

**“HARSH PLAY”: THE DARK TETRAD OF PERSONALITY, TROLLING AND  
CYBERBULLYING AMONG THE UNIVERSITY STUDENTS IN SOUTH AFRICA**

**BY**

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## DECLARATION

I, Lele Hellen Mashaba, declare that the dissertation hereby submitted to the University of Limpopo, in fulfilment of Master of Arts in Psychology, has not been previously submitted by me for a degree at this or any other university, that it is my own work in design and execution, and that all sources contained therein have been duly acknowledged.

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**Mashaba, LH (Ms)**

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**Date**

**Dedication:**

To my mother Sarah Boitseng Mamabolo, and all the women who believe in education

I know you wanted to achieve a lot in life but because of the dictations of the past you couldn't.

Your love and support have been an inspiration to me

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It has been difficult and challenging throughout the years; there were times when I wanted to quit, but thanks to all those who made me focus and for that I wish to express my sincere appreciation and gratitude to the following people:

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## Abstract

Incidents associated with internet trolling and cyberbullying are a problem among adolescents. A quantitative research method was applied in this study to explore if attitudes towards cyberbullying can mediate the association between the Dark Tetrads of personality and internet trolling among undergraduate University students in South Africa.. A convenience sample ( $N = 249$ ) of undergraduates was recruited, and data were collected using a structured, composite questionnaire, within a cross-sectional research design. The findings indicated that there was a small but statistically significant indirect effect,  $b = 0.4$ , BCa CI [0.015, 0.071]. A more nuanced analysis showed that only the mediation models involving psychopathy and everyday sadism as independent variables were statistically significant ( $p < .05$ ). From the results, it can be concluded that internet trolling does mediate the relationship between the Dark Tetrads of personality and attitudes towards cyberbullying. However, the Dark Tetrad personality dimensions of Machiavellianism and narcissism are not significantly involved in the relationship.

**Key words:** Dark Tetrads of personality, cyberbullying, attitudes towards cyberbullying, internet trolling, threatened egotism theory

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### **List of abbreviations**

GAIT	-	Global assessment of internet trolling
DT	-	Dark tetrad personality style
ATC	-	Attitudes towards cyberbullying
SSIS	-	Short sadistic impulse scale
SD3	-	Short dark triad scale
ICT	-	Information and communication technology

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## CHAPTER 1

### OVERVIEW OF THE STUDY

#### 1.1 Research problem

Research has found that internet trolling and cyberbullying are a problem to many people and organisations that make up networked societies (Bishop, 2013). Although online technologies provide numerous benefits such as learning and teaching activities online technology also has a potentially 'dark side', as it can be used for harm (Campbell, 2005). Among the more serious consequences of internet trolling is an increase in the risk of suicidal ideation and self-harm among the victims of such behaviours (Coles & West, 2016). Preliminary evidence suggests that personality traits do predict cyberbullying and internet trolling behaviour (Buckels, Trapnell & Paulhus, 2014; Coles & West, 2016; Goodboy & Martin, 2015). Buckels et al. (2014) have conducted studies on personality and internet trolling. However, not many of the available studies integrate the three concepts (Dark Tetrads, internet trolling and attitudes towards cyberbullying). The current study is intended to further explore the associations between internet trolling, attitudes towards cyberbullying and the Dark Tetrads of personality in a South African context.

#### 1.2 Aim of the study

The research aims to explore the degree of relationship between the Dark Tetrad of personality, internet trolling and attitudes towards cyberbullying among the University of Limpopo undergraduate students.

#### 1.3 Objective of the study

- To investigate the association between internet trolling, attitudes towards cyberbullying and the Dark Tetrads of personality; and
- To examine the role of gender in their relationship.

#### 1.4 Research hypotheses

**Hypothesis 1:** Male students will report higher scores of internet trolling and attitudes towards cyberbullying than female students.

**Hypothesis 2:** Attitudes towards cyberbullying will mediate the association between the Dark Tetrads and internet trolling.

## **1.5 Significance of the study**

The use of the internet to communicate is a growing phenomenon in industrialised and developed countries. Technology and the internet has become a vital form of communication. South Africa, an industrialising and developing economy, is also witnessing a marked increase of internet use. Internet is mostly accessed using mobile devices (54% of the population) and it is accessed at work or educational institutions (StatsSA, 2018). Nine out of 10 South Africans use a mobile phone, and the phone is likely to be a smartphone (Pew Research Center, March 2019). Most 18 to 29 year-olds owned a mobile phone, intended for their personal use (Pew Research Center, March 2019; see also Popovac and Leoschut, 2012)

Although there are obvious and indisputable advantages in being internet savvy, there are also hidden risks and dangers. One of the risks of internet use is being exposed to abuse through internet trolling and cyberbullying. Available research was collected from Western countries but there is comparatively little research conducted in South Africa on the area. The present study will contribute a South African perspective on the topic. The research will be useful to authorities who must regulate the behaviour and will provide valuable information on the psychological impact of cyberbullying and internet trolling. One should also note the significance of the study as it addresses the importance of taking regulatory measures such as anti-cyberbullying policies, and the psychological interventions which should be put in place to stop the distress related with cyberbullying.

## **1.6 Operational definition of concepts**

### **1.6.1 Cyberbullying**

Cyberbullying, also known as electronic bullying or online social cruelty, refers to bullying that occurs through email, instant messaging, chat rooms, web pages, video gaming and digital messages sent via cellular phones (Kowalski, Morgan, Limber, & Agatston, 2008). On the other hand, cyberbullying has been defined as the distorted and inappropriate use of electronic means such as the internet and mobile phones, to repeatedly attack a person usually defenceless in order to hurt him or her and cause

damage to his or her reputation (Smith, Mahdavi, Carvalho, Fisher, Russel & Tippet, 2008). Smith, del Barrio, and Tokunaga (2013) suggested that the imbalance of power can be assessed in terms of differences in technological know-how between the perpetrator and victim, relative anonymity, social status, number of friends or marginalised group position. However, Garaigordobil (2015) also noted that cyberbullying presents some peculiarities which differentiate it from traditional bullying for example, the victims cannot escape (because they are constantly receiving messages on their mobile or computer), the breadth of the audience (it reaches an infinite number of people), the bullies' invisibility, the duration (the harassment content may be permanent), as well as the speed and ease with which it is carried out.

According to Wolke and Lereya (2015), cyberbullying occurs when someone tries to upset and harm a person using electronic means (mobile phones, text messages, instant messaging, blogs, websites like Facebook or YouTube, or emails). Cyberbullying activity involves victims':

1. Having their private email, instant mail or text messages forwarded to someone else or have them posted where others can see them;
2. Having rumors spread about them online;
3. Getting threatening or aggressive emails, instant messages or text messages; and
4. Having embarrassing pictures posted online without their permission.

### **1.6.2 Dark Tetrad of personality:**

This refers to a group of personality traits comprising narcissism, Machiavellianism, psychopathy and sadism. They are all characterised by a 'dark', rather malevolent element in the personality structure (Buckels et al., 2014; Chabrol et al., 2009; Paulhus & Williams, 2002). The concept is also abbreviated to Dark Tetrads. Therefore, the concepts Dark Tetrads and Dark Tetrad of personality will be used interchangeably in this document.

## **1.7 Background and motivation**

Research has found a growing number of studies investigating the role of personality in the use of social networks. In these studies, personality is conceptualised in different ways, including a broad description such as the five factor model (Davenport, Bergman, Bergman, & Fearington, 2014; Ross, Orr, Sisic, Arseneault, Simmering, &

Orr, 2009). Aside from more comprehensive types of personality, some have focused on personality components, such as neuroticism and extraversion (Michikyan, Subrahmanyam, & Dennis, 2014). Nevertheless, most of the studies, influenced by Buffardi and Campbell (2008), have investigated the role of narcissism in the use of social networking sites and the internet in general (Ahn, Kwolek, & Bowman, 2015; Davenport, et al. 2014). A relatively smaller number of these studies focus on the construct of the Dark Tetrad of personality. Already, the Dark Triad comprising narcissism, Machiavellianism, and psychopathy (Paulhus & Williams, 2002), is advanced as a factor behind the use of social media (Wang, Jackson, Zhang, & Su, 2012).

It appears that there is a pattern of massive use of social media sites by South African youth, raising a concern that many young girls and boys in South Africa may not be aware of the dangers of posting offensive messages to one another or about one another and the deleterious relationship of the postings to cyberbullying. According to Popovac and Leoschut (2012) comparative studies suggest that South Africa has a considerable number of users of mobile technology and mobile social media on the continent as compared to other countries like Cameroon, Ethiopia, Namibia and Tanzania. Studies suggest that the growing rate of online shared life among youth such as university students has contributed remarkably to the alarming rate of cyberbullying behaviours (Campbell, 2005; Suriyabandara, 2017). On the other hand, an equal amount of attention has been given to internet offenses, including cyber stalking, sexual offenses and cyberbullying, which together place the safety of children and teens who use the social network into question (Notar, Padget, & Roden, 2013).

Before the term cyberbullying originated, traditional bullying was considered to be a social problem that involved physical harassment intended to cause injury or discomfort (Beran & Li, 2005). Cyberbullying has emerged as an opportunity for digital users to engage in online bullying rather than traditional bullying. However, there are various ways in which cyberbullying can be carried out. Also, several studies have found that those who are cyber-victimised experience a wide array of negative psychological and behavioural outcomes (Barlett, Gentile, Anderson, Suzuki, Sakamoto, Yamaoka & Katsuri, 2014). As a start for research in the South African

context, it is worthwhile to study the role of personality in internet trolling and attitudes towards cyberbullying behaviour.

### **1.7.1 Narcissism**

Jones and Paulhus (2011a) argued that narcissistic behaviour was marked by manipulation and callousness, much like Machiavellianism and psychopathy. However, it differentiates itself from them by having an element of self-importance. Jones and Paulhus (2011b) further suggested that intra-psychically, narcissism was defined by a clash between a grandiose identity and underlying insecurity.

### **1.7.2 Machiavellianism**

According to Jones and Paulhus (2011a) the Mach-IV items include cynical worldview, lack of morality and manipulateness. Machiavellians plan ahead, build alliances and do their best to maintain a positive reputation. Jones and Paulhus (2011a) argued that Machiavellians are strategic rather than impulsive and they avoid manipulating family members, and any other behavioural tactics that might harm their reputation.

### **1.7.3 Psychopathy**

Jones and Paulhus (2011a) have pointed to two key elements of psychopathy, namely deficits in affect (callousness) and self-control (impulsivity). The self-control deficit has remained central to criminal as well as noncriminal conceptions of psychopathy and consequently, psychopaths manifest their callousness in a short term fashion (Jones & Paulhus, 2011a). For example, they lie for immediate rewards, even if those lies compromise their long-term interests (Paulhus & Jones, 2015). Thus callous manipulation combines with other short-term traits (like recklessness, and thrill seeking) to engender bold and relentless criminal behaviour (Paulhus & Williams, 2002).

### **1.7.4 Sadism**

Sadism is defined as the enjoyment of perpetrating cruelty towards others (Chabrol et al., 2009). O'Meara, Davies, and Hammond (2011) describe the sadistic personality as one who humiliates others, shows a longstanding pattern of cruel or demeaning behaviour to others, or intentionally inflicts physical, sexual, or psychological pain or suffering on others in order to assert power and dominance or for pleasure.

### **1.7.5 Trolling**

Trolling is the practice of behaving in a deceptive, destructive, or disruptive manner in a social setting on the internet with no apparent instrumental purpose (Bishop, 2013; Buckels et al., 2014). In its original form trolling is meant to entice, allure, fish, entice, or to bait a usually unsuspecting target (Netlingo, 1995-2019).

### **1.8 Conclusion**

This chapter has identified the elements of cyberbullying and introduced the personality elements with may be associated with it. It has also defined the research aims and objectives.

The following chapter lays out the theoretical background and reviews the relevant literature.



## CHAPTER 2

### THEORETICAL PERSPECTIVE AND LITERATURE REVIEW

#### 2.1 Introduction

This chapter outlines the theoretical framework that supports all the discussions in the study. The prevalence of the Dark Tetrads of personality, internet trolling and attitudes towards cyberbullying, as well as the conceptual differences and their covariates are discussed.

#### 2.2 Theoretical framework

This study is empirical and it does not follow any particular theory. However, the concepts that have been found to be associated with the Dark Tetrads of personality, internet trolling and attitudes towards cyberbullying are included in the study. The researcher has adopted two theories, namely: Threatened Egotism Theory, and General Strain Theory as the theoretical models which serves as a framework for the study. The theories can provide a rationale of how the Dark Tetrad of personality or socially aversive personalities can impact or predict internet trolling and cyberbullying behaviour in a social environment.

##### 2.2.1 Threatened Egotism Theory

Bushman and Baumeister (1998) postulated that people's thoughts and feelings about themselves influence their propensities to perform acts of aggression against others. The theory of aggression states that violence is related to a highly favourable view of the self, combined with an ego threat (Baumeister, Smart & Boden, 1996). However, this theory does not suggest that high self-esteem necessarily causes violence or that there is any direct relationship between self-esteem and violence (Baumeister, Smart & Boden, 1996).

##### 2.2.2 Key assumptions of the Threatened Egotism Theory in relation to internet trolling, attitudes towards cyberbullying and the Dark Tetrads of personality

Several researchers highlight self-esteem as a source of threatened egotism and have hypothesised that aggressive behaviours like cyberbullying and internet trolling could be result of threatened ego (Baumeister, Smart & Boden, 1996; Bushman &

Baumeister; 1998, Kernis, Grannemann & Barclay 1989). Furthermore, Long (1990) asserted that low self-esteem and feelings of inadequacy are prominent characteristics of most terrorists. One view (and one that seems implicit in many writings) is that people who lack self-esteem hope to gain it by violent means, such as by aggressively dominating others (Baumeister, Smart & Boden, 1996). In Baumeister et al.'s (1996) view, violence would be a technique of self-enhancement, in the sense that it is used as a means of increasing one's esteem. He further argued that there are some bases for suggesting that egotism could lead directly to violence (Baumeister et al. 1996).

People who regard themselves as superior beings might feel entitled to help themselves to the resources of other, seemingly lesser beings, and indeed they might even carry out aggression against these lesser beings without compunction, just as people kill insects or mice without remorse (Myers, 1980 as cited by Baumeister, Smart & Boden, 1996). In plain terms, egotists might be more likely to assume that they will win a fight, and so they would be more willing to start it (Baumeister et al. 1996). Due to their feelings of superiority, individuals with high explicit self-esteem may be more likely to take advantage of others without remorse (Stenason, 2014). Stenason (2014) further posits that they may also be confident to be the victorious individual when engaged in an argument or fight. Baumeister et al.'s (1996) theory does not depict self-esteem as an independent and direct cause of violence but rather proposes that the major cause of violence is high self-esteem combined with an ego threat. When favourable views about oneself are questioned, contradicted, impugned, mocked, challenged or otherwise put in jeopardy, people may be aggressive (Baumeister, Smart & Boden, 1996). Stenason (2014) suggests that although self-esteem can be perceived as a desirable characteristic to possess, inflated self-esteem can be maladaptive, therefore contradicting the previous belief that individuals possessing the Dark Triad personality traits exhibit high levels of self-esteem.

Threatened egotism has been measured in a variety of ways as well, such as perceived disrespect, wounded pride, insults, verbal abuse, or unfavourable feedback (Baumeister et al. 1996). In addition, the same pattern was found for nations, medium and small groups and lone individuals. It is important to note that the theory does not claim that threatened egotism is the only cause of aggression since there are likely numerous other factors, such as biochemical or genetic causes, family environment,

and other factors that have yet to be identified (Baumeister et al. 1996). Studies indicate that threatened egotism is a cause of violence in a substantial number of contexts, but there are other possible variables that might play important roles in predicting violence (Bushman & Baumeister; 1998, Kernis, Grannemann & Barclay, 1989). In this view, then, aggression emerges from a particular discrepancy between two views of self: a favourable self-appraisal and an external appraisal that is much less favourable (Baumeister et al. 1996). That is, people turn aggressive when they receive feedback that contradicts their favourable views of themselves and implies that they should adopt less favourable views (Kernis, Grannemann & Barclay, 1989). More to the point, it is mainly the people who feel rejected that become violent.

Kernis, Grannemann and Barclay (1989) showed that people with high but unstable self-esteem (meaning subject to daily fluctuations) reported the highest tendencies towards hostility and anger, whereas people with stable high self-esteem reported the lowest. High self-esteem may thus be a heterogeneous category with links to both extremes of behaviour (violent and nonviolent), which could help account for the lack of published findings about self-esteem and aggression (Kernis, Cornell, Sun, Berry, & Harlow, 1993). High but unstable self-esteem would produce heightened sensitivity to ego threats, because the individual has much to lose and is vulnerable to the miserable feeling of a brief drop in self-esteem, and so his or her sensitivity may lead to maximal hostility (Kernis et al., 1993). Kernis et al. (1993) continue to argue that if threatened egotism is indeed the crucial cause of violence, then one may predict that vulnerability to ego threats would be the feature of self-regard most relevant to aggression. In particular, inflated, grandiose or unjustified favourable views of self should be most prone to causing aggression, because they will encounter the most threats and be chronically most intolerant of them (Baumeister et al., 1996).

Baumeister et al. (1996) maintained that high self-esteem is desirable and adaptive and can even be used as one indicator of good adjustment. Hence, it is not surprising that psychopaths are known as bullies, aggressive after physical threats and actually carry out their deviant fantasies, whether they be sexual or revenge fantasies (Baughman, Dearing, Giammarco, & Vernon, 2012), which is also evident in regard to internet trolls and cyberbullies.

### 2.2.3 General Strain Theory

The theory was developed with the emphasis on variables of stress, aggression equity and justice. Agnew (1992a) introduced three types of strain; the strain may result from when others (1) prevent an individual from achieving positively valued goals; (2) remove positively valued stimuli pertaining to individual; (3) present individual with negative stimuli.

*Strain as the Failure to Achieve Positively Valued Goals.* Agnew (1992a) argued that individuals are not only concerned about future goals, but also about immediate goals therefore strain as the blockage of positively valued goals should be measured as the discrepancy between expectations and actual achievements (p. 52). Failure to achieve expectations may lead to certain types of emotions such as anger, resentment, disappointment, and unhappiness and to reduce the gap between expectations and achievements, individual may deviate from the norm (Yilmaz & Koca, 2015). Agnew (1992a) postulated that the discrepancy between expectations and achievements seem to be more realistic than the discrepancy between aspirations and expectations in the formation of strain

*Strain as the Removal of Positive Stimuli.* The blockage of positively valued goals was shown as a weak predictor of strain (Yilmaz & Koca, 2015). Stressful life events mostly focuses on the loss of positive stimuli and the introduction of negative stimuli (Agnew, 1992a). Agnew (1992a), maintained that stressful life events may lead to delinquency when individual attempts to prevent the removal of positively valued stimuli; tries to find a substitution for the loss; seeks revenge or tries to alleviate his or her grievances using illicit drugs (p. 57, 58). Given the situation one can hypothesize that the dark tetrads of personalities like Machiavellianism and Narcissism who have this element of self-importance are likely to eliminate threat as a stressful event through manipulation.

*Strain as the Presentation of Negative Stimuli.* Agnew (1992a) argued that negative relationships with families, teachers, and others in the immediate social environment of adolescents may lead delinquency when they (1) try to escape from negative stimuli; or (2) try to remove the source of those stimuli; (3) seek revenge against the source of negative stimuli; and (4) try to manage the situation by taking illicit drugs (p. 58).

Agnew and White (1992b) found empirical support for the argument that strain may result in delinquency. According to research the impact of general strain variables on delinquency was comparable to social control variables and more specifically, strain variables had a substantial influence on delinquency and a moderate influence on drug use (Agnew & White, 1992b). Research suggests that students' own psychological issues such as lack of confidence, low-self-esteem, absences from class, test anxiety, challenges of learning a second language and interpersonal stressors are among central factors directly related to students' academic achievements (Breckler, 2011 & Muzamil, 2016). Therefore one can speculate that university students with psychopathy traits are more likely to engage in cyberbullying and trolling behaviour when academic expectations are not met.

## **2.3 Literature review**

### **2.3.1 The prevalence of the Dark Tetrads of personality, internet trolling and cyberbullying**

Cyberbullying is a prevalent problem affecting 20% to 40% of youths (Tokunaga, 2010), typically via mobile phones and the internet (Smith & Slonje, 2012). Cyberbullying occurs across a variety of venues and media in cyberspace, and it should not come as a surprise that it occurs most often where teenagers congregate (Notar, Padgett & Roden, 2013).

According to a recent study conducted in 79 countries, it was found that about 30% of adolescents experienced victimisation from bullying (Van Geel, Goemans, Toprak & Vedder, 2017). A study was conducted in the United States of America in 2009 and found that 50% of the respondents reported to having been victims of cyberbullying, while 22% of them had personally perpetrated cyberbullying (Varjas, Talley, Meyers, Parris & Cutts, 2010). Another study indicated that 35% of children between the ages of 13 and 17 were targets of cyberharrassment (Smit, 2015). Faucher, Jackson, and Cassidy (2014) also performed a study on 1,925 students across four Canadian universities that found 24.1 % of students had been the victims of cyberbullying over the last 12 months. In South Africa a study by the Centre for Justice and Crime Prevention proposed that almost a third of the more "traditional" bullying could be ascribed to cyberbullying (Burton & Mutongwizo, 2009). Burton and Mutongwizo

(2009) further discovered that among 1,726 adolescents also found that 46.8% had experienced some form of cyberbullying.

Personality researchers have explained and studied potential individual difference variables as contributors to both traditional bullying and cyberbullying in past literature (Goodboy & Martin, 2015, Sutton & Keogh, 2000). As such the personality construct that has been connected to bullying and cyberbullying is the Dark Triad (Van Geel et al., 2017). The Dark Triad of personality includes subclinical (that is, within a normal range of functioning) Machiavellianism, narcissism and psychopathy (Paulhus & Williams, 2002). Several researchers have suggested the Dark Triad contains a fourth dark trait which is sadism (Buckels et al., 2013; Chabrol et al., 2009; Furnham, Richards, & Paulhus, 2013).

In the study by Buckels et al. (2014), samples were drawn upon a number of different forums to explore how online users mobilise and make the use of 'trolling' and the analysis of online forum members responses to the publication of Buckels et al., (2013) exploring the differences and similarities in meaning between speakers across forums. Buckels et al. (2013) reported positive correlations between the Dark Tetrad and internet trolling on 418 US participants sampled from a website. There are limitations in the study as the study was uncontrolled and the diaspora of online communities were similarly unrestricted, and individuals posting to online forums could be located anywhere in the world. On the other hand, the study is significant as it had created awareness and given insight about the online space.

### **2.3.2 Conceptual differences between internet trolling and cyberbullying and their relationship to the Dark Tetrads of personality**

It is significant to note that internet trolling and cyberbullying are interchangeably used to outline online behaviour include online disruptions, sending of offensive messages and starting online arguments. Several studies have examined similar traits in their conceptualisation of internet trolling and cyberbullying and most observe the same approach initially suggested by Bishop, (2013) and Buckels et al. (2014) which posits that the two variables share an element of aggression.

According to Bishop, (2013) internet trolling is referred to as a specific type of online behaviour, intended to aggravate, annoy or otherwise disrupt online interactions and

communication. Buckels et al. (2014) refer to internet trolling as the practice of behaving in a deceptive or disruptive manner in a social setting on the internet with no apparent instrumental purpose. However, the two studies are of the same view that the action is to be perceived as a disruptive influence in the online space. Comparing the two studies of Bishop, (2013) and Buckels et al. (2014) internet trolling was intended to 'annoy' or amuse online users and it has since shifted from annoying to harassing online users. Nevin (2015) argued that internet trolling can be seen as a form of bullying, although many internet trolls self-differentiate from cyberbullies with justifications of just having fun or doing it for the 'lulz' (making a joke at another's expense – a corruption of the commonly used 'lol' meaning 'laugh out loud') rather than acting out maliciously with harmful motivations.

It is also evident that internet trolling behaviour may be misunderstood to be harmful or serious whereas the perpetrator's intention might be to have fun "lulz" especially on online games, therefore internet trolling cannot be equated to cyberbullying. Buckels et al. (2014) and Bishop, (2013) had provided basic facts in the field as well as serving as the source for future research and hypotheses. On the other hand, their evidence is inconclusive; hence there is a need to uncover the causes of internet trolling in individuals. Buckels et al. (2014) argued that the frequency of activity is an important correlate of antisocial use of technology. Bishop (2013), postulated that impulsivity is often seen among people suffering from internet trolling as they act at the spur of the moment in response to immediate stimuli, and acting on a momentary basis without a plan or consideration of outcomes as well as difficulty in establishing and following plans.

Buckels (2014) refers to internet trolls as sadists because they possessed personality traits such as being manipulative, deceitful, narcissistic, having a lack of remorse, and/or a willingness to inflict pain on others. Research has revealed that trolling typically contains four characteristics; namely deception (hiding one's motivations); aggression (attempting to infuriate other posters); disruption (disturbing the flow of interactions); success (if the internet trolls failed to provoke anyone, they are not considered successful) (Coles & West, 2016). On the other hand, cyberbullying is considered an "aggressive, intentional act carried out by a group or individual, using electronic forms of contact repeatedly and over time against a victim who is generally

defenceless” (Slonje, Smith & Frisen, 2012). Cyberbullies do not have to be strong or fast; they just need access to a cell phone or computer and a desire to terrorise (Notar, Padgett & Roden, 2013).

Researchers have argued that cyberbullying peaks later in middle school or in high school (Kowalski, Morgan, Limber & Agatston, 2008). The emergence of cyberbullying has been mainly attributed to rapid developments in ICT and the extensive penetration of internet devices among teenagers and school-aged children (Cassidy et al., 2013). Cyberbullying is communicated using channels such as text messages, website postings, emails, pictures, and video clips (Smith & Slonje, 2012) that attempt to harass, denigrate, impersonate, or ostracise others (Kowalski, Limber, & Agatston, 2012). Foody, Samara and Carlbring (2015) observed that this increased usage of ICT as a means of communication has created a situation where there is a ‘digital divide’ between younger generations and their elders.

Craker and March (2016) argue that although internet trolling behaviours and cyberbullying share aggressive attributes, cyberbullying is not characteristically deceptive or meaninglessly disruptive. It is also evident that bullies are familiar with their victims in real life and they are harassing the people that they know, whereas internet trolls are harassing the people they do not know or never met physically. Research conducted on students has revealed that the motive for engaging in cyberbullying includes revenge, jealousy, boredom and seeking approval (Goodboy, & Martin, 2015). According to Goodboy and Martin (2015), there is empirical evidence to suggest that both traditional bullying that is enacted face to face, and cyberbullying should be associated with the Dark Tetrad traits.

Research has demonstrated a significant correlation between the Dark Tetrads and media usage (Sumner, Byers, Boochever, & Park, 2012). Although psychopathy, Machiavellianism, and narcissism are overlapping constructs that share commonalities such as lack of empathy and callousness (Paulhus, 2014), these Dark Triad personalities also display different behaviours online (Lopes & Yu, 2017). Narcissism was found to be negatively related to internet trolling (Buckels et al., 2014). Research also suggests that narcissism is associated with downward social comparison rather than internet trolling whereas psychopathy predicts internet trolling behaviour but not social comparison (Lopes & Yu, 2017). The dark personality traits



had an overall significant influence on one's internet trolling scores to both popular and less popular profiles (Lopes & Yu, 2017).

Several lines of evidence noted that people who score high in psychopathy and Machiavellianism tend to use more swearing words and more words associated with anger. The major differences between psychopathy and Machiavellianism is in the frequency of words associated with sex, relativity, motion and time (Sumner et al., 2012). On the other hand, psychopathy as a personality is characterised by a sadistic schema composed of cognitions about the acceptability of harming others for fun and the associated sadistic pleasure causing pain to others, which are then linked to socially deviant behaviour and bullying (Lopes & Yu, 2017). It can be argued that the three traits share common threads of deceitfulness, self-promotion, coldness, disagreeableness, exploitation and aggression which are also evident in internet trolls and cyberbullies (Furnham et al., 2013).

Paulhus, Curtis, and Jones (2017) also note that the Dark Tetrad members tend to show different patterns of associations with aggression, whether self-reported, observer reported or behavioural. Buckels et al. (2014) and Van Geel et al. (2017) are of the same view that sadism is more predictive of antisocial online behaviour than the Dark Triad traits, and online antisocial behaviour seems more driven by sadistic pleasure than by callousness, strategic consideration or a threatened ego. It can be argued that there is a significant association between trait psychopathy and maladaptive impulsivity (March, Grieve, Marrington & Jonason, 2017). It is important to note that the Dark Tetrads, internet trolls and cyberbullies are classified as antisocial behaviours (Buckels et al., 2014). Buckels et al. (2014) further argue that in displaying central characteristics such as social manipulation, the drive for ruthless self-advancement and most notably a lack of empathy, the Dark Tetrads are most likely to engage in impulsive situations. Buckels et al. (2014) investigated personality traits of individuals who engage in internet trolling behaviours in terms of the Dark Tetrad of personality and they found that sadism was the most strongly associated with enjoyment of internet trolling practices.

Circumstantial evidence suggest that dark personalities could indeed be particularly successful in contexts of less illumination whereby less light means less visibility, more secrecy, and more anonymity and hence more freedom for 'shady operations'

(Rauthmann, Kappes & Lanzinger, 2014). For example, internet trolls and cyberbullying behaviours are more likely to operate with hidden identities when using the internet. Cyberbullies are more likely to act based on callousness and hostility. It can be argued that trolls and cyberbullies lack respect towards others and may be considered to be irresponsible; that they act on the spur of the moment without thinking of consequences (impulsive) and they act in an unlawful manner due to boredom and hidden self-identity (risk takers). One can hypothesise that personality traits of the Dark Tetrads are mostly manipulateness, callousness and impulsivity are more likely to predict internet trolling and cyberbullying behaviours in individuals.

### **2.3.3 Covariates of the Dark Tetrads of personality, internet trolling and cyberbullying**

#### **2.3.3.1 Gender**

Several studies have investigated the different covariates of the Dark Tetrads of personality, internet trolling and cyberbullying behaviour. While there is contrasting evidence in international literature regarding differences in relation to cyberbullying by gender, some studies have noted that girls are more vulnerable to and more likely to perpetrate various forms of cyberbullying (Burton & Mutongwizo, 2009). Moreover, some researchers have pointed out that cyberbullying is more prevalent among girls (Anderson & Sturm, 2007; Willard, 2007) because this cyberbullying is text-based, and girls tend to be more verbal than boys (Hinduja & Patchin, 2009). Other researchers, however, find no significant sex differences (Arıcak, 2009 as cited by Icellioglu & Ozden 2014; Beran & Li, 2005).

However, the study by Ferenczi, Marshall and Bejanyan (2017) on ( $N= 575$ ) men reported greater narcissism relative to women. Numerous studies have shown that men tend to score higher than women on narcissism, Machiavellianism, and psychopathy (Cale & Lilienfeld, 2002; Twenge et al., 2008; Wertheim, Widom, & Wortzel, 1978). The aforementioned findings indicated that there has been a general increase in levels of narcissism over time among college students of both sexes, but comparatively the average level of narcissism in women has increased more than the average level of narcissism in men (Twenge et al., 2008).

On the other hand relative to women, men are said to report more frequent engagement in internet trolling behaviours and higher levels of trolling enjoyment

(Buckels et al., 2014), findings which have been replicated specifically for the social networking site Facebook (Craker & March, 2016). According to Foody et al., (2015) some studies have reported a gender divide for cyberbullying behaviour. For example, Wong et al. (2014) found that more males than females engaged in some form of cyberbullying behaviour in a sample of adolescents from Hong Kong. However, contrasting findings have been reported where Canadian girls were found to be more actively involved in cyberbullying (Foody et al., 2015).

According to Burton and Mutongwizo (2009) South Africa seems to follow the international trend, with more girls reporting experiences of cyber victimisation over the 12 month period prior to the study than boys – 33.1% compared to 29.3%. Studies by several researchers have reported that men are higher in overall internet use (Joiner, Gavin, & Duffield, 2005) and higher in antisocial behaviour online (Zweig, Dank, Yahner, & Lachman, 2013 as cited by Buckels et al., 2014). This appears to be because men tend to perceive cyberbullying behaviours as more harmless than females do (Ozden & Icellioglu, 2014).

Nevin (2015), have reported that there are no significant gender differences in the engagement of online misconduct. The studies contradict one another; therefore, this study will examine if gender is likely to impact the relationship between Dark Tetrads of personality, internet trolling and cyberbullying. Rogers et al. (2006), indicated that females make up almost 53% of 'computer deviants', while Fletcher et al. (2014) reported that lifetime cyberbullying engagement is 15% for males versus 13% for females. Another study by Chabrol et al. (2009) reported a greater number of delinquent behaviours in boys than in girls with the results revealing that boys were likely to go to school drunk, engage in physical fights and carry a gun or blade to school.

#### **2.3.3.2 Age**

Several researchers have demonstrated that younger ages have been associated with increased flaming cyber-aggression (Pabian, De Becker, & Vandebosch, 2015), online deception (Caspi & Gorsky, 2007), and cyberbullying (Nevin, 2015). Selwyn, (2008) reported that online misbehaving peaks at age 20, and then decreases at 21 years of age and older. Another work by researchers (Pabian et al., 2015; Slonje, Smith, &

Frisen, 2012) on adolescent girls and boys highlighted that through cyberbullying and internet trolling there is systematic abuse of power and aggression by the perpetrators.

Frequently, when individuals consider themselves to be rejected or otherwise socially excluded a number of emotional, psychological, and behavioural problems may arise (Hinduja & Patchin, 2007). It can be hypothesised that if integration becomes difficult, internet trolls and cyberbullies are likely to use aggression as a way of seeking out attention from their peers. It can be argued that if the online self comes in to contact with the physical self, there can be identity crisis. Given the significant social changes that take place during adolescence, it is no surprise that failure to successfully navigate these developmental changes increases their risk of experiencing loneliness, a consequence of social competence deficits (Zhang, Zou, Wang & Sima Finy, 2015).

### **2.3.3.3 *Digital access and literacy***

According to Brown and Mayisela, (2015) South African universities now provide access to computers as a standard service and almost all students need to use a computer in some way for their studies and information and communication technologies (ICTs) are seen as a core component of learning. Nevin (2015) postulated that digital literacy (as well as relative to the life course) can influence one's understanding of cybercrimes. Nevin (2015) further argued that digital literacy is important as online misconduct cannot be performed without both the knowledge of how to act and the ability or technical skills to act out. Given the situation it can be argued that the more knowledge and time spent on the internet the more likely one is turned into an internet troll or cyberbully. Caspi and Gorsky (2007) indicated that individuals who spend three or more hours per day online are significantly more likely to engage in deception, even though digital skills do not directly lead to increased deception. Hinduja and Patchin (2008) found that more time online predicted both significantly higher odds of being a cyberbully and being victimised.

According to Burton and Mutongwizo (2009) South Africa is the fourth-fastest growing mobile market in the world. Recent data shows that nearly 99% of the South African population belong to a mobile network operator (Burton & Mutongwizo, 2009). Burton and Mutongwizo (2009) study indicated that there is a growing number of young people who own cell phones, with 92% reporting that they either own or have access to a cell phone for their personal use. Social networking sites are the most frequented

sites with almost 64% of the young people reporting that they use Mxit (Burton & Mutongwizo, 2009).

#### **2.3.3.4 Socio-economic status**

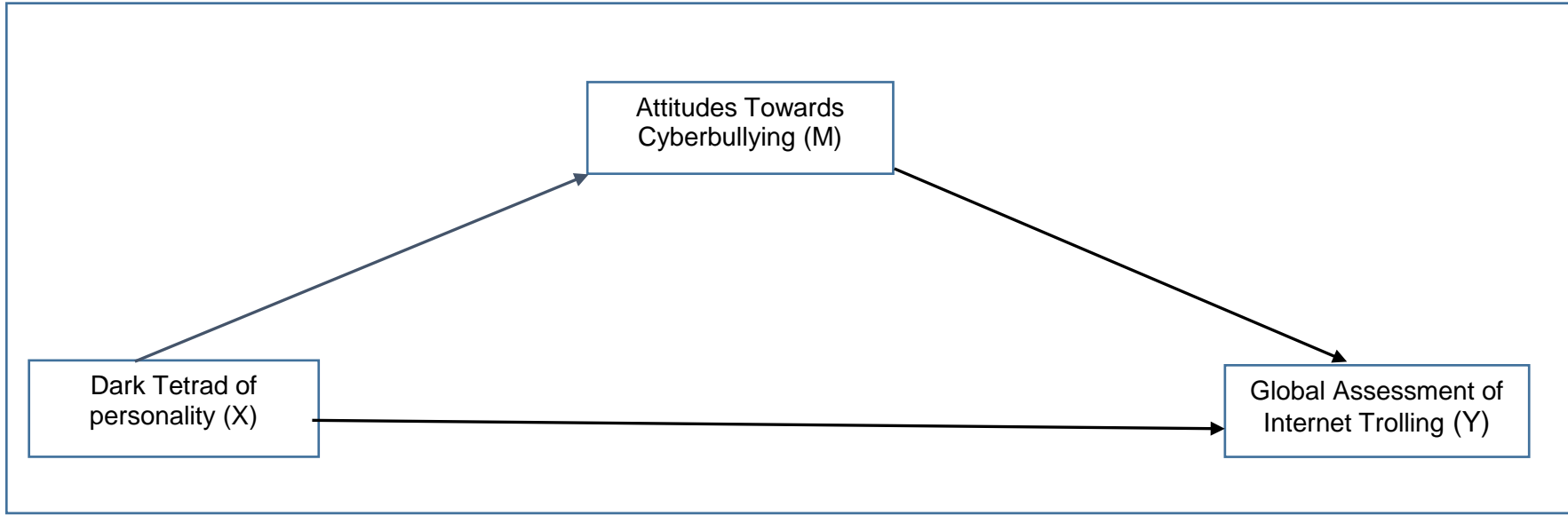
Nevin (2015) also suggested that it is important to examine the population of interest when looking at psychopathy due to cultural differences in personality expression. Burton and Mutongwizo's (2009) study in South Africa reported race to be more significant both at home and in the school environment, with black children and youth reporting the highest incidence of cyber-aggression, followed by white youths, coloured youths and finally Asian youths who reported the lowest incidence. This still leaves many questions unanswered, as South Africa does not have any legislation that regulates internet trolling and cyberbullying behaviour as in some other countries. Fletcher et al. (2014) conducted a study in UK on young people aged 12 to 13 in eight English secondary schools to examine the prevalence of cyberbullying perpetration and its associations with socio-demographics, other behaviours and health outcomes. The results showed that cyberbullying others was associated with poorer quality of life and with psychological difficulties but not with peer/social problems or worse mental wellbeing (Fletcher et al., 2014). This leaves the researcher with the question that can socio-economic status of the individual predict their level of engagement in internet trolling and cyberbullying? To my knowledge no empirical studies have been conducted that explore the correlations of socio-economic status of the Dark Tetrads personality, internet trolling and cyberbullying; therefore, this could be an important addition to future research.

#### **2.3.4 Conceptual model of the Dark Tetrads of personality, internet trolling and cyberbullying**

The model for this study (Figure 2.1 below) hypothesises the following relationships between the variables: Dark Tetrads of personality, internet trolling and cyberbullying. The theoretical framework above provided the researcher with enough guidance and comprehensive explanation on whether the Dark Tetrads of personality can lead to positive attitudes towards cyberbullying and internet trolling behaviour among undergraduate students. As indicated on the study model below, the Dark Tetrads of personality have a direct relationship with cyberbullying and internet trolling. If students with the Dark Tetrads traits are exposed to internet trolling on the internet or social

media websites, there is a likelihood that they can engage in cyberbullying behaviour with their peers. Internet trolling becomes significant or resourceful in moderating the effects of the Dark Tetrads of personality on cyberbullying. The Dark Tetrads of personality are then hypothesised to be associated with internet trolling and cyberbullying. This is only a model to be tested by the current study. Below, is a diagrammatic representation of the model.

**Figure 2.1: Hypothesised model of mediation of the association between the Dark Tetrads of personality and attitudes towards cyberbullying by global assessment of internet trolling**



## **2.4 Conclusion**

This chapter has examined in detail the Dark Tetrad of personality traits which can be associated with cyberbullying, as well as the various covariates which may need to be taken into account, as well as giving a theoretical model.

The next chapter deals with the research methodology adopted for this study.



## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

In this chapter the researcher discusses the methodology used in collecting data. The research design, sampling, data collection and measures used are also discussed. The description and psychometric properties of the scales are also described.

#### **3.2 Research design**

The study used a cross-sectional research design in measuring the relationship between the Dark Tetrads of personality, internet trolling and attitudes towards cyberbullying among the University of Limpopo students. Cross-sectional design is the most common method in social sciences in which data are collected only at one point in time (de Vos, Strydom, Fouché, & Delpont, 2011).

##### **3.2.1 Research variables**

The variables included in the study are as follows:

- Independent variable: the major independent variable considered in the present study is the Dark Tetrads of personality. The Dark Tetrads of personality include the four personality traits, namely Machiavellianism, psychopathy, narcissism and sadism.
- Dependent variable: the dependent variables in this study is internet trolling and cyberbullying. Cyberbullying and attitudes towards cyberbullying are interchangeably used in the study. As mentioned before, cyberbullying activities can be viewed as harmless by those not exposed to it and can be viewed as harmful by those exposed to it; hence, it was decided to measure attitudes towards cyberbullying.

##### **3.2.2 Participants**

The sample consisted of undergraduate registered students of the University of Limpopo in the Limpopo Province. For population representation the researcher had ensured that all the four faculties of the university, namely; Faculties of Health Sciences, Humanities, Management and Law and the Faculty of Science and

Agriculture, were represented in the population sample. Though an estimated number of 300 sample population was selected, sampling decreased to 236 participants who were available to participate in the study. Some students opted not to participate in the study and 13 questionnaires were discarded because unanswered questions exceeded 25% of the total number of scorable items and the participants indicated lack of access to internet or no device. The ages of participants ranged from 19 years to 35 years of age and were mostly males. Most (90%) of the participants indicated owning a static or mobile device from which they can access the internet.

### **3.2.3 Procedure**

Before the study was conducted, ethical clearance (TREC/51/2018: PG) was sought and obtained from the University of Limpopo's Research Ethics Committee. The ethical guidelines of organisations such as the American Psychological Association (2017) were followed in conducting it. The researcher approached the students in the lecture halls and seminars after making arrangements with consenting lecturers. Ethical considerations were followed. The students were informed of their right to privacy and that participation was voluntary. The students were made aware that the research may involve stress, discomfort and they should be prepared to tolerate or they could opt to withdraw at any time during the process. They were assured that the information given was to be treated as confidential and it was the researcher's responsibility to protect the information given. Consent forms were completed by all the participants before taking part in the study. None of the participants had experienced discomfort or stress during the process. The participants were informed of their right to access the results after the completion of the study.

. A quantitative method of collecting data was used by issuing questionnaires to students in class. Group sessions were utilised whereby each participant was requested to fill in the questionnaire on their own without discussing it with other members. Participants were encouraged to seek clarity or explanation on some of the English phrases. Some participants had difficulty understanding some English phrases such as "trolling" and "lulz" so some phrases were changed from "griefing" to "hurting" and "lulz" to "laugh". The survey required approximately 30 minutes to complete. All data were coded and entered in an SPSS file.

### **3.3 Sampling method**

Convenience sampling method was used to recruit the participants for this study. According to Gravette and Forzanno (2009) in convenience sampling, researchers use those participants that are easy to access and participants are selected on the basis of their availability. In this case, the researcher approached University of Limpopo students as they fall within the youth and young adult age and they are in the best position to furnish the researcher with the information needed to answer the research questions of the study.

### **3.4 Biographical data**

The participants completed the biographical data questionnaire, which was designed to collect information such as the age, gender, domicile, socio-economic status and internet usage.

### **3.5 Instruments**

In this section instruments used in the study are described. Details about item characteristics, measurement scales and psychometric properties are outlined. However, the complete scales themselves are not reproduced since the researcher does not have the authors' permission to publicise them.

#### **3.5.1 The Short Dark Triad Scale (SD3) (Jones & Paulhus, 2014)**

Machiavellianism, psychopathy and narcissism were assessed using the SD3 in this study. The SD3 is a 27-item instrument which has been successfully employed to measure the Dark Triad personalities by a number of researchers (Arvan, 2012; Baughman, Dearing, Giammarco, & Vernon, 2012; as cited by Jones & Paulhus, 2014). The SD3 is used to measure personalities such as Machiavellianism, narcissism and psychopathy. There are three subscales of nine items each. Its response is keyed on a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly Agree). The scale includes items such as "Generally speaking, people won't work hard unless they have to" and "I know that I am special because everyone keeps telling me so". Scores of the SD3 are generated by calculating the mean of the 9 items within each of the subscales. Studies by Jones and Paulhus (2014) examined the structure, reliability and validity of the SD3 subscales in both community and student samples. Jones and Paulhus (2014) study indicated that the SD3 provides efficient,

reliable and valid measures of the Dark Triad of personalities. Reliability across the studies of Jones and Paulhus (2014) ranged from  $\alpha = 0.68$  to  $0.78$  for male and female respondents.

Internal consistency was conducted in the study and the reliability levels for the subscale narcissism was  $\alpha = 0.44$ . When reliability analysis was conducted without the problematic items, which happened to be all the reversed items, reliability improved to  $\alpha = 0.55$ . The subscale narcissism has proved to be reliable in most studies (Buckels, 2014; Jones & Paulhus, 2014) when paired with the subscales of Machiavellianism and Psychopathy as the SD3 scale, hence it was surprising that it did not perform well in this study. Given that the subscale has proved to be reliable in most studies, the scale was used in the study to retain its integrity. Machiavellianism subscale scored  $\alpha = 0.58$ , and psychopathy subscale scored  $\alpha = 0.72$ , respectively.

### **3.5.2 Short Sadistic Impulse Scale (SSIS) (O'Meara, Davies, & Hammond, 2011)**

O'Meara, Davies and Hammond (2011) observed that the SSIS is used as a simple screening device for exploring sadistic orientation that underpins the manifestation of sadism in a variety of modalities. The SSIS has proved to be a strong one-dimensional measure of a sadistic inclination (O'Meara, Davies & Hammond, 2011). The SSIS contains 10 items that measure a dispositional tendency to enjoy hurting others, rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale includes items such as "Hurting people would be exciting" and "I would enjoy hurting someone physically, sexually or emotionally". In a study by O'Meara et al. (2011), the SSIS was administered along with a number of other measures related to sadism in order to assess the validity of the scale. Results showed that the SSIS has good internal consistency ( $\alpha = 0.88$ ) and strong construct and discriminant validity, and may be useful as a screening measure for sadistic impulse (O'Meara et al., 2011). The reliability level in this study was  $\alpha = .65$ .

### **3.5.3 Global assessment of Internet trolling scale (GAIT) (Buckels et al., 2014)**

GAIT was used to assess internet trolling in the study. The GAIT is a 4-item scale developed by Buckels, Trapnell and Paulhus (2014). Participants are asked to rate how well each statement describes them on a five-point scale from 1 (strongly disagree) to 5 (strongly agree). The scale includes items such as "I have sent people

to shock websites for the 'lulz' and "The more beautiful and pure a thing is, the more satisfying it is to corrupt". According to Buckels et al. (2014) the first three items addressed trolling experience and enjoying various forms of internet trolling, while the last item addressed identification with trolling and internet subcultures. Buckels et al. (2014) have used the scale to measure internet trolling and the scale has proved to be a valid and reliable measure of, among other constructs, internet trolling behaviour. The internal consistency of the scale was estimated at  $\alpha = .82$  in Buckels et al. (2014).

In this study the GAIT items were interspersed among other scales to get a more comprehensive evaluation of internet trolling behaviours. Internal consistency of the GAIT scale was measured and the Cronbach alpha score was  $\alpha = .44$  lower than expected. The reversed items were then excluded to check if there could be any significance, the scale failed to reach significance level. Given that GAIT has proved to be positively associated with scores of all Dark Tetrad measures and strongly with sadism, ( $r$ 's  $> .55$ ) (Buckels et al., 2014) it was used in the study to retain its credibility.

#### **3.5.4 Attitudes Towards Cyberbullying Questionnaire (ATC) (Barlett & Gentile, 2012)**

The ATC questionnaire is used to measure positive attitudes towards cyberbullying. It is a nine item questionnaire that asks participants to rate how well each statement describes them on a five-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). The scale include items such as "It is acceptable to send mean emails to others when they deserve it" and "those that create Facebook or Myspace groups that are socially exclusive are fun to join". Certain items are reverse scored and summed, such that higher scores indicate more positive attitudes towards cyberbullying.

According to Barlett and Gentile (2012) ATC was created considering that no published questionnaires specific to cyberbullying have been developed to test the three constructs namely; positive attitudes towards cyberbullying, cyberbullying reinforcement, strength differential and anonymity attitudes. The scale has proved to be reliable rating  $\alpha = .76$  though more refinement may be needed to the newly created scale (Barlett & Gentile, 2012). In this study the reliability was  $\alpha = .65$ .

### **3.6 Conclusion**

This chapter has described the different research instruments used in the study, as well as the sampling method used.

The following chapter presents the results of the investigation.

## CHAPTER 4

### RESULTS

#### 4.1 Introduction

This chapter includes the plan for analysing data, description of the sample and the results of the study.

#### 4.2 Plan for analysing data

Data were decoded, captured and analysed through standard statistical software, the IBM Statistical Package for the Social Sciences, version 25. Before analysis could proceed, data cleaning was conducted and errors were corrected to increase accuracy of the data and where necessary missing values were replaced with mean scores for each variable. The data were considered to have been extracted from a normal distribution ( $p < .05$ ) of the Short Dark Triad scale, and the analysis of data involved the use of descriptive statistics such as frequencies, percentages, means and standard deviations to provide sample characteristics. Furthermore, the Cronbach alpha was used to determine the reliability levels of the instruments. The researcher then chose to employ the Hayes (2012) PROCESS tool to test the mediation analysis whether there is a causal relationship among the Dark Tetrads of personality, internet trolling and cyberbullying.

#### 4.3 Demographic variables of participants

The study included undergraduate students for the University of Limpopo in Mankweng, Polokwane, and Limpopo Province. The majority of students in the University of Limpopo are Africans at 98% and 2% Asian, white and coloured. The university consists of different African cultural diversities with the majority of 87% Northern Sotho speaking and followed by 3% of Tsonga speaking students. Most of the students use English as their second language. Two hundred and thirty-six undergraduate students from four faculties, namely; the Faculties of Health Sciences, Humanities, Management and Law, and the Faculty of Science and Agriculture, were represented in the final sample. The study used those participants that were available in classes on the day of data collection. The summary of the demographic details of the sample is represented in Table 4.1. Participants' age ranged from 19 to 35 years,

with an average age of 22.37 ( $M = 22.37$ ,  $SD = 2.117$ ). The largest percentage (50.6%) of undergraduate students who volunteered to participate in the study were males. Nearly 89% of the participants listed their domicile as a rural area and 11% from the urban area. Most of the participants (90.4%) indicated that they owned a device and 84.3% of the participants indicated that they had access to the internet. Most (53.5%) participants indicated through self-reported questionnaires that they came from lower middle-class families, with the second largest group (40.4%) coming from a working-class family background. There were more participants (26.3%) who indicated that they fairly often post comments on the social networking sites or web-based platforms than the few participants (23.5%) who very often post comments on the social networking sites.



**Table 4.1: Description of the sample (N = 249)**

	<i>F</i>	<i>%</i>	<i>Mean</i>	<i>S.D</i>	<i>Minimum</i>	<i>Maximum</i>
<b>Age</b>						
			22.37	2.117	19	35
<22 yrs. Old	90	36.6				
22-23 yrs. Old	116	47.2				
>24 yrs. Old	40	16.3				
<b>Gender</b>						
Female	123	49.4				
Male	126	50.6				
<b>Domicile</b>						
Urban	28	11.2				
Rural	221	88.8				
<b>Computer or mobile phone use</b>						
Yes	225	90.4				
No	24	9.6				
<b>Internet Access</b>						
Yes	210	84.3				
No	39	15.7				

***Posts on social networking sites or web based platforms***

<i>Very often</i>	58	23.5
<i>Fairly often</i>	65	26.3
<i>Now and then</i>	61	24.7
<i>Rarely or never</i>	63	25.5

***Socio-economic status***

Working class	92	40.4
Lower middle class	122	53.5
Upper middle class	11	4.8
Upper class	3	1.3

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#### **4.3.1 Male undergraduate students will report higher levels of internet trolling and positive attitudes towards cyberbullying than female undergraduate students**

The hypothesis predicting that male students will report higher levels of internet trolling than their female counterparts was not supported ( $t = .927, p = ns$ ; see *Table 2*). Further analysis showed that there were statistically significant differences between males and females on attitudes towards cyberbullying ( $t = 2.723, df = 233, p < 0.01, d = .36$ ). Male students reported higher mean scores than female students on a measure of attitudes towards cyberbullying.

**Table 4.2: Mean comparisons of all the major variables of the study**

	Sex	<i>N</i>	$\bar{X}$	<i>SD</i>	<i>t</i>	<i>df.</i>	<i>p-value</i>	<i>Cohen's d</i>																																																												
Machiavellianism	Male	117	31.01	5.399	-0.829	234	.408	-0.11																																																												
	Female	119	31.57	5.033					Narcissism	Male	116	27.84	4.962	-1.834	232	.068	-0.24	Female	118	28.95	4.300	Psychopathy	Male	117	21.37	5.721	3.489	234	.001	0.46	Female	119	18.82	5.478	Sadism	Male	117	18.57	5.714	2.086	227.51	.038	0.27	Female	119	17.13	4.902	Global assessment of internet trolling	Male	117	1.61	1.000	0.927	225.18	.355	0.12	Female	119	1.50	0.832	Attitudes towards cyberbullying	Male	117	20.96	5.952	2.723	233	.007
Narcissism	Male	116	27.84	4.962	-1.834	232	.068	-0.24																																																												
	Female	118	28.95	4.300					Psychopathy	Male	117	21.37	5.721	3.489	234	.001	0.46	Female	119	18.82	5.478	Sadism	Male	117	18.57	5.714	2.086	227.51	.038	0.27	Female	119	17.13	4.902	Global assessment of internet trolling	Male	117	1.61	1.000	0.927	225.18	.355	0.12	Female	119	1.50	0.832	Attitudes towards cyberbullying	Male	117	20.96	5.952	2.723	233	.007	0.36	Female	118	18.71	6.667								
Psychopathy	Male	117	21.37	5.721	3.489	234	.001	0.46																																																												
	Female	119	18.82	5.478					Sadism	Male	117	18.57	5.714	2.086	227.51	.038	0.27	Female	119	17.13	4.902	Global assessment of internet trolling	Male	117	1.61	1.000	0.927	225.18	.355	0.12	Female	119	1.50	0.832	Attitudes towards cyberbullying	Male	117	20.96	5.952	2.723	233	.007	0.36	Female	118	18.71	6.667																					
Sadism	Male	117	18.57	5.714	2.086	227.51	.038	0.27																																																												
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	Female	118	18.71	6.667																																																																

### **4.3.2 Correlation analysis of all study variables**

All main variables of the study were subjected to a correlation analysis between themselves to establish if there was any linear relationship between them. The Pearson Product-Moment correlation analysis was used since the point-biserial correlation is its special case. The results of the correlation analysis (in Table 4.3) show that age does not correlate with any of the variables of the study ( $p > .05$ ), and gender correlates with psychopathy, sadism and attitudes towards cyberbullying ( $p < .05$ ). In the context of the present study, the results mean that on average, males score higher than females on the concerned variables.

Attitude towards cyberbullying (ATC) had a positive correlation with psychopathy and sadism ( $p < .05$ ), but was marginally associated with Machiavellianism ( $p < .10$ ) and was not related to narcissism ( $p > .05$ ). GAIT registered a positive correlation with Machiavellianism, psychopathy and sadism ( $p = .05$ ), but was not related to narcissism ( $p > .05$ ). Machiavellianism was associated with narcissism ( $p < .05$ ), and psychopathy was related to both Machiavellianism and narcissism ( $p < .05$ ). However, the associations were modest, ranging from  $r = .15$  to  $.20$ . At  $r = .41$ ,  $p < .001$ , the correlation between psychopathy and sadism was the highest. Sadism did not correlate with either Machiavellianism or narcissism ( $p > .05$ ).

**Table 4.3: Associations between the major study variables**

Variable	1	2	3	4	5	6	7	8
1. Gender	1							
2. Age	-.141 .027	1						
3. Machiavellianism	.060 .345	-.069 .282	1					
4. Narcissism	.103 .106	.009 .893	.171 .007	1				
5. Psychopathy	-.217 .001	-.002 .971	.196 .002	.146 .021	1			
6. Sadism	-.138 .030	.035 .582	.075 .238	.078 .220	.412 .000	1		
7. ATC	-.191 .003	-.048 .452	.108 .092	.088 .169	.450 .000	.348 .000	1	
8. GAIT	-.100 .115	-.063 .323	.169 .007	.086 .180	.423 .000	.288 .000	.318 .000	1

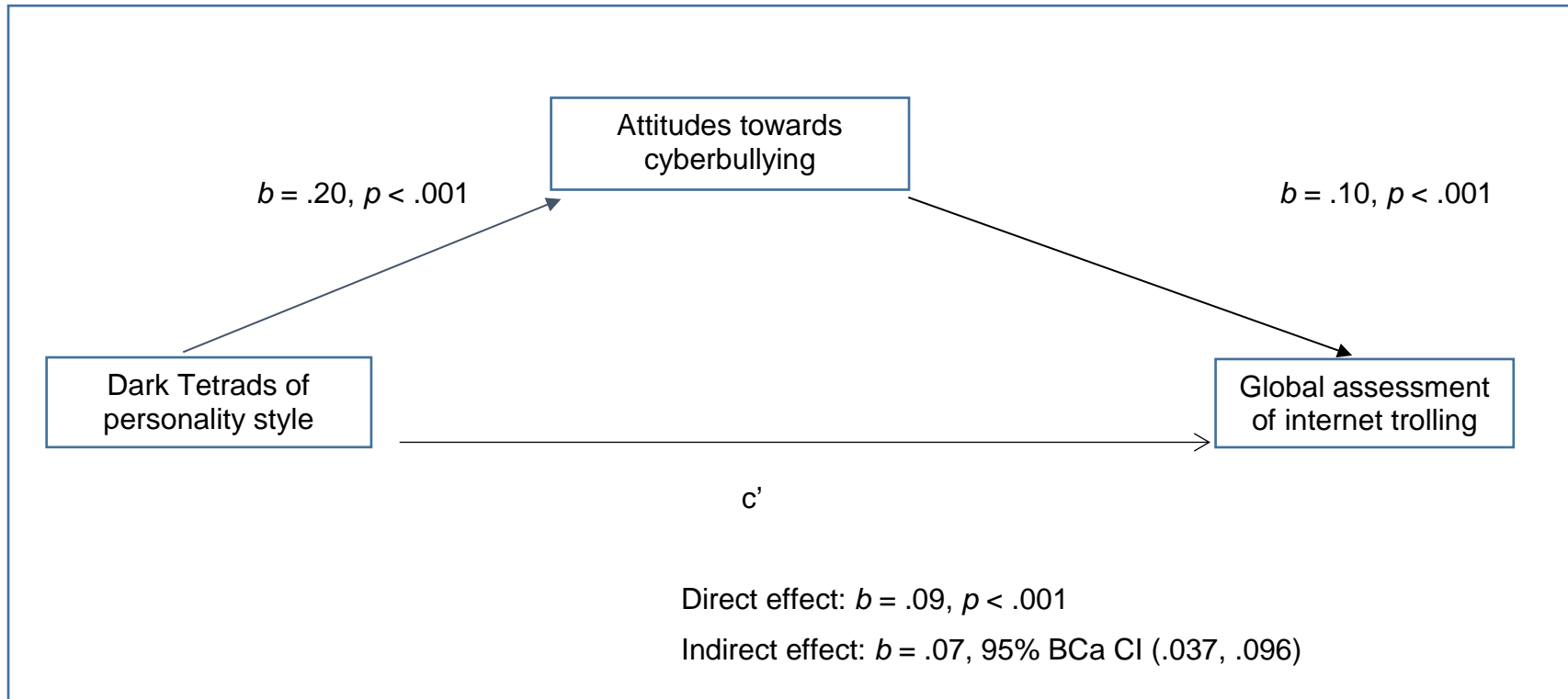
Note: ATC = attitudes towards cyberbullying; GAIT = global attitudes towards internet trolling.

### 4.3.3 The Dark Tetrads of personality will impact on attitudes towards cyberbullying through internet trolling among undergraduate students

The hypothesis that the dark tetrads of personality will impact on attitudes towards cyberbullying through internet trolling among undergraduate students was tested through mediation analysis. The results obtained using the Hayes PROCESS tool showed that there was a significant indirect effect of the Dark Tetrads on internet trolling through attitudes towards cyberbullying (see Figure 4.1;  $b = 0.2$ , BCa CI [0.007, 0.038]). The effect size was estimated with the standardised  $b$  for the indirect effect, which resulted in a value of  $b = .09$ , 95% BCa CI [.029,.164]. The overall results indicate that attitudes towards cyberbullying do mediate the relationship between Dark Tetrad personalities and internet trolling.

Considering that the Dark Tetrad variable is a composite consisting of overlapping but distinct constructs, analysis was further conducted to verify the involvement of each of the constructs, namely, Machiavellianism, narcissism, psychopathy and everyday sadism, in the mediation model. The results are shown in Table 4.4. Attitudes towards cyberbullying did not act as mediator when Machiavellianism and narcissism were predictors ( $b = .02$ , BCa CI =  $-.003$ — $.052$ , and  $b = .02$ , BCa CI =  $-.007$ — $.046$ , respectively). The effect sizes confirmed the results; a standardised  $b$  for the indirect effect of  $b = .04$ , 95% BCa =  $-.007$ — $.092$  was obtained when Machiavellianism was a predictor, and  $b = .02$ , 95% BCa =  $-.012$ — $.074$  when narcissism was the predictor. Attitudes towards cyberbullying acted as a mediator when psychopathy and everyday sadism were predictors ( $b = .04$ , BCa CI =  $.012$ — $.084$ , and  $b = .05$ , BCa CI =  $.044$ — $.166$ , respectively). Effect sizes in both instances were  $b = .08$ , 95% BCa CI =  $.022$ — $.165$  and  $b = .05$ , 95% BCa CI =  $.044$ — $.166$ .

Figure 4.1: Results of mediation analysis: Composite Dark Tetrad personality style (X), attitudes towards cyberbullying (M), and GAIT (Y).





**Table 4.4: Attitudes towards cyberbullying as mediator in the relationship between Dark Tetrads and global assessment of internet trolling: Direct and indirect effects**

Outcome variable	Path a = <i>b</i> (SE)	Path b = <i>b</i> (SE)	Direct effect = <i>b</i> (SE)	indirect effect (CI)
Composite Dark Tetrads	.20 (.030) <sup>***</sup>	.10 (.030) <sup>***</sup>	.07 (.014) <sup>***</sup>	.02 (.007— .038)
Machiavellianism	.13 (.080)	.15 (.028) <sup>***</sup>	.06 (.035) <sup>*</sup>	.02 (-.003— .052)
Narcissism	.11 (.090)	.15 (.029) <sup>**</sup>	.04 (.041)	.02 (-.007— .046)
Psychopathy	.51 (.065) <sup>***</sup>	.08 (.030) <sup>**</sup>	.17 (.034) <sup>***</sup>	.04 (.012— .084)
Sadism	.44 (.073) <sup>***</sup>	.18 (.030) <sup>***</sup>	.11 (.034) <sup>**</sup>	.05 (.024— .091)

Note: † = .10, \* = .05, \*\* = .01, .001<sup>\*\*\*</sup>

#### **4.4 Conclusion**

This chapter has presented the statistical evidence for the association between the personality traits identified and the actual behaviour associated with cyberbullying.

The final chapter discusses the results, and makes recommendations for further study.

## CHAPTER 5

### DISCUSSION

#### 5.1 Introduction

The main objectives of the study were: (a) to explore if gender has any effect on the experience of internet trolling and attitudes towards cyberbullying, and (b) to find out whether attitudes towards cyberbullying mediate the relationship between Dark Tetrads and internet trolling among University of Limpopo undergraduate students. The present chapter will discuss the findings, relating them to the existing literature. Thereafter, limitations of the study will be stated, and recommendations emanating from the study advanced.

##### **5.1.1 Undergraduate male students will report higher scores of internet trolling and have more positive attitudes towards cyberbullying than female undergraduate students.**

Mean scores of male and female students on internet trolling and attitudes towards cyberbullying were compared. The results concerning the first hypothesis were inconclusive, in that there was a split of significant findings between males and females on internet trolling and attitudes towards cyberbullying. Male and female scores on internet trolling were not statistically significant, supporting findings by studies such as March (2019) and March et al. (2017). These findings contradict studies such as Buckels et al. (2014), Craker and March (2016), and Sest and March (2017), who found that males and females differ in their engagement in internet trolling behaviour. March (2019) has speculated that lack of statistical differences between males and females on internet trolling may be related to the skewed distribution of the sexes in the samples studied, where females always outnumbered males by a large margin. However, it is also possible, according to March (2019) that results may depend on context, since there is inconsistency in the findings.

On the second aspect of the hypothesis, namely, the average scores of male and female students on ATC, the differences were statistically significant, with males scoring high. The present study did not measure cyberbullying per se, but attitudes towards it. However, attitudes can be used to comment about behaviour since the two are linearly related. There are some inconsistencies in the literature regarding whether

males or females engage in cyberbullying (Monks, Robinson, & Worlidge, 2012). The findings of this study are consistent with the literature that found that males engage in cyberbullying more (Kokkinos, Antoniadou, & Markos, 2014). Males were more likely than females to be bullies (Kowalski & Limber, 2007; Monks & Smith, 2000). Aricak et al. (2008) indicated that males engaged in cyberbullying and pretended to be someone else in cyberspace significantly more frequently than females. Additionally, males were more likely than females to endorse that they would engage in cyberbullying in the future (Aricak et al. 2008)..

Motswi and Mashegoane (2017) found that while male secondary school students describe themselves as cyberbullies and being cybervictim-bullies (cybervictims who simultaneously engage in bullying others) more than female students, the latter were more likely to report being victims than their male counterparts do. Pettalia, Levin, and Dickinson (2013) report that while girls in Canada are also less likely to be cyberbullies and more likely to be cybervictims, they too reported that they were cybervictimised bullies like male students in Limpopo. It makes sense that an individual who is bullied will most likely be a cybervictim-bully because bullying is used as a means of self-defence and a way to ward off victimisation (Wong, Cheung, & Xiao, 2018). The discussion so far suggests that the results of the present study must be contextualised for them to make sense.

It is likely that the results of the present study can be contradicted by evidence suggesting that in fact females are actively involved in cyberbullying than males (Aboujaoude, Savage, Starcevic, & Salame, 2015). In other words, depending on how cyberbullying is measured, the results of gender differences in cyberbullying may be different (Monks, Robinson & Worlidge, 2012). Females may score high if cyberbullying is measured as indirect aggression (Smith et al., 2012), such as when the victim is excluded from the peer group or his or her personal and social reputation is the focus of attack (Estévez, Povedano, Musitu, & Jiménez, 2012). Direct aggression is more prototypical of the male gender, while indirect aggression is more common among females.

### **5.1.2 The Dark Tetrads personality traits will predict internet trolling and attitudes towards cyberbullying behaviour among undergraduate students**

The Dark Tetrads have been brought together conceptually because of their common malevolent, antisocial character (Paulhus & Williams, 2002; Stead, Fekken, Kay, & McDermott, 2012). Not only do they share some characteristics in common, within the normal range of personality functioning they are indistinguishable (Paulhus, 2014). Although they share characteristics, they also have aspects that are unique (Book et al., 2016; Buckels et al., 2013; Furnham et al., 2013). The present study also found that the Dark Tetrads of personality are associated with each other. However, the size of the correlations was relatively small, not more than  $r = .20$ , and therefore not in the statistical region normally found in empirical studies ( $r = .20-.50$ ; Mededović & Petrović, 2015).

Students' reports of two of the Dark Tetrads, Machiavellianism and narcissism, did not vary according to the gender of the respondents. However, sadism and psychopathy scores were influenced by gender. Male students' reports were on the average higher than those of female students. The pattern of results is in line with the literature (Jonason, Li, & Buss, 2010). Psychopathy, in particular, seems to account for most of the variance in the differences between the sexes. Jonason and Kavanagh (2010) could still detect male and female differences on psychopathy in a sample highly skewed in favour of female participants.

#### **5.1.2.1 Mediator role of ATC**

Although there are distinctions between cyberbullying and internet trolling, the two variables do have some overlapping characteristics. The two concepts refer to a behaviour executed with the help of internet-based, social media platforms. Some variants of internet trolling involve an element of sometimes subtle and at other times overt harassment, abuse and aggression intended to cause some kind of harm to the target, in that sense bringing it closer to the objectives of cyberbullying (Akhtar, & Morrison, 2019; Bishop, 2012, 2014; Griffin Law, n.d.; Tustin, Zulu, & Basson 2014). Cyberbullying and internet trolling have the effect of embarrassing or isolating the target from the group (Patchin & Hinduja, 2006); the potential for harm exists when the attacks by cyberbullies and internet trolls are consistent and targeted. A close inspection of the study by Tustin et al. (2014) among South African high school

learners in the Western Cape and Gauteng provinces demonstrates that the definitional lines between cyberbullying and internet trolling are blurred. We have proposed in this study that there actually is a relationship between cyberbullying and internet trolling. However, we proposed that the relationship is not direct. Studies have proposed that internet trolling can be predicted by personality variables, especially the Dark Tetrads (Fu-Yuan Honga, Kuang-Tsan Cheng). Cyberbullying acts as a mediator in the relationship.

Analysis in the present study showed that attitudes towards cyberbullying do indeed serve a mediator role in the relationship between Dark Tetrads of personality and internet trolling. However, a finer analysis of the composite personality variable showed that it is actually the associations involving the psychopathy and sadism components that are mediated, and not those that include Machiavellianism and narcissism. Buckels et al. (2014) found that it was sadism together with Machiavellianism that were associated with internet trolling, rather, enjoyment of internet trolling to be exact. However, in a situation where other Dark Tetrads are controlled, it is sadism that is strongly associated with internet trolling, narcissism was negatively related to it, and psychopathy was unrelated to it.

The results of the present study modify the conclusion by Buckels et al. (2014), in that they show that in a mediational model, where it is assumed that the basis of internet trolling is the students' favourable outlook to cyberbullying behaviour, both sadism and psychopathy associate with internet trolling. After all, psychopathy and sadism are associated (Cracker & March, 2016; Reidy, Zeichner, & Seibert, 2011).

## **5.2 Conclusion**

In conclusion, the current study established that attitudes towards cyberbullying mediate the relationship between Dark Tetrads of personality and internet trolling. However, the effect size found was small, suggesting that possibly other factors may be responsible for the relationship. It is possible that it is not only cyberbullying attitudes responsible for the association, but other variables such as aggression or the threatened ego. The variables measured are also complicated and some of them are still undergoing development. Internet trolling in particular, has many varieties. It could be that its measurement in this study did not capture its essence.

### **5.3 Limitations**

This study has several limitations. The study sample was convenient and drawn from one educational institution only. Therefore, caution must be exercised when generalising the findings. The university where sampling was done draws a majority of its students from rural areas. The socio economic status of the participants might have negatively impacted on the study as few indicated that they do not have access to internet. Considering that before coming to university, the internet usage patterns of the students differ widely, it might be that even at university the students have retained their pre-university usage patterns and behaviours. The study used a cross-sectional design in its methodology. Of course this type of design limits the researcher's ability to draw causal inferences. The low reliability of the narcissism and Machiavellianism subscales might have limited the study. Finally, some of the instruments used were kept short and simple to avoid an overwhelming number of questions. This may have its own drawback, namely not being able to capture the construct in its diversity and/or complexity (for instance, internet trolling). Bullying was not directly measured. This would add another dimension to studying the concept, and it would be interesting to see what the results would be in case actual bullying is measured.

### **5.4 Recommendations**

It is recommended that future researchers use longitudinal designs so that cause and effect can be established. It is also recommended, as Buckels et al. (2014) did, that a more direct measure of internet trolling behaviour be devised in future. Future research should focus on a broader and more diverse sample that would provide greater variation of attitudes towards cyberbullying and internet trolling behaviour. Internet trolling in this study was generalised and not categorised as 'kudos' and 'flaming'. Future research should distinguish between the modalities and directness of the items in the internet trolling and cyberbullying scale. Future research should cover all the constructs of internet trolling and cyberbullying. Future research should explore the correlations of socio economic status on internet trolling and cyberbullying.

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## Appendix: Turfloop Research Ethics Committee Clearance Certificate



**University of Limpopo**  
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### TURFLOOP RESEARCH ETHICS COMMITTEE CLEARANCE CERTIFICATE

**MEETING:** 06 April 2018

**PROJECT NUMBER:** TREC/51/2018: PG

**PROJECT:**

**Title:** Harsh play: The dark tetrad of personality, trolling and cyberbullying among the University of Limpopo students.

**Researcher:** LH Mashaba  
**Supervisor:** Prof S Mashegoane  
**Co-Supervisors:** N/A  
**School:** Social Science  
**Degree:** Master of Arts in Psychology

  
**PROF TAB MASHEGO**  
**CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE**

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: REC-0310111-031

**Note:**

- i) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
- ii) The budget for the research will be considered separately from the protocol.  
**PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.**