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## **Effect of Dark Triad Personality on Cyberbullying Behavior among Malaysian University Students**

**Siti Aisyah PANATIK**

Universiti Teknologi Malaysia

**Nurul Nabilah ABDUL RAOF**

Universiti Teknologi Malaysia

**Nor Akmar NORDIN**

Universiti Teknologi Malaysia

**Junaidah YUSOF**

Universiti Teknologi Malaysia

**Ruzanna SHAHRIN**

Universiti Teknologi Malaysia

**Abstract:** Cyberbullying has become more prevalent in this age due to the increased usage of electronic gadgets, the Internet, as well as the personality traits of the aggressor. The purpose of this study is to examine the effects of Dark Triad personality traits on cyberbullying behaviour among university students. The personality model adopted in this study is the Dark Triad Model, which includes Machiavellianism, Narcissism and Psychopathy. This current study used a cross-sectional quantitative research design to collect data through online questionnaires. This study utilized the 9-Item Cyberbullying Offending Scale and the 12-Item Dirty Dozen scale to gather the data. A total of 400 samples from Malaysian public university students were selected based on the convenience sampling methods. The data were analyzed using descriptive and inferential statistics through SPSS version 27. The finding shows a low level of cyberbullying behaviour among Malaysian university students. The findings also indicated that all three dark traits (i.e. Machiavellianism, Psychopathy, Narcissism) are significantly correlated with cyberbullying behaviour. Meanwhile, the regression analysis indicates that both Psychopathy and Machiavellianism significantly positive affect cyberbullying behaviour. The study contributes to the existing literature by providing evidence from the Malaysian perspective, which is a collectivistic culture in nature. Additionally, the findings provide information to the stakeholders as guidelines for future intervention and prevention programs development for cyberbullying.

**Keywords:** Dark Triad, Machiavellianism, Narcissism, Psychopathy and Cyberbullying

### **Introduction**

In this digital era, online social media usage has become a ubiquitous phenomenon among youth as it acts as a vehicle for individuals to connect and build relationships virtually. With the rapid increase in social media usage, cyberbullying has emerged as a new form of bullying that occurs in cyberspace, becoming a salient issue that needs to be focused on. Cyberbullying activities include engaging in a short online argument utilising malicious languages, harassing by spamming derogatory messages, circulating spiteful rumours, impersonating someone else with ill intentions and purposely isolating a person from an online group (Willard, 2007). The huge online platform enables massive numbers of people with perceived anonymity to view or participate in

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online bullying, making the situation even more distressing (Watts et al., 2017). The motivations that led perpetrators to conduct this negative behaviour may stem from jealousy, boredom, revenge and/or seeking acknowledgement from others (Varjas et al., 2010).

This problematic social media use has become a troubling issue in Malaysia, as the country was ranked sixth among 28 countries worldwide in a report recently released by tech review site “Comparitech” (Nur, 2020). Malaysia was also second in problematic social media use in Asian countries (Nur, 2020). These perturbing statistics of cyberbullying cases in Malaysia have called for immediate attention to tackle this matter at hand to ensure the wellbeing of online users. Information about the factors and predictors of cyberbullying is critical to learning about this problematic behaviour. As the number of cyberbullying cases has steadily grown in Malaysia, it is crucial to provide empirical research data on this area of study. Hence, the knowledge implication of this study is that it can contribute to the existing literature in the conceptual areas of cyber bullying. In addition, there is still a lack of literature that researched the effects of dark triad personality such as Narcissism, Machiavellianism and Psychopathy traits on cyberbullying (Alonso & Romero, 2017), as most of the past studies focus on the other aspects of bullying. The psychological reasons behind cyberbullying behaviour may shed some light on the motivators that galvanise this immoral act. Hence the findings from this study can provide some essence of personality traits on cyberbullying behaviours to further understand the motive of the perpetrator.

Previous research has shown that cyberbullying can cause various negative outcomes that can be detrimental to both the physical and psychological health of the victims (Zhang et al., 2020). Negative emotions and behaviours, such as social anxiety, poor concentration, substance abuse, and even suicide are to be expected from the victims. This is because the consequences of cyberbullying attacks are just as harmful as traditional bullying or perhaps even worse. Traditional bullying differs from cyberbullying in terms of the time and frequency of the attack from the perpetrators. For instance, a victim who was physically bullied at school may feel safe during the evenings and nights as the person are in the comfort of his own home during those times. Whereas cyberbully victims are not blessed with that safe period of harassment, as it will continuously occur every time of the day due to the support of media circulation. In addition, the harassment is presented towards a larger virtual audience which can be more humiliating for the victims to show their faces in public (Peluchette et al., 2015). To make things worse, embarrassing pictures, videos or comments towards the victim can be downloaded and shared repeatedly in multiple social media platforms, which eventually leads to the person becoming viral and a target for harassment as well as a laughingstock. Hence, this present research can be one of the attempts to understand the pattern of this negative antisocial online behaviour to curb this problem from being more widespread. By knowing the effects of the personality traits towards cyberbullying behaviour, this can assist future researchers to apply the knowledge in detecting cyberbullies that exist online as conducted by past research, in which they incorporate the dark triad features in a machine-learning algorithm to detect cyberbullying among Twitter communities (Balakrishnan et al., 2019).

Cyberbullying research among young adults, or more specifically, university students, is critical as they are equally susceptible to the harm of cyber aggression. Based on past research, it has been asserted that almost all university students are internet literate and have higher access to the internet for their studies (Lai et al., 2017). Thus, this increases the percentage of university students as cyber users, which justifies the need to investigate further the cyberbullying incidence among this population. According to Gilroy (2013), there is a higher probability for university students to be engaged in cyberbullying behaviour when exposed to an extensive amount of Internet and social media. Research on this population is necessary to comprehend the nature of this phenomenon fully. This present study can add new knowledge and empirical data related to the influence of Narcissism, Machiavellianism and Psychopathy as the dimensions of the Dark Triad personalities on cyberbullying behaviour among university students in Malaysia. This is because it has been stated that not much research has been done on the university students regarding cyberbullying (Watts et al., 2017). Thus, with the data gathered through this study, the levels of cyberbullying behaviour among university students in Malaysia can be brought to light and assist future researchers in further investigate this research area.

From previous studies, numerous researchers have discovered that personality traits, such as the Dark Triad Personality and the Big 5 Model, can be one of the predictive factors for antisocial online behaviours, including cyberbullying (Moor & Anderson, 2019). Some researchers have utilised the Dark Triad Personality model in their research, whereas few incorporated the Big 5 Model to predict cyberbullying behaviour (Van Geel et al., 2017). In this research, the Dark Triad model, which encompasses the traits of Machiavellianism, Narcissism and Psychopathy, is utilised as the personality model. This model fits for this research due to the theoretical perspectives of each trait associated with cyberbullying behaviour. Since the three Dark Triad traits are linked with values such as power, hedonism, and manipulation, people high on these traits may use cyberbullying as a

coping method to feel powerful, entertained, or relieved from ordinary real-life issues (Kircaburun et al., 2018). By investigating the linkages between personality traits and cyberbullying, one may assess what personality trait has a significant relationship with this negative online behaviour, which can contribute to society in terms of aiding educators to develop effective strategies to guide and demotivate students from cyberbullying behaviours. However, studies on the relationship between personality traits and cyberbullying are pretty scarce (Alonso & Romero, 2017). Thus, this study aims to examine the effects of Dark Triad personality traits on cyberbullying behaviour among university students in Malaysia.

## **Literature Review**

### **Personality Traits**

Personality traits can be defined as a neuropsychic system capable of making several functionally identical stimuli and triggering and facilitating equivalent (meaningfully consistent) reactive and expressive behaviour (Allport, 1961). This definition implies that personality traits do not mean that people would react the same way regardless of any situation, instead, there is a concept of variance. The newer definitions of personality traits acknowledge that personality traits are related to inconsistency based on different situations, as pointed out by Allport (1961). Moor and Anderson (2019) defined personality traits as the relatively constant patterns of thinking, feeling, and attitude that represent the inclination to react in specific ways according to situations. Social and personality psychologists have substantiated that personality traits can precisely specify specific differences in behaviour even from environments (Gosling et al., 2002).

In this study, personality traits refer to the dark personality traits often associated with negative, undesirable behaviour that can cause harm to others, such as cyberbullying. The personality model deemed fit for this study is the Dark Triad model (Paulhus & Williams, 2002). This model consists of three dimensions that are Narcissism, Machiavellianism and Psychopathy. Narcissism can be described as an extreme feeling of entitlement and superiority. Machiavellianism is the likelihood of the person manipulating others deliberately. Psychopathy refers to incautious thrill-seeking behaviour and lack of empathy (Paulhus & Williams, 2002). The personality traits are measured by using the 12-item Dirty Dozen Dark Triad Scale (Jonason & Webster, 2010).

### **The Dark Triad Model**

Several personality models have been applied by previous researchers to study the correlation between cyberbullying and personality traits. The Dark Triad Model is utilised as the underpinning theory in this study. The Dark Triad Personality is the most widely accepted model of malicious personality traits (Paulhus & Williams, 2002). The dark triad concerns three socially unappealing personality traits: narcissism, Psychopathy, and Machiavellianism. The trait *Narcissism* can be defined as an enhanced sense of superiority, uniqueness, and self-importance while demeaning others (Rauthmann & Kolar, 2012). *Psychopathy* can be described as a stable pattern of blatant indifference and abuse of the rights of others with a pronounced affinity for deception and manipulation. *Machiavellianism* is a trait that involves deception and manipulation for personal gain in relationships due to their fear of rejection (Rauthmann, 2011). Even though the traits of the Dark Triad Model are commonly displeasing, it is essential to highlight that they are still within the normal, sub-clinical range, which makes people who scored high in these traits can still be considered normal and should not be confused with those in forensic and clinical populations (Vernon et al., 2008). However, it is erroneous to assume that people with these subclinical traits are less harmful to society and themselves than to the clinical population with the same traits (Gibb & Devereux, 2014). Past research found that people often view narcissists as socially unpleasant despite being in a clinical or subclinical population (Leary et al., 1997; Paulhus, 1998). The trait psychopathy is also deemed the most malicious among the other traits in the Dark Triad, even at a subclinical degree, as it was found to influence a broad range of self-report behavioural measures of antisocial behaviour (Paulhus & Williams, 2002; Rauthmann, 2012). People that score high in Machiavellianism are regarded as dishonest, and deceitful, and perceive that interpersonal manipulation is the secret to achieving what they want in life; hence they act as such (Jones & Paulhus, 2009).

Furthermore, despite their disparate backgrounds, the dimensions in the "Dark Triad" share several similar characteristics. All three traits have the disposition to exhibit self-glorifying, emotional indifference, and aggression to the varying extent as they possess socially malicious personalities (Paulhus & Williams, 2002). Paulhus and Williams (2002) also discovered that the Dark Triad traits all displayed a common core of disagreeableness in non-clinical samples, which makes it frighteningly normal for them to behave destructively

in social situations. Other research also supported the statement, claiming that these three characteristics are considered exploitative as they exhibit an indifference to the damage they inflict on others in the pursuit of their goals." (Jones & Paulhus, 2011, p. 253). According to Jones and Figueredo (2013), all three characteristics have an antagonistic essence of callousness and manipulation in nature, which are in line with the previously stated research. When compared to the Big Five Model, the Dark Triad traits have shown that they all have one commonality, which is low agreeableness (Paulhus & Williams, 2002; Jakobwitz & Egan, 2006). Hence, it is not surprising that people with the Dark Triad traits suffer psychosocial consequences (Jonason, Li & Czarna, 2013) because of a lack of self-control, emotional intelligence, and equity sensitivity (Goodboy & Martin, 2015).

### **Cyberbullying Behaviour**

Cyberbullying can be described as any vile act against another cyber user through the internet or other digital technologies, such as distributing or uploading deeply offensive content or using other forms of social harassment (Willard, 2006). Cyberbullying is classified into seven categories by Li (2007) and Willard (2006): flaming, online harassment, cyberstalking, denigration, masquerading, trickery and outing, and exclusion. Furthermore, cyberbullying behaviour can also be defined as causing distress to others by the constant means of technology (Slonje et al., 2013). However, previous research discovered that university students disagreed with the definition (Gibb & Devereux, 2014). They stated that there is an issue with the evolving nature of technology, which calls for a more comprehensive set of behaviours related to cyberbullying. The participants asserted that cyberbullying should be associated with the perceived distress of victims and not solely based on the intended harm of the perpetrator. The operational definition of the present study is aligned with the definition provided by the university students in the past research, as the study focused on the most integral elements that are most commonly included in defining cyberbullying behaviour, which is repetition and harm caused to the victim. Aside from that, cyberbullying has been associated with other indirect forms of aggression, which makes it vary from traditional bullying, due to its perceptually covert nature (Gibb & Devereux, 2014).

Social media, e-mail, chat rooms, instant messages and mobile phones are all the typical platforms where cyberbullying tends to take place. Since many of today's students are members of the digital generation, educators should be mindful of the cyberbullying issue and recognise that it affects teens and young adults. As stated in past research, college students spend most of their time online due to the nature of their studies which require them to access the internet. Thus, this increases the probability of them engaging in cyberbullying behaviours (Lai et al., 2017). Aside from that, Calvete et al. (2010) discovered that cyberbullying is linked to proactive aggression, the rationale for violence, openness to violence, and a lack of perceived social support from peers. Cyberbullying, which relates to persistent, deliberate, and malicious online activities directed at weaker people (Patchin & Hinduja, 2015), has been linked to psychopathy from the Dark Triad traits, and sadism from Dark Tetrad traits specifically (Van Geel et al., 2017). Thus, these could potentially lead university students to cyberbully others as they could be more exposed to these factors.

### **Prevalence of Cyberbullying among University Students**

There is a large amount of research surrounding cyberbullying among adolescents. However, there seems to be a scarcity of articles that have the research samples of university students (Watts et al., 2017). This study aims to tackle this research gap to provide more knowledge on cyberbullying. Thus, it is rational to conduct a thorough review of the limited existing research that has been done on university samples.

According to a study by Gibb and Devereux (2014), it was discovered that about 52% of college students are involved in cyberbullying behaviours, which is quite a high level of incidences compared to previous estimates in the study. Their study employed 297 college students, 67.4% of whom were female, to take part in an online survey to test the correlation of the dark triad personality with cyberbullying. This study used the Cyberbullying Questionnaire (CBQ; Calvete et al., 2010) as the instrument to measure cyberbullying behaviour. The research findings were aligned with past research that stated cyberbullying behaviour can still occur at the university level (e.g. Kowalski et al., 2013; MacDonald & Roberts-Pittman, 2010). The plausible reason for this result may be due to university students' time spent on the Internet (Lai et al., 2017). Based on Gilroy (2013), university students are more inclined to engage in cyberbullying behaviour when exposed to the Internet for a considerable amount of time. Furthermore, a systematic literature review conducted by Watts et al., (2017) aimed to increase awareness of the ongoing phenomenon of cyberbullying among undergraduates. Their study analysed numerous databases to look for existing literature on cyberbullying. A total of 100 articles were examined, with 54

included in the final literature review. From this study, it can be discovered that high school cyberbullies were much more likely to cyberbully in university (e.g., Beran et al., 2012), with the sample of 1368 Canadian and American college students. This claim can be supported by a study conducted by Chapell et al., (2006) studied 119 students and found that 54% (14 of 26 participants) of college cyberbullies were also cyberbullied when they were in high school and elementary school. A researcher also claimed that male university students are more likely to be cyberbullies than females (Ozden & Icelliglu, 2014).

Most of the research previously was conducted in Western countries, and still limited study from Asian countries like Malaysia. From Malaysian perspective, the cyberbullying phenomenon has not yet been thoroughly investigated. There is still scarce research regarding this topic among Malaysian samples (Lai et al., 2017). Thus, the data obtained on cyberbullying cases in Malaysia is quite limited. In 2013, 389 incidents of cyberbullying were identified based on the data published in a local newspaper. In contrast to 250 cases in 2012, this figure had risen by 55.6 per cent in 2014. Nevertheless, it is erroneous to assume that the article considers all cyberbullying cases, in fact, many cases are unreported due to the victims' silence. Their silence may be stemmed from feelings of helplessness, embarrassment, and depression.

A study from Malaysia was conducted by Lai et al. (2017), it was stated that 66% (470 out of 712) of their samples have experienced cyberbullying. The research gathered up a total of 712 public and private university students as their participants. Males comprised 310 (43.5%) of the total participants, while females made up 402 (56.5%). The study consists of 374 Malays, 64 Chinese, 109 Indians, 160 Borneo native peoples, and five other ethnic groups. The findings of the stated research is in line with a more recent study conducted at a university in Johor Bahru, Malaysia, which has a total sample of 400 undergraduates comprising 32% male respondents and 68% female respondents. The study also discovered that 61% of their 244 respondents have experienced cyberbullying. The result of this study further proves that cyberbullying is currently on the rise, particularly among university students in Malaysia, due to the high incidence rate. According to an online safety site, this is analogous to the situation in the United Kingdom, where 69% of young people were cyberbullied (Cyber Bullying Statistics, 2015). However, the trends exhibited by Malaysia are pretty contrasting with the USA, as research in the latter country only showed 21.9% of college students having been cyberbullied (MacDonald & Roberts-Pittman, 2010).

Finally, cyberbullying among Malaysian students in higher education institutions has reached alarming levels. From an academic standpoint, cyberbullying can have a negative impact on victims' academic success due to mental and physical complications caused by cyberbullying. Thus, it is essential to carry out this research to obtain more empirical data on the level of cyberbullying behaviour among university students in Malaysia.

### **Types of the Dark Triad Personality Traits among University Students**

The model of the Dark Triad personality consists of three malevolent traits: Machiavellianism, Narcissism and Psychopathy. Hence, the present research intended to identify the type of Dark Triad personality that exists among university students in Malaysia. According to a previous finding by Mumin (2021), out of all the dark traits, the trait Narcissism appeared to be the most prevalent among university students in Malaysia. The study incorporated the same Dark Triad instrument, the Dark Triad Dirty Dozen Scale, and obtained data from 549 respondents to study the role of Dark Triad personality as a buffer against stress. Aside from that, Vedel and Thomsen (2017) also found the same trend in their results, with Narcissism scoring highest, followed by Machiavellianism and Psychopathy in their university student samples. The research aimed to see if there are any pre-existing Dark Triad distinctions between academic majors, which involved 487 students. The same result can be seen in a study by Rauthmann and Kolar (2012), which also showed Narcissism as the most prevalent type of dark personality trait and Psychopathy with the least prevalent score. The study also used the Dirty Dozen Scale on 244 respondents to examine the perceived darkness of Narcissism, Machiavellianism and Psychopathy.

However, a study by Rauthmann and Kolar (2012) related to the relationship between bullying behaviours and the Dark Triad showed differing results. The research finding showed that the trait Machiavellianism scored the highest level out of all the three traits, followed by Narcissism and Psychopathy. Interestingly, it can still be observed that Psychopathy remained the least prevalent among university students. These findings may probably be because psychopathy is known as the most malicious trait in the Dark Triad Model (Rauthmann & Kolar, 2012). Hence, due to the varying results of the Dark Triad personality traits among university students, the need to conduct this study is deemed more significant to contribute further knowledge in dark personality traits. The findings could potentially be beneficial for preventing and intervening in cyberbullying problems.

## **Dark Triad Personality Traits and Cyberbullying Behaviour Relationships**

This section discusses the findings from prior studies investigating the relationship between personality traits and cyberbullying among university students. Goodboy and Martin (2015) conducted a study to examine the relationship between the dark triad personality traits and self-reported cyberbullying behaviours. This study accumulated 227 questionnaires from college students to report their traits of narcissism, psychopathy, and Machiavellianism as well as their cyberbullying behaviours. It was revealed that all three dark traits were correlated with cyberbullying. In the same vein, a study by Van Geel et al., (2017) also found that Narcissism, Machiavellianism and Psychopathy have a significant relationship with cyberbullying. However, those studies were conducted among university students in the USA, which is individualistic culture and cannot be generalised to other countries, especially Malaysia. Thus, this research fills up the gap by conducting research among public university students in Malaysia.

Upon further investigation, most prior research on this topic had discovered inconsistent results on the relationship between personality traits and cyberbullying. For instance, Kircaburun et al., (2018) studied the direct and indirect associations of the Dark Tetrad traits with Problematic Social Media Use (PSMU), such as cyberbullying, by using 761 participants from a Turkish university. The participants consist of 274 male and 487 female university students. This study showed that only Machiavellianism and Psychopathy were directly associated with cyberbullying. The trait of Narcissism was indirectly correlated with cyber-trolling, which was another type of PSMU (Kircaburun et al., 2018). This finding did not align with the previous research that asserted all the Dark Triad traits were correlated with cyberbullying behaviour from the USA sample. (Goodboy & Martin, 2015; Van Geel et. al, 2017). These inconsistent findings could be due to the different geo-locations between the studies.

A study by Balakrishnan et al. (2019) found that cyberbullying detection mechanism was greatly enhanced with the assistance of factoring in the user's personality. Out of the Dark Triad traits, psychopathy emerges as the most significant trait that can effectively detect bullies online (Balakrishnan et al., 2019). This result is supported by previous researchers that had concurred that the trait psychopathy has a significant positive relationship with cyberbullying (Goodboy & Martin, 2015; Van Geel et al., 2017; Kircaburun et al., 2018). Hence, the current research could potentially aid future researchers in detecting cyberbullies online by factoring in the related personality traits of a cyberbully.

In conclusion, a few limitations exist in the prior research regarding this subject. Some studies are conducted on samples from only one university. Besides that, none of those mentioned above articles are located near the geo-location of Asia. Hence, the research result cannot be fully applied to populations beyond the geo-locations of the studies. The previous research also has the issue of inconsistency in the results. Some studies claimed that all the Dark Triad traits were correlated with cyberbullying while others have conflicting results. This research can overcome the limitations by conducting research in Malaysian public university students. Therefore, this study tested the following hypotheses:

- H1 There is a significant positive relationship between Machiavellianism and cyberbullying behaviour among university students.
- H2 There is a significant positive relationship between psychopathy and cyberbullying behaviour among university students.
- H3 There is a significant positive relationship between narcissism and cyberbullying behaviour among university students.

## **Effects of the Dark Triad Personality Traits on Cyberbullying Behaviour**

A large body of past literature had elucidated the effects of personality traits on problematic social media uses such as cyberbullying. However, studies on the potential role of dark personalities were entirely overlooked (Kircaburun et al., 2018). But there are still some available studies that can give a good picture on how these dark traits are related to cyberbullying. A study done by Gibb and Devereux (2014) among 297 college students aimed to investigate cyberbullying behaviours among university samples. Most of the participants were non-Hispanic White (67.4%), female (61%), and heterosexual (91.9%). Cyberbullying Questionnaire was modified and completed by the participants (CBQ; Calvete et al., 2010). The Dark Triad short form scale, which measures Machiavellianism, subclinical narcissism, and subclinical psychopathy, was then completed by the participants. Cyberbullying behaviour was more likely reported by people who scored high on a subclinical test of

psychopathy. Cyberbully victims, men, and people with subclinical psychopathy also participated in a broader spectrum of cyberbully behaviour. The findings of their study showed that individuals that scored high in subclinical psychopathy were more inclined to engage in cyberbullying behaviour, hence this supported their hypothesis that psychopathy trait is related to cyberbullying. Meanwhile, the other two traits, Machiavellianism and narcissism were not significant predict cyberbullying. Another study by Goodboy and Martin (2015) also revealed that psychopathy emerged as the unique predictor of cyberbullying among 227 undergraduate students (104 male, 112 female, 11 sex not identified) from the United States of America. Their study used the Dirty Dozen scale (Jonason & Webster, 2010) to measure the Dark Triad personality and the Revised Adolescent Peer Relations Instrument (RAPRI) to measure the cyberbullying behaviour. In the same vein, a study by Pabian et al., (2015) conducted among 324 Belgian participants to study the effect of Dark Triad personality traits on cyber aggression also discovered Psychopathy as the only significant predictor of cyber aggression, which includes cyberbullying.

Furthermore, Safaria et al. (2020), that examines the relationship and the effects of Dark Triad personality on cyberbullying behaviour, had collected 2407 respondents from Indonesia. The study discovered a contradicted result from previous research in which Machiavellianism is the strongest predictor of cyberbullying behaviour, followed by Psychopathy and Narcissism. The instruments used in the study are the Short Dark triad (SD3) and a one-item cyberbullying scale. Hence, the finding of this study showed that there would be a significant positive effect of Machiavellianism on cyberbullying behaviour among university students.

Van Geel et al., (2017) researched to investigate the relationship between personality traits with traditional bullying and cyberbullying. The study included two personality models, the Big Five Model and the Dark Triad Model, with the addition of subclinical sadism. 1568 respondents are ranging in age from 16 to 21 years old, with 61.9% of them being female. The European Cyberbullying Intervention Project Questionnaire was used to assess cyberbullying (Del Rey et al., 2015). The Short Dark Triad Questionnaire (Jones & Paulhus, 2014) considers the presence of the dark triad. This study showed that sadism is a significant predictor of cyberbullying, while narcissism and psychopathy were only slightly substantial. Machiavellianism, on the other hand, was not significant. This study is in line with a study by Kircaburun et al., (2019) which found that Psychopathy and Sadism were the only traits that influence cyberbullying as a result showed that men with Sadistic traits are more inclined to engage in cyberbullying behaviour, while Psychopathy played a role in cyberbullying behaviour among women. The research involved 772 Turkish university students (280 male, 492 women) recruited through convenience sampling. These findings contradicted the earlier research by Goodboy and Martin (2015) and Gibb and Devereux (2014), which showed that only psychopathy was found to be a significant predictor. The past researchers concluded psychopathy was the sole trait related to cyberbullying. Hence, it is rational to note that in the model, psychopathy can be raised as the only predictor of cyberbullying.

Finally, it can be concluded that some researchers have substantiated that psychopathy is the sole predictor of cyberbullying behaviour out of all the Dark Triad traits (Goodboy & Martin, 2015; Gibb & Devereux, 2014) meanwhile another research showed Machiavellianism to be the strongest predictor of cyberbullying behaviour (Safaria et al., 2020). However, research that included the trait Sadism in the study had discovered varying results as it was asserted that psychopathy was shown to be only slightly significant predictor (Van Geel et al., 2017). Thus, it is important to conduct this research to bring a broader understanding of personality traits and cyberbullying behaviour among university students. Therefore, this study tests the following hypotheses regarding the influence of the Dark Triad personality traits on cyberbullying behaviour.

- H4: There is a significant positive effect of Machiavellianism on cyberbullying behaviour among university students.
- H5: There is a significant positive effect of psychopathy on cyberbullying behaviour among university students.
- H6: There is a significant positive effect of narcissism on cyberbullying behaviour among university students.

## **Research Framework**

This research aims to study the effects of dark triad personality traits on cyberbullying behaviour among university students in Malaysia. This study utilised the Dark Triad Personality Model as the fundamental model for the study to measure the effects of personality traits on cyberbullying behaviour among Malaysian university students. The conceptual framework of this study is shown in Figure 1. This research used three sub-dimensions

of the Dark Triad Model, such as Narcissism, Machiavellianism, and Psychopathy as the predictor of the cyberbullying behaviour among university students in Malaysia.

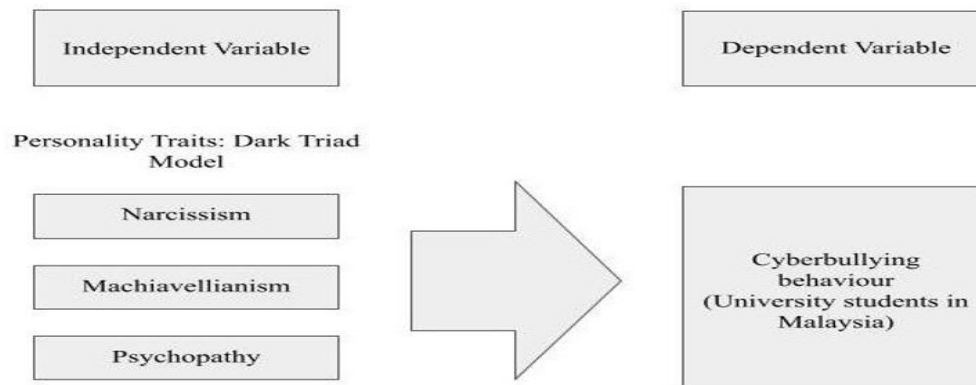


Figure 1. Conceptual framework of study

## Method

### Research Design

The research design is based on a quantitative approach using descriptive, correlational and non-experimental causal studies. This research utilised a cross-sectional design that enables the researcher to acquire a large amount of data at one point. The researcher used questionnaires to measure the variables of personality traits and cyberbullying behaviour as it is deemed the most suitable research design to collect specific and well-structured quantitative data for the data approach (Kumar, 2019). The data will be analysed using descriptive and inferential statistics.

### Population and Sampling

The population of this study is university students in Malaysia. The targeted sample to represent the population data is obtained from public university students in Malaysia. The total number of students in public higher education institutions in Malaysia has reached around 706,550 students, which is significantly higher among females compared to male students (Hirschmann, 2021). Based on the Krejcie and Morgan table, the minimum sample size required for this study is around 384 respondents (Krejcie & Morgan, 1970). However, to maximise the response rate of the data collection, the targeted sample size decided for this research will be 400 public university students. Due to the wide range of the population and the difficulty to get the sampling frame of the population, this study utilised non-probability sampling, a convenience sampling method to select the respondent. The questionnaires were distributed online through WhatsApp, Twitter, Instagram and Facebook to reach the targeted sample.

### Research Instrument

There are three sections in the questionnaire of this study. Section A is to obtain demographic information, that consists of 4 items, which are age, gender, race, and place of study. In Section B, to measure the variable of personality traits, which is utilised the 12-item Dirty Dozen Dark Triad Scale developed by Jonason and Webster (2010). This 12-item questionnaire is used to assess Machiavellianism, Psychopathy and Narcissism based on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). All dimensions in the scale scored a Cronbach's Alpha of above .79. The items in this instrument were proved to have acceptable psychometric properties such as construct validity (Jonason & Luévano, 2013), and it is reliable over time and across several tests (Jonason & Webster, 2010). In Section C, the Cyberbullying Offending Scale (Patchin & Hinduja, 2015) measures the level of cyberbullying behaviour among the respondents. The questionnaire consists of 9-items that represent the most integral elements commonly included to define cyberbullying, which are repetition and harm. It only included five response options, on a scale of 0 (never) to 4 (many times). Researchers have revealed that the Cyberbullying Offending Scale has excellent psychometric properties, where the alpha coefficient of the original scale exceeded 0.89 and has a high construct validity and internal reliability



(Hamburger et al., 2011). The inter-item correlations for each item in the scales exhibited relatively high numbers, and it was statistically significant (Patchin & Hinduja, 2015).

### **Data Collection Procedure**

The researcher used online platform to collect the data due to the ease of implementation (Kokkinos et al., 2016). The online tool “Google Form” is used to create online questionnaires in order to directly receive responses from respondents. It circulated through various social media and messaging apps such as WhatsApp, Twitter, Instagram and Facebook to acquire the data more easily as it is more widespread and cost-effective. Potential respondents may read the instructions and the confidentiality agreement stated in the online questionnaire. Hence, the respondents that choose to answer the questionnaire can be considered that they are already given informed consent. Aside from that, the researcher also asked fellow students from various public universities in Malaysia to spread the questionnaire to their friends and other students in their respective universities to participate in the study.

### **Data Analysis**

This study uses descriptive and inferential statistics to analyse the data through SPSS Version 27. The descriptive will be used to analyse the demographic information and the overview of the study variables. Pearson correlation analysis and Multiple Linear Regression are used to test the hypothesis. Pearson Correlation analysis is conducted to determine the relationship between personality traits and cyberbullying behaviour. The value will be regarded as significant if the value is  $p < 0.01$  for two tails, which means that the dimension is correlated to cyberbullying. Their  $r$  values will also be examined to identify the strength of their relationship. Multiple Linear Regression analysis is used to determine the effects of personality traits on cyberbullying. It is suggested from previous research that Multiple Regression should be conducted in addition to correlations when studying the influences of Dark Personality due to the common core they share (Furnham et al., 2013). This is calculated by analysing the  $\beta$  value in the standardised coefficient table of each personality dimension.

## **Results and Discussion**

### **Demographic Profile of Respondents**

A total of 400 online questionnaire responses were received from public university students all over Malaysia. The response rate for this study is 100%, as the target number of samples is precisely 400. All data obtained from the students were used in the data analysis. Table 4.1 presents the demographic information of the respondents in this study. The results indicated that most of the respondents were female students, with 283 (70.8%) and only 117 male students (29.3%) participated in the study. Most respondents are aged between 18-22 years (70.5%) followed by 110 students aged 23-37 years (27.5%). Students aged 28-32 and above 33 years old have the same value, only 4 students (1.0%). Most of the respondents are of Malay ethnicity, with a total of 336 students (84.0%), 39 are Chinese (9.8%), 9 are Indians (2.3%), 8 are Bumiputera Sabah (2.0%), 3 are Bumiputera Sarawak (0.8%), and 5 respondents answered others (1.3%). Most respondents are from UiTM with 121 students (30.3%), followed by UTM with 115 students (28.7%), UM with 33 students (8.3%), and UMT with 24 students (6.0%) and the rest of the universities have below than 5% response rate.

### **Prevalence of Cyberbullying Behaviour among University Students**

The first objective of this study is to examine the prevalence of cyberbullying among undergraduate students in Malaysia. Table 4.1 shows the level of cyberbullying behaviour among the respondents. The level of cyberbullying behaviour is identified through the 9-item Dirty Dozen scale questionnaire, which consists of a 5-point Likert scale of 0 (never) to 4 (many times). Based on Table 4.1, the level of cyberbullying behaviour among university students is low as the overall mean for the variable is 0.35 (SD = 0.622). The highest mean score out of all the items is seen to be Item-5, which is spreading rumours about someone online (M=0.58, SD=0.993).

Meanwhile, the lowest mean score is Item-8, which relates to creating a mean or hurtful web page about someone (M=0.16, SD=0.588). However, it can be observed that the mean score for each item is in the low-

level range as all of them are below 1.33. Most university students (93.8%) have a low level of cyberbullying behaviour, while 4.5 per cent students scored moderate, followed by 1.8 per cent with high cyberbullying behaviour.

**Table 4.1. Descriptive analysis of items for dimension cyberbullying behaviour**

No.	Item	N f (%)	O f (%)	AFT f (%)	ST f (%)	MT f (%)	Mean	S.D.
1.	I cyberbullied others.	303 (75.8)	53 (13.3)	33 (8.3)	5 (1.3)	6 (1.5)	0.40	0.813
2.	I posted mean or hurtful comments about someone online.	301 (75.3)	53 (13.3)	36 (9.0)	5 (1.3)	5 (1.3)	0.40	0.804
3.	I posted a mean or hurtful picture online of someone.	308 (77.0)	51 (12.8)	27 (6.8)	10 (2.5)	4 (1.0)	0.38	0.801
4.	I posted a mean or hurtful video online of someone.	306 (76.5)	49 (12.3)	27 (6.8)	11 (2.8)	7 (1.8)	0.41	0.868
5.	I spread rumours about someone online.	272 (68.0)	59 (14.8)	43 (10.8)	17 (4.3)	9 (2.3)	0.58	0.993
6.	I threatened to hurt someone online.	346 (86.5)	26 (6.5)	13 (3.3)	9 (2.3)	6 (1.5)	0.26	0.757
7.	I threatened to hurt someone through a cell phone text message.	339 (84.8)	29 (7.2)	20 (5.0)	7 (1.8)	5 (1.3)	0.28	0.745
8.	I created a mean or hurtful web page about someone.	364 (91.0)	20 (5.0)	6 (1.5)	8 (2.0)	2 (0.5)	0.16	0.588
9.	I pretended to be someone else online and acted in a way that was mean or hurtful to them.	338 (84.5)	30 (7.5)	16 (4.0)	10 (2.5)	6 (1.5)	0.29	0.786
<b>Overall Mean</b>							<b>0.35</b>	<b>0.622</b>

\*Note: 5-Likert scale is used, where N=Never, O=Once, AFT=A Few Times, ST=Several Times, MT=Many Times, f=frequency, %=percentage, S.D.=standard deviation

The result of descriptive analysis indicated that the overall level of cyberbullying behaviour is low, as 93.8% of university students scored low level in cyberbullying behaviour, while only 7.3% scored moderate to a high level. However, despite the low level of cyberbullying behaviour, more than half of the participants (55.8%) responded that they had acted in at least one of the cyberbullying behaviours specified, whereas 44.3% reported that they had not engaged in any of them. This result raises a concern about cyberbullying behaviour among university students, which justifies the need to expand and focus our research on this population.

The finding of the present study is consistent with previous research, in which MacDonald and Roberts-Pittman (2010) stated that only 8.6% of American college students in their study, reported cyberbullying someone else. Meanwhile, a study among 1,263 Malaysian young adults by Balakrishnan and Fernandez (2018) found that 20.3% of their samples reported cyberbullying, which is quite comparable to the result of the present study. Hence, there is evidence that cyberbullying behaviour also happens beyond school years, even at a low level. It is important to consider the overall level of cyberbullying behaviour to avoid being too simplistic by just considering whether or not students engaged in cyberbullying. This is because cyberbullying does not follow any known patterns. Individuals may have simply participated in a single act of cyberbullying behaviour and therefore been mislabelled as 'cyberbully,' even though one incident of cyberbullying does not indicate one is a cyberbully, as has been stated (Slonje et al., 2013).

There are a few possible reasons for this finding. One of the plausible reasons is from previous research, that it has been stated that Malaysian university students showed low intention to engage in cyberbullying due to being subjected to negative social pressure from their friends and family towards the behaviour (Shaikh et al., 2021). Besides that, students in higher education settings do not tolerate cyberbullying as easily, since they tend to express more empathy towards the victims (Watts et al., 2017). Hence, this explains the low level of cyberbullying behaviour among university students in this present study.

Aside from that, according to Baldasare et al. (2012), participants in their study expressed reluctance to label their behaviour as cyberbullying, as they claimed that they were 'just joking' and tend to associate the term 'cyberbullying' with adolescent behaviour. Participants may also refuse to admit to the negative behaviour due to their tendency to look at themselves in higher regard. Thus, the low rates of cyberbullying obtained in the present and prior studies were most likely due to reporting bias, as participants were either reluctant to classify themselves as cyberbullies or perceived the behaviour as unfit to the definition of cyberbullying.

### **Types of Dark Triad Personality among University Students**

The second objective of this study is to determine the Dark Triad personality types among university students. The descriptive statistics and prevalence for each Dark Triad personality trait (Machiavellianism, Psychopathy, Narcissism) are presented. Table 4.2 shows the descriptive statistics of Machiavellianism. The overall mean of Machiavellianism is 2.50 (SD = 0.91), which can be considered moderate. More students scored low in Machiavellianism (45.5%) compared to the moderate level (44.3%). Only 10.3 per cent of university students scored high in Machiavellianism. As for the Psychopathy traits, the overall mean for Psychopathy is 2.11 (SD = 0.84), which is considered low among university students. Most of the students scored low in Psychopathy (66.3%). While 115 university students (28.7%) scored moderate, followed by 20 students that scored high (5.0%) in Psychopathy. Next, for the dimension of Narcissism in the Dark Triad personality traits, the overall level of Narcissism among university students is moderate with a score of 2.84 (SD = 1.03), as all the items have a mean score of moderate level.

Table 4.2. Types of dark triad personality

Variables	Mean	S.D.	Level
Machiavellianism	2.50	0.91	Moderate
Psychopathy	2.11	0.84	Low
Narcissism	2.84	0.50	Moderate

Mean value (Low = 1.00 - 2.33; Moderate = 2.34 - 3.67; High = 3.68 - 5.00)

The findings indicated that Narcissism emerged as the most prevalent trait among university students. This is because 99 university students (24.8%) have a high level of Narcissism, which is higher compared to the other two Dark Traits, Machiavellianism (10.3%) and Psychopathy (5%). The overall level of Narcissism and Machiavellianism is moderate meanwhile, the level of Psychopathy among university students is low. The findings of previous studies also showed a similar trend in which the level of Narcissism is the highest in the Dark Triad personality, followed by Machiavellianism and Psychopathy among university students in Malaysia (Mumin, 2021). Vedel and Thomsen (2017) also presented the same pattern in their findings, as their university student samples also scored Narcissism as the highest, then Machiavellianism and Psychopathy. Thus, it can be observed that the findings for the Dark Triad personality traits of the present research align with the past studies.

This finding would probably be because the traits of Psychopathy and Machiavellianism were known to be the "darkest" among the Dark Triad (Rauthmann & Kolar, 2012), which can result in a lower prevalence rate compared to the trait Narcissism. Furthermore, it would also make sense that respondents' answers to the questionnaires were influenced by their social desirability as it is a self-administered questionnaire. Thus, participants would be more comfortable admitting their Narcissistic traits than Machiavellianism and Psychopathic traits.

### **Relationship between Dark Triad Personality Traits and Cyberbullying Behaviour.**

The third objective of this study is to identify the relationship between the Dark Triad personality traits and cyberbullying behaviour among university students. Table 4.3 shows the relationship between Dark Triad personality traits and cyberbullying behaviour. The findings indicated a significant positive relationship between the Dark Triad personality traits and cyberbullying behaviour among university students.

The findings of the present study showed that there is a significant positive relationship between the Dark Triad personality traits and cyberbullying behaviour among university students. Of all the Dark Triad traits, Machiavellianism has the highest correlation to cyberbullying behaviour ( $r = 0.417, p < 0.001$ ), indicating a moderate correlation. Meanwhile, Psychopathy ( $r = 0.376, p < 0.001$ ) and Narcissism ( $r = 0.274, p < 0.001$ ) both have significant weak correlation with cyberbullying behaviour (Dancey & Reidy, 2007). Hence, the results indicated that Hypothesis 1, Hypothesis 2 and Hypothesis 3 are accepted.

The result of this present study can be supported by various past research, in which they reported consistent results. Goodboy & Martin (2015) examined the association between the dark triad personality traits and self-reported cyberbullying behaviours across a body of research. They found that all three Dark Triad traits positively correlate to cyberbullying behaviour among college students. Previous studies had discovered a positive and significant relationship between personality and cyberbullying behaviour, in which they incorporated the Dark Triad personality as the personality construct of their study (Shaikh et al., 2021). Research that aims to identify bullying trends within Twitter by referring to the relationship between personality traits and cyberbullying also found that Psychopathy is the most significant trait that can be used to detect cyberbullies online (Balakrishnan et al., 2019). The result of the study was consistent and can be supported by much previous research that reported Psychopathy to have a significant correlation to cyberbullying. Even though there are studies that support the present research, there were also a few past research that contradicts the current findings. Kircaburun et al., (2018) studied the direct and indirect associations of the Dark Tetrad traits with Problematic Social Media Use (PSMU), such as cyberbullying. The results of the study reported that only Machiavellianism and Psychopathy were directly associated with cyberbullying behaviour. Besides that, A study also found that all the three Dark Triad traits have a positive correlation with cyberbullying behaviour, however, the correlation between them was classified as weak correlation (Van Geel et al., 2017).

The reason for these conflicting findings may be due to the fact that the study conducted has a different geo-location, which could affect the findings mainly if the instrument used was translated into a foreign language. Besides that, some of the research also used other instruments to measure the Dark Triad traits, as some used the Short Dark Triad questionnaire instead of the Dirty Dozen questionnaire. Since the questionnaires were developed based on different conceptual definitions of the Dark Triad personality traits, the measuring system of the questionnaire can cause differing results. However, as for the studies that have consistent findings with the present research, the result is most probably due to personality being the driving component that triggers irrelevant thinking, which tends to boost engagement and attracts people to cyberbullying (Kubiszewski et al., 2015). Aside from that, the finding could also be because of the malevolent nature of each Dark Triad personality trait, which is deemed as probable to be correlated with cyberbullying due to the expected negative core they share.

Table 4.3. Relationship between dark triad personality traits and cyberbullying behaviour

Dimension	Cyberbullying Behaviour	
	r	p
Machiavellianism	0.417**	<0.001
Psychopathy	0.376**	<0.001
Narcissism	0.274**	<0.001

Note: \*\*. Correlation is significant at the 0.01 level (2-tailed)

### Effects of the Dark Triad Personality Traits on Cyberbullying Behaviour

The last objective of the present study is to identify the effects of the Dark Triad personality traits on cyberbullying behaviour among university students. The Variance Inflation Factor (VIF) value for each dimension of the Dark Triad personality trait is all lower than 2.5, thus there is no issue of multicollinearity among the independent variables (Johnston et al., 2018). The regression analysis findings in Table 4.4 indicated that the Dark Triad personality traits significantly influenced cyberbullying behaviour. The trait of Machiavellianism ( $\beta = 0.28$ ,  $p < 0.01$ ) and Psychopathy ( $\beta = 0.223$ ,  $p < 0.01$ ) have significant positive effects on cyberbullying behaviour among university students, supporting Hypotheses 4 and 5. However, Narcissism did not significantly affect cyberbullying behaviour of university students ( $\beta = 0.07$ ,  $p > 0.01$ ), Hence, the finding did not support Hypothesis 6. The regression analysis indicated that Machiavellianism and Psychopathy both significantly positively affect cyberbullying behaviour. However, the Narcissism trait does not significantly influence cyberbullying behaviour of university students.

Table 4.4. Multiple regression analysis between the dark triad traits and cyberbullying behaviour

Variables	Cyberbullying Behaviour		
	$\beta$	P-value	VIF
Machiavellianism	0.280	<0.001	1.460
Psychopathy	0.223	<0.001	1.297
Narcissism	0.076	0.132	1.283

Note:  $R^2 = 0.221$ ,  $F = 37.464$ ,  $P\text{-value} = <0.001$

The current study found that Machiavellianism was the most influential predictor of cyberbullying and followed by Psychopathy. The findings are consistent with the results of the previous study by Safaria et al. (2020) that was conducted in Indonesia. As stated by Paulhus and Williams (2002), Machiavellianism is a personality characterised by the externalisation of blame, emotional coldness, and interpersonal strategies to manipulate others for personal gain. Barlow et al., (2010) stated that this Machiavellianism trait tends to see the world cynically with distrust by using others and exploit the weaknesses of others, resent intense emotional involvement with others, and have been found to lack empathy. This finding is consistent with a study by Kircaburun et al., (2018) stated Machiavellianistic traits would move past moral standards, and an absence of guilt can be the unique determinant of antisocial online behaviour.

Gibb and Devereux (2014), as well as Goodboy and Martin (2015), also found that psychopathy is the only significant predictor of cyberbullying behaviour, while Machiavellianism and Narcissism did not significantly predict cyberbullying. Hence, this showed that past researchers also supported the Psychopathy trait as one of the significant predictors of cyberbullying behaviour. Another study by Van Geel et al., (2017) showed that the Psychopathy and Narcissism traits are only slightly important predicts cyberbullying behaviour, meanwhile, Machiavellianism is not necessary. This is probably because Psychopathy was a substantial predictor of cyberbullying, which is consistent with a study about "internet trolling" (Buckels et al., 2014), where psychopathy was shown to be a predictor of trolling, albeit with a lesser impact size than sadism. Psychopathic individuals tend to perform destructive behaviour patterns in interpersonal relationships, using skits and warmth to manipulate others to profit themselves. According to Hare (1999), a psychopath also tends to have high impulsivity and a disposition toward reckless, inappropriate, immoral, or even violent conduct. Meanwhile et al., (2008) mentioned that psychopath tends to lack empathy and do not feel guilty for their destructive behaviour toward others. This is because people with high levels of psychopathy are more aggressive and less sympathetic than others, which are all the traits of a cyberbully (Ang et al., 2011). The immediate thrill of realising that they are possibly harming another person may motivate these people's actions and encourage their proclivity to engage in similar acts in the future.

However, in the present study, Narcissism does not influence cyberbullying behaviour among undergraduate students in Malaysia. According to Kircaburun et al. (2018), narcissism was not associated with cyberbullying, among other attributes. It is possible that after psychopathy is considered, narcissism's impact on interpersonal violence fades away. One of the plausible reasons for this finding is that perhaps the narcissistic trait involves a pattern of self-centred, arrogant thinking and behaviour, a lack of empathy and consideration for other people, and an excessive need for admiration. Thus, this characteristic is only focused on themselves rather than others.

## **Implication of Study**

The present research contributes to a greater understanding of the following ways to grasp better and minimise cyberbullying. First, Dark Triad personality characteristics will be used to investigate previously understudied cyberbullying behaviour. Second, only a few researchers have recruited university students as sample participants. Most of the research on cyberbullying has been conducted on pupils in schools. Even studies focusing on university students only covered a small aspect of cyberbullying. As a result, this study contributes to the recent findings by identifying the personality attributes contributing to cyberbullying among Malaysian university students. This study proposed that two traits of the Dark Triad personality, which are Machiavellianism and psychopath, significantly contributed to the cyberbullying behaviors among undergraduate students from a Malaysian perspective.

This research provides empirical evidence to the Malaysian government, students, IT practitioners, psychologists, university management, parents, and other stakeholders. It will enable them better to understand personal factors' influence on cyberbullying behaviour. The research shows the influence of the Dark Triad personality traits that lead to cyberbullying behaviour among Malaysian university students. This study also aids Malaysia's relevant authorities in developing effective methods to counteract cyberbullying, such as mentoring, role-playing, and legal action to raise awareness of the seriousness of cyberbullying. One of the most critical components in reducing cyberbullying is raising awareness. Educating students about cyberbullying is essential to any effective bullying prevention strategy. Campbell (2005) also says that promoting student understanding can help prevent cyberbullying. Moreover, an individual's level of understanding of cyberbullying can significantly impact their actions. Individuals who have a better awareness of cyberbullying and its effects on victims are less likely to engage in this conduct than those who do not (Lee & Shin, 2017).

Furthermore, to prevent immoral conduct such as cyberbullying in today's digital age, the primary step is to identify the factors that influence such behaviour. It has been proposed that personality traits are crucial explanatory determinants for cyberbullying behaviour, which includes victimisation and aggressiveness (Fang et al., 2020). Policymakers can figure out ways to decrease and manage the negative effects of technology in society by focusing on the factors of personality traits. The present research can provide knowledge on the influence of Dark Triad personality traits, which can be of practical use by applying it to detect cyberbullies online as previously done by Balakrishnan et al. (2019). The previous research incorporates the Dark Triad features in a machine-learning algorithm to detect cyberbullying among Twitter communities. Thus, the finding of this present research can be one of the reasonable attempts for policymakers to curb cyberbullying issues by seeing them online and taking legal actions against them.

The outcomes of this research are likely to help Malaysia achieve Sustainable Development Goal 16: Peace, justice, and strong institutions. Understanding the social variables connected to cyberbullying will also benefit Malaysia's National Transformation 2050 (TN50). This, however, will only have a short-term effect on society. In the long run, parents, universities, and the government should establish rules or policies to minimise cyberbullying by considering the findings of this research. This will assist families and universities in fostering an environment where university students find it challenging to engage in cyberbullying.

## **Limitation and Recommendations**

When analysing the results, some limitations need to be addressed. To begin with, the collection of data was convenient, which caused the inability to generalise the findings of the study to the population as a whole. This engendered most of the respondents in the present study to be female graduates, which limits the generalisability of the findings. Secondly, self-report measures risk eliciting socially desired responses as they tend to look at themselves in higher regard. Thirdly, the present study's limitation is that it only looked at a limited set of behaviours and did not account for all conceivable cyberbullying activities. Individuals who stated that they did not participate in any of these behaviours may have acted in other behaviours that would fit the definitional criteria for cyberbullying, such as harassing someone on Instagram. Lastly, previous studies discovered another dark trait, which is Sadism (tendency to find joy in the suffering of others) that can be incorporated into the Dark Triad to become the Dark Tetrad personality traits. According to Van Geel et al. (2017), Sadism appears to influence cyberbullying behaviour. However, the present study did not include Sadism in the cyberbullying research.

More study is needed to delve deeper into the influence of the Dark Triad personality traits on cyberbullying. Continued research on the role of personality in increasing cyberbullying could aid in developing preventative and intervention initiatives such as anti-bullying educational programmes for parents, educators, and students to help lessen or remove the problem. There are several suggestions that can be listed for future research. Firstly, in order to attempt a generalisation of the findings, future studies may use random sampling to conduct research to increase the accuracy of representation due to the lack of bias. Secondly, future studies could improve by incorporating additional data, such as from interviews, to avoid the risk of biased responses. Thirdly, as new technologies are produced, future studies should continue to study the conceivable spectrum of cyberbullying behaviours and disruptive behaviours associated with these new technologies as it would further characterise and widen the profile of people who engage in cyberbullying behaviour. Last but not least, it is recommended that future studies investigate the trait Sadism, by replicating the same methodology of the present research and using the model of Dark Tetrad personality traits.

## **Conclusion**

In conclusion, cyberbullying among youth has become a great issue today. Cyberbullying can have egregious effects on its victims in which it can lead students to attempt and commit suicide. Prior study has centred on high school students, with university students almost entirely neglected. As a result, the focus of this research has been on further investigating and evaluating cyberbullying by identifying factors that affect university students.

Investigating personality factors related to cyberbullying behaviour could give significant knowledge to researchers, universities, policymakers, the Malaysian government, and practitioners. This research showed the psychological element, such as the Dark Triad personality traits, could drive Malaysian public university students to engage in cyberbullying. This study used the Dark Triad personality trait model to examine the

cyberbullying behaviour of Malaysian university students. The findings obtained from the study can be used as criteria to predict cyberbullying behaviour.

This study tested Dark Triad personality factors as antecedents of Malaysian students' attitudes. The data analysis results suggest that all three Dark Triad personalities (Machiavellianism, Narcissism, Psychopathy) are significantly correlated to cyberbullying behaviour. This study also reports that the level of cyberbullying behaviour among university students is low. The study confirms that Machiavellianism and Psychopathy can lead to the development of cyberbullying attitudes of Malaysian undergraduates. Meanwhile, the Narcissism trait is not an antecedence of cyberbullying behaviour. Therefore, it can be concluded that most of the findings are in line with empirical shreds of evidence from the literature. The Dark Triad personality traits have given an exciting insight into cyberbullying behaviour among Malaysian undergraduate students. It eventually helped this study to highlight the relationship and the effects between toxic cyberbullying behaviour and personality traits.

## Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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### Author Information

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#### Siti Aisyah Panatik

Universiti Teknologi Malaysia  
School of Human Resource Development and Psychology  
Faculty of Social Sciences and Humanities  
Universiti Teknologi Malaysia  
81310 Johor Bahru, Malaysia  
Contact e-mail: saisyah@utm.my

#### Nurul Nabilah Abdul Raof

Universiti Teknologi Malaysia  
School of Human Resource Development and Psychology  
Faculty of Social Sciences and Humanities  
Universiti Teknologi Malaysia  
81310 Johor Bahru, Malaysia

#### Junaidah Yusof

Universiti Teknologi Malaysia  
School of Human Resource Development and Psychology  
Faculty of Social Sciences and Humanities  
Universiti Teknologi Malaysia  
81310 Johor Bahru, Malaysia

#### Nor Akmar Nordin

Universiti Teknologi Malaysia  
School of Human Resource Development and Psychology  
Faculty of Social Sciences and Humanities  
Universiti Teknologi Malaysia  
81310 Johor Bahru, Malaysia

#### Ruzanna Shahrin

Universiti Teknologi Malaysia  
School of Human Resource Development and Psychology  
Faculty of Social Sciences and Humanities  
Universiti Teknologi Malaysia  
81310 Johor Bahru, Malaysia

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