provokes peers and reacts extremely aggressive when peers respond (Unnever, 2005).

Distal factors, on the other hand, influence aggression after a long period of time. These include the environment the adolescent lives in and the biological modifiers such as genes and puberty. *Environment (location)* is a location in a specific place (Merriam-Webster's dictionary, 2011). In this case, it is a specific place where the mobile bully-victim grew up. The location is also one of the factors that lead to bully-victim behaviour (Hanish & Guerra, 2004). Examples of these include being exposed to violence at home and at school, which results in a stressful environment that makes children feel insecure (Hanish & Guerra, 2004). Adolescents who have been exposed to such environments end up mimicking the aggressive behaviour to their peers. Previous studies acknowledged that violence within the community where the adolescent lives has an influence on bully-victim behaviours (Hanish & Guerra, 2004). Raven and Jurkiewicz (2014) stated that genetics influence bullying and victimisation. For example, adolescents who are regarded as having weak genes in terms of their physical appearance and personality are bullied the most for a long time, and they also retaliated by bullying others. Vaillancourt, Hymel and McDougall (2013) noted that being victimised by peers leads to a change in Deoxyribonucleic acid (DNA) makeup. This DNA change means the environmental signals are translated into organismal molecular events. This change is called Epigenetic alteration, which results in victims having more chances of becoming bully-victims (Ball et al., 2008).

Personality

Personal factors are what an individual brings to the current episode, such as beliefs, self-esteem, and self-control. In order to build a better understanding of the personal characteristics of bully-victims, and compare our findings to existing research, the researchers found it necessary to examine the common themes identified in previous studies, but also those where many inconsistencies in findings have been reported. These include Self-esteem; self-control; gender, and age (Thomas, Connor & Scott, 2018; Akyeampong & Adzahlie-Mensah, 2018; Cassidy et al., 2013; Kowalski et al., 2014).

Self-esteem: self-esteem is a representation of social acceptance, rejection, and a psychological gauge" (Patchin & Hinduja, 2010, p. 3). Therefore, self-esteem is an individual belief regarding the personal value (Patchin & Hinduja, 2010). Literature states that bully-victims have very low self-esteem as compared to both victims and bullies (Bayraktar et al., 2015). The cause of this may be a previous experience of victimisation, which leads to a decrease in self-esteem (Patchin & Hinduja, 2010). Over time, adolescents who experienced victimisation several times develop aggressive behaviours (van Dijk et al., 2017).

Self-control: self-control refers to one's ability to control emotions and thoughts (Inzlicht et al., 2014). Bully-victims are characterised by hot-temper (Bayraktar et al., 2015). Their inability to control anger decreases self-control and results in aggression. This means aggressive behaviour on bully-victims is a result of depleted self-control. This is evident when bully-victims are provoked, they tend to react aggressively.

Gender: gender is a state of being either a male, female, or other. According to Berkowitz and Benbenishty (2011), male adolescents are more likely to be bully-victims than females because they engage more in physical aggression as compared to females. Therefore, male bully-victims choose to socialize with aggressive peers, and they end up becoming victims. This is the case for traditional bully-victims, when it comes to cyberspace, females are more likely to become bully-victims than males (Cuadrado & Fernández, 2016). Other studies have found that both males and females are equally likely to become bully-victims (Bayraktar et al., 2015). Therefore, the influence of gender on mobile bully-victim is unclear, and this is evident as previous bully-victim studies have contradicting findings.

Age: Age is the time an individual has lived (Merriam-Webster's Collegiate Dictionary, 2011). According to Jansen et al. (2011), children who suffer from anxiety while they are still young are less likely to become bully-victims because as they reach the adolescent stage, anxiety decreases. This is not the case for aggressive children at pre-school. Aggressive pre-schoolers are likely to become bully-victims because as they transition from primary to high school, they are likely to become victims at the beginning (Jansen et al., 2011). These children start as minor aggressors who steal and bully others, and as they become old, they become more aggressive. According to Hanish and Guerra (2004), bully-victims become more strategic aggressors as they grow old, which makes them bully others more and decreases the level of victimisation.

Baker (2009) has highlighted that age does not impact aggressive behaviour only. However, it also has an influence on social integration. For example, adolescents may engage in negative social interactions with social network users that are in the same age group, since they are more relatable to them. Hence, age was grouped as a mediating factor on the conceptual model.

Frustration-Aggression model (stress and frustration)

From the General Aggression Model discussion, characteristics of an individual, and the environment that the individual is exposed to act as inputs to aggressive behaviour. The GAM does not explicitly mention factors that challenged an individual's emotional well-being, such as stress and frustration. As a result of this gap, the frustration-aggression model was adapted as an additional model to explain frustration and stress as causes of aggressive behaviour. Previous researchers such as Tam and Taki (2007), that have studied aggression, utilised the frustration-aggression model. Therefore, it is appropriate for this research section since it is about the causes of aggressive behaviour.

Stress is defined as an environmental change that is both challenging physically and psychosocially. Examples of stress events include a violent environment, a threat to physical or psychological well-being (Aldwin & Levenson, 2013). Dollard, Doob, Miller, Mowrer, and Sears (1939) stated that frustration and stress are some of the factors that cause aggressive behaviour. The frustration-aggression model depicted that bullied adolescents see bullying as a stressful event, and they react in two ways to victimisations, namely; asking for support from others or reacting aggressively as a way of coping (Konishi & Hymel, 2009). The adolescents that bully others through using reactive aggression as a way of dealing with victimisation become bully-victims. Because now, they are not only being bullied, they also engage in bullying.

Frustration refers emotions of anger that an individual has when they are denied something, or they feel as if they are unable to attain their goals (Den Hamer, Konijn & Keijer, 2014). According to the frustration-aggression model, frustration leads to aggression (Worchel, 2017). For example, when some adolescents feel excluded or rejected by parents, they become aggressive towards others. Being excluded on purpose by others frustrates adolescents because it deprives them of allies and friendships, which results in them becoming hostile to their peers (Sijtsema et al., 2010). Since peer rejection is another form of bullying, the excluded adolescent

is, therefore, a victim at first. Over time, the victim starts bullying others because they feel frustrated, which then makes the adolescent a bully-victim. Hence, the adolescent is not only being bullied; the victim also engages in aggressive behaviour.

2.6.2. Social integration

Social integration is defined as a process that occurs over time through which individuals form social relationships and affiliations (Ware et al., 2007; Berkman et al., 2000). Sometimes adolescents form friendships and allies through social integration by manipulating social systems (Antiri, 2016). This is called social bullying or relational bullying. In relational bullying, there is a bully and a victim as the victim is marginalised by the bully during a social interaction through insults, exclusion, and spreading rumours. However, at times, bullies end up being victims whilst victims retaliate and become bullies (Kaukiainen et al., 2002). In section 2.6.2.1, Bronfenbrenner's ecological model was used to explain how social integration within various types of environments or systems results in mobile bully-victim behaviour.

2.6.2.1. *Bronfenbrenner's ecological model*

Bullying has to be understood across individuals, families, peers, schools, and community context. "Bullying and victimisation are ecological phenomena, and they are established and perpetuated over time as a result of the complex interplay between inter and intra-individual variables" (Espelage & Swearer, 2004, p.172). Hence, Bronfenbrenner's ecological model was selected because it illustrated that mobile bully-victim behaviour is not straightforward. Instead, it is a result of interactions between an individual and the different environments they live in or are exposed to (Cross et al., 2015). Bronfenbrenner's ecological model, also known as a social-ecological model is a developmental science framework that is based on the ecology of human development (Espelage, 2014). The ecological framework emphasizes the significance of conducting research on natural environments, such as schools (Espelage, 2014). Additionally, this model focused on demonstrating how direct and indirect factors influence an adolescent's behaviour (Cross et al., 2015).

The majority of scholars who have studied school bullying and peer victimisation have used the socio-ecological framework to understand how youth characteristics and their interaction with environmental systems promote victimisation and bullying (Espelage, 2014). The ecological model has also been applied to previous cyberbullying studies to understand relational aggression (Ross et al., 2015). Even though this model has been widely used, not all of the systems that form the model have been investigated before. For example, only the individual level has been examined by cyberbullying related studies. This study, on the other hand, explored all the systems/environments in this model and explained how they influence an adolescent to engage in mobile bully-victim behaviour.

Socio-ecological model components: According to the Socio-Ecological Model, the behaviour of adolescents is greatly influenced by contextual systems such as friends, and family members (Hong & Espelage, 2012). This contextual system is referred to as a micro-system (Hong & Espelage, 2012). Once the adolescent starts attending school, they become exposed to the school climate, which also influences their behaviour. When the influence of home and the influence of school interact, this is called a mesosystem (Hong et al., 2014). Policies by government institutions that can be applied to schools and an adolescent's life also have effects on the adolescents' behaviour, and these belong to an environment called exo-system (Hong et al., 2014). Other factors that play a role in the way an adolescent behaves include culture, laws, social conditions, and religion. These factors are collectively referred to as macro-system (Hong et al., 2014). Amongst all these factors, there are experiences that influence an adolescent directly, such as puberty. These instances belong to the individual level, which significantly affects the way adolescents conduct themselves, amongst others. This individual component is shown in figure 2.3 below, and all these systems/environments form the socio-ecological model in Figure 2.3 below.

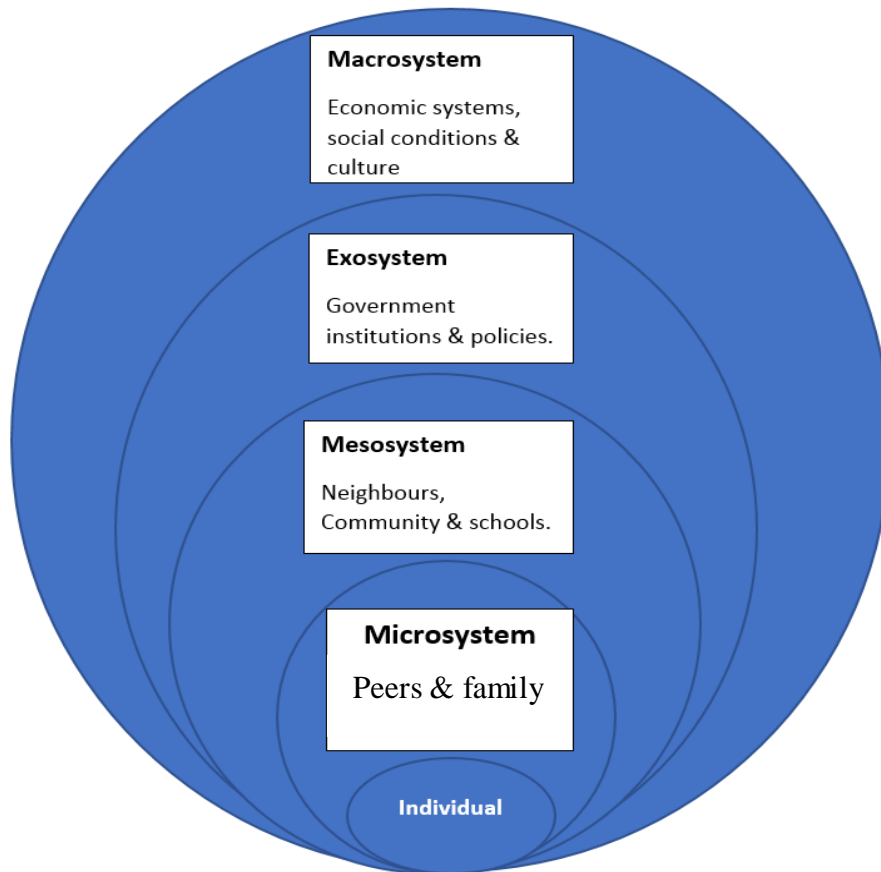


Figure 2.3: Bronfenbrenner's ecological model (Leonard, 2011)

a) Individual (social goals and MSNs features): The individual-level attributes that were considered for social integration are social goals. Social goals consist of elements such as popularity, power, self-perception, and having allies belonging to a group, which leads to mobile bully-victim behaviour during social interactions within social networks.

- i) **Power theory:** power is regarded as both an influence and a psychological change. Change involves a change in attitude, behaviour, needs, and goals (French et al., 1959). Power change takes place within a system or a social network. For instance, to affect psychological change, such as changing one's opinion, influential individuals exert a force. Usually, this force may arise from the need for security or maintenance of the power (French et al., 1959).

The actors of the network possess power because of the resources they have, such as physical appearance, having the knowledge, being intelligent, and having social status. Studies referred to this type of power as implicit power (Agnew, 1999).

Implicit power is gained by successfully influencing others within a social network with the implicit resources possessed (Fiske & Berdahl, 2007). Influence is an outcome of the psychological force exerted by the person with power within a social network (Castells, 2011). Power may, however, be abused by influential individuals when they influence others to do what they do not want to do (Fiske & Berdahl, 2007). The influence may involve offering the powerless individuals incentives (such as friendship, allies, and group membership), in return for doing what the powerful individual wants, which is referred to as reward power (Agnew, 1990). Being able to offer reward is a crucial source of power during the adolescent stage since adolescents face insecurities and often want to belong (Agnew, 1990). For example, a powerful adolescent can ask powerless individuals to spread a rumour even if they do not want to, in exchange for a reward. This association would enable powerless individuals to secure their positions in the social network hierarchy.

According to network theory, individuals tend to compete for power because it is a scarce resource (Castells, 2011). The competition results in the rivalry between those who have power, and those who do not have it, as those without power will oppose those who possess power (Castells, 2011). Such opposition would involve the use of aggressive strategies. The individuals with power may also attempt to resist such aggression, and as a result, they become bully-victims (Adams, 1975).

ii) Self-perception: self-perceptions are beliefs that individuals have about themselves. These include physical appearance, intellectual, emotional, and social components. According to Kaloyirou and Lindsay (2008), examining the self-perceptions of those involved in bullying would help teachers, parents, and psychologists to gain a deeper understanding of bullying. Examples of self-perception include adolescents seeing themselves as being powerful at school. In order to be assertive, adolescents become more competitive within social networks. The self-perception theory highlighted that the final constructed self-perception is a result of the previous behaviour, and individuals reveal this behaviour on social networks (Ross & Shulman, 1973). Kaloyirou and Lindsay (2008) claimed that when adolescents are provoked by their bullies within a social network, they tend to react aggressively because they perceive a threat to their existing constructed

self-perception. In this case, the adolescent being provoked is a victim who uses hostility as a tool to maintain their self-perception within a social network. This is how a victim becomes a bully, through using hostility to protect their self-perception from bullies.

iii) Popularity: according to Parker-Pope (2011), being popular at school is what most high school learners wish for. The road to reaching this goal is rough and characterised by learners who are popular for engaging in bullying, at the same time, being victims (Parker-Pope, 2011). This is a result of learners rushing to improve or maintain their social status through relational aggression. Popularity is the admiration of a particular individual (Merriam-Webster's Collegiate Dictionary, 1999). It is a mixture of prosocial and aggressive behaviour within a social network (Cillessen, 2011). Popularity in a peer group is about prestige, being more noticeable, or holding a high status among peers (Cillessen, 2011). Therefore, popularity is a strongly desired commodity during adolescence because it affords social resources such as peer administration and influence, but it is also scarce (Hawley, 1999; Cillessen, 2006). This makes those who do not possess popularity status to compete for it (Dumas et al., 2017). Therefore, a popular adolescent does not only reap the rewards of being influential but, he/she also becomes a victim of bullying.

Popular adolescents can use relational aggression to manipulate their social environment and move up the social hierarchy. For example, through relationally aggressive acts such as spreading a rumour, damaging a peer's reputation, etcetera. It is also possible that popular adolescents experience relational aggression from peers who also want to become dominant and visible (Cillessen, 2011). According to Parker-Pope (2011), adolescents tend to bully adolescents who are in the middle to high ranges of popularity because they see them as threats to their goals of being popular.

Popular adolescents may retaliate (retaliatory relational aggression) as they try to keep peers in subservient positions (Dumas et al., 2017). It is important to note that the motivation for popularity drives relational aggression (Dumas et al., 2017). Furthermore, it has been observed that popularity is more strongly associated with

relational aggression when adolescents have stronger motivations to be popular or when they prioritise popularity to a greater extent (Cellessen et al., 2014; Dawes & Xie, 2014).

Adolescents who possess both implicit resources and popular social status have the advantage to implement relational aggression successfully, but the likelihood of them engaging in negative social interaction is less unless they either want to maintain or improve their popularity (Shoulberg et al., 2011). Furthermore, other studies noted that adolescents who are striving for popularity do not only treat their peers with hostility. However, bullies victimise them because of annoying others in their attempts to gain popularity (Shoulberg et al., 2011).

b) Microsystem (peers)

Social integration and peer rejection: the theory of social integration discussed the nature and social interactions as constructs that shape people's lives (Rose et al., 2014). According to the social integration theory, low psychological well-being is a result of not having strong bonds with others. The stronger the bond within a social group, the more the members will conform to the norms of that particular group (Rose et al., 2014). The reason to conform is to sustain the bond. The person interested in a group characterised by strong bonds is under pressure to impress the members of the group in order to attract them (Blau, 1960). The reason for this is that acceptance by a group is intensely dependent on attraction. However, attraction to a group does not mean members of that group are also attracted to the individual (Blau, 1960). The attraction gives an attracted individual a goal to work on. The competition rises between individuals who want to be part of a specific group and to recruit allies (Blau, 1960). This competition becomes unhealthy, and it blocks social integration. As competition for social resources such as peers and allies increase, the attracted individuals may resort to aggression in order to impress the peers they are attracted to (Pellegrini et al., 1999). Aggressive behaviour is not attractive to peers because it can result in rejection (Bayraktar et al., 2015). This rejection acts as a source of strain that leads to aggressive relational behaviour. Relational aggression is a coping strategy for bully-victims. Bully-victims tend to use this strategy to execute revenge (Wright & Li, 2013). Bully-victims

invite further victimisation by reacting aggressively to bullies, and they end up being targets of victimisation because they do not have allies (Dulmus et al., 2006).

c) Exosystem (current mobile bully-victim framework)

According to Swearer et al. (2014), there is no formalised policy or framework in South Africa that deals with child protection online, neither by government or any other industry (Porter et al., 2016). Instead, reliance is placed on several constitutional laws that do not explicitly deal with bullying. The two primary laws that cyberbully-victims rely on is the Child Justice Act 75 of 2008 and Protection from Harassment Act 71 of 2011. It is stated in the Child Justice Act 75 of 2008 that a child has a right to be protected from any form of abuse. This Act is aimed at protecting child development, physical and emotional state. While the Protection from Harassment Act 71 of 2011 can be used as a reference by the victim to apply for protection against the bully with or without a parent. As much as this is a law that is closer to addressing traditional and cyberbullying, it does not explicitly mention the case of bully-victims.

Bandura's Social Cognitive Theory (1986) has been used in previous studies to develop frameworks for combating bullying through cognitive behavioural intervention. According to the Social Cognitive Theory, frameworks and policies for combating bullying should consist of psychological, social, and cognitive factors in order to be effective (Swearer et al., 2014). Based on the principles of the Social Cognitive Theory, policies, and laws in South Africa do not entirely address mobile bullying and victimisation. As they do not consist of psychological, social, and cognitive aspects of dealing with mobile bully-victim behaviour. This indicates why victims turn out to adopt relational aggression. This is because the policies do not defend victims, so they end up resorting to reactive aggression (Smith, 2015).

d) Meso-system (MSN features)

Use and Gratifications Theory was used to examine why bully-victim adolescents preferred to use certain MSNs to retaliate or bully others. This is in line with the proposition by Ahn (2011), who stated that in order to understand the negative impact of social networks, researchers must not only look at the behaviour of the youth but at the technical features. These technical features enable youth to perpetrate bullying and retaliate. In the end, the aim is to obtain clarity of how mobile technology contributes to bully-victim behaviour. Use and Gratifications Theory focused on adolescents and why they chose to use specific forms of communication media as

opposed to others (Cheung, Chiu & Lee, 2011). This theory affirms that adolescents are goal-orientated in their behaviour, and they can clearly identify their needs. For the purpose of this research, the researcher discussed the concept of technology with a specific focus on the features that mobile social networks platforms offer, which facilitate bullying (such as retweets, shares, likes). Below are the details of how each MSN feature enables adolescents to engage in bully-victim behaviour.

- i) **Hashtags:** a hashtag (#) consists of a number of key characters that begin with a hash symbol (Small, 2011). Users usually contribute to the same topic by using the same hashtag (Tsur & Rappoport, 2012). For example, #Rosebank can be used by a large number of users to contribute to a topic about Rosebank. The first social network to come up with this feature was Twitter (Zappavigna, 2017). Twitter is a microblogging application that is accessible both on mobile devices and desktop computers (Tsur & Rappoport, 2012; Zappavigna, 2017). In order to successfully invite more users to contribute to a specific topic of discourse, a hashtag plays a huge role. This is equally applied to spreading bullying content such as videos, photos, and posts that are directed at a specific person or a group (Calvin et al., 2015). The participants who contribute to the topic, as well as the user who started sharing bullying content and using a hashtag to invite more people, are called bullies. According to Moule, Decker and Pyrooz (2017), victims who receive attacks through hashtags tend to retaliate, especially the youths that belong to a gang. In the end, the youth ends up in the bully-victim category because they do not only suffer from bullying but, they also engage in bullying in order to maintain their status or execute revenge.

Twitter is not the only social network that provides a hashtag feature. Instagram also enables users to use popular hashtags on the photos or videos they post. Instagram is an online mobile social network for sharing videos and photographs. Instagram shares some similarities with Facebook and Twitter since it enables users to share photos, however, it also differs because it offers filters for modifying pictures before they are uploaded (Sheldon & Bryan, 2016). Instagram is widely used by adolescents, however, there is limited research on how it enables mobile bully-victim behaviour. Instagram enables bullying by allowing adolescents to hashtag photos using the most popular searches in order to attract a larger audience

to view the content (photos/videos) about victims. According to Hosseinmardi et al. (2015), filters that Instagram provides, are used by bullies to edit images of the victims in order to humiliate them. On the other hand, hashtags are not only initiated by bullies, but they can also be initiated by victims so that they execute revenge. For example, an online blogger used Instagram to share embarrassing nude photographs of men who harassed her online (Vitis & Gilmour, 2017). In this case, the blogger is classified as a bully-victim because of the retaliation perpetrated.

- ii) **Retweet:** is another feature of Twitter. Retweeting is when a follower shares a tweet of the person they are following (Kwak et al., 2010). Retweets play a negative role to victims because they enable negative content to reach a larger audience. According to previous research, negative content directed at victims spreads quicker than positive content (Tian, 2016). This puts pressure on victims, and they end up retaliating by bullying others or their bullies. Examples of bully-victims on Twitter include adolescents who are involved in gang violence who use the application to challenge others through posting threats and insults. These adolescents also use Twitter as a means of retaliating or executing revenge on their rivals (Patton, 2017).

- iii) **Likes and Shares:** Facebooks offers both the like and the share button. The like button is a way of showing approval of a post, picture, or video, while the share button is used for distributing the content (Fox & Moreland, 2015). The share button plays a negative role when it comes to bullying content, because the more the content is shared, the larger the audience becomes, and it is hard to erase it once it has been shared completely. Cracker and March (2016) stated that the provocative comments made by bullies when sharing embarrassing content about a victim, motivate victims to retaliate. Likes, on the other hand, indicated the popularity of the post as well as social feedback (Alhabash et al., 2013). If a photo of the victim is liked by others, it means they approve victimisation of a particular adolescent. That also puts pressure on the victim to retaliate by bullying others or executing revenge.

- iv) **WhatsApp Groups:** according to Nadan and Kaye (2018), most bullying incidents occur in WhatsApp groups. These groups allow each member to share instant

messages, photos, and videos with other members within the group. Amongst the group members, there is an administrator or administrators of the group. The administrators have more power than members of the group because they can add or remove other members on the WhatsApp group. The type of bullying that happens on WhatsApp is mostly the exclusion and distribution of videos or pictures and rumours. For example, adolescents would create a group that would exclude one individual on purpose. Or they will remove an individual from the group because they do not like them or for revenge purposes. Adolescents also share disturbing video clips on WhatsApp, and these create a non-ending cycle of bullying on the victim's side as they have to relive the event each time the video or picture is shared on the WhatsApp groups.

e) Macrosystem (country determinants- income inequality)

Countries with a high rate of income inequality create harsh environments whereby violence in the form of bullying is taken lightly or ignored (Elgar et al., 2009). South Africa fits the profile of a country with a high rate of violence, and inequality which results in adolescents from a poor background being excluded from social groups. Over a period of time, this results in a cycle of retaliation by the socially excluded victims (Elgar et al., 2009). Being discriminated against makes them behave aggressively towards others because they start perceiving hostility from others (Elgar et al., 2009).

The social integration theory supports the fact that in a macro-system, when challenges such as income inequality disturb the society, social norms become weaker as a result of society's beliefs in aspects such as peace, support, and protection start to fail individuals (Glass, 2000). From both the social integration theory, it is clear that when the society can no longer protect victims and inequality seems to be the order of the day, adolescents are likely to become bully-victims.

2.2 Gaps identified in the existing literature

Previous South African based literature on aggression, cyberbullying, and mobile bully-victims were examined, as shown in Table 2.1. However, there are few studies that have focused on the role of bully-victims, even though such studies exist, research on the role of social

interactions on mobile bully-victim behaviour was not highlighted. Only limited international studies have highlighted the role of social interaction in causing bully-victim behaviour online. On the other hand, research on the aggressive behaviour of bully-victims exists, however, it is not based on recent mobile social networks such as WhatsApp and Instagram. Additionally, international studies have highlighted both aggression and social integration as aspects that contribute to mobile bully-victim behaviour. However, a study that has integrated social integration and aggressive behaviour to explain the causes of bully-victim behaviour online does not exist. These factors are explained separately. In order to overcome these gaps, an integrative model was developed based on previous literature from both local and international studies. This model consists of both aggressive behaviour factors and social integration factors. Additionally, it highlights the role of modern MSN features played in mobile bully-victim behaviour.

Table 2.1: Literature review gaps (SA literature)

Author/s	Aggression (retaliation, self-control, stress)	Social interactions	Buying on Mobile social networks	Mobile bullying	Bully-victims
Burton, Leoschut & Phyfer, 2016				x	
Kyobe, 2016	X			x	X
Smith, 2015			X		
Porter et al., 2016			X	x	
Liang, Flisher, 2007	X				X

2.7. Integrative model

In order to derive the integrative model in Figure 2.4, Bronfenbrenner's Socio-Ecological model (1979) was used as a template. The causes of mobile bully-victim behaviour in each environment within Bronfenbrenner's Socio-Ecological were explained by different theories. The individual part of the model was mostly explained by the General Aggression Model, which articulated how certain individual characteristics led to aggression. Whilst the causes of

mobile bully-victim behaviour within micro and Macro environments were explained by Durkheim's Social Integration Theory (1951), amongst other theories. The cause of mobile bully-victim behaviour on the exo-environment was explained by the Social Cognitive Theory whilst on the mesosystem, it was explained by the Use and Gratifications Theory.

The Socio-Ecological model and Social Integration Theory provided a sufficient explanation of how different social interactions within environments that adolescents are exposed to lead to bully-victim behaviour on MSNs. General Aggression Model, on the other hand, provided an explanation of how both distal and proximate factors led to aggressive behaviour. Majority of the theories used to construct the integrated model complemented each other. For instance, GAM, Socio-Ecological Model, and Social Cognitive Theory clearly stated that violent environments have an influence on mobile bully-victim behaviour (Espelage, 2014; Allen, Anderson & Bushman, 2018). According to these theories, the bully-victim learns relational aggression through observing violent acts at home, school, or in the community. These theories also looked at individual factors that contributed to bully-victim behaviours such as beliefs, age, social goals, and other personal characteristics. As much as GAM, Socio-Ecological Model, and Social Cognitive Theory complemented each other, they also have limitations. GAM only explained mobile bully-victim as a result of aggressive behaviour, the social interaction factor is not explained in detail. With reference to social interactions, GAM only considered encounters such as insults, threats as triggers of aggressive behaviour. Even though GAM focused mostly on aggression as a cause for mobile bully-victim behavior, it does not provide an explanation of how cognitive factors such as frustration and stress influence aggression. The weaknesses of GAM influenced the adoption of the frustration-aggression model to explain the role that stress, and frustration played towards influencing an individual's aggressive behaviour.

The Socio-Ecological model provided details of how social encounters within different environments influenced the mobile bully-victim behaviour of adolescents. This model described how goals such as the desire for popularity and social power influenced mobile bully-victim behaviour. Because of this limitation, popularity and Network power theories were adapted. Above all, the other limitations, GAM, Socio-Ecological model, and Social integration theory does not include the role of today's MSN features on mobile bully-victim behaviour, hence the adoption of the Use and Gratifications Theory.

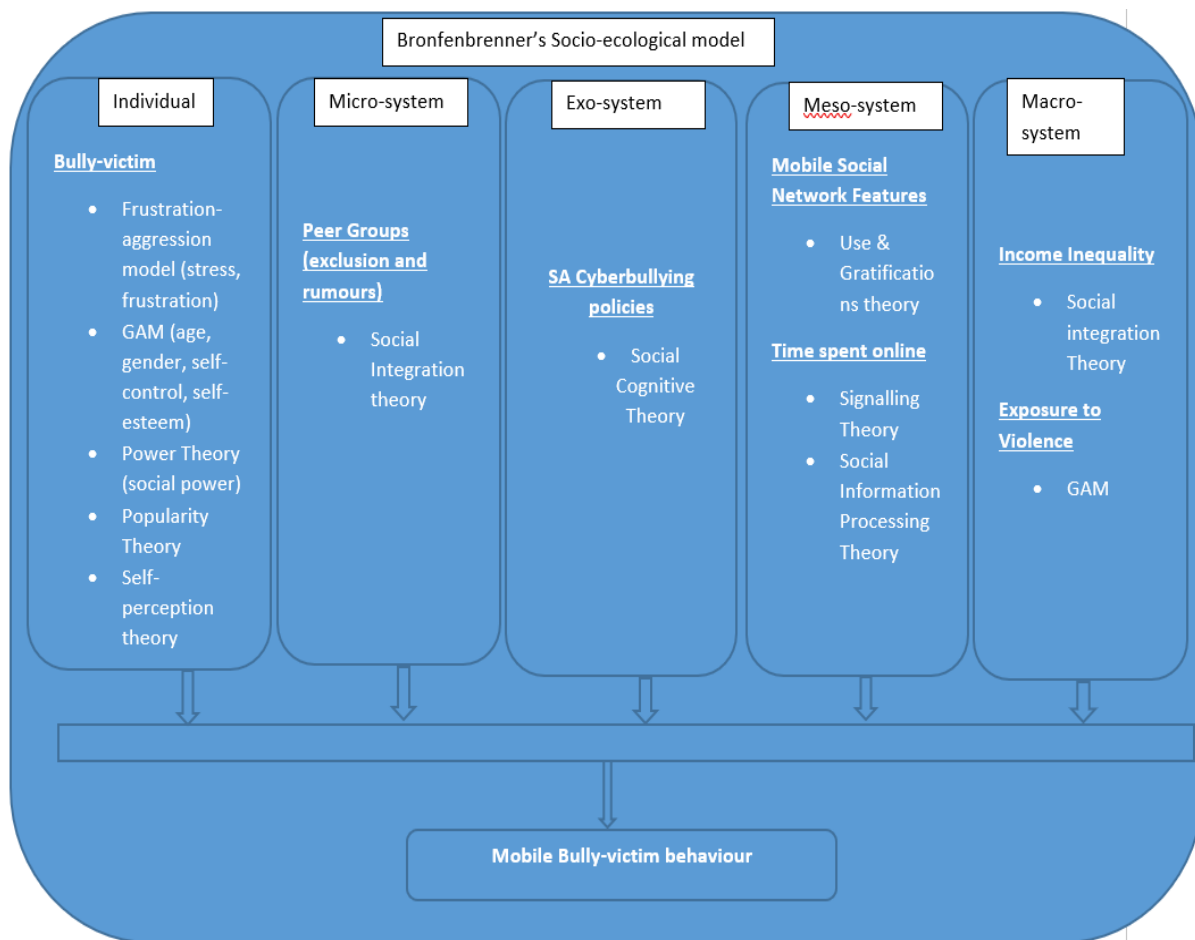


Figure 2.4: Integrative Mobile Bully-Victim Model

2.8. Conceptual model and propositions

The proposed conceptual model in Figure 2.5 was derived from the Integrative mobile bully-victim Model in Figure 2.4. This model consists of Mobile bully-victim behaviour as a dependent construct and both aggressive behaviour and social integration as independent constructs. This illustrates that mobile bully-victim behaviour is particularly caused by aggressive behaviour and social integration factors. Social integration and aggressive behaviour were the main constructs however, these constructs were caused by various factors, as indicated in figure 2.5. Additionally, age, gender and mobile phone usage (technology) are

grouped together as they have an impact on both social integration and aggressive behaviour as shown in figure 2.4. Based on this conceptual model and literature, six propositions were developed.

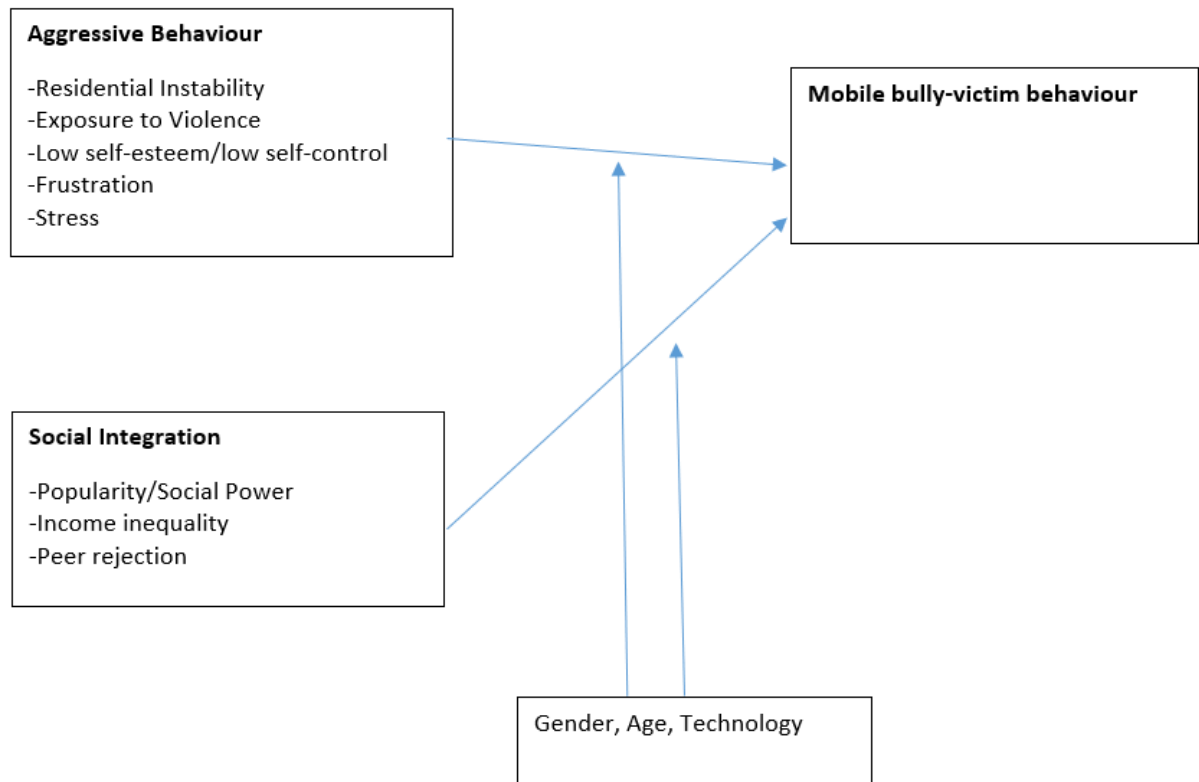


Figure 2.5: Mobile Bully-Victim Conceptual Model (Jokazi and Kyobe, 2017)

- **Proposition 1: Mobile bully-victim behaviour is a result of social integration**

According to Frey et al. (2015), one of the main reasons adolescents bully is to reach their social goals, and at the adolescent stage, these goals are crucial. Previous research found that adolescents with social goals were likely to irritate others in the process of their attempts to fulfil their social goals using relational aggression (Dulmus et al., 2006). As a result, adolescents turned out to be mobile bully-victims. This means adolescents are less likely to become mobile bully-victims because they are naturally aggressive since, during the adolescent stage, social status and resources are more important.

- **Proposition 2: Exposure to violence increases the likelihood of being a mobile bully-victim.**

Being exposed to a violent environment at home, within a community, and living in a violent country with a high rate of inequality has been found to cause aggressive behaviour of bully-victims (Hanish & Guerra, 2004; Elgar et al., 2009).

- **Proposition 3: Females are more likely to become mobile bully-victims than males.**

Females are likely to engage in relational aggression than males (Cuadrado & Fernández, 2016). Females are also most likely to be bullied online by their partners through disclosing private pictures, which increases the chances of them becoming bully-victims, given that they are likely to retaliate and engage in relational aggression as compared to males (Stroud, 2014).

- **Proposition 4: Powerless adolescents are more likely to become mobile bully-victims**

Given that power is a limited resource that adolescents would have access to, powerless adolescents are likely to bully powerful adolescents as rivals who want to have power (Castells, 2011). On the other hand, powerful individuals are more likely to protect their social position by fighting rivals. Therefore, powerless adolescents are more likely to become bully-victims.

- **Proposition 5: Instagram is an MSN venue where most of the mobile bully-victim behaviour takes place than on WhatsApp, Facebook and Twitter**

According to Underwood and Ehrenreich (2017), about 76% of adolescents spend time on Instagram as compared to being on other social networks. Therefore, this is where most bully-victim behaviour would occur as compared to other Mobile Social Network platforms.

- **Proposition 6: Younger adolescents are more likely to become mobile bully-victim when compared to older adolescents**

According to Kowalski and Limber (2013), adolescents become exposed to different types of cyberbullying at a young age, especially during their first year in high school. This means younger adolescents are more likely to become mobile bully-victims as compared to older high school adolescents.

2.10. Summary

South Africa, Ghana, Kenya and Tanzania have been identified as developing countries with active internet users and high prevalence of mobile bullying through pictures and videos by previous studies. These studies have also highlighted that there is a growing number of bully-victims on mobile platforms, however, studies on the causes of mobile bully-victims do not exist. This is a concern as mobile bully-victims face psychological risks that are severe than those of mobile bullies and mobile victims. This study examined the previous literature in order to identify the causes of mobile bully-victims. From previous studies, it was clear that mobile bully-victim behaviour was not only caused by social integration, aggressive behaviour also plays a role. Theories and models were used to explain these causes. It was noted that there was no theory or model that explained both aggressive behaviour and social integration as causes of mobile bully-victim behaviour. Therefore, several theories and models were integrated to explain how social integration and aggressive behaviour both cause mobile bully-victim behaviour. However, it was not clear whether aggressive behaviour contributes more to mobile bully-victim behaviour than social integration or vice versa.

Chapter Three: Research Design and Methodology

3.1. Introduction

The current chapter reviewed the philosophical assumptions, methods, and techniques that were applied in order to conduct this study. The chapter begins with an explanation of the purpose of this study, followed by a discussion of the research philosophy. The philosophy section has two sub-sections, namely ontology, and epistemology. The ontology and epistemology sub-sections provided differences between the common ontological stances (objectivism and subjectivism) and epistemological stances (positivism and interpretivism). These sub-sections also provided principles of the chosen ontology and epistemology and how they were suitable for this study. Following the philosophy is the methodology which provided details about the research methods and techniques that were used to select the sample of this study, collect data and analyse data. The last section provided details of how ethics approval was obtained for this study. An overview of how this chapter is structured is illustrated in Figure 3.1 below.

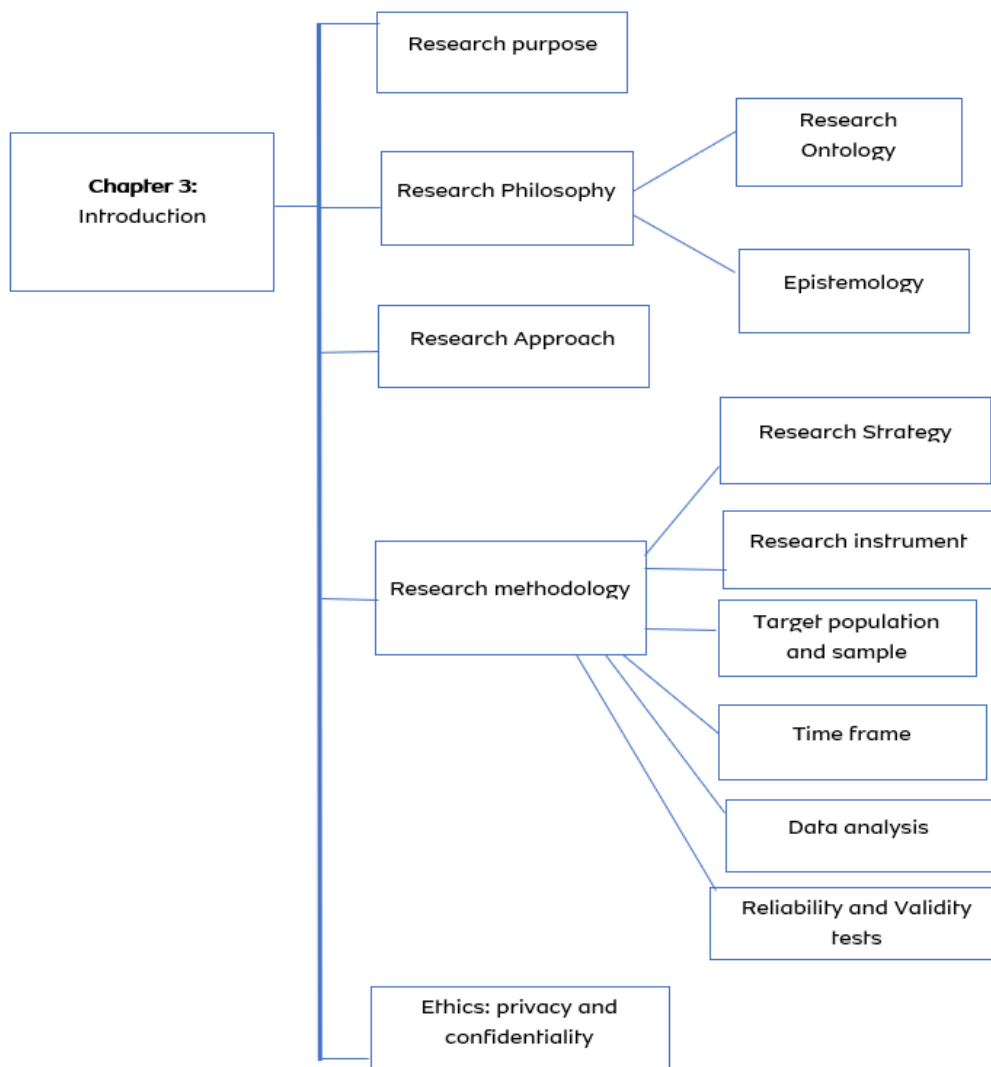


Figure 3.1: Chapter Overview (research design and methodology)

3.2. Research purpose

This chapter provided details on the research design of this study. Research design is affected by the research purpose and research questions (De Vaus & de Vaus, 2001; Kothari, 2004). According to Kothari (2004), there are four research purposes, namely, exploratory, descriptive, diagnoses, and experimental. Exploratory research answers the why questions, and it involves developing causal explanations. For example, causal explanations argued that phenomenon Y is affected by element X. Based on the explanation for exploratory research, the current research is exploratory research, because this research examined the relationships that may or may not exist between mobile bully-victim behaviour and the constructs that have been identified through literature as causes of this behaviour (aggressive behaviour and social integration).

3.3. Research philosophy

There are two major philosophical considerations, namely, subjectivism and objectivism (Diesing, 1996). These considerations are explained by several assumptions concerning ontology, epistemology, human nature view, and methodology. According to Holden and Lynch (2004), these assumptions are important to one another. For example, ontology informs epistemology, which then affects the researcher's view of human nature and the methodology to be adapted. The next two sub-sections provided more details on both the ontology, an epistemology that was adapted in this study.

3.3.1. Research ontology

Ontology is defined as the science of existence (Zúñiga, 2001). “Ontology mainly focuses on nature and the structure of reality” (Guarino, Oberle & Staab, 2009, p. 2). There are two main ontologies that are concerned with reality, namely; objectivism and subjectivism. Objectivism is based on the assumption that there are independent causes that lead to an observed effect, and both hypotheses and propositions can be verified or rejected by the observed effects. Subjectivism, on the other hand, is against categorising research problems into causes and effects (Rønnow-Rasmussen, 2003). The main reason for this is based on the assumption that a phenomenon under investigation is part of continuous creation (Holden & Lynch, 2004). Objectivism differs from subjectivism because researchers who adapt subjectivism interact with the subject under research. Subjectivists also do not believe in causality but investigate the meaning of the question to individuals that are affected by a subject that is being studied (Holden & Lynch, 2004). Another difference is that objectivists use the hypothesis deductive approach to reduce the research problem into smaller components. Subjectivists, on the other hand, believe a problem should not be reduced, instead it should be examined as a whole.

Out of the two ontological stances, objectivism was adapted for the purposes of this research. Below are the principles of objectivism followed by the motivation for using objectivism in this research:

- a) There are independent causes that lead to observed effects (Holden & Lynch, 2004)
- b) Relationship between humans and society is deterministic, meaning men are born in a world with casual laws that explain the behaviour of human beings (Holden & Lynch, 2004)

- c) The real world is completely structured, and it can be demonstrated (Vrasidas, 2000).
- d) The real world exists objectively independently of human awareness (Vrasidas, 2000).
- e) The real world consisting of objects are arranged based on their features and relations (Vrasidas, 2000).

The main objective of this research was to identify the causes of mobile bully-victim behaviour. The researcher believed there are factors that lead to mobile bully-victim behaviour and that it does not occur on its own. This is in line with the major principle of objectivism (a), which states that there are independent causes that lead to observed effects (Holden & Lynch, 2004). Both independent constructs (aggressive behaviour and social integration) that were identified as causes of mobile bully-victim behaviour were explained through models and theories. For example, the aggression construct was explained through the General Aggression Model and Frustration-Aggression Model. Social integration, on the other hand, was explained through the socio-ecological model and theories such as popularity theory, power theory, and social integration theory. Using theories and models to explain the independent constructs is in line with the 2nd principle (b) above, which states that the relationship between humans and society is deterministic, meaning man are born in a world with casual laws that explain the behaviour of a human being.

After applying theories and models to provide an explanation of how aggressive behaviour and social integration resulted in mobile bully-victim behaviour, an integrative model was developed. The integrative model was created based on the similarities and gaps that were identified from the models and theories. The main reason for creating the integrative model was to model the causes of mobile bully-victim behaviour. Based on the integrative model, a conceptual model was derived. The conceptual model demonstrated the relationship between the causes of mobile bully-victim behaviour and mobile bully-victim behaviour as a dependent construct. Having a model that demonstrates the relationship between independent construct and a dependent construct is aligned to the third and fourth principles of objectivism. The 3rd principle states that the real world is complete and can be demonstrated through models, which was done in this research. The cause of mobile bully-victim behaviour was demonstrated through a conceptual model. Likewise, the 4th principle states that the objects are arranged according to their properties and relations. In this case, the conceptual model that was

developed in chapter 2 is arranged according to independent constructs and dependent constructs.

3.3.2. Research epistemology

According to Orlikowski and Baroudi (1991), epistemology is concerned with how knowledge can be obtained and validated. In information systems, there are two common extremes of epistemology, namely; positivism and interpretivism (Gabriel, 2015). “Positivism is concerned with causal explanations for a phenomenon whilst interpretivism seek out to understand how humans interpret a phenomenon” (Roth & Mehta, 2002, p. 8). Both positivism and interpretivism consist of fundamental assumptions. Positivism assumes objective reality, on the other hand, interpretivism assumes subjective reality. Therefore, these epistemological stances are informed by ontology. As suggested by Holden and Lynch (2004), ontology informs epistemology. For the purpose of this research, the next section elaborated on the assumption of positivism since it has been chosen as the epistemology of this study. Below are the principles of positivism:

- Cause-effect relationships exist, and they can be identified and tested via hypothetic-deductive logic and analysis (Orlikowski & Baroudi, 1991)
- Knowledge obtained from theories can be verified or falsified through empirical tests (Orlikowski & Baroudi, 1991).

The cause-effect relationship between the two independent constructs (aggressive behaviour and social integration) and mobile bully-victim behaviour was tested through propositions and statistical analysis. This is in line with the positivist assumptions above, which states that cause-effect relationships exist, and they can be identified and verified or falsified through the test (Orlikowski & Baroudi, 1991).

3.4. Research approach

According to Hyde (2000), there are two approaches to acquiring knowledge, namely; deductive and inductive reasoning. With the inductive approach, the researcher observes, later, they generalise features, behaviour, etc. for the phenomenon under examination. Therefore, inductive reasoning is a process used for building knowledge (Holden & Lynch, 2004). On the

other hand, the deductive approach is a process for testing theories. When deductive reasoning is adapted, the researcher begins by generalising or using established theory, and later those theories are verified through empirical tests (Holden & Lynch, 2004). In the case of this study, established theories and models were used to inform a conceptual model which illustrated the causes of mobile bully-victim behaviour. The conceptual model that was developed in chapter two was used to verify the relationship between mobile bully-victim behaviour and its causes through quantitative methods and techniques in chapter four. Therefore, it is clear that the deductive approach is more suitable in this study, hence it was adapted.

3.5. Research methodology

Research Methodology acts as a tool-kit that enables researchers to investigate a phenomenon (Holden & Lynch, 2004). There are two types of research methodologies that are common in information systems, namely, quantitative and qualitative methodologies (Chen & Hirschheim,2004). Quantitative methodology is defined as an approach that measures variables that belong to a phenomenon under examination with numbers and analyses them using statistical methods (Chen & Hirschheim,2004). Qualitative methodology, on the other hand, is defined as a methodology that uses natural means to collect data about the phenomenon of interest over a long period in order to provide insights that cannot be achieved by other types of methodologies. Quantitative and qualitative differ from each other in terms of epistemological foundations (Bryman, 1994). The quantitative methodology applies the positivist approach to research, while a qualitative methodology applies the interpretive approach.

A quantitative methodology was used in this study for data collection, analysis, and reporting. Quantitative methods and techniques were also used to test propositions and identify the predictors of mobile bully-victim behaviour through statistical analysis. This is in line with Pekrun (2006), who argued that quantitative techniques are needed to test propositions and to identify the effects of an independent variable on the dependent variables. Also, in order to determine which factor influences mobile bully-victim behaviour more between aggressive behaviour and social integration, a form of quantification is needed and can be achieved through statistical methods. Hence quantitative techniques were used. This is also in line with

the definition of the quantitative methodology by Chen and Hirschheim (2004), which stated that when using quantitative analysis, variables under investigation can be measured using numbers and analysed through statistical methods.

3.5.1. Research strategy

In the field of information systems, there are three main research strategies, namely; surveys, case studies and laboratory experiments (Pinsonneault & Kraemer, 1993). A researcher selects a research strategy based on the research purpose. For example, a case study is normally used when the aim is to investigate a particular phenomenon in its natural state, in order to gain more context on the subject. Case studies do not explicitly require independent and dependent variables to be defined as in laboratory experiments (Pinsonneault & Kraemer, 1993). Laboratory experiments are recommended when the researcher's aim is to examine the effects of independent variables on dependent variables. This type of research is usually conducted in a controlled environment whereby some variables are held constant. The major difference between case studies and laboratory experiments is that case studies aim to gain context about the phenomenon while laboratory experiments are conducted when the concepts are already defined.

For this study, a survey instrument was adapted. A survey is a research instrument for collecting data about actions, characteristics, and opinions of a particular group through questionnaires or interviews (Pinsonneault & Kraemer, 1993; Chen & Hirschheim, 2004). Unlike a laboratory experiment, a survey does not consist of controlled variables. However, independent and dependent variables are identified, just like in laboratory experiments. The main purpose of a survey is to test a hypothesis based on literature and theories, which include cause and effect components that assume a directional relationship between variables. This strategy was suitable for this study since the main purpose was to investigate the relationship between mobile bully-victim behaviour, social integration, and aggression. This choice was also in line with the positivist belief, which is an epistemological stance that was chosen for this research. Positivism assumes that a survey is an appropriate research technique because it enables researchers a certain amount of control over data collection and analysis through the manipulation of parameters and statistical analysis (Orlikowski & Baroudi, 1991).

3.5.2. Research instrument

There are two types of surveys, namely; questionnaires and interviews (Bowling, 2005). Questionnaires are mainly used to measure knowledge, attitudes, and behaviour. In this study, it was used to collect data which was analysed to test the proposition about mobile bully-victim behaviour instead of interviews. A questionnaire was appropriate because the research participants were in high schools in different parts of Johannesburg (Kyobe & Shongwe, 2015). Olweus's questionnaire for bully-victims was adapted, and some adjustments were made for the purpose of this study. The main reason for adapting this questionnaire was that it covered both social integration and aggressive behaviour aspects that were under examination for this study. For example, the questionnaire included general aggression and social disintegration in peer groups in class. Other self-report questions from previous studies were also adapted.

The questionnaire for this study was a self-reporting questionnaire. A self-reporting questionnaire is a questionnaire that asks about the thoughts and actions of individuals (Stone et al., 1991). The reason for selecting this type of questionnaire was because it helped to obtain information held privately by adolescents, and teachers or parents may not necessarily know about it (Gámez-Guadix, Gini, & Calvete, 2015). For example, according to Burton et al. (2016), about 86.7% of South African parents are not aware of their teenager's activities online and their experiences. Therefore, self-reporting questionnaires were more suitable in gathering data since the majority of the sample of youth partaking in this study may not share or want to share their online activities with their teachers or parents. Gámez-Guadix et al. (2015) also claimed that self-report questionnaires reflect the intention of engaging in certain behaviour. This was advantageous for this study as the main objective was to find out what causes adolescents to engage in mobile bully-victim behaviour.

Questionnaires consist of different rating scales for close-ended questions. A rating scale is a qualitative description of a limited number of aspects of a phenomenon or traits of a phenomenon under examination (Kothari, 2004). For this study, a Likert scale was used, with a scale rating containing a fixed response format. A Likert scale was developed by Rensis Likert in 1931, and it is mainly for assessing the respondent's behaviour or attitudes (Croasmun & Ostrom, 2011). Since some of the variables in this study measured attitude and behaviour, a Likert scale was suitable. This rating scale is also good for measuring responses to closed-

ended questions such as the frequency of mobile bully-victim behaviour (Kothari, 2004). A minimum of five options when using a Likert scale was recommended by (Croasmun & Ostrom, 2011). For example, respondent's options can include; strongly agree, agree, neutral, disagree, and strongly disagree. A Likert scale was suitable for this research since the questions that were asked are close-ended except for some of the demographic questions. Below (Table 2) are variables that were used to develop the questionnaire in Appendix 1.

Table 3.1: Variables employed in the mobile bully-victim behaviour survey

Variable	Description	Adapted from
Gender	One of the sociodemographic questions that were asked by a cyberbully-victims was their gender. 0 represented females, and 1 represented males.	Mashna et al. (2012)
Age	In the socio-demographics section, the participants of this study were asked about their age. The age range that participants had to select from was within the target sample of the study (12-17).	Mashna et al. (2012); Patchin and Hinduja (2010)
Grade	All the grades the study focused on were listed on the questionnaire under the socio-demographics section.	Patchin and Hinduja (2010)
Violence	Exposure to violence at home and in the community where the adolescent lives were measured by asking	Hanish and Guerra (2004)

	how often they have witnessed violence through a 5 point Likert scale.	
Peer rejection	This is measured by the level of peer support perceived by an adolescent. A 5 point Likert scale has been used in previous studies to measure this variable (1= never, 5= always)	Golmaryami et al. (2016)
Bullying	Bullying was measured by asking how often they engage in bullying on MSNs. The Likert scale range from 1=never to 5 = always.	Haynie et al. (2001); Mashna et al. (2012)
Victimisation	Learners were asked whether they experienced being victimised, learners were asked to select one answer from a Likert scale of 5 with 1= never and 5= always.	Haynie et al. (2001); Mashna et al. (2012)
Self-esteem	The self-esteem of an adolescent was measured in two ways; positive and negative statements. Such as asking how learners feel about themselves (proud/ not proud). A Likert scale from 1 to 4 was used (1=	Patchin and Hinduja (2010)

	strongly disagree, 5=strongly agree).	
Self-control	Self-control was measured as one individual characteristic that contributed to bully-victim behaviour. Using a Likert scale of 1 to 4 (1 =never, 5=always), the researcher measured self-control. Adolescents were asked how often they lose their temper or get even when they are angry.	Haynie et al. (2001);
Popularity	Popularity was measured by the number of friend or followers the bully or victim have on their social network account.	Chatzakou et at. (2017)
Social power	Social power on social networks was measured by the number of times the user's posts get shared by others.	Chatzakou et at. (2017)
Income inequality (socioeconomic position)	To measure inequality, adolescents were asked to estimate the income of their families. This was measured using a 6-point Likert scale (1=less than 5000, 6 =prefer not to say). Adolescents had a choice not to disclose their	Due et al. (2009)

	family's income as this was to adhere to their right to privacy.	
Stress	To measure stress, learners were asked about their daily concerns, such as schoolwork.	Olafsen and Viemerö (2000); Konishi and Hymel (2009)
Frustration	To measure frustration, learners were asked about what makes them feel angry or frustrated. For example, whether they feel unlucky or yelling at their teachers/parents.	Patchin and Hinduja (2011)

3.5.3. Research timeframe

In the information systems discipline, there are two common research time horizons, which are: cross-sectional and longitudinal. A cross-sectional timeframe means the collection of data is done at once at a specified period of time. While longitudinal timeframe refers to the collection of data at an uninterrupted period of time, and the main focus is on the process of collecting data (Mann, 2003).

The cross-sectional timeframe is ideal for determining the prevalence, for purposes of the current study, this helped the researcher to determine the prevalence of mobile bully-victim behaviour in South African high schools (Mann, 2003). Since a cross-sectional timeframe is also advantageous with reference to inferring causation and effects, it was more suitable for this study as the main objective was to identify the causes of mobile bully-victim behaviour. Cross-sectional studies are not only beneficial for identifying the causes, however, they are also good for finding associations between variables (Mann 2003). In this study, a cross-sectional timeframe enabled the researcher to find the relationship between mobile bully-victim behaviour, social integration, and aggression. Even though the cross-sectional time can be used

to identify relationships between independent and dependent variables, the literature recommends a longitudinal timeframe for data collection since it provides more confidence for causal inferences as compared to a cross-sectional time frame, and it establishes temporal priority easily (Pinsonneault & Kraemer, 1993). Reliable causal inferences were obtained using a cross-sectional timeframe in this study because independent variables such as self-control, use of mobile features (cameras and videos), and mobile social network features such as sharing posts, influence mobile bully-victim behaviour immediately (Kyobe, 2016). Therefore, both independent and dependent variables must be measured at the same time. Therefore, a cross-sectional timeframe was appropriate for this study. On the other hand, a longitudinal timeframe is usually used when a researcher's purpose is to find the effects of interventions, meaning data has to be collected for two-time frames before and after the intervention. In this study, no form of intervention was applied, therefore longitudinal time frame was not appropriate (Pinsonneault & Kraemer, 1993).

3.5.4. Target population and sample

According to a study that was conducted by UNICEF between 2015 and 2016 in South Africa, the majority of internet users in South Africa are between the ages of twelve to seventeen (Burton et al., 2016). According to the finding of this study, this group also experiences more bullying as compared to children under the age of twelve years and children above seventeen years of age. Based on these findings from previous research, this study focused on adolescents between the ages of twelve to seventeen years. Previous research also found that Gauteng, Western Cape, and Eastern Cape, amongst other provinces, represent the socio-economic context of South Africa (Burton et al., 2016). After comparing these three provinces, it was found that Gauteng teenagers experience bullying the most as compared to Western Cape and Eastern Cape teenagers (Burton et al., 2016). Therefore, since mobile bully-victim behaviour is more prevalent in Gauteng province, the target population of this study were learners in Gauteng high schools.

In addition to selecting the Country and Province from which the population of this study was selected, the researcher also considered streamlining this population to learners with mobile devices. Although bullying has been part of teenagers' experience for decades, 21st-century adolescents face new forms of bullying that are more severe than before. This is because the

platforms where bullying takes place to involve a wider audience, and the embarrassment is more severe as a photo or a video can be shared to thousands of people around the world within seconds. According to Burton et al. (2016), the majority of bullying takes place on mobile social networks. Amongst other networks, the top three popular networks amongst South African adolescents are WhatsApp, Facebook, and Instagram. About 80.2% of adolescents access these social networks via smartphones, and 37.6% use iPads. Based on these findings from previous literature, this study focused on bully-victim behaviour conducted in the South African province of Gauteng by students between (12 and 17 years of age) using mobile devices such as smartphones and iPads on WhatsApp, Facebook, Twitter, and Instagram. Therefore, the target population for this study was high school learners in Johannesburg who own at least one mobile device. Based on the target population, a sample that represents the population was selected for this study.

A target sample for research can either be a probability sample or a non-probability sample (Kothari, 2000). Probability sampling is usually based on random sampling, while non-probability is based on convenience and judgemental sampling. Convenience sampling is based on ease of access, while with judgemental sampling, the researcher selects the sample based on characteristics that are considered to represent the target sample for the phenomenon under investigation (Kothari, 2000).

The sample size for this study was determined using the Raosoft sample size calculator. Raosoft calculator is a probability sampling technique that calculates the minimum sample required for a study based on the population the researcher is focusing on. According to the Stats SA website, in Gauteng province, there are 830 000 learners, between grade 8 and grade 11. Therefore, the minimum sample size that was required for this study, according to the Raosoft calculator, was two hundred and forty-six (246) learners, as shown in figure 3.2. Three hundred learners participated in the study, and hundred and twenty-three (123) of the participants were identified as mobile bully-victims.

Raosoft Sample size calculator

What margin of error can you accept? %
5% is a common choice

What confidence level do you need? %
Typical choices are 90%, 95%, or 99%

What is the population size?
If you don't know, use 20000

What is the response distribution? %
Leave this as 50%

Your recommended sample size is **246**

The margin of error is the amount of error that you can tolerate. If 90% of respondents answer yes, while 10% answer no, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.

The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer yes would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size.

How many people are there to choose your random sample from? The sample size doesn't change much for populations larger than 20,000.

For each question, what do you expect the results will be? If the sample is skewed highly one way or the other, the population probably is, too. If you don't know, use 50%, which gives the largest sample size. See below under **More information** if this is confusing.

This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

Online surveys with **Vovici** have completion rates of 66%!

Alternate scenarios							
With a sample size of	<input type="text" value="100"/>	<input type="text" value="200"/>	<input type="text" value="300"/>	With a confidence level of	<input type="text" value="90"/>	<input type="text" value="95"/>	<input type="text" value="99"/>
Your margin of error would be	7.84%	5.54%	4.53%	Your sample size would need to be	174	246	425

Figure 3.2: Raosoft calculator

3.5.5. Data analysis

Data were analysed using a combination of statistical software, Microsoft Excel, and Statistica. Ms Excel was used to store the data from questionnaires in order for it to be loaded to Statistica. Data was also cleaned and grouped in Excel in order for it to be ready for statistical analysis in Statistica. Cleansing included removing data from incomplete questionnaires and outliers. After cleansing the data, the data were grouped according to mobile bullies, mobile victims, and mobile bully-victim. This was determined based on the frequency of bullying and victimisation actions selected by learners on the questionnaire. The learners who selected that they get excluded and others spread lies or rumours about them online sometimes or often or all the time and they also exclude others and they lose temper online sometimes or often or always were classified as mobile bully-victims. Only mobile bully-victim data was analysed,

Statistic software is a package for conducting statistical analysis (Werner, 2015). It was used to conduct descriptive and inferential statistical tests such as Chi-square, ANOVA, regression analysis, and Cronbach Alpha. Descriptive statistical analysis was conducted to check whether the data is normally distributed, such as central tendency measures (for example; mean and standard deviation) in order to determine which test was more suitable for the collected data. The Chi square test was used to compare the data collected from female and male mobile bully-

victims in order to determine whether their behaviour differs. In order to answer research questions and test the hypothesis, a multiple-regression test was conducted. Regression test is used for modeling relationships between independent and dependent variables (Gefen, Straub & Baudrea, 2000). This means through linear or multiple regression, a researcher can determine the causal relationship between independent and dependent constructs. Since this research was aimed at examining the causes of mobile bully-victim behaviour, multiple regression was used to determine a causal relationship between aggressive behaviour and mobile bully-victim behaviour and also the relationship between social integration and mobile bully-victim behaviour.

3.5.6. Reliability and validity

According to Tavakol and Dennick (2011), reliability and validity are two important measures for assessing a research instrument. Validity evaluates whether the researcher's instrument is measuring what it is intended for (Tavakol & Dennick, 2011), while reliability measures the consistency of the researcher's instrument (Croasmunn & Ostrom, 2011).

To measure reliability for the questionnaire, statistical methods were employed. The reliability test also determines whether an instrument can be reused by other researchers (Rattray & Jones, 2007). The common test for measuring consistency is Cronbach alpha, which uses inter-item correlations to verify whether the items grouped under a specific category are measuring the same thing. According to Tavakol and Dennick (2011), Cronbach alpha is useful when there is more than one variable that measures a specific construct. Since some of the variables that have been identified for this study consisted of more than one item, Cronbach alpha was suitable for this research. The test results revealed that the variables that measured aggressive behaviour and social integration had a Cronbach alpha ranging between 0.57 and 0.76. According to Gliem and Gliem (2003), an acceptable Cronbach alpha is between 0.6 and 0.9. However, Burmann, Zeplin and Riley (2009) argued that Cronbach alpha values that are not less than 0.5 are also acceptable. Therefore, the Cronbach alpha values of aggressive behaviour and social integration variables are reliable, and their sub-items measured what they were intended for.

3.6. Ethics: privacy and confidentiality

It is recommended that informed consent be obtained by researchers before they proceed with data collection (Rattray & Jones, 2007). Consent should be obtained from university representatives, necessary government institutions, and the selected participants. Therefore, before issuing questionnaires to high school learners, an application for permission to collect data from participants was requested from the University of Cape Town (Appendix 4), Gauteng Department of Education (Appendix 5), and from the school principals (Appendix 2). For adolescents under the age of 18, consent was requested from parents/guardians (Parent or guardian letter in appendix 3).

Below are the measures that were taken to ensure the study adhered to the participants right to privacy:

- **Ensuring participants have given informed consent:** participating in the study was voluntary and confidential. The participants of this study were politely asked to give consent to participate before taking the questionnaire. A section which emphasised confidentiality and voluntary participation was included in the questionnaire. Besides, the principals and teachers were informed about this.
- **Ensuring no harm comes to participants:** the surveys were conducted at schools where learners were fairly safe and comfortable. Learners were asked to exit the survey if, at any point, they felt uncomfortable, and emphasis on this was also included in the questionnaire.
- **Ensuring confidentiality and anonymity:** a section which emphasised confidentiality and voluntary participation was included in the questionnaire. Also, the principals and teachers were informed about this.

If at any point, the researcher intended to follow up on some of the participants, consent was requested from the authorities (University and department of education representatives) guardians or parents and the participants.

Summary

Below is a summary table which provided an overview of the research design and methodology that was used for this study to answer the research questions, test the conceptual model, and propositions.

Table 3.3: Research design and methodology

Methodology	Approach
Ontology	Objectivism
Epistemology	Positivism
Research approach	Deductive
Research strategy	Survey - questionnaire
Research Time frame	Cross-sectional
Target sample	12-17-year-old high school adolescents (Johannesburg)

Chapter 4: data analysis

Introduction

This study was conducted in three schools which are in Johannesburg North and Johannesburg West. The total number of participants was 300 and out of these participants, 123 were mobile bully-victims, which was 41% of the population sample. The usual number of bully-victims varies for each study, for example, according to Yang and Salmivalli (2013) usually, the percentage of bully-victims within each population is between 0.4% to 29%. While others say, the variation is between 6% -10% (Kelly et al., 2015). It is important to also note that some of the international and local studies have noted a high prevalence of bully-victims that is beyond 50%. For, example a Canadian study by Li (2007) found that 54% of the participants were bully-victims and a study based in South Africa reported that 69.7% of the respondents were cyberbully-victims. Hence it is not surprising that 40% of the participant of this study were mobile bully-victims.

4.1. Demographics of study participants

Majority of the study participants were between the age of sixteen and seventeen, most of them were females living in moderately safe areas as shown in figure 4.1. Furthermore, out of the 300 participants, 123 (41%) were mobile bully-victims, 74 (25%) mobile bullies, 38 (13%) mobile victims and 65 (22%) were neither bullies nor victims as shown in figure 4.2. Figure 4.3. shows the demographics for mobile bully-victims, which are not much different from the ones for the whole sample.

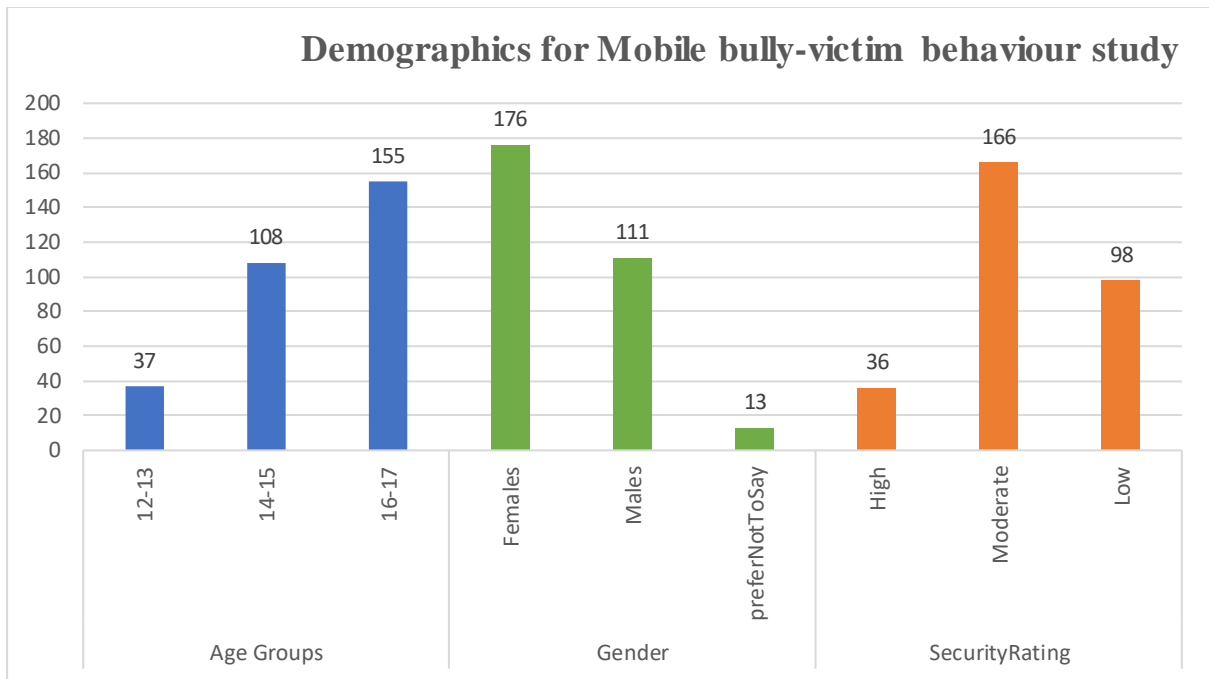


Figure 4.1: Demographics of study participants

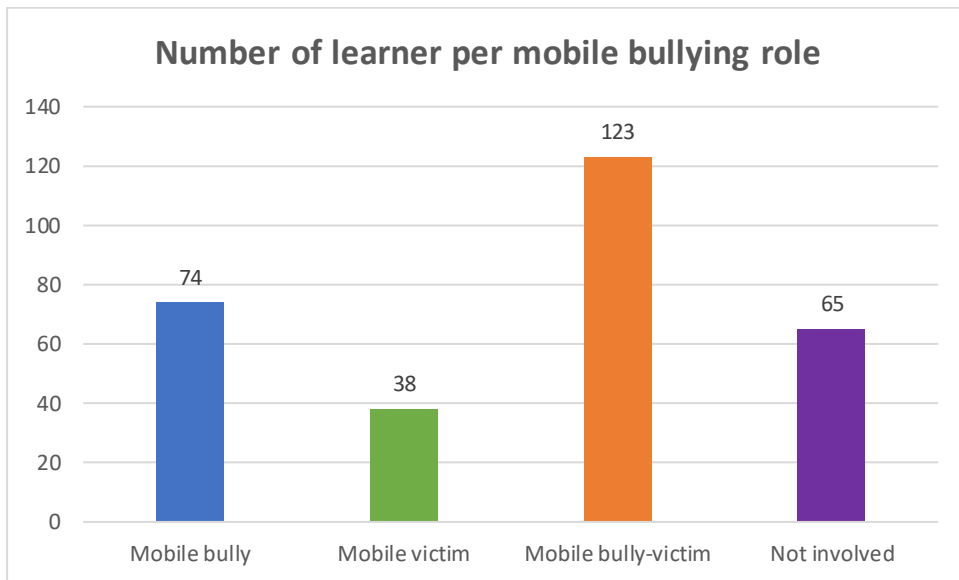


Figure 4.2: Number of learners per mobile bullying role

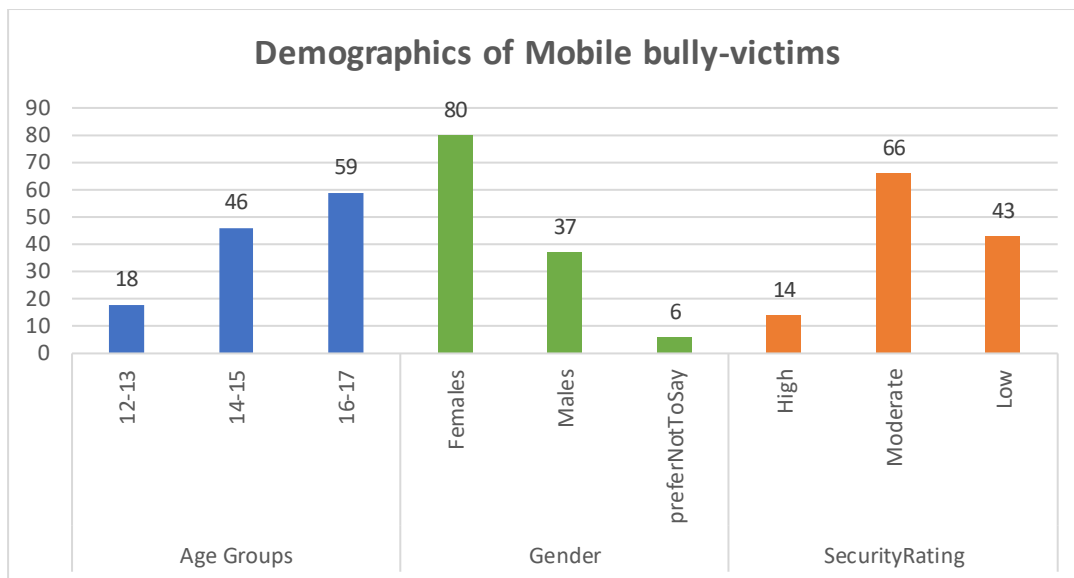


Figure 4.3: Mobile bully-victim demographics

4.2. Reliability & Validity tests

The questionnaire included a section whereby learners were asked how often they get bullied and how often they bully others, however, this was not used to determine the number of mobile bully-victims. The main reason for this is because according to Green et al. (2013), respondents usually underreport bullying and victimisation on self-reporting questionnaires because of the shame associated with bullying and victimisation. Instead, learners who selected that they get bullied online through exclusion and rumours (sometimes/ often/ always) and they also bully others online through actions such as excluding others and losing temper were classified as mobile bully-victims. These variables were selected because previous studies have identified them as predators of mobile bully-victim behaviour (Kyobe, 2016), for example, according to Kyobe (2016) mobile bully-victims lack self-control which leads this group towards bullying others. Whilst the victimisation element of mobile bully-victims is a result of negative social interaction such as being excluded by others.

The questionnaire that was distributed to the respondents consisted of 5 variables for measuring aggressive behaviour, 3 variables that measured social integration, and 3 variables were mediating factors (age, gender and technology). In order to find out whether these items measured what they were intended for, Cronbach Alpha test was used. Cronbach Alpha is a measure of internal consistency for items that have been used to measure a specific variable (Gliem & Gliem, 2003). Therefore, this method was used to measure whether the items that were grouped together to measure a certain variable are actually related. According to Gliem and Gliem (2003), an acceptable Cronbach Alpha ranges from 0.7 to 0.9.

The results in Table 4.1 indicate that Cronbach alpha value for mediating factors and mobile bully-victim behaviour were below the minimum acceptable value of 0.7. Even though this is the case, Ahmad, Zulkurnain and Khairushalim (2016) argue that Cronbach score of 0.6 is acceptable in exploratory studies. Furthermore, Zeplin and Riley (2009) state that, a Cronbach alpha value that is between 0.5 and above is also acceptable. Therefore, the items that measure aggressive behaviour, social integration, mediating factors and mobile bully-victims are reliable.

Table 4.2.1: Cronbach Alpha for variables that measure mobile bully-victim behaviour

Construct	Number of Items	Cronbach Alpha
Aggressive Behaviour	5	0.76
Social Integration	3	0.72
Mediating Factors	3	0.66
Mobile Bully-victim Behaviour	2	0.57

4.3. Descriptive statistics

Table 4.3.1. Descriptive Data – Only Bully-Victims

Variable	Descriptive Statistics (Sheet1 in DataCollected-Bully-victimStudy E2) Include condition: bulvic > 2				
	Valid N	Mean	Minimum	Maximum	Std.Dev.

ResidentialSafety	123	2.235772	1.000000	3.000000	0.641225
Gender	123	1.398374	1.000000	3.000000	0.583093
age	122	2.336066	1.000000	4.000000	0.734179
grade	123	2.804878	1.000000	8.000000	1.545265
Mobile Device1	123	0.943089	0.000000	1.000000	0.232619
Mobile Device2	123	0.105691	0.000000	1.000000	0.308699
Mobile Device3	123	1.365854	1.000000	4.000000	0.643610
Mobile Device4	123	0.276423	0.000000	1.000000	0.449058
MSN1	123	0.902439	0.000000	1.000000	0.297934
MSN2	123	0.439024	0.000000	1.000000	0.498298
MSN3	123	0.211382	0.000000	1.000000	0.409959
MSN4	123	0.626016	0.000000	1.000000	0.485838
MolePhoneUsage	123	3.016260	1.000000	5.000000	1.173364
Bully	122	1.598361	1.000000	4.000000	0.839715
Victim	123	1.406504	0.000000	4.000000	0.766484
Violence	123	2.390244	1.000000	5.000000	1.149727
Selftcontrol	123	3.369919	1.500000	5.000000	0.824416
selfesteem	123	3.154472	1.750000	4.500000	0.495389
Frustration	123	2.766260	1.000000	4.750000	0.793635
Stress	123	2.906504	1.000000	5.000000	1.020988
Peerrejection	123	3.105691	1.000000	5.000000	0.981910
exclusion	123	2.853659	1.000000	5.000000	1.303733
income	123	4.552846	1.000000	6.000000	1.704398
SocialPower	123	2.967480	1.000000	5.000000	1.113884
AVGVIC	123	2.073171	1.000000	3.666667	0.639525
AVGBUL	123	2.659892	1.333333	4.000000	0.544219
BULVIC	123	3.170732	3.000000	4.000000	0.377813

4.4. Multiple regression: what causes mobile bully-victim behaviour between social integration and aggressive behaviour?

In order to examine whether social integration and aggressive behaviour were predictors of mobile bully-victim behaviour on mobile social networks, multiple regression was applied. According to Hoyt, Leierer and Millington (2006), multiple regression techniques are used to determine which of the identified independent constructs predict the dependent construct. Hence this technique was used to model the relationship between mobile bully-victim behaviour and the independent constructs (aggressive behaviour and social integration). The results that were obtained from using multiple regression were used to answer the following research questions:

1. Which of the two factors (social integration and aggressive behaviour) contribute the most to mobile bully-victim behaviour?
2. Which social integration factors influence mobile bully-victim behaviour?
3. Which factors influence aggressive behaviour of mobile bully-victims?

Table 4.4.1: multiple regression (aggressive behaviour and social integration factors)

N=123	Regression Summary for Dependent Variable: BULVIC (Sheet1 in DataCollected-Bully-victimStudy E2)					
	R= ,63698239 R ² = ,40574657 Adjusted R ² = ,35799406					
	F(9,112)=8,4969 p<,00000 Std.Error of estimate: ,30372					
	Include condition: Bulvic > 2					
		b*	Std.Err.	b	Std.Err.	t(112)
Intercept			1,598,320	0,297059	5,380,475	0,000000
ResidentialSafety	-0,044145	0,077208	-0,026011	0,045491	-0,571771	0,568613
Gender	0,037707	0,078867	0,024520	0,051285	0,478107	0,633506
age	0,164646	0,076112	0,085006	0,039296	2,163,224	0,032649
Frustration	0,267248	0,076491	0,099077	0,028357	3,493,877	0,000683
selfesteem	-0,027566	0,076163	-0,021009	0,058046	-0,361929	0,718087
Violence	0,270728	0,076470	0,077259	0,021823	3,540,302	0,000583
Stress	0,051900	0,076702	0,019190	0,028360	0,676640	0,500029
Peerrejection	0,451545	0,078898	0,174194	0,030437	5,723,154	0,000000
Social Power	0,329202	0,118597	0,113134	0,040757	2,775,795	0,006455
MobilePhoneUsage	0,104495	0,076941	0,033618	0,024754	135,811	0,177259
income	-0,060576	0,076552	-0,013428	0,016969	-0,791299	0,430442

Significant variables

Five factors (age, frustration, violence, peer rejection and social power) were statistically significant at predicting mobile bully-victim behaviour on mobile social networks, as shown in Table 4.4.1. The influence each of the five variables has on mobile bully-victim behaviour is explained below:

- **Age:** when other variables are held constant, changes in one's unit of age results in 8% positive change in mobile bully-victim behaviour.
- **Violence:** had a positive influence on mobile bully-victim behaviour, results are statistically significant at 5% level. This means, changes in one unit of violence will result in a 7% change in mobile bully-victim behaviour
- **Frustration:** had a positive effect on mobile bully-victim behaviour on social networks. A unit increase in frustration is likely to result in a 7% increase in mobile bully-victim behaviour on social networks.
- **Peer rejection:** had a 17% positive influence on mobile bully-victim behaviour, results are statistically significant at 5% level. This means, adolescent who reject others by excluding them are likely to become mobile bully-victims.
- **social power:** had an 11% positive influence on mobile bully-victim behaviour on social networks, results are statistically significant at 5% level. This indicates that, if an adolescent has more power on social networks, they are more likely to be victimised online and bully others online.

Non- significant variables (age, gender, residential, self-esteem, IT usage and income)

Some of the variables were not statistically significant at predicting mobile bully-victim behaviour, however, they could provide insight into their influence on mobile bully-victim behaviour on social networks. Mobile phone usage (3%) and living in a residential area that is less safe (0.26%) could potentially positively influence mobile bully-victim behaviour on social networks.

Overall the sample size for this study was small and this could have affected the influence of independent variables on the dependent variable (Mobile bully-victim behaviour).

Propositions

- Proposition 1: Mobile bully-victim behaviour is a result of social integration.
- Proposition 2: Exposure to violence increases the likelihood of being a mobile bully-victim.

Based on multiple regression results mobile bully-victim behaviour is caused by both social integration (peer rejection and social power) and aggressive behaviour factors (violence and frustration). However, it appears social integration has more influence than aggression, as its regression coefficients were higher. Peer rejection has a regression coefficient of 0.17 (the highest) followed by Social power (0.11). This indicates that both aggressive behaviour and social integration contribute to mobile bully-victim behaviour, and not just social integration, therefore proposition 1 is rejected. Proposition 2, on the other hand, is accepted as multiple regression results indicate that exposure to violence has a significant influence on mobile bully-victim behaviour. This is based on the p-value of violence (0.0006), which is below the statistical significance threshold of 0.05. This is supported by figure 4.2., which indicate that most of mobile bully-victim live in moderately and low secure areas such as Johannesburg central (CBD) which is number two (2) on a list of areas with the highest crime rate in South Africa, according to the September 2018 report by BusinessTech.

Research questions

Question 1

1. Which of the two factors (social integration and aggressive behaviour) contribute the most to mobile bully-victim behaviour?

Figure 4.4.1 indicates that both aggressive behaviour and social integration variables have an influence on mobile bully-victim behaviour. This is evident as peer rejection and social power

which are social integration factors and violence and frustration factors which are aggressive factors, loaded the most. However, social integration predicts mobile bully-victim behaviour more than aggression. As shown in figure 4.4.1, social integration (peer rejection and social power) factors that predict mobile bully-victim behaviour more as their coefficients are higher than those of aggression. Therefore, social integration contributes to mobile bully-victim behaviour more than aggressive behaviour.

Question 2

2. Which factors influence aggressive behaviour of mobile bully-victims?

In order to determine which factors contribute to the aggressive behaviour of mobile bully-victims, aggressive behaviour variables were tested against mobile bully-victim behaviour through multiple regression. Based on the results in table 4.4.1, aggressive behaviour leads to mobile bully-victim behaviour through exposure to violence and frustration.

Question 3

3. Which social integration factors influence mobile bully-victim behaviour?

In order to determine which negative social integration elements lead to mobile bully-victim behaviour, multiple regression test was conducted. The social integration factors were tested against mobile bully-victim behaviour. Based on the results in figure 4.4.1, social integration leads to mobile bully-victim behaviour through peer rejection and social power.

Mediating factors (age, gender -0.35 vs 0.33)

N=123	Regression Summary R= ,62016692 R ² = ,38460700 Adjusted R ² = ,33559340 F(9,113)=7,8469 p<,00000 Std.An error of estimate: 30796 Include condition: Bulvic > 2					
	b*	Std.Err.	B	Std.Err.	t(113)	p-value
Intercept			1.91	0.30	6.38	0.00
Violence	0.28	0.08	0.10	0.03	3.54	0.00
self-esteem	-0.03	0.08	-0.02	0.06	-0.35	0.73
Frustration	0.28	0.08	0.08	0.02	3.65	0.00
Stress	0.08	0.08	0.03	0.03	1.01	0.31

Peer rejection	0.44	0.08	0.17	0.03	5.68	0.00
SocialPower	0.32	0.12	0.11	0.04	2.62	0.01
Income	-0.06	0.08	-0.01	0.02	-0.79	0.43
ResidentialSafety	-0.04	0.08	-0.03	0.05	-0.57	0.57
MobilePhoneUsage	0.11	0.08	0.03	0.02	1.39	0.17

Table 4.4.2: multiple regression excluding age and gender (R square 0.35 vs 0.33)

When gender and gender were excluded from the multiple regression, R squared decreased, therefore, gender and age have an influence on mobile bully-victim shown in figure 4.4.2, even though it is not much.

4.5. Age and gender differences

A chi-square and one-way ANOVA tests were used to test the following propositions from chapter two:

- I. Proposition 3: females are more likely to become mobile bully-victims than males.
- II. Proposition 6: There are significant differences between age groups of mobile bully-victims (younger adolescents are more likely to become mobile bully-victims).

To compare more than two groups, a Chi-square or a One-Way ANOVA is utilised. A One-way ANOVA test is utilised if the data is of interval scale and it is normally distributed whilst Chi-square is utilised for nominal data that is of normal distribution (McCrum, 2008). Since gender is a nominal variable and is normally distributed as shown in figure 4.5.1, Chi-square test was utilised. On the other hand, age a is also normally distributed as shown in figure 4.5.2 and it is of interval scale, therefore, ANOVA is a suitable test for determining whether there are age differences between mobile bully-victims.

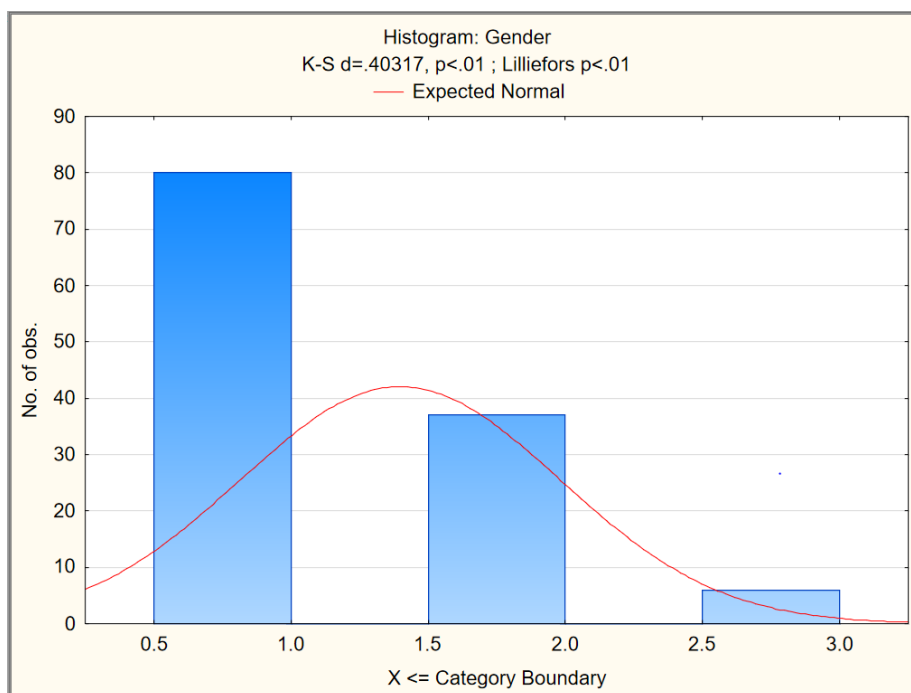
Gender differences

1 = Females

1 = Males

2 = PreferNotToSay

Figure 4.5.1 Gender distribution



Statistics: Bulvic (2) x Gender(3) (DataCollected-Bully-victimStudy E2)			
Pearson Chi-square	3.24593	df=2	p=0.19731
M-L Chi-square	4.324851	df=2	p=0.11505

Table 4.5.1. Chi-square results

Gender	2-Way Tables of Descriptive Statistics (Sheet1 in DataCollected-Bully-victimStudy F2) N=156 (No missing data in dep. var. list) Include condition: BULVIC3 >=2,6		
	BULVIC3	BULVIC3	BULVIC3
1	3.625000	90	0.822139
2	3.412500	60	0.514256
3	3.375000	6	0.832917
All Groups	3.533654	156	0.722946

Table 4.5.2 descriptive statistics -gender

The result in table 4.5.1 indicates that there are no differences between males, females and those who preferred not to reveal their gender in terms of mobile bully-victim behaviour since the p-value 0.19 is greater than 0.05 which is the threshold for significance (Storey & Tibshirani, 2003). Descriptive statistics on table 4.5.2 also shows that the means for the three age groups are not too different from each other. Therefore, the differences between males and females in terms of mobile bully-victim behaviour are not significant, hence proposition 6 is rejected.

Age differences

Figure 4.5.2 Age distribution

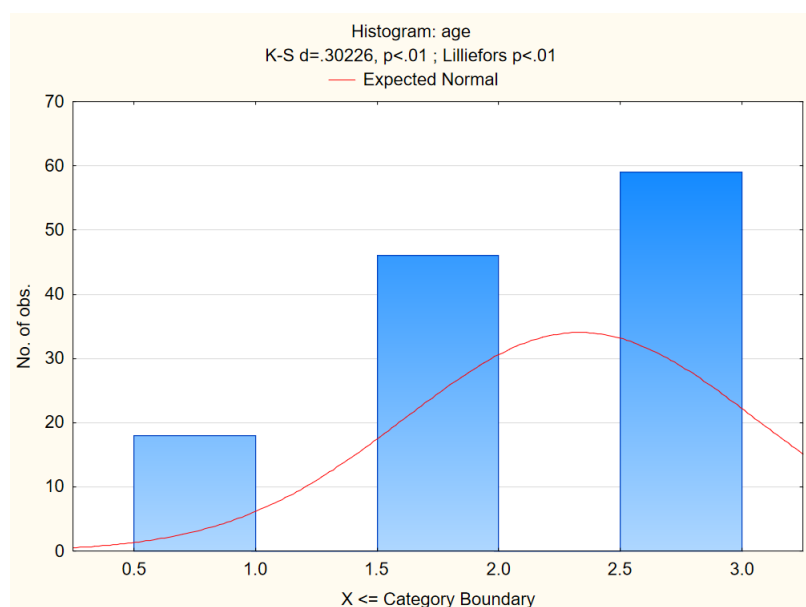


Table 4.5.3 ANOVA-age differences

Analysis of Variance (Sheet1 in DataCollected-Bully-victimStudy F2)								
Marked effects are significant at p <, 05000								
Include condition: BULVIC3 >=3								
Variable	SS	df	MS	SS	df	MS	F	p
BULVIC3	10.44439	4	2.611098	57.28006	132	0.433940	6.017188	0.000177

		2-Way Tables of Descriptive Statistics (Sheet1 in
--	--	---

		DataCollected-Bully-victimStudy F2) N=137 (No missing data in dep. var. list) Include condition: BULVIC3 >=3		
Age		BULVIC3	BULVIC3	BULVIC3
12 years	1	3.365385	39	0.371015
13yrs	2	3.333333	18	0.402200
14yrs	3	3.694444	9	0.446825
15 yrs	4	3.768519	54	0.538280
16-17yrs	5	4.176471	17	1.421830
	All Groups	3.642336	137	0.705673

Table 4.5.4 descriptive statistics -age

The p-value on figure 4.5.3 is 0.00017 which is less than the threshold for significance (0.05) (Storey & Tibshirani, 2003). Therefore, results are significant, hence, there is evidence to suggest that mobile bully-victim behaviour of various age groups (12, 13, 14, 15, 16 and 17) differs. According to Menesini and Salmivalli (2017), bully-victim behaviour is more prevalent during junior secondary years and it decreases in high school. This is consistent with the findings in table 4.5.4, which indicates that majority of mobile bully-victims were 15 years (junior secondary age group) however this number decreased amongst those who are 16-17 years (high school age group). The implication of these results is that mobile bully-victim behaviour of adolescents differs according to age groups and younger adolescents are more likely to become mobile bully-victims, therefore proposition 6 is accepted.

4.6. Descriptive statistics: number of mobile bully-victims per mobile social network

In order to test proposition 5 which states that adolescents who use Instagram are more likely to become mobile bully-victims compared to adolescents who use WhatsApp, Facebook and Twitter, the frequency table in 4.6 was analysed. Based on the results in table 4.6, the majority (111) of mobile bully-victims used WhatsApp more than Facebook, Twitter and Instagram. Hence Proposition 5 was rejected as Instagram has the second-highest number of mobile numbers of mobile bully-victims. These results are supported by MyBroadBand reports that

were issued in 2015 and 2016, which stated that WhatsApp is a social network with the most users in South Africa, whilst, Instagram was also named as the fastest growing mobile social network in South Africa in the 2016 report by MyBroadBand.

Table 4.6: Number of mobile bully-victims per social network

Mobile Social Network	Number of MBVs
WhatsApp	111
Facebook	54
Twitter	26
Instagram	77

4.7. Summary

Table 4.7: results summary

Question/proposition	Outcome
Which factor contributes the most to mobile bully-victim behaviour between social integration and aggressive behaviour?	Social integration (peer rejection and social power)
How does social integration lead to mobile bully-victim behaviour on mobile social networks?	Through peer rejection and social power
How does aggression results in mobile bully-victim behaviour on mobile social networks?	Through exposure to violence and frustration
Proposition 1: Mobile bully-victim behaviour is a result of social integration	Rejected (both social integration and aggressive behaviour predict mobile bully-victim behaviour)

Proposition 2: Exposure to violence increases the likelihood of being a mobile bully-victim.	Accepted
Proposition 3: Females are more likely to become mobile bully-victims than males.	Rejected
Proposition 4: Powerless adolescents are more likely to become mobile bully-victims	Rejected
Proposition 5: Instagram is an MSN venue where most of mobile bully-victim behaviour takes place than on WhatsApp, Facebook and Twitter	Rejected
Proposition 6: Younger adolescents are more likely to become mobile bully-victim when compared to older adolescents	Accepted

Chapter Five: Discussion, Recommendations and Limitations

5.1. Discussion

The main objective of this study was to examine what causes mobile bully-victim behaviour on mobile social networks between aggressive behaviour and social integration. The population of interest was high school learners in South Africa (Johannesburg). The study consisted of females, males and those who preferred not to reveal their gender. Majority of the mobile bully-victims were fifteen years old, doing grade eleven. Quantitative analysis was conducted based on the data that was collected from three high schools in Johannesburg North and Johannesburg West. The results are discussed in this chapter while section 5.2 provides recommendations and section 5.3 focuses on the limitations that were encountered.

In order to answer the research questions and examine which of the factors in the conceptual model actually cause mobile bully-victim behaviour, multiple regression test was conducted. The results indicated that age, frustration and exposure to influenced mobile bully-victim. These findings are in line with literature, for example according to Closson (2006) aggressive victims tend to use reactive aggression towards their peers as a result of feeling frustrated. Evans, Cotter and Smokomki (2017), also highlighted that victims of bullying end up engaging in bully-victim behaviour as a result of using aggression as a defence response to frustration. Frustration makes aggressive victims feel trapped and they view reactive aggression as their only option. According to Smeets (2017), this shows that bully-victims become desperate to free themselves from their bullies. This is also consistent with the frustration-aggression theory which states that presence of frustration always results in some form of aggressive behaviour (Breuer & Elson, 2017). Furthermore, in the demographics section of the questionnaire, learners were asked where they lived, additional to this, they were asked whether they were exposed to violence or not. This information was used to determine whether mobile bully-victim behaviour is influenced by living in an unsafe area and being exposed to violence. The multiple regression results indicate that being exposed to violence leads to mobile bully-victim behaviour, however living in an unsafe area has no impact on this behaviour. Which means

whether adolescents are from safe or unsafe areas if they are exposed to violence, they are likely to become mobile bully-victims. This is supported by early studies which have reported that aggressive behaviour of bully-victims is influenced by violence that adolescents witness (Halliday-Boykins & Graham, 2001). Therefore, proposition 2 which stated that exposure to violence increases the likelihood of being a mobile bully-victim was accepted. Additionally, since frustration and exposure to violence were used to measure aggressive behaviour and they show significance in influencing mobile bully-victim behaviour, this means aggression results in mobile bully-victim behaviour through aggression and frustration.

When it comes to social integration factors, results show that social power has the most influence on mobile bully-victim behaviour. The multiple regression results also indicated that excluding others (peer rejection) has a positive influence on mobile bully-victim behaviour. This implies that having more social power is likely to result in an increase in mobile bully-victim behaviour. The results are in line with findings by Kuther (2006), who noted that bully-victim select their victims based on their power, meaning they only victimise those who are less popular than themselves. These results imply proposition 4, which stated that adolescents with less social power are more likely to engage in mobile bully-victim behaviour is rejected. On the other hand, peer rejection by excluding others loaded as the second-highest variable that influences mobile bully-victim behaviour. This not surprising as Fong and Espelage (2005) noted that excluding others is the most utilised form of mobile bullying used by adolescents as they grow older instead of insults.

It is clear that both aggressive behaviour and social integration lead to mobile bully-victim behaviour. Therefore proposition 1, which stated that mobile bully-victim is a result of social integration only, is rejected. Some of the aggressive behaviour and social integration variables were not significant in causing mobile bully-victim behaviour according to multiple regression results in chapter 4 (Table 4.4.1). These variables are grade, residential safety, income, stress and mobile phone usage. When it comes to family income the majority of the respondents preferred not to reveal their family income and those who did indicated a high family income bracket per month. Therefore, based on this, it is not surprising that family income does not have an impact on mobile bully-victim behaviour. Erdur-Baker (2010) also observed that income does not influence bully-victim behaviour online. Stress also did not predict mobile

bully-victim behaviour even though previous studies have associated stress with cyberbully-victims. A study by González-Cabrera et al. (2017), investigated the relationship between aggressive behaviour and stress indirectly using cortisol which is a hormone involved in the regulation of metabolism in cells and helps us regulate stress within the body (Merriam-Webster's dictionary, 2011). González-Cabrera et al. (2017) asserted that cortisol was used to measure the relationship between stress and aggression because stress is associated with Cortisol. In this study, the relationship between stress and aggressive behaviour was examined directly, hence the results were not significant. Furthermore, frequent use of a mobile phone did not predict mobile bully-victim behaviour based on the multiple regression results. This is attributable to the fact that phone features that adolescents utilise were not examined, only MSN features were used to predict social power (e.g. number of followers). Studies that have found a relationship between online bullying and the time spent online also examined the mobile phone features. For example, a study by Juvonen and Gross (2008), found that frequent use of instant messaging applications and webcams results in cyber victimisation. The multiple regression results also indicate that self-esteem does not predict mobile bully-victim behaviour, the reason for this is related to the fact that self-esteem is seen as a regulator of stress by previous studies. For example, according to Bottin et al. (2015), victims of online bullying coped with stress by developing confidence.

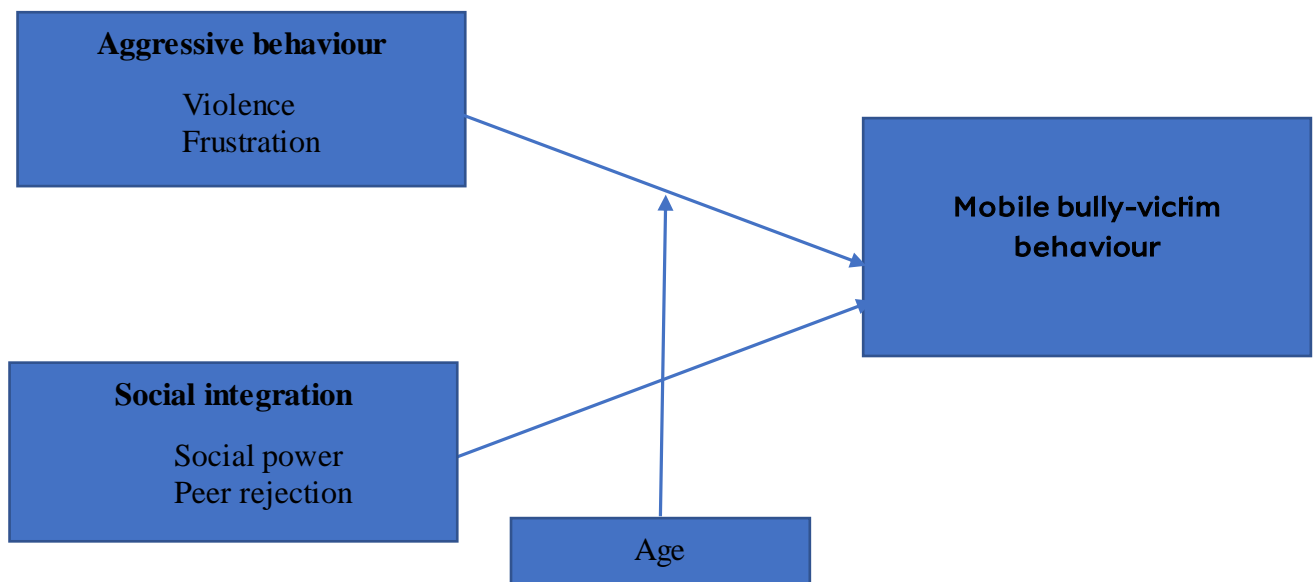
When it comes to mediating variables (gender and age). The Chi-Square test and One-way ANOVA were used to examine whether there were gender and age differences when it comes to mobile bully-victim behaviour. The results showed that there are no significant gender differences in mobile bully-victim behaviour. The p-value for a chi-squared test that was conducted was 0.19 which is more than 0.05, the required threshold for statistical significance. Therefore, there were no differences between male and female mobile bully-victims. This is consistent with observations by Bayraktar et al. (2015) who found that the likelihood of being a cyberbully-victim does not differ according to gender since there is no physical contact online. Therefore, proposition 3 was rejected because the mobile bully-victim behaviour that was examined in this study takes place online, not in physical environments such as schools. Erdur-Baker (2010), also indicated that there are inconsistencies regarding gender differences when it comes to different types of cyberbullying. Some of the previous studies have noted gender differences such as Campbell et al. (2012), who noted that boys were more likely to be

cyberbully-victims than girls. On the other hand, Buelga, Martínez-Ferrer and Cava (2017) noted that girls are more likely to be cyber-bully-victims than boys. Whilst others have not found any differences between males and females, for example, Beckman (2013) noted that gender does not determine the likelihood of being a cyberbully-victim. Furthermore, ANOVA results indicate that mobile bully-victim behaviour differs by age. Given the ANOVA results, proposition 6 which stated that younger adolescents are more likely to be mobile bully-victims as compared to older, is accepted.

Through descriptive analysis, it was noted that the majority of mobile bully-victims utilised WhatsApp more than Facebook, Twitter and Instagram. This is not surprising as Sprugnoli et al (2018) found that WhatsApp is a preferred platform for bullying others compared to other mobile social networks. Even though adolescents who are below 16 are prohibited from WhatsApp, children between the age of 10 and 13 are using this mobile application.

Based on the multiple regression results, the conceptual model in chapter 2 was updated to show the factors that actually have an influence on mobile bully-victim behaviour, as indicated in figure 5.1.

Figure 5.1. Updated conceptual model



5.2. Conclusion and Recommendations for future research

Overall, results indicate that both social integration and aggressive behaviour cause mobile bully-victim behaviour, however, social integration contributes the most to this behaviour. Furthermore, mobile bully-victim behaviour does not differ based on gender, however when it comes to age, younger adolescents are more likely to become mobile bully-victims compared to older adolescents. WhatsApp and Instagram are the most utilised platforms for mobile bully-victim behaviour.

Now that the causes of mobile bully-victim behaviour have been investigated by this study, future research can focus on the characteristics of mobile bully-victims. The reason for this is that mobile bully-victims are difficult to recognise, even though this step is important for tackling this behaviour (Ireland, 2002; Crowe, 2015). Therefore, one way to recognise the bully-victims group is to investigate their characteristics. Once the characteristics of mobile bully-victims are known, schools and government department can work on legislation that specifically addresses mobile bully-victims. Currently, reliance is on constitutional laws that does not address this behaviour directly.

5.3. Limitations

This research had limitations, other cities and provinces within South Africa were not included as a result the sample size of mobile bully-victims was small. Therefore, generalising these results in a larger sample should be done with caution. Furthermore, not all the factors for socio-economic factors were explored such as racial and gender-based stereotypes. These could influence mobile bully-victim behaviour especially gender-based violence as previous studies have highlighted religious beliefs to influence bullying of the LGBT group (Alden & Parker, 2005).

References

- Ahn, J. (2011). The effect of social network sites on adolescents' social and academic development: Current theories and controversies. *Journal of the Association for Information Science and Technology*, *62*(8), 1435-1445.
- Alberts, C., & Kheswa, J. G. (2017). Social networks and sexual behaviour amongst adolescent females in one secondary school in Eastern Cape, South Africa. *African Population Studies*, *31*(2).
- Alhabash, S., McAlister, A. R., Hagerstrom, A., Quilliam, E. T., Rifon, N. J., & Richards, J. I. (2013). Between likes and shares: Effects of emotional appeal and virality on the persuasiveness of anticyberbullying messages on Facebook. *Cyberpsychology, Behavior, and Social Networking*, *16*(3), 175-182.
- Allen, J. J., Anderson, C. A., & Bushman, B. J. (2018). The general aggression model. *Current opinion in psychology*, *19*, 75-80.
- Barlett, C., & Coyne, S. M. (2014). A meta-analysis of sex differences in cyber-bullying behavior: The moderating role of age. *Aggressive behavior*, *40*(5), 474-488.
- Bayraktar, F., Machackova, H., Dedkova, L., Cerna, A., & Ševčíková, A. (2015). Cyberbullying: The discriminant factors among cyberbullies, cybervictims, and cyberbully-victims in a Czech adolescent sample. *Journal of interpersonal violence*, *30*(18), 3192-3216.
- Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium☆. *Social science & medicine*, *51*(6), 843-857.
- Beckman, L. (2013). *Traditional Bullying and Cyberbullying among Swedish Adolescents: Gender differences and associations with mental health* (Doctoral dissertation, Karlstads universitet).

Berkowitz, R., & Benbenishty, R. (2012). Perceptions of teachers' support, safety, and absence from school because of fear among victims, bullies, and bully-victims. *American Journal of Orthopsychiatry*, 82(1), 67-74.

Bottino, S. M. B., Bottino, C., Regina, C. G., Correia, A. V. L., & Ribeiro, W. S. (2015). Cyberbullying and adolescent mental health: systematic review. *Cadernos de saude publica*, 31, 463-475.

Bougaardt, G., & Kyobe, M. (2011, April). Investigating the factors inhibiting SMEs from recognizing and measuring losses from cybercrime in South Africa. In *ICIME 2011- Proceedings of the 2nd International Conference on Information Management and Evaluation: ICIME 2011 Ryerson University, Toronto, Canada, 27-28 April 2011* (p. 62). Academic Conferences Limited.

Bowling, A. (2005). Mode of questionnaire administration can have serious effects on data quality. *Journal of public health*, 27(3), 281-291.

Breuer, J., & Elson, M. (2017). Frustration–Aggression Theory. *The Wiley Handbook of Violence and Aggression*, 1-12.

Buelga, S., Martínez–Ferrer, B., & Cava, M. J. (2017). Differences in family climate and family communication among cyberbullies, cybervictims, and cyber bully–victims in adolescents. *Computers in Human Behavior*, 76, 164-173

Burmann, C., Zeplin, S., & Riley, N. (2009). Key determinants of internal brand management success: An exploratory empirical analysis. *Journal of Brand Management*, 16(4), 264-284.

Burton, P., & Mutongwizo, T. (2009). Inescapable violence: Cyber bullying and electronic violence against young people in South Africa. *Centre for Justice and Crime Prevention*, 8, 1-12.

Calvin, A. J., Bellmore, A., Xu, J. M., & Zhu, X. (2015). # bully: Uses of hashtags in posts about bullying on Twitter. *Journal of School Violence*, 14(1), 133-153

Campbell, M., Spears, B., Slee, P., Butler, D., & Kift, S. (2012). Victims' perceptions of traditional and cyberbullying, and the psychosocial correlates of their victimisation. *Emotional and Behavioural Difficulties*, *17*(3-4), 389-401.

Chang, Y. T., Yu, H., & Lu, H. P. (2015). Persuasive messages, popularity cohesion, and message diffusion in social media marketing. *Journal of Business Research*, *68*(4), 777-782.

Chatzakou, D., Kourtellis, N., Blackburn, J., De Cristofaro, E., Stringhini, G., & Vakali, A. (2017, June). Mean birds: Detecting aggression and bullying on twitter. In *Proceedings of the 2017 ACM on Web Science Conference* (pp. 13-22).

Chen, G. M. (2015). Losing face on social media: Threats to positive face lead to an indirect effect on retaliatory aggression through negative affect. *Communication Research*, *42*(6), 819-838.

Chester, D. S., & DeWall, C. N. (2017). Combating the sting of rejection with the pleasure of revenge: A new look at how emotion shapes aggression. *Journal of personality and social psychology*, *112*(3), 413.

Closson, L. M. (2006). *The Role of Perceived Popularity and Social Dominance in the Dynamics Within Early Adolescent Friendship Cliques* (Doctoral dissertation, Carleton University).

González-Cabrera, J., Calvete, E., León-Mejía, A., Pérez-Sancho, C., & Peinado, J. M. (2017). Relationship between cyberbullying roles, cortisol secretion and psychological stress. *Computers in Human Behavior*, *70*, 153-160.

Cross, D., Barnes, A., Papageorgiou, A., Hadwen, K., Hearn, L., & Lester, L. (2015). A social-ecological framework for understanding and reducing cyberbullying behaviours. *Aggression and Violent Behavior*, *23*, 109-117.

Cuadrado-Gordillo, I., & Fernández-Antelo, I. (2014). Cyberspace as a generator of changes in the aggressive-victim role. *Computers in Human Behavior*, *36*, 225-233.

Closson, L. M. (2006). *The Role of Perceived Popularity and Social Dominance in the Dynamics Within Early Adolescent Friendship Cliques* (Doctoral dissertation, Carleton University).

Craker, N., & March, E. (2016). The dark side of Facebook®: The Dark Tetrad, negative social potency, and trolling behaviours. *Personality and Individual Differences*, *102*, 79-84.

Croasmun, J. T., & Ostrom, L. (2011). Using Likert-Type Scales in the Social Sciences. *Journal of Adult Education*, *40*(1), 19-22. Den Hamer, A., Konijn, E. A., & Keijer, M. G. (2014). Cyberbullying behavior and adolescents' use of media with antisocial content: A cyclic process model. *Cyberpsychology, behavior, and social networking*, *17*(2), 74-81.

DeWall, C. N., Anderson, C. A., & Bushman, B. J. (2011). The general aggression model: Theoretical extensions to violence. *Psychology of Violence*, *1*(3), 245.

Dodge, K. A., Lansford, J. E., Burks, V. S., Bates, J. E., Pettit, G. S., Fontaine, R., & Price, J. M. (2003). Peer rejection and social information-processing factors in the development of aggressive behavior problems in children. *Child development*, *74*(2), 374-393.

Erdur-Baker, Ö. (2010). Cyberbullying and its correlation to traditional bullying, gender and frequent and risky usage of internet-mediated communication tools. *New media & society*, *12*(1), 109-125.

Evans, C. B., Cotter, K. L., & Smokowski, P. R. (2017). Giving victims of bullying a voice: a qualitative study of post bullying reactions and coping strategies. *Child and adolescent social work journal*, *34*(6), 543-555.

Fox, J., & Moreland, J. J. (2015). The dark side of social networking sites: An exploration of the relational and psychological stressors associated with Facebook use and affordances. *Computers in Human Behavior*, *45*, 168-176.

Frey, K. S., Strong, Z. H., & Onyewuenyi, A. C. (2017). Individual and class norms differentially predict proactive and reactive aggression: A functional analysis. *Journal of Educational Psychology*, *109*(2), 178.

Gliem, J. A., & Gliem, R. R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education.

Halliday-Boykins, C. A., & Graham, S. (2001). At both ends of the gun: Testing the relationship between community violence exposure and youth violent behavior. *Journal of Abnormal Child Psychology*, *29*(5), 383-402.

Hauke, J., & Kossowski, T. (2011). Comparison of values of Pearson's and Spearman's correlation coefficients on the same sets of data. *Quaestiones geographicae*, *30*(2), 87-93.

Hay, C., Meldrum, R., & Mann, K. (2010). Traditional bullying, cyber bullying, and deviance: A general strain theory approach. *Journal of Contemporary Criminal Justice*, *26*(2), 130-147.

Hong, J. S., & Espelage, D. L. (2012). A review of research on bullying and peer victimization in school: An ecological system analysis. *Aggression and violent behavior*, *17*(4), 311-322.

Hosseinmardi, H., Mattson, S. A., Rafiq, R. I., Han, R., Lv, Q., & Mishra, S. (2015, December). Analyzing labeled cyberbullying incidents on the instagram social network. In *International Conference on Social Informatics* (pp. 49-66). Springer, Cham.

How many people use Facebook, Twitter and Instagram in South Africa (2017, 18 September). *Business Tech*. Retrieved from: <https://businesstech.co.za/news/internet/199318/how-many-people-use-facebook-twitter-and-instagram-in-south-africa/>

Johnson, R. A., & Wichern, D. W. (2004). Multivariate analysis. *Encyclopedia of Statistical Sciences*, 8.

Jokazi, N., & Kyobe, M. (2017). EXAMINING THE EXTENT TO WHICH MOBILE BULLY-VICTIM BEHAVIOUR IN SOUTH AFRICAN HIGH SCHOOLS IS A CONSEQUENCE OF AGGRESSIVE BEHAVIOUR OR SOCIAL INTEGRATION. *Rethinking Education in the 21st Century*.

Jones, K., & Leonard, L. N. (2008). Trust in consumer-to-consumer electronic commerce. *Information & management*, 45(2), 88-95.

Juvonen, J., & Gross, E. F. (2008). Extending the school grounds? Bullying experiences in cyberspace. *Journal of School health*, 78(9), 496-505.

Kaukiainen, A., Salmivalli, C., Lagerspetz, K., Tamminen, M., Vauras, M., Mäki, H., & Poskiparta, E. (2002). Learning difficulties, social intelligence, and self-concept: Connections to bully-victim problems. *Scandinavian journal of psychology*, 43(3), 269-278.

Kelly, E. V., Newton, N. C., Stapinski, L. A., Slade, T., Barrett, E. L., Conrod, P. J., & Teesson, M. (2015). Suicidality, internalizing problems and externalizing problems among adolescent bullies, victims and bully-victims. *Preventive medicine*, 73, 100-105.

Keith, S., & Martin, M. E. (2005). Cyber-bullying: Creating a culture of respect in a cyber world. *Reclaiming children and youth*, 13(4), 224-228.

Klomek, A. B., Sourander, A., Niemelä, S., Kumpulainen, K., Piha, J., Tamminen, T., ... & Gould, M. S. (2009). Childhood bullying behaviors as a risk for suicide attempts and completed suicides: a population-based birth cohort study. *Journal of the American academy of child & adolescent psychiatry*, 48(3), 254-261.

Kowalski, R. M., & Limber, S. P. (2013). Psychological, physical, and academic correlates of cyberbullying and traditional bullying. *Journal of Adolescent Health*, 53(1), S13-S20.

Kwan, G. C. E., & Skoric, M. M. (2013). Facebook bullying: An extension of battles in school. *Computers in human behavior*, 29(1), 16-25.

Kwak, H., Lee, C., Park, H., & Moon, S. (2010, April). What is Twitter, a social network or a news media?. In *Proceedings of the 19th international conference on World wide web* (pp. 591-600). ACM.

Leonard, J. (2011). Using Bronfenbrenner's ecological theory to understand community partnerships: A historical case study of one urban high school. *Urban Education*, 46(5), 987-1010.

Lomax, R. G., & Schumacker, R. E. (2012). *A beginner's guide to structural equation modeling*. New York, NY: Routledge Academic.

Mason, C. H., & Perreault Jr, W. D. (1991). Collinearity, power, and interpretation of multiple regression analysis. *Journal of marketing research*, 268-280.

McInroy, L. B., & Mishna, F. (2017). Cyberbullying on Online Gaming Platforms for Children and Youth. *Child and Adolescent Social Work Journal*, 34(6), 597-607.

Persaud, A., & Azhar, I. (2012). Innovative mobile marketing via smartphones: Are consumers ready?. *Marketing Intelligence & Planning*, 30(4), 418-443.

Li, Q. (2007). New bottle but old wine: A research of cyberbullying in schools. *Computers in human behavior*, 23(4), 1777-1791. Li, Q. (2007). New bottle but old wine: A research of cyberbullying in schools. *Computers in human behavior*, 23(4), 1777-1791.

Lindsay, M., & Krysik, J. (2012). Online harassment among college students: A replication incorporating new Internet trends. *Information, Communication & Society*, 15(5), 703-719.

Miller-Johnson, S., Coie, J. D., Maumary-Gremaud, A., & Bierman, K. (2002). Peer rejection and aggression and early starter models of conduct disorder. *Journal of abnormal child psychology*, 30(3), 217-230.

Mishna, F., Khoury-Kassabri, M., Gadalla, T., & Daciuk, J. (2012). Risk factors for involvement in cyberbullying: Victims, bullies, and bully-victims. *Children and Youth Services Review*, 34(1), 63-70.

Modecki, K. L., Minchin, J., Harbaugh, A. G., Guerra, N. G., & Runions, K. C. (2014). Bullying prevalence across contexts: A meta-analysis measuring cyber and traditional bullying. *Journal of Adolescent Health*, 55(5), 602-611.

Moule, R. K., Decker, S. H., & Pyrooz, D. C. (2017). Technology and conflict: Group processes and collective violence in the Internet era. *Crime, Law and Social Change*, 68(1-2), 47-73.

Mc Mahon, C. (2014). Why we need a new theory of cyberbullying.

Ojanen, T., Findley, D., & Fuller, S. (2012). Physical and relational aggression in early adolescence: Associations with narcissism, temperament, and social goals. *Aggressive Behavior, 38*(2), 99-107.

Osborne, J. W., & Waters, E. (2002). Multiple Regression Assumptions. ERIC Digest.

Park, H. M. (2009). Comparing group means: t-tests and one-way ANOVA using Stata, SAS, R, and SPSS.

Park, S., Na, E. Y., & Kim, E. M. (2014). The relationship between online activities, netiquette and cyberbullying. *Children and youth services review, 42*, 74-81.

Patton, D. U., Lane, J., Leonard, P., Macbeth, J., & Smith Lee, J. R. (2017). Gang violence on the digital street: Case study of a South Side Chicago gang member's Twitter communication. *new media & society, 19*(7), 1000-1018.

Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice. *Educational psychology review, 18*(4), 315-341.

Pollastri, A. R., Cardemil, E. V., & O'Donnell, E. H. (2010). Self-esteem in pure bullies and bully/victims: A longitudinal analysis. *Journal of interpersonal violence, 25*(8), 1489-1502.

Popovac, M., & Leoschut, L. (2012). Cyber bullying in South Africa: Impact and responses. *CJCP Issue Paper, 13*.

Porter, Gina, Kate Hampshire, James Milner, Alister Munthali, Elsbeth Robson, Ariane Lannoy, Andisiwe Bango et al. "Mobile Phones and Education in Sub-Saharan Africa: From Youth Practice to Public Policy." *Journal of International Development* 28, no. 1 (2016): 22-39.

Sam, D. L., Bruce, D., Agyemang, C. B., Amponsah, B., & Arkorful, H. (2018). Cyberbullying Victimization among High School and University Students in Ghana. *Deviant Behavior, 1-17*.

Sarwar, M., & Soomro, T. R. (2013). Impact of Smartphone's on Society. *European journal of scientific research, 98(2)*, 216-226.

Sheldon, P., & Bryant, K. (2016). Instagram: Motives for its use and relationship to narcissism and contextual age. *Computers in Human Behavior, 58*, 89-97.

Sijtsema, J. J., Ojanen, T., Veenstra, R., Lindenberg, S., Hawley, P. H., & Little, T. D. (2010). Forms and functions of aggression in adolescent friendship selection and influence: A longitudinal social network analysis. *Social Development, 19(3)*, 515-534.

Smit, D. M. (2015). Cyberbullying in South African and American schools: A legal comparative study. *South African Journal of Education, 35(2)*, 01-11.

Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of child psychology and psychiatry, 49(4)*, 376-385.

Underwood, M. K., & Rosen, L. H. (2011). Gender and bullying. *Bullying in North American schools*, 205-223.

Raven, S., & Jurkiewicz, M. A. (2014). Preservice Secondary Science Teachers' Experiences and Ideas about Bullying in Science Classrooms. *Science Educator*, 23(1), 65.

Small, T. A. (2011). What the hashtag? A content analysis of Canadian politics on Twitter. *Information, Communication & Society*, 14(6), 872-895.

Storey, J. D., & Tibshirani, R. (2003). Statistical significance for genomewide studies. *Proceedings of the National Academy of Sciences*, 100(16), 9440-9445.

Swearer, S. M., Wang, C., Berry, B., & Myers, Z. R. (2014). Reducing bullying: Application of social cognitive theory. *Theory into practice*, 53(4), 271-277.

Tam, F. W. M., & Taki, M. (2007). Bullying among girls in Japan and Hong Kong: An examination of the frustration-aggression model. *Educational Research and Evaluation*, 13(4), 373-399.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2, 53.

Teesson, M. (2015). Suicidality, internalizing problems and externalizing problems among adolescent bullies, victims and bully-victims. *Preventive medicine*, 73, 100-105.

The 30 worst areas in South Africa for crime in 2017 (2017, October 24). *Business Tech*. Retrieved from: <https://businesstech.co.za/news/lifestyle/207191/the-30-worst-areas-in-south-africa-for-crime-in-2017/>

Smeets, K. C., Oostermeijer, S., Lappenschaar, M., Cohn, M., van der Meer, J. M. J., Popma, A., & Buitelaar, J. K. (2017). Are proactive and reactive aggression meaningful distinctions in adolescents? A variable- and person-based approach. *Journal of abnormal child psychology*, *45*(1), 1-14.

Tian, X. (2016). Investigating Cyberbullying in Social Media: The case of Twitter.

Tsur, O., & Rappoport, A. (2012, February). What's in a hashtag?: content based prediction of the spread of ideas in microblogging communities. In *Proceedings of the fifth ACM international conference on Web search and data mining* (pp. 643-652). ACM.

Twyman, K., Saylor, C., Taylor, L. A., & Comeaux, C. (2010). Comparing children and adolescents engaged in cyberbullying to matched peers. *Cyberpsychology, behavior, and social networking*, *13*(2), 195-199.

Ullman, J. B., & Bentler, P. M. (2012). Structural equation modeling. *Handbook of Psychology*, Second Edition, 2.

Underwood, M. K., & Ehrenreich, S. E. (2017). The power and the pain of adolescents' digital communication: Cyber victimization and the perils of lurking. *American Psychologist*, *72*(2), 144.

Unnever, J. D., & Cornell, D. G. (2004). Middle school victims of bullying: Who reports being bullied?. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, *30*(5), 373-388.

Unnever, J. D. (2005). Bullies, aggressive victims, and victims: Are they distinct groups?. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, *31*(2), 153-171.

Vaillancourt, T., Hymel, S., & McDougall, P. (2013). The biological underpinnings of peer victimization: Understanding why and how the effects of bullying can last a lifetime. *Theory into Practice, 52*(4), 241-248.

Vitis, L., & Gilmour, F. (2017). Pics on blast: A woman's resistance to online sexual harassment using humour, art and Instagram. *Crime, Media, Culture, 13*(3), 335-355.

Ware, N. C., Hopper, K., Tugenberg, T., Dickey, B., & Fisher, D. (2007). Connectedness and citizenship: Redefining social integration. *Psychiatric Services, 58*(4), 469-474.

Zalaquett, C. P., & Chatters, S. J. (2014). Cyberbullying in college: Frequency, characteristics, and practical implications. *Sage Open, 4*(1), 2158244014526721.

Zappavigna, M. (2017). 8. Twitter. *Pragmatics of Social Media, 11*, 201.

Zimmerman, A. G., & Ybarra, G. J. (2016). Online aggression: The influences of anonymity and social modeling. *Psychology of Popular Media Culture, 5*(2), 181.

APPENDICES

Appendix 1: Mobile bully-Vitim questionnaire

Appendix 1: Questionnaire - Mobile bully-victim Survey



The main purpose for this study is to identify the main causes of mobile bully-victim behaviour.

Approval for this study has been obtained from the Commerce Faculty Ethics Committee at the University of Cape Town, South Africa.

Mobile bully-victims are both victims and perpetrators of bullying on mobile platforms such as social networks (Facebook, Twitter, WhatsApp etc.) (Parren & Alsaker, 2006; Allison, 2007).

This questionnaire is confidential, all the information you will provide will not be shared with anyone in your school. ***Please do not write your name on this questionnaire as it is anonymous.***

It will take approximately 15 minutes to complete this questionnaire.

This questionnaire is completely voluntarily; therefore, you can choose to exit anytime.

Please only choose one option from each question and use x to indicate your choice.

1. Demographic information

Where do you live?					
Gender	Female	Male	Prefer not to say		
Age	12-13	14-15	16-17		
Grade	8	9	10	11	12

2. Mobile social network accessibility

What type of mobile device do you have?	Smartphone	iPad	Tablet	Laptop	
What mobile social networks are you on?	WhatsApp	Facebook	Twitter	Instagram	
How often do you access social networks?	0 hours	1-3	4-6	6-8	9 or more

3. Mobile Bully-victim behaviour

	Never	rarely	Sometimes	Often	Always
How often, do you get bullied on social networks?	1	2	3	4	5

How often do you take part in bullying on social networks?	1	2	3	4	5
4. Aggressive behaviour					
A. Exposure to violence	Never	Once a year	Every month	Every week	Every day
How often do you witness violence?	1	2	3	4	5
B. self-control	Never	Rarely	Sometimes	Often	Always
How often do you lose your temper?	1	2	3	4	5
How often do you want to get even with someone or fight with someone to get even?	1	2	3	4	5
C. Self-esteem: How often do feel this way?					
	Never	Rarely	Sometimes	Often	Always
I feel good about myself.	1	2	3	4	5
I wish I were someone else.	1	2	3	4	5
I feel useless at times.	1	2	3	4	5
I feel smart.	1	2	3	4	5
D. Frustration: How often do you feel this way?					
	Never	Rarely	Sometimes	Often	Always
I feel unlucky.	1	2	3	4	5
Life has been unfair to me	1	2	3	4	5
I am jealous of others.	1	2	3	4	5
I want to shout at my teacher/parents	1	2	3	4	5
E. Stress: How often do you feel this was					
	Never	Rarely	Sometimes	Often	Always
My school work is hard.	1	2	3	4	5
Participating in sport at school is hard.	1	2	3	4	5
5. Social integration					
A. Social exclusion: Over the last 3 months, how often have you experience or done any of the following activities?					
	Never	Rarely	Sometimes	Most of the time	Always
Have you ever been excluded from a group of friends or ignored online?	1	2	3	4	5
Has someone spread lies or rumours about you online?	1	2	3	4	5

Have you excluded/spread lies about someone online?	1	2	3	4	5
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B. Popularity and social power

How many friends/followers usually share your posts?	No one	10-20	30-40	50-60	70 or more
How many friends/followers do you have on the social networks you are on?	Less than 100	100-200	300-400	400-500	600 or more

C. Income inequality

How much is your family income per month?	Less than 5 000	5 000 less than 10 000	10 000 less than 20000	20 000 less than 3 0000	3 0000 or more	Prefer not to say
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Survey complete!

Thank you participating in this study. Your answers will not be share with anyone, also please do not share them with anyone or your friends/classmates.

If you have been bullied/bullied someone at school or on your smartphone/computer and you would like to talk to someone, please contact your teacher, parent/guardian for help. You can also choose to contact ChildLine for assistance on 08000 55555, this line is free and provides support 24 hours a day. You can also contact the South African Depression and Anxiety Group (SADAG) on 011234 4837/ 0800 20502.

Appendix 2: Principal consent letter



Department of Information Systems
Leslie Commerce Building
Engineering Mall, Upper Campus

OR

Private Bag X3 - Rondebosch - 7701

Tel: +27 (0) 21 650 2261 Fax: +27 (0) 21650 2280

Internet: <http://www.commerce.uct.ac.za/informationssystem>

23 April 2018

Request to conduct research in your School

Dear Sir/Madam

In terms of the requirements for completing a Masters of Commerce Degree in Information Systems at the University of Cape Town a research study is required. The study is titled “Examining the extent to which mobile bully-victim behaviour is a consequence of social integration or aggressive behaviour in South African high schools”. The purpose for conducting this research is to investigate the causes of mobile bully-victim behaviour and it has been approved by the Commerce Faculty Ethics in Research Committee.

Mobile bully-victims are adolescents who are both victims and perpetrators of bullying on platforms such as WhatsApps, Facebook and Twitter. This research requires adolescent participants between the ages of 12-17. Therefore, the researcher would like to request permission to conduct this study in your school.

Participating on this study will be in a form of answering a questionnaire. We would like to inform you that participating on this study is voluntarily and the respondents can exit the study anytime. The respondents will be kept anonymous and their personal details such as names and identification documents will not be required. If you authorise this study to be conducted in your school premises, please kindly sign the attached form.

Should you require any clarity on this study, please feel free to contact me on 0782912395/0832007924.

Your school’s participation on this study would be greatly appreciated.

Yours Faithfully

Nombulelo Jokazi

Researcher \ M.Com Student, (UCT)
Department of Information Systems

University of Cape Town
Email: ntombyjoannas@gmail.com

Prof Michael Kyobe

Research Supervisor
Department of Information Systems
University of Cape Town
Email: Michael.kyobe @uct.ac.za

Principal Consent

I, _____, give the researcher (Nombulelo Jokazi) of this study consent to conduct their study in the following school:

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

Signature

Date

Appendix 3: Pant/Gaudian consent letter



Department of Information Systems
Leslie Commerce Building
Engineering Mall, Upper Campus
OR

Private Bag X3 - Rondebosch - 7701
Tel: +27 (0) 21 650 2261 Fax: +27 (0) 21650 2280
Internet: <http://www.commerce.uct.ac.za/informationssystem>

23 April 2018

Request to consent

Dear Parent/Guardian

I am a Master's student at University of Cape Town (Department of Information Systems) under the Supervision of Professor Michael Kyobe. I would like to request consent for your child to participate in a study about understanding the causes of mobile bully-victim behaviour. This research has been approved by the Ethics Committee in the Commerce Faculty at the University of Cape Town.

Mobile bully-victims are adolescents who are both victims and perpetrators of bullying on mobile platforms such as Facebook and Twitter. This study aims to examine the causes of mobile bully-victim behaviour amongst adolescents, which includes learners between 12-17 years of age. Since the learners will be under the age of 18, I therefore request your consent for your child/children to participate in this study by completing the attached survey.

Participating in this study is voluntarily and your child/children can exit the study anytime. Please note that personal details such as name, surname and any identity information of the learner will not be required. Your child/children's participation will be kept anonymous.

Your participation on this study would be greatly appreciated.

Should you require any clarity on this study, please feel free to contact me on 0782912395/0832007924.

Yours Faithfully

Nombulelo Jokazi

Researcher \ M.Com Student, (UCT)
Department of Information Systems

University of Cape Town
Email: ntombyjoannas@gmail.com

Prof Michael Kyobe

Research Supervisor
Department of Information Systems
University of Cape Town
Email: Michael.kyobe @uct.ac.za

Parent/Guardian Consent

As a Parent/Guardian of _____

- a) I give consent for my child to participate in the study through completing the survey questions
- b) I am aware that participation is voluntary and that respondents may choose to withdraw from this study at any time, should they choose to do so.

Name:

Signature:

Date:

Appendix 4: Faculty of Commerce ethics approval letter



Faculty of Commerce

Private Bag X3, Rondebosch, 7701
2.26 Leslie Commerce Building, Upper Campus
Tel: +27 (0) 21 650 4375/ 5748 Fax: +27 (0) 21 650 4369
E-mail: com-faculty@uct.ac.za
Internet: www.uct.ac.za



@Commerce_UCT



UCT Commerce Faculty Office

23/04/2018

Ms Nombulelo Jokazi
Department Of Information Systems
University of Cape Town

REF: REC 2018/004/019

Dear Nombulelo Jokazi

Examining the extent to which mobile bully-victim behaviour is a consequence of social integration or aggressive behaviour

We are pleased to inform you that your ethics application has been approved. Unless otherwise specified this ethical clearance is valid for 1 year and may be renewed upon application.

Please be aware that you need to notify the Ethics Committee immediately should any aspect of your study regarding the engagement with participants as approved in this application, change. This may include aspects such as changes to the research design, questionnaires, or choice of participants. The ongoing ethical conduct throughout the duration of the study remains the responsibility of the principal investigator.

We wish you well for your research.

Modie Sempu
Administrative Assistant
University of Cape Town
Commerce Faculty Office
Room 2.26 | Leslie Commerce Building

Appendix 5: Gauteng Department of Education Research approval letter



GAUTENG PROVINCE

Department: Education
REPUBLIC OF SOUTH AFRICA

8/4/4/1/2

GDE RESEARCH APPROVAL LETTER

Date:	28 March 2018
Validity of Research Approval:	05 February 2018 – 28 September 2018 2017/411
Name of Researcher:	Jokazi N.V
Address of Researcher:	27 Umoya Kikuyi Road Sunninghill 2157
Telephone Number:	078 291 2395
Email address:	ntombyjoannas@gmail.com; JKZNOM003@myuct.ac.za
Research Topic:	Examining the extent to which mobile bully-victim behaviour is a consequence of social integration or aggressive behaviour
Type of qualification	Masters of Commerce

Number and type of schools:	Five Secondary Schools
District/s/HO	Johannesburg North; Johannesburg South Johannesburg East; Johannesburg West and Johannesburg Central

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

signature removed to avoid exposure online 28/03/2018

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Making education a societal priority

Office of the Director: Education Research and Knowledge Management

7th Floor, 17 Simmonds Street, Johannesburg, 2001

Tel: (011) 355 0488

Email: Faith.Tshabalala@gauteng.gov.za

Website: www.education.gpg.gov.za