



THE RELATIONSHIP BETWEEN DARK TRIAD, ENVY AND
SCHADENFREUDE AMONG UNDERGRADUATES IN MALAYSIA

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This research project is submitted in partial fulfilment of the requirements for the Bachelor of Social Science (Hons) Psychology, Faculty of Arts and Social Science, Universiti Tunku Abdul Rahman. Submitted in September 2025.

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DECLARATION

We declare that the material contained in this paper is the end result of our own work and that due acknowledgement has been given in the bibliography and references to ALL sources be they printed, electronic or personal.

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APPROVAL FORM

This research paper attached hereto, entitled “The Relationship Between Dark Triad, Envy and Schadenfreude Among Undergraduates in Malaysia” prepared and submitted by Lau Jia Le, Lim Wen Nee and Lim Yi Ling in partial fulfillment of the requirements for the Bachelor of Social Science (Hons) Psychology is hereby accepted.



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ABSTRACT

The increase in antisocial behaviours that were usually corresponding to the Dark Triad traits, envy, and schadenfreude would lead to numerous personal and societal issues. Hence, the current study was conducted to examine the relationship between narcissism, Machiavellianism, psychopathy, envy, and schadenfreude among undergraduates in Malaysia. In this research, a cross-sectional correlational study was carried out to gather numerical data and conduct statistical analysis to investigate the relationship between the variables. An online questionnaire was distributed to gather data across multiple social media platforms, while the purposive sampling method was utilised for recruiting Malaysian students who are at the undergraduate level and between the ages of 18 to 26 years old, and 178 samples, with the majority of them being Chinese (89.3%), were involved in this study. The instruments of Dark Triad Dirty Dozen (DTDD), Dispositional Envy Scale (DES), and Schadenfreude Scale were used to evaluate the study variables. Based on PPMC, all variables of Machiavellianism, psychopathy, narcissism, and envy showed a significant and positive relationship with schadenfreude. On the other hand, the result of single linear regression analysis also indicated that all variables significantly predict schadenfreude. This study has refined the existing research in regard to schadenfreude in the context of Malaysia. Not to mention, it also offered empirical support to the higher education institution and mental health professionals to raise public awareness regarding the underlying psychological mechanisms related to antisocial behaviours. In addition to that, early intervention and assessments could be implemented in time to detect and resolve these behaviours, promoting a better mental well-being and interpersonal relationships.

Keywords: Schadenfreude, Dark Triad, Envy, Social Comparison, Malaysian Undergraduates

Subject Area: Psychology, Mental Health

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List of Abbreviations

1. DTDD Dark Triad Dirty Dozen
2. DES Dispositional Envy Scale
3. UTAR Universiti Tunku Abdul Rahman
4. SERC Scientific and Ethical Review Committee

Chapter 1

Introduction

Background of Study

When humans interact with specific targets, a certain emotion rises. Emotions are inherently social, arising during interactions and shaped by social norms (van Kleef & Côté, 2021). The social effects of emotions explain how one person's emotional expressions impact others' thoughts, feelings, and behaviours, highlighting the interplay between personal experiences and social dynamics (van Kleef & Côté, 2021). There will be a variety of emotions that arise from people when they engage in social interaction. The basic emotion theory by Ekman (1992) introduces the six basic emotions: anger, disgust, fear, happiness, sadness, and surprise. Whereby this present study will look into a more complex human emotion, schadenfreude, commonly referred to as malicious joy.

According to Watanabe et al. (2022), schadenfreude is a passive emotion that is different from behaviours that might result in misery, including purposefully causing pain to others as a kind of punishment or seeking direct vengeance. Schadenfreude may be perceived as a socially undesirable emotion since it may coexist with other malevolent intentions and emotions like jealousy and anger (Peplak et al., 2020). Sometimes, schadenfreude might be boldly displayed in public, where people laugh out loud when they see someone has fallen due to a banana peel. Schadenfreude significantly influences interpersonal and intergroup dynamics, especially in contexts where social comparison plays a crucial role, making it a prevalent and intense emotion in various situations. (Okan et al., 2023). Due to its complexity, schadenfreude has become a worthwhile emotion to examine across a range of social and cultural situations.

Occasionally, schadenfreude can arise as a reaction to perceived unfairness in competitive situations (Riaz et al., 2023). It may occur when people take pleasure in their

competitors' misfortunes even when doing so is detrimental to the individuals concerned as well as society generally, and may incorporate self-interest (Combs et al., 2009). The feelings of schadenfreude also can be intensified by social distance, which is made possible by anonymity and quick contact on social media (Wei & Liu, 2020). Interestingly, a study even found that children as young as four years old can already experience feelings of schadenfreude (Schindler et al., 2015). Hence, some recent studies have further examined schadenfreude in various contexts, including social media (Barron et al., 2023; Brubaker et al., 2021; Yusainy et al., 2023), the workplace (Chen et al., 2021; Qiao et al., 2021), sports (Boecker, 2021; Tyler et al., 2021), and even political contexts (Ash & Dolan, 2020; Pohan et al., 2024; Webster et al., 2024), to explore more about the human interpersonal nature of schadenfreude across different environments.

Given its common associations with socially maladaptive behaviours and emotional reactions, the relationship between schadenfreude and the Dark Triad traits: narcissism, Machiavellianism, and psychopathy, has attracted a lot of researchers. Several studies have been conducted to examine the relationship between schadenfreude and the Dark Triad traits. Erzi (2020) found that narcissism and Machiavellianism, both traits from the Dark Triad, positively correlate with schadenfreude. Similarly, Shahab and Taklavi (2021) also found that higher levels of psychopathy, narcissism, and Machiavellianism are associated with higher levels of schadenfreude. It can be said that this link exists because researchers have identified connections between schadenfreude and certain features of the Dark Triad. Schadenfreude is usually studied along with the Dark Triad. This is because the behaviours caused by having the Dark Triad traits usually lead to schadenfreude, making them closely related to each other (Sharafi Zadegan et al., 2024).

Compared to Dark Triad traits, envy and schadenfreude have been extensively studied because, despite their differences, they are closely related emotions that frequently surface in

social comparison situations. Numerous researches have been conducted to examine the relationship between schadenfreude and envy, which can be traced back to the late 90s. The earliest study that investigated the relationship between envy and schadenfreude was conducted by Smith et al. (1996). Envy is a negative feeling that arises when we see someone doing better (Parrott & Smith, 1993), while schadenfreude is a positive feeling when we see others' misfortune (Greenier, 2020). However, these two opposite emotions were found to positively correlate with each other. Hence, this phenomenon becomes one of the reasons this research will be conducted. Furthermore, according to Shimul et al. (2021), envy can positively predict schadenfreude. Similarly, a study by Ramadhana (2024) also explained that there is a positive correlation between envy and schadenfreude, which indicates that a high level of envy is usually associated with a high level of schadenfreude. Their study further illustrated an inseparable relationship between envy and schadenfreude, insisting that the existence of envy will certainly follow with the presence of schadenfreude. As a result, the close association between these two variables has provided a reason for undertaking this research.

In brief, the study of the relationship of the Dark Triad, envy, and schadenfreude among Malaysian undergraduates is necessary.

Problem Statement

Schadenfreude has been found to be highly correlated with antisocial behaviours (Demeter et al., 2021; Erzi, 2022). According to Barriga et al. (2001), antisocial behaviours are defined as observable behaviours that have a negative influence, either directly or indirectly, on other people by breaking significant ethical or social norms. Antisocial behaviours can be highly violent, such as murder or rape, and it can also be less violent, including lying or stealing. A study by Demeter et al. (2021) found that there is a positive relationship between schadenfreude and antisocial behaviours. Similarly, a study by Erzi

(2022) also illustrated that schadenfreude is correlated with antisocial tendencies, including aggression and anger. People who enjoy seeing something awful happen to others have the probability of developing serious behavioural problems (Kanz, 2015; Wang et al., 2019). This statement has also been proved by a study by Ouwerkerk and Johnson (2016), which found that people who have feelings of schadenfreude often engage in dysfunctional online behaviours. Their study also discovered that high levels of schadenfreude lead to an increase in the intention to gossip about other people, as well as a decrease in one's empathy level. In short, a high level of schadenfreude might cause one to perform actions that can bring harm to others by increasing the level of antisocial tendencies. Although no study can prove that schadenfreude directly causes harm to one another, its significant correlation with antisocial behaviours is good enough to draw scholars' attention to research it. Hence, just like what had been supported by Demeter et al. (2021), further research is required to investigate possible factors that trigger schadenfreude to achieve the prevention and reduction of tendencies of anti-social behaviours or thoughts. Not to mention, although there were many prior studies of schadenfreude have been made in the past 30 years, the fact that the multifaceted nature of schadenfreude still has yet to be captured (Sharafi Zadegan et al., 2024) enhanced the necessity of researching it.

To the authors' best knowledge, the correlation between envy and schadenfreude has yet to be investigated in Malaysia. In contrast, past studies have been conducted in other cultural contexts, including Finland (Lin & Liang, 2021), the United States (Greenier, 2020), Indonesia (Ramadhana, 2024), and Australia (Shimul et al., 2021). Additionally, only one study has been found to investigate the relationship between the Dark Triad and schadenfreude in the Malaysian context (Yee & Lee, 2022). Similarly, there are also past studies conducted in other cultural contexts, such as Iran (Sharafi Zadegan et al., 2024) and Turkey (Erzi, 2022). Moreover, many available studies are found to be outdated (van Dijk et

al., 2006; van de Ven et al., 2014; James et al., 2014), making the information collection process difficult and putting the consistency of the results into question. Furthermore, instead of investigating the relationship between envy, the Dark Triad, and schadenfreude, other variables are included such as publicness (Wei & Liu, 2020), group identity (Sun et al., 2024), and anger (Ilia et al., 2022) as predictors of schadenfreude. In brief, there is still a lack of research investigating the relationship between envy, the Dark Triad, and schadenfreude.

Not only that, past studies also reported mixed results regarding the correlation. For example, there were a few studies that suggested there is a significant relationship between envy and schadenfreude (Shimul et al., 2021; Ramadhana, 2024), while, on the other hand, a study by Yildirim et al. (2024) found a weak and insignificant relationship between envy and schadenfreude. Meanwhile, Greenier (2020) explained that the relationship between envy and schadenfreude will only become significant with the presence of disliking. Furthermore, van de Ven et al. (2014) and Lin and Liang (2021a) also interpreted that only malicious envy, which is one of the dispositional envy, positively correlated with schadenfreude, while the relationship between benign envy and schadenfreude is not significant. Not to mention, Lin and Liang's (2021b) research justified that envy does not necessarily lead to schadenfreude, particularly when malicious envy and schadenfreude are triggered by social comparisons.

On the other hand, some aspects of the Dark Triad also showed inconsistent findings. For example, several past studies have found that narcissism positively predicts schadenfreude (Krizan & Johar, 2012; Neufeld & Johnson, 2016). However, this is incongruent with the findings by Lee (2019), who stated that there is a non-significant relationship between schadenfreude and narcissism. Furthermore, according to Erzi (2020), Machiavellianism has a stronger relationship with schadenfreude compared to narcissism and psychopathy, which is also supported by the study of Veselka et al. (2014). In contrast, James et al. 's (2014) study illustrated that the relationship between schadenfreude and psychopathy

is stronger and more significant than the other two traits. Their findings explained that high levels of psychopathy lead to high levels of schadenfreude in all three situations given, which indicates a stronger relationship, while high narcissism and Machiavellianism, on the other hand, will only lead to schadenfreude in certain circumstances. In short, further studies are required to clarify the correlation between (1) envy and schadenfreude, as well as (2) the Dark Triad and schadenfreude. Additionally, this research is also crucial to find out which aspects of the Dark Triad: narcissism, psychopathy, or Machiavellianism contribute more to the presence of schadenfreude. This understanding could help explain how each trait of the Dark Triad influences one's emotional behaviour and the intensity of schadenfreude that each trait predicts.

In essence, the present study aims to investigate the relationship between Dark Triad, envy, and schadenfreude among undergraduates in Malaysia.

Significance of Study

The present study will examine the relationship between Dark Triad, envy, and schadenfreude. Consequently, it aims to provide a greater understanding of their relationship among undergraduate students. Future researchers can also expand the existing literature by using this study to further understand and explore the relationship between these variables among the population of undergraduate students.

Moreover, the present research is able to contribute to the body of knowledge related to schadenfreude, envy, and Dark Triad in the Malaysian context. Currently, there are only two studies about schadenfreude done in Malaysia by Yee and Lee (2022) and Chan (2023). While there are several studies done about envy (Fam et al., 2020; Leff et al., 2021; Awee et al., 2020) and numerous studies about Dark Triad (Aisyah et al., 2022; Mumin, 2021; Cheah et al., 2024; Wong, 2023; Hew et al., 2023; Bernie et al., 2020) in Malaysian context, there are no studies in Malaysia that study the relationship between these variables. Hence, this

study is able to shed light on their relationship among undergraduates in the Malaysian context.

Next, by conducting this study, a better understanding towards human nature can be cultivated. Schadenfreude is an emotion that is normal for humans to feel as it had already existed back then mentioned by Aristotle (Cavalli, 2020). Schadenfreude is a complex emotion, making its relationship with envy and the Dark Triad something that should be further studied to gain more understanding. Thus, our study aims to unravel the mystery of human nature regarding the relationship between schadenfreude, envy, and the Dark Triad.

Lastly, this study will help increase awareness about schadenfreude. Schadenfreude exists everywhere in different settings of everyday life (Cecconi et al., 2020). This includes sports, social media, and everyday interactions with friends and family. Schadenfreude is deemed socially unacceptable along with envy and the Dark Triad traits. This is due to the potential for manipulation by individuals with these traits and emotions. This study is able to increase awareness about this complex emotion and help future researchers to assess the impact brought by these variables.

Research Objectives

1. To examine the relationship between the Dark Triad (Narcissism, Machiavellianism, and Psychopathy) and Schadenfreude.
2. To examine the relationship between the Envy and Schadenfreude.

Research Questions

1. Is there a significant relationship between narcissism and schadenfreude among undergraduates in Malaysia?
2. Is there a significant relationship between Machiavellianism and schadenfreude among undergraduates in Malaysia?

3. Is there a significant relationship between psychopathy and schadenfreude among undergraduates in Malaysia?
4. Is there a significant relationship between envy and schadenfreude among undergraduates in Malaysia?

Research Hypotheses

H₁: There is a significant positive relationship between narcissism and schadenfreude among undergraduates in Malaysia.

H₂: There is a significant positive relationship between Machiavellianism and schadenfreude among undergraduates in Malaysia.

H₃: There is a significant positive relationship between psychopathy and schadenfreude among undergraduates in Malaysia.

H₄: There is a significant positive relationship between envy and schadenfreude among undergraduates in Malaysia.

Conceptual Definition

Dark Triad

According to Paulhus and Williams (2002), the Dark Triad is the three personality traits that are socially aversive but not pathological: narcissism, defined by grandiosity, entitlement, domination, and a great need for admiration; Machiavellianism, characterised by manipulative behaviour, emotional coldness, and a focus on self-interest and deceit; and psychopathy, linked to low anxiety, impulsivity, thrill-seeking, and a lack of empathy (Paulhus & Williams, 2002).

Envy

Envy is a feeling that stems from unfair anger and leads to excess hostility and personal discontent (Lange & Protasi, 2024). In addition to involving resentment and dislike towards the envied individual, as well as despair and malice, envy was thought to arise from

perceived unfair inadequacy, thus emphasising that it is often unnecessary within the range of human emotions (Lange & Protasi, 2024).

Schadenfreude

Schadenfreude, a term originating from German, describes pleasure derived from another's misery (Cecconi et al., 2020). Schadenfreude is a common feeling that reflects the broad and diverse characteristics of the human (Sharafi Zadegan et al., 2024) which is associated with significant facets of everyday life (Cecconi et al., 2020).

Operational Definition

Dark Triad

The Dark Triad Dirty Dozen (DTDD) developed by Jonason and Webster (2010) will be administered to measure the participants' Dark Triad personality in this study. This brief self-report scale is a 12-item scale, 4 items per subscale to assess the Dark Triad traits: narcissism, Machiavellianism, and psychopathy, respectively. This scale will be measured by rating each item on the five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). To compute the score for each trait, the responses to the four relevant items will be summed up for the result in individual scores for narcissism, Machiavellianism, and psychopathy. These scores can be combined to provide a total score to evaluate Dark Triad personality traits. A higher total score indicates a stronger tendency towards undesirable social behaviours and personality characteristics associated with the Dark Triad, the same applies to the total score for each subscale.

Envy

In this study, the Dispositional Envy Scale (DES) established by Smith et al. (1999) will be used to measure participant differences in tendencies to dispositional envy. It is a self-report measure consisting of an 8-item scale. Each of the items will be assessed with the five-point Likert scale which includes 1 (*strongly disagree*), 2 (*disagree*), 3 (*neutral*), 4 (*agree*),

and 5 (*strongly agree*). There are no negative entries on this unidimensional scale. The total score will be calculated by adding the scores of all the items. A higher total score will thus indicate a higher level of envy.

Schadenfreude

A 12-item schadenfreude scale generated by Crysel and Webster (2018) will be adopted in the present study to estimate the level of schadenfreude. This scale consists of six reversed-score items. Each item is rated on a five-point Likert scale, ranging from 1 (*strongly disagree*), 2 (*disagree*), 3 (*neither agree nor disagree*), 4 (*agree*), to 5 (*strongly agree*). The scores acquired from these reversed-score items will be reversed back before being combined with the other item values to calculate the final score. A higher total score indicates a higher degree of schadenfreude.

Chapter 2

Literature Review

Dark Triad

The Dark Triad is a theory composed of three personality traits that contain overlapping features but are still distinct, which are narcissism, Machiavellianism, and psychopathy (Maheux-Caron et al., 2024). These traits usually reflect deceptive tendencies and predict maladaptive behaviours (Konuk & Otterbring, 2024). The Dark Triad traits have been considered undesirable to possess by society due to their tendency to show behaviour such as aggression, being obsessed with self, or being manipulative (Brownell et al., 2021). Erzi (2022) agreed that these traits have the common side of being selfish and directing people around them to be in line with their interests. These traits contributed to similar behaviour due to their shared insensitivity that contributes to interpersonal manipulation (Kötücül et al., 2020). People with high Dark Triad personality traits tend to apply strategies that increase their desirability to others (Hudson, 2022). While high levels of these traits do not imply any clinical disorders, the behaviours brought forth by these traits may bring harmful consequences to themselves or others (Bonfá-Araujo et al., 2022). Besides the aggressive behaviours, dark emotions like schadenfreude are also a product of having the Dark Triad traits. The Dark Triad traits are also related to a lack of empathy, prioritising one's own needs and goals, and seeing the loss of others as personal gains (Erzi, 2020).

Narcissism

Narcissism is one of the personality traits in the Dark Triad. This personality trait is characterised by entitlement, superiority, self-love, magnified yet fragile sense of self-importance, grandiosity, and dominance (Brownell et al., 2021; Serenko & Choo, 2020). Konuk and Otterbring (2024) added on by mentioning that self-centeredness is also a characteristic of narcissism. According to Erzi (2022), narcissism reflects the tendency to

control others, gain power, and selfishness. A narcissistic individual often craves admiration, lacks empathy, shows little interest in others, has a closed attitude towards criticism, and has a belief that others are envious of them. Studies have found that similar to Machiavellianism and psychopathy, narcissists also exert behaviours such as insensitivity and manipulation (Set, 2020). People with high narcissism tend to show extraverted behaviours to make a good first impression to increase their status and popularity and obtain more leadership positions (Set, 2020). However, they may reveal their disagreeable behaviours over time making it difficult to maintain the reputation that has been built (Brownell et al., 2021). High levels of deservingness are expected by narcissists and upon realising a mismatch between their self-concept and the feedback received from their surroundings, strategies will be engaged to reach their desired state of superiority (Edershile & Wright, 2021). While narcissism is associated with arrogance, there is actually a conflict between this grandiose identity and underlying insecurity (Set, 2020).

There are two dimensions of narcissism which are grandiose narcissism and vulnerable narcissism (Miller et al., 2021). The characteristics of grandiose narcissism include arrogance, higher self-esteem, aggression, perceived likability, amiability, and entitlement, while the characteristics of vulnerable narcissism include egocentrism, low self-esteem, doubt of others, and social isolation (Set, 2020). To further understand these two dimensions, the Trifurcated Model explains that there are three dimensions within the narcissism trait which are agentic extraversion, self-centred antagonism, and narcissistic neuroticism (Bader et al., 2022). Agentic extraversion is marked by assertiveness, leadership qualities, high self-esteem, and a tendency to take initiative. Individuals with vulnerable narcissism tend to have higher agentic extraversion. Self-centred antagonism shows arrogance, exploitation, deceitfulness, and manipulation. This is mostly seen in individuals high in grandiose narcissism. Narcissistic neuroticism shows low levels of self-esteem, self-

consciousness, and emotional dysregulation. This is commonly seen in both grandiose narcissism and vulnerable narcissism and is unique only to the narcissism trait in the Dark Triad (Bader et al., 2022).

Machiavellianism

Machiavellianism is represented by cynicism, strategic long-term planning, immoral thinking, unprincipled deceit, exploitation, and manipulating and deceiving others for their own accomplishment (Brownell et al., 2021; Konuk & Otterbring, 2024; Bader et al., 2022; Aldousari & Ickes, 2021; Serenko & Choo, 2020). Individuals with high Machiavellianism are willing to rule over others and maximise their own personal interests (Erzi, 2022). They take pride in being master manipulators with a strong need to control others (Brownell et al., 2021). Being inclined to take part in amoral manipulation, improving one's status, and being slow to trust others are also characteristics of individuals with high Machiavellianism.

Machiavellianism is similar to the other two Dark Triad traits of selfishness and self-interest for they will do unethical behaviour to reach a certain position and avoid conflict to better control and take advantage of others (Set, 2020). According to Gala et al. (2020), the main behaviours shown by individuals with high Machiavellianism are lying, cheating, and betraying. In order to obtain more benefits, they are more prone to lie, dishonour deals that have been made, and withdraw important information. A study found that individuals with high Machiavellianism are more prone to have anxiety, low tolerance for ambiguity, low self-esteem, low optimism, and neuroticism (Belschak et al., 2020).

Psychopathy

Psychopathy involves a lack of conscience, emotional detachment, and lovelessness. Individuals with high psychopathy are able to exploit others without remorse even after harming them (Konuk & Otterbring, 2024). They have the tendency to not feel guilt after immoral actions, act impulsively and aggressively, lack a sense of responsibility, and exert

antisocial behaviours (Erzi, 2022). Facing difficulties in perceiving, understanding, and responding to other's emotions seems to be a common issue faced by individuals with high psychopathy due to their lack of empathy (Brownell et al., 2021). In the same study, it is found that individuals with high psychopathy lack normal levels of emotional arousal, causing them to be more manipulative, more prone to succeed in using others to their advantage and have the desire to seek excitement. This leads them to engage in unreasonable interpersonal aggression (Serenko & Choo, 2020). Individuals with high psychopathy were found to not pay attention towards emotions suggesting that they ignore their and others' emotions (Set, 2020). According to Set (2020), there are two sub-dimensions of psychopathy. The first one is primary psychopathy which is associated with pathological and maladaptive characteristics such as irresponsibility and non-pathological traits such as low levels of anxiety and interpersonal attraction. Secondary psychopathy is associated with maladaptive characteristics such as deception and indifference. The Triarchic Model of Psychopathy is also used to understand more about psychopathy (Bader et al., 2022). According to the model, there are three themes that correspond to psychopathy which are boldness, meanness, and disinhibition. Boldness involves the ability to stay calm and focused under pressure, recover quickly from stressful situations, have high self-confidence and social competence, and tolerate uncertainty and risk. Meanness is characterised by a lack of empathy, a dismissive attitude towards others, a rebellious nature, a thrill-seeking tendency, exploitative behaviour, and a sense of power derived from cruelty. Disinhibition shows poor impulse control, a lack of planning and foresight, difficulty regulating emotions and urges, a demand for immediate gratification, and a lack of self-control.

Envy

Envy is a feeling that arises when one wishes to have another person's outstanding talent, success, or property (Parrott & Smith, 1993). Envy is also explained as a negative

emotion that includes feelings of disappointment, anger, and hatred when comparing oneself to those who have something desired (Redelmeier et al., 2023). According to Kimplova et al. (2024), Aristotle, who is the first man to define envy, describes it as a deep hatred for another person's joy, especially if both of them have similar or equal status. Envy usually goes after fame, respect, and reputation—especially the advantages they want for themselves. The definition of envy provided by Aristotle distinguished envy from jealousy, which is more inclined to a feeling of fear that he or she might lose the things one already has. Apart from that, Ramachandran and Jalal (2017) defined envy as an emotional phenomenon that is unrelated to logical thinking, which supports the theory of Aristotle that people are more likely to envy those who share similar features or characteristics than those with different traits. In addition, the findings of the study of Ramachandran and Jalal also matched the theory of Aristotle, in which individuals only compete with those within the same social status. Wang et al. (2023) stated that envy occurs due to the feeling of inferiority and the limited capacity to obtain desired characteristics of someone superior. Envy is usually upward-looking (Crusius et al., 2019), suggesting that envy is triggered when someone else has a better situation than one does (van de Ven, 2016), which can be explained by the social comparison theory. Additionally, Okan et al. (2023) stated that an envious individual will prefer no one to have the desired benefit when they cannot acquire it and they tend to develop feelings of anger and dislike when someone has the desired advantage. Hence, they will often hope the envied individual will lose the desired advantage. According to Crusius et al. (2021), envy is correlated with greed. Not only that, envy is also found to have a relationship with the aspects of the Dark Triad (Lange et al., 2017).

The type of envy can be different in gender. According to Kimplova et al. (2024), women envied men for their less responsibility, more personal time, and a relaxed life without worries. In contrast, men envied women for their physical attractiveness and

domestic skills. Different genders also express their envy in different ways. Men were found to express higher levels of envy than women. Moreover, men also use more active or behavioural expressions as a response to envy, while women display more passive and mostly emotional expressions (de Zoysa et al., 2021). On the other hand, the type of envy also can be different in age. A study by Henniger and Harris (2015) revealed that people tend to become less envious of others' physical appeal, achievement in school, love connection, and social status when they age. In contrast, feelings of envy toward one's financial wealth tend to increase with age.

There were two forms of envy being discussed, including dispositional envy and episodic envy (Shi et al., 2024). According to Yu et al. (2018), dispositional envy is triggered by an overall way of looking at others' success, and it is also a stable trait that distinguishes people according to the extent and frequency with which they experience envy. Likewise, dispositional envy is also negatively associated with prosocial behaviours. It was found to positively predict anxiety and depression which would negatively affect one's mental and physical health (Li & Xiang, 2020). In contrast, episodic envy is an instant emotion felt when a person lacks another's superior characteristics (Shi et al., 2024). Shi et al. (2024) also explained the main difference between dispositional envy and episodic envy: Dispositional envy refers to a feeling towards a group, while episodic envy is an instant emotion towards a specific individual. On the other hand, Wu and Srite (2021) explained two forms of dispositional envy, including malicious envy and benign envy. These two forms of envy stemmed from feelings of inferiority, an urge to compare, and the painful experience when comparing with others (Jiang et al., 2022). Wu and Srite (2021) defined malicious envy as a feeling of inferiority while comparing oneself to others who have more advantages. The person who experiences malicious envy has the probability of having negative thoughts with the purpose of causing others to fail or be harmed. Jiang et al. (2022) also explained

malicious envy as a negative side of envy, in which one aims to put down the person from his or her position of superiority. In contrast, benign envy motivates one to work harder to reduce the gap with the envied person (Li & Xiang, 2020). According to Jiang et al. (2022), benign envy has a more positive side as it involves comparing oneself to those who deserve an advantage, which reduces the likelihood of depression and anxiety. Furthermore, Crusius and Lange (2020) explained the main difference between malicious and benign envy. Malicious and benign envy not only differ in emotional reaction, but they also have different cognitive focus, which is also known as counterfactual thinking. People who have malicious envy are more concerned with other people, while the ones who experience benign envy only focus on themselves instead of others. A study by Lange et al. (2017) also found a relationship between envy and the Dark Triad, in which benign envy is related to Machiavellianism behaviour, while malicious envy is related to both Machiavellianism and psychopathy.

Schadenfreude

Schadenfreude is defined as experiencing the joy of another person's misery (Greenier, 2020). It comes from the German terms *Schaden*, which means hurt, and *Freude*, which means pleasure, with a possible equivalent phrase in English, “malicious joy” (Cecconi et al., 2020). Schadenfreude is one of the social emotions that is frequently felt by people nowadays (Peplak et al., 2020). It might serve an essential function in daily social interactions with others such as talks about sports and politics, or regular conversations with friends, family, and coworkers (Cecconi et al., 2020). When it comes to enjoying pleasure in other people's misfortunes, it may vary according to different people (Liaqat et al., 2022). Supporting this, the idea proposed by Cikara and Fiske (2013) listed out three types of circumstances that predict schadenfreude, which are people experience schadenfreude (1) when they benefit from others' unfortunate incident, (2) when they feel their jealous target suffer, or (3) when they believe the person who is suffering is deserved.

Schadenfreude is obviously different from other joyful emotions. Some people may experience feelings of joy when they witness someone else going through a difficult period in life (Greenier, 2020). A study by Okan et al. (2023) further mentions that the feeling of schadenfreude rising among people is against social standards to inspire these malevolent and even sneaky sensations of joy at other people's misfortunes when situations are supposed to evoke empathy. Not only do people recall how they experienced schadenfreude going through, but they also think of others who were going through it at all costs (Crysel & Webster, 2018). Even while schadenfreude is a common experience, it was suggested that it should not be widely accepted because it might result in behaviours that harm other people (Liaqat et al., 2022). It makes schadenfreude viewed as socially undesirable as it can coexist with other negative motives and feelings (Peplak et al., 2020).

Apart from getting pleasure in the suffering of others, people sometimes feel more joyful when they see someone they dislike suffer (Wei & Liu, 2020). According to van Dijk et al. (2011), the feeling of schadenfreude increased in corresponding to the target's hatred and the degree to which the event was considered justified. To illustrate, some people may become more neurotic in their actions towards disliked market competitors by taking pleasure in their failures and misfortunes, such as posting insulting information about their disliked brands on social media (Okan et al., 2023). Similarly, Yusainy et al. (2023) found that feelings like schadenfreude will cause people to engage in virtual friendships even when they are not motivated by social goals. Connecting with someone they dislike, behaviour such as hate-following would demonstrate one's superiority (Yusainy et al., 2023). Pietraszkiewicz and Wojciszke (2014) applied Heider's (1958) balance theory to explain this phenomenon, when disliking a person and seeing them experience misfortune creates a balanced emotional response, people may feel the misfortune deserved.

On the other hand, even if schadenfreude is perceived as an immoral or deceitful emotion, it is clear that some circumstances that give rise to these feelings are not always negative. Some people are pleased when other people are finally brought to justice when they suffer the results of their destructive actions (Watanabe et al., 2022). Liaqat et al. (2022) reinforced that people experience greater schadenfreude when they believe that someone else's suffering is justified, which may indicate that schadenfreude is linked to the sense that justice was successfully done. Further explained by Smith et al. (2009), schadenfreude is frequently triggered by misfortunes associated with someone's hypocrisy because they are consistent with a feeling of deservingness. It occasionally reflects the people's expectations of success from their sense of justice (Okan et al., 2023). Such occurrences allow people to enjoy the situation without sensing that it is motivated by self-interest, while also satisfying people's need for harmony and balance (Smith et al., 2009).

Aside from considering the three types of schadenfreude, another term to explain schadenfreude, episodic schadenfreude and trait schadenfreude was suggested by Crysel and Webster (2018). Episodic schadenfreude is the term for temporary happiness or enjoyment experienced in reaction to a particular circumstance in which someone experiences misery. This kind of schadenfreude is short-term, like a state feeling brought on by a specific incident or circumstance. Meanwhile, Crysel and Webster (2018) explain that trait schadenfreude is a more consistent dispositional drive to take pleasure in the misfortunes of others in a variety of situations. It is more likely to reflect a persistent feature of a person's personality or disposition. People who exhibit high characteristic schadenfreude are more likely to feel happy or satisfied when others fail, no matter the situation (Crysel & Webster, 2018).

Dark Triad and Schadenfreude

In accordance with previous studies, the Dark Triad traits show a positive relationship with schadenfreude (Crysel & Webster, 2018; Erzi, 2020; James et al., 2014; Sharafi Zadegan

et al., 2024; Yee & Lee, 2022) These results imply that people with high dark personalities are more engaged in enjoying greater pleasure in observing other people suffer. James et al. (2014) mention that the Dark Triad has many traits with the behaviours that lead to schadenfreude, including a lack of empathy or callousness, competition, and a propensity for disliking other people. Further focusing on the lack of empathy, common in all three aspects of the Dark Triad, establishes a clear conceptual connection between these dark personalities and the feeling of schadenfreude (Erzi, 2020; James et al., 2014; Sharafi Zadegan et al., 2024). The study by Erzi (2020) and Sharafi Zadegan et al. (2024) used moral disengagement as an aspect that contributed to the explanation of the Dark Triad and schadenfreude. Bandura et al. (1996) assert that a process of moral disengagement is the misrepresentation of consequences through dehumanisation and neglect or minimisation (Erzi, 2020). It is believed that people inclined with moral disengagement may be more prone to experience schadenfreude since they are less likely to feel uncomfortable with remorse over negative actions (Erzi, 2020; Sharafi Zadegan et al., 2024). In short, those lacking empathy are more likely to experience schadenfreude.

Narcissism

Studies on narcissism, one of the sub-traits of the Dark Triad, have revealed that it is only associated with schadenfreude under certain circumstances. Erzi (2020) and James et al. (2014) found that individuals with high narcissism experienced schadenfreude when exposed to certain criteria for downward social comparison. Additionally, studies differentiating between grandiose and vulnerable narcissism revealed that vulnerable narcissism is positively correlated with schadenfreude (Krizan & Johar, 2012; Neufeld & Johnson, 2016). However, the outcome of these studies is prone to explain the relationship between vulnerable narcissism and schadenfreude with the mediating of envy, where those with high levels of vulnerable narcissism find relief and fulfilment in the misfortune of others they envy (Krizan

& Johar, 2012; Neufeld & Johnson, 2016). These results emphasise the complex relationship between narcissism and schadenfreude.

Machiavellianism

A study by Abell and Brewer (2018) which focused on the relationship between Machiavellianism and schadenfreude, found that Machiavellianism is positively correlated with schadenfreude in some situations, especially in interpersonal connections like friendships between people of the same sex. Since this study only included female participants, it demonstrates that women with higher Machiavellian scores exhibited greater schadenfreude in response to a friend's misfortune in romantic relationships and physical appearance (Abell & Brewer, 2018). Supporting this, Erzi (2020) also found a positive correlation was found between Machiavellianism and schadenfreude, which was elicited by situations in both social and academic contexts.

Psychopathy

Few studies observed a positive correlation between psychopathy and schadenfreude (Erzi, 2020; James et al., 2014; Lane, 2016). This is comparable to the perception of psychopaths as bullies who take pleasure in the suffering of others despite the fact that it was their fault (Walker & Jackson, 2017). Research by Lane (2016) found that people with higher scores for psychopathy lack morals as they have no trouble laughing at someone who gets hurt or has had bad luck. Similarly, Erzi (2020) and James et al. (2014) also mention that people who score high in psychopathy are more inclined to exhibit relational aggression and moral disengagement, which leads to increased schadenfreude in social and academic contexts.

Envy and Schadenfreude

People tend to experience higher feelings of schadenfreude when they feel envy toward others (Shimul et al., 2021). According to Lin and Liang (2021a), the causal

relationship between envy and schadenfreude could be explained by achievements of the motivational goal of malicious envy, which is to prevent someone else from doing better. One's superiority will be diminished when he or she experiences hardship, and this will achieve the motivational goal of envy and then elicit happy feelings (van de Ven et al., 2014). Lange et al. (2018) stated that envy is defined as a pain emotion in terms of psychological pain. Thus, others' misfortune will reduce these feelings of pain and increase positive feelings, which shows an increase in schadenfreude. This is also supported by the study by Ramadhana (2024), who stated that people feel better and more powerful when they observe others' failure. The more envy an individual feels, the more schadenfreude he or she expresses. Furthermore, perceived deservedness also affects the relationship between envy and schadenfreude. If the envied individual's success is perceived as unfair, schadenfreude has a higher chance of being triggered when that person fails (Haq et al., 2024).

On the other hand, few studies insisted on an insignificant relationship between envy and schadenfreude (Greenier, 2020; Yusainy et al., 2023; Yıldırım et al., 2024). A study by Greenier (2020) found that envy itself nearly causes no effect on schadenfreude, but envy can predict schadenfreude with the presence of disliking, which suggests that only malicious envy can predict schadenfreude. The result of this study is also consistent with the findings of Yusainy et al. (2023), which stated that benign envy does not necessarily lead to schadenfreude. Other than that, the study by Yıldırım et al. (2024) also found that an increase in the level of envy does not affect the level of schadenfreude, and this might be due to the difficulty in measuring the concept of envy in methodological aspects, and the result might differ in different culture context.

Theoretical framework

Social Comparison Theory

The relationship between Dark Triad, envy and schadenfreude can be explained using social comparison theory. The social comparison theory was first introduced by Festinger (1954), explaining why people compare themselves with others constantly, and how it affects their opinions, experiences, and behaviours (Crusius et al., 2022). The social comparison theory further differentiates into two major types, upward and downward comparison. Upward comparison is the comparison of self towards others who are better, often serving as a source of inspiration and guidance for self-improvement (Crusius et al., 2022). Conversely, the downward comparison is the comparison of self towards others who are inferior, which can strengthen or protect one's self-esteem (Crusius et al., 2022).

One may argue that social comparison is a trigger of schadenfreude. It can be accessed by considering individual evaluations of the relative superiority or inferiority of their own abilities and another person's capacities if the misfortune includes social comparison (Lin & Liang, 2021b). Schadenfreude seems to be more easily elicited when people are in a less favourable position or when they witness the unfortunate events of superior people, which leads to an upward comparison (Boecker et al., 2022). It is possible to claim that misfortune levels contribute to a reduction in the noticeable distance between the two people. Yet, it is also being criticised that schadenfreude can also be triggered by other events where upward comparisons are not a required prerequisite for this emotion (Boecker et al., 2022). Although downward comparison is usually linked to sentiments of relief or self-improvement, seeing someone who is already in a worse situation experiencing even more hardship can heighten feelings of superiority and boost self-esteem. Schadenfreude in this situation could explain more about ensuring an individual's sense of control or power than it is about jealousy through social comparison.

People with Dark Triad characteristics are more prone to use downward social comparison towards other people (Yee & Lee, 2022). This is due to that Dark Triad traits are characterised by a lack of empathy and their desire to be perceived as someone who is more superior to others. According to Brubaker et al. (2021), individuals with high narcissism are more likely to apply social comparison due to their need to safeguard their self-esteem. Their sense of self-importance and grandiosity makes them look for reassurance that they remain superior and better than others, thus making them compare themselves with others and employ strategies to maintain their status. Narcissists will have exaggerated reactions when they receive social comparison threats and will commit to maintaining their status (Milić et al., 2022). This is possibly due to their low self-esteem and insecurity, making them want to always appear better than others which when achieved, leads to schadenfreude when they notice others are not faring as well as them. Individuals with high Machiavellianism tend to prioritise themselves and their own status. To elevate their own status, social comparison is engaged for them to make their plans. They are skilled in making long-term strategies to improve their status and gain advantages against others. Thus, when they notice their plans on gaining the higher ground succeed and others fall into misery, schadenfreude occurs as they get the confirmation that their strategies are a success. This is supported by Erzi (2020) who found that Machiavellianism has a positive correlation with schadenfreude. Individuals with high psychopathy may engage in social comparison just for the sake of the thrill felt when they are able to prevail against others. Psychopathy is characterised by the desire for thrill-seeking, which may include being able to best others in all ways possible. To be better than somebody, a comparison has to be made, thus social comparison occurs. When comparing, they feel pleasure when they see others being uncomfortable and miserable due to their lack of empathy, which leads to schadenfreude. Erzi (2020) found that psychopathy relates to schadenfreude more in a social context due to its cold nature.

Envy is a negative feeling that one feels in social comparison, where one understands others have what they want but don't have. Upward social comparison was found as the foundation of envy, and people who like to make upward social comparisons with excellent others tend to increase the likelihood of envy (Wang et al., 2020). With this, feelings of schadenfreude will be triggered, and they will feel better and more powerful when they observe the failure of the people they envied (Ramadhana, 2024). According to Crusius et al. (2019), envy is an emotional prototype that results from social comparison with another individual who is thought to be superior. This statement is supported by van de Ven et al. (2014), who stated that both malicious and benign envy stem from an upward social comparison, which develops feelings of dissatisfaction and inadequacy, and then triggers a motivation to narrow the gap with the superior person. For example, when a person compares himself with a peer who succeeds in their career, envy may be triggered if they regard themselves as failing in their own professional life. Thus, they will prefer to see others' failure as this can decrease their feelings of inferiority and increase happy emotions, leading to a higher level of schadenfreude (Lange et al., 2018).

According to Sung et al. (2024), social comparison can trigger both malicious and benign envy. People who have malicious envy tend to experience negative and destructive emotional states when they compare themselves with someone who performs better, which then triggers higher feelings of schadenfreude. According to Lin and Liang (2021b), the goal of malicious envy is to prevent others from performing better. Hence, they would like to see the failure of the people they compare with. In contrast, benign envy triggers one's motivation to acquire the characteristics of superior others, which is less likely to lead to schadenfreude as they are mainly focused on themselves but not others. Social comparison and envy do not necessarily cause negative experiences, but they depend on the focus of comparison, which is either on similarities with the target (*assimilation*) or differences with

the target (*contrast*). It is explained that upward assimilation and downward contrast tend to improve one's well-being as they provide a sense of superiority. On the other hand, upward contrast and downward assimilation will reduce one's well-being, leading to high levels of schadenfreude as focusing on the differences between one and the superior others will cause them to be more enjoyable when they see the failure of superior others in order to decrease their inferiority feelings (Meier & Johnson, 2022).

Conceptual framework

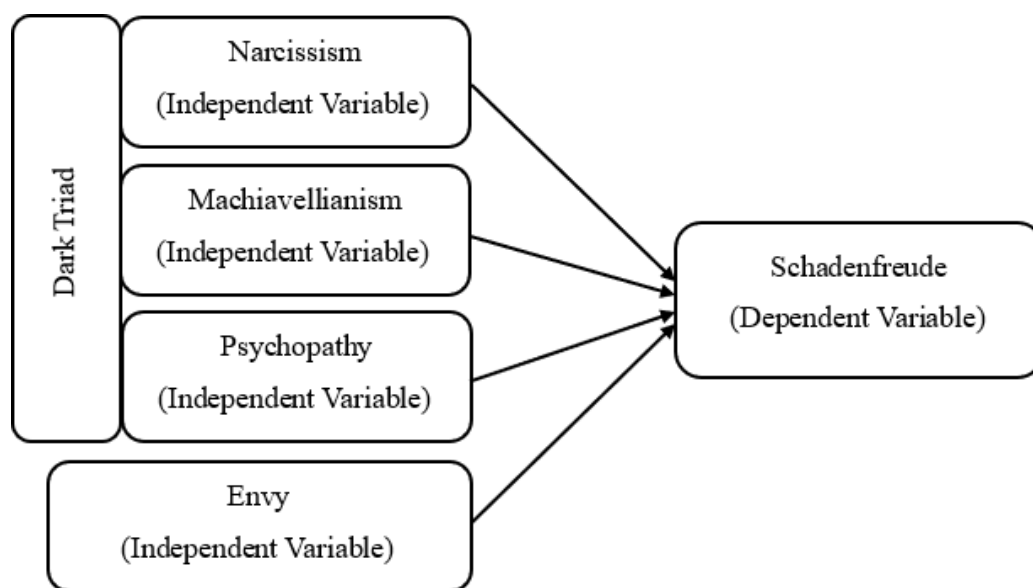


Figure 2.1. The conceptual framework of “Relationship between Dark Triad, envy and schadenfreude among undergraduates in Malaysia”.

This conceptual framework illustrates the relationship between Dark Triad, envy and schadenfreude. Dark Triads can be further classified into narcissism, Machiavellianism, and psychopathy which serve as the independent variable, alongside envy as the independent variable and schadenfreude as the dependent variable in this study. This model serves as a basis for examining these relationships among undergraduates in Malaysia. It outlines that Dark Triad and envy will positively lead to schadenfreude.

Chapter 3

Methodology

Research Design

Quantitative and cross-sectional correlational research design was used in the study to examine the relationship between the Dark Triad, envy, and schadenfreude among undergraduates in Malaysia. This study aimed to formulate hypotheses, collect numerical data, and conduct statistical analysis to identify the relationship and answer the research question (Kotronoulas et al., 2023), which is why quantitative research was applied. On the other hand, this study utilised a cross-sectional research design to gather large amounts of data from a target population at a specific point in time. In contrast, the reason for choosing this research design was its convenience, time savings, and inexpensiveness (Wang & Cheng, 2020).

Sampling Procedures

Sampling method

This study employed purposive sampling, a technique for non-probability sampling. Purposive sampling is a sampling technique used when researchers rely on their own judgment to choose the sample whose characteristics have been found relevant to the study's goal (Andrade, 2021). Since it allowed researchers to rationalise their selections based on logical and theoretical grounds, hence this sampling technique was chosen as the sampling method for this study (Berndt, 2020). By applying this, participants who fulfilled the inclusion criteria were eligible to take part in the study.

Young adults between the ages of 18 to 26 years old were selected as the target population. According to Erikson's Eight Stages of Psychosocial Development, young adulthood tends to face conflict, which is centred on forming intimate relationships with others or being isolated (Sun & Sun, 2021). Successfully forming relationships with others

will lead to a healthy personality, while failing to form meaningful relationships, on the other hand, results in isolation and alienation (Khairani & Maemonah, 2021).

Location of Study

Qualtrics software was used to generate an online self-reported questionnaire. In order to reach a wider audience, the questionnaire was handed out through various social media platforms, including Facebook, Microsoft Teams, WhatsApp, RedNote, Instagram and WeChat. Only the responses from undergraduate students in Malaysia were collected and analysed.

Ethical Clearance Approval.

Universiti Tunku Abdul Rahman (UTAR) Scientific and Ethical Review Committee (SERC) (U/SERC/78-421/2024) granted Ethical Clearance Approval to the study before proceeding to the step of data collection, ensuring the research was done in an ethical way (see Appendix C).

Sample Size, Power, and Precision

The G*Power 3.1 software was used to determine the recommended total sample size for this study (Faul et al., 2009). The p-value, power level, and effect size were calculated to run before the test (Kang, 2021). The effect size was calculated by averaging the correlation coefficients of the relationship between Dark Triad, envy, and schadenfreude from the previous study (Crysel & Webster, 2018) and entering them into Cohen's (1988) formula, $f^2 = R^2 / (1 - R^2)$. This resulted in an effect size of .3824 (see Appendix A). Four independent factors were also included in this study: narcissism, Machiavellianism, psychopathy from the Dark Triad, and envy. For the analysis, the recommended sample size of 54 was calculated using .95 of power input and .05 of the alpha error probability (see Appendix A). Given that G*Power recommended a sample size of 54, the obtained sample size was doubled to

incorporate outliers and missing data into consideration. The present research planned to reach a minimum of 110 undergraduate students overall.

Data Collection Procedures

Questionnaire Preparation

This study utilised an online questionnaire constructed with Qualtrics. A hyperlink and QR code were made to simplify the data collection process. This enabled the researchers to collect data easily and the participants to access the questionnaire more conveniently. By using the hyperlink and QR code, it was easier to encourage participants to distribute the questionnaire to their peers who met the inclusion criteria.

Inclusion and Exclusion Criteria

For data to be included in the present study, participants were required to fulfil three inclusion criteria: (i) citizens of Malaysia, (ii) aged between 18 to 26, and (iii) undertaking a bachelor's degree at the moment in Malaysia. At the same time, the exclusion criteria are participants who enrolled in foundation, diploma, and postgraduate studies, are currently taking part in student exchange programs, and provided data that was incomplete in the questionnaire. The survey also included an attention check question to ensure data quality (Wardropper et al., 2021). Those who failed the question “to ensure the survey quality, please choose strongly disagree (1) with this statement” had their data excluded to ensure the quality of the study.

Procedures for Obtaining Consent

In part A of the questionnaire, a consent form was provided for the participants to choose whether they agree or disagree with the information and data provided to be used in this study. In this form, the participants were able to understand information about the research, which included the aim of the study, free will involvement in the study, possible risks, concerns of confidentiality, the researchers' contact details, and the participants'

criteria for inclusion. Not only that, the participants were reminded that their contribution in this study was fully voluntary and they were not required to provide any explanation when they decided to stop participation at any point in time. Most importantly, it was made very clear that all the information collected would remain anonymous and treated with strict confidentiality. All data obtained was for academic purposes only.

Pilot Study

A pilot study was carried out prior to the main trial of the research. It is the first step of the entire research protocol, aiming to analyse the validity of the instruments and procedures before applying them to a larger-scale study (In, 2017). Besides, the feasibility of the study, such as the inclusion and exclusion criteria of participants, could also be assessed through conducting the pilot study. Not to mention, the suitability of data collection methods can also be tested. Hence, a total of 31 samples were collected, which already exceeded the recommended sample size for a pilot study of 12 (Julious, 2005). The data collection process of the pilot study lasted for 33 days, from 13 January until 16 February 2025. The responses were collected by sending questionnaires through direct messages to participants who fulfilled the inclusion criteria on social media platforms, including Instagram and WhatsApp. The reliability test of the instruments was then conducted using SPSS after receiving enough respondents. All instruments then showed a good reliability level, with Cronbach's alpha values of .845 for Dark Triad Dirty Dozen, .887 for Dispositional Envy Scale, and .735 for schadenfreude (Khairul Zahreen Mohd Arof et al., 2018). Hence, the reliability and feasibility of the study were confirmed.

Actual Study

After a pilot study was conducted and no major issues were discovered, the actual study proceeded over the next two weeks. The data collection period spanned four months (120 days), starting from 28 February to 28 June 2025. Compared to the pilot study, this

actual study reaches out to more social media platforms to collect data, such as reaching out to Facebook, WeChat, RedNote, and Microsoft Teams. In this ongoing actual study, a total of 399 cases were obtained. The data were cleaned, filtered and analysed using IBM SPSS Statistics 23 software within a week. In the actual study, the coefficient of Cronbach's alpha of the variable was not much different from the pilot study. The Cronbach's alpha value of the Dark Triad Dirty Dozen is .845, the Dispositional Envy Scale is .887, and schadenfreude is .735, while the value of the Dark Triad Dirty Dozen subscale, narcissism is .850, Machiavellianism is .776, and psychopathy is .693. Most values fall in a good and acceptable reliability level (Khairul Zahreen Mohd Arof et al., 2018). To examine the hypotheses, two different types of tests were used to analyse the data, which are Pearson Product-Moment Correlation (PPMC) and Simple Linear Regression (SLR). The PPMC is used to analyse the linear relationship between two variables (Gnambs, 2023), while SLR was utilised to investigate the relationship between an independent and dependent variable (Koirala, 2025).

Table 3.1

<i>Reliability Statistics</i>	
Scale	Cronbach's Alpha
Dark Triad Dirty Dozen	.845
Narcissism	.850
Machiavellianism	.776
Psychopathy	.693
Dispositional Envy Scale	.887
Schadenfreude Scale	.735

Instruments

The questionnaire provided included seven demographic questions, which were gender, age, ethnicity, level of education, the current university enrolled in, the state of the university enrolled in, and nationality. It was followed by three instruments, the 12-item Dark

Triad Dirty Dozen (DTDD), the 8-item Dispositional Envy Scale (DES) and the 12-item Schadenfreude Scale.

Dark Triad Dirty Dozen (DTDD)

The first instrument was the Dark Triad Dirty Dozen (DTDD) by Jonason and Webster (2010), which was used to measure participants' Dark Triad personality. This scale consists of a total of 12 items, four per subscale, to assess the Dark Triad traits of narcissism, Machiavellianism, and psychopathy. Narcissism measured traits associated with excessive self-focus, Machiavellianism measured traits related to manipulation and psychopathy measured traits such as a lack of empathy. This instrument was a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The items of "I tend to want others to admire me", "I tend to want others to pay attention to me", "I tend to seek prestige or status", and "I tend to expect special favours from others" represent narcissism. On the other hand, the items of "I tend to be callous or insensitive", "I tend to lack remorse", "I tend to not to be too concerned with morality or the morality of my actions", and "I tend to be cynical" represent Machiavellianism. Last but not least, the items of "I tend to manipulate others to get my way", "I have used deceit or lied to get my way", "I have use flattery to get my way", and "I tend to exploit others towards my own end" represent psychopathy. The individual scores for narcissism, Machiavellianism, and psychopathy were calculated by summing the responses to relevant items. A total Dark Triad score was obtained by combining these individual scores. Higher scores indicate greater levels of Dark Triad traits, both for the individual subscales and the overall score. The internal consistency for the overall scale was higher than other subscales, which was .83, while narcissism was .78, Machiavellianism was .77, and Psychopathy was .69 (Jonason & Webster, 2010). The test-retest reliability was also strong, with an average correlation of .89 for the overall scale and a range of .71 to .88 for the

subscales (Jonason & Webster, 2010). The findings by Jonason and Webster (2010) also demonstrated convergent and discriminant validity to support the validity of the scale.

Dispositional Envy Scale (DES)

The second instrument was the Dispositional Envy Scale (DES) by Smith et al. (1999), which measures participants' dispositional envy level. This scale has a total of eight items without negative entries, with the rating of a five-point Likert scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). The example items were “I feel envy every day”, “It is so frustrating to see some people succeed so easily” and “I am troubled by feelings of inadequacy”. The overall score was computed as the sum of individual item scores. A greater degree of envy was indicated by a higher overall score. The scale demonstrated sufficient reliability, particularly in internal consistency, with Cronbach’s alpha values ranging from .83 to .86 in various samples (Smith et al., 1999). Similarly, Mola et al. (2014) reported a Cronbach’s alpha coefficient of approximately .80, reflecting an acceptable level of reliability. Additionally, Smith et al. (1999) provided evidence of the scale’s satisfactory convergent and discriminant validity, supporting its use in research.

Schadenfreude Scale

The third instrument was the Schadenfreude Scale by Crysel and Webster (2018), which aimed to measure the level of schadenfreude. There were two subscales in this scale, benign schadenfreude and malicious schadenfreude. Benign schadenfreude measured pleasure associated with misfortunes that cause minimal harm, and malicious schadenfreude assessed pleasure derived from misfortunes with more harmful outcomes. Each subscale consists of 6 items, with a total of 12 items. The scale was rated with a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The sample item for benign schadenfreude was “It's not funny when a person walks into a closed sliding-glass door”, while for malicious schadenfreude was “I laugh when someone just misses the bus”. To

calculate the total score, the reversed-score items (Item 1, 2, 5, 8, 9, and 11) were reversed before being combined with the other items. A total score that's higher would indicate a greater level of schadenfreude. The scale demonstrated acceptable reliability in Crysel and Webster's (2018) study, with a Cronbach's alpha of .79 for the total score and .77 and .73 for the benign and malicious subscales, respectively. Additionally, the scale exhibited a strong test-retest reliability value of .87 overall, with .73 for benign and .84 for malicious schadenfreude. Crysel and Webster (2018) also reported satisfactory convergent validity, supporting the scale's psychometric soundness.

Chapter 4

Results

Descriptive Statistics

Demographic characteristics

The total sample used for data analysis for this research was 178 respondents. From 18 to 25 were the range of the respondents' ages, with the majority of them being 22 years old. 21.64 was the mean age with a standard deviation of 1.355. A total of 142 females' (79.8%) and 36 males' (20.2%) data were collected. The sample consisted of 159 Chinese respondents (89.3%), 12 Indian respondents (6.7%), 5 Malay respondents (2.8%), and 2 others who were Kadazan and Siamese (1.1%). All respondents were Malaysians and were currently taking their degree program in Malaysia. 52.8% of the sample were studying in Perak ($n=94$), 13.5% in Malacca ($n=24$), 11.8% in Selangor ($n=21$), 11.2% in Kuala Lumpur ($n=20$), 5.6% in Penang ($n=10$), 1.7% in Johor ($n=3$), 1.1% in Kedah ($n=2$), and 0.6% each in Negeri Sembilan, Perlis, Sabah, and Terengganu having only one respondent studying in each of these four states. From the sample, 157 of the respondents studied in private universities (88.2%) while 21 of the respondents were studying in public universities (11.8%). The majority of the respondents studied at Universiti Tunku Abdul Rahman, as there were 105 of them (59%). Other universities included were Multimedia University (13.5%), Tunku Abdul Rahman University of Management and Technology (5.6%), New Era University College (2.2%), Asia Pacific University of Technology & Innovation (2.2%), Xiamen University Malaysia (2.2%), Universiti Malaya (1.7%), Inti College (1.7%), HELP University (1.7%), Taylor's University (1.1%), IMU University (1.1%), Universiti Sains Malaysia (1.1%), AIMST University (1.1%), Universiti Malaysia Terengganu (0.6%), Universiti Malaysia Sabah (0.6%), Sunway University (0.6%), Universiti Putra Malaysia (0.6%), Institut Pendidikan Guru Kampus Raja Melewar (0.6%), Universiti Tun Hussein Onn Malaysia

(0.6%), Han Chiang University College (0.6%), Universiti Pendidikan Sultan Idris (0.6%), Universiti Teknologi Mara (0.6%), and UCSI University (0.6%).

Table 4.1*Demographic Information of Research Sample (n = 178)*

	<i>n</i>	<i>%</i>	<i>M</i>	<i>SD</i>
Age			21.64	1.355
Gender				
Male	36	20.2		
Female	142	79.8		
Ethnicity				
Malay	5	2.8		
Indian	12	6.7		
Chinese	159	89.3		
Others	2	1.1		
Name of University				
AIMST University Malaysia	2	1.1		
Asia Pacific University of Technology and Innovation	4	2.2		
Han Chiang University College of Communication	1	0.6		
HELP University	3	1.7		
IMU University	2	1.1		
Institut Pendidikan Guru	1	0.6		
INTI International University and Colleges	3	1.7		
Multimedia University	24	13.5		
New Era University College	4	2.2		
Sunway University	1	0.6		

Taylor's University	2	1.1
Tunku Abdul Rahman University of Management and Technology	10	5.6
UCSI University	1	0.6
Universiti Malaya	3	1.7
Universiti Malaysia Sabah	1	0.6
Universiti Malaysia Terengganu	1	0.6
Universiti Putra Malaysia	1	0.6
Universiti Sains Malaysia	2	1.1
Universiti Pendidikan Sultan Idris	1	0.6
Universiti Teknologi MARA	1	0.6
Universiti Tun Hussein Onn Malaysia	1	0.6
Universiti Tunku Abdul Rahman	105	59
Xiamen University Malaysia	4	2.2

Type of University

Public	21	11.8
Private	157	88.2

Location of the University

Johor	3	1.7
Kedah	2	1.1
Melacca	24	13.5
Negeri Sembilan	1	0.6
Penang	10	5.6
Perak	94	52.8
Perlis	1	0.6
Sabah	1	0.6
Selangor	21	11.8

Terengganu	1	0.6
Kuala Lumpur	20	11.2

Note. n = number of cases; % = percentage; M = mean; SD = standard deviation

Topic-specific characteristics

The mean and standard deviation for each variable were calculated to determine the level of narcissism, Machiavellianism, psychopathy, envy, and schadenfreude of our sample. The scores that were one standard deviation higher than the mean value were considered high level, while scores that were one standard deviation lower than the mean value were considered low level.

The mean score of narcissism was 11, and the standard deviation was 4. This showed that the cut-off point for low level of narcissism was 7 and the cut-off point for high level of narcissism was 15. From the sample, it could be seen that 9% of the respondents had a low level of narcissism ($n = 16$), 75.3% of the respondents had a moderate level of narcissism ($n = 134$), and 15.7% of the respondents had a high level of narcissism ($n = 28$).

The mean score of Machiavellianism was 10, and the standard deviation was 3. This showed that the cut-off point for low level of Machiavellianism was 7 and the cut-off point for high level of Machiavellianism was 13. From the sample, it could be determined that 19.7% of the respondents had a low level of Machiavellianism ($n = 35$), 67.4% of respondents had a moderate level of Machiavellianism ($n = 120$), and 12.9% of the respondents had a high level of Machiavellianism ($n = 23$).

The mean score of psychopathy was 8, and the standard deviation was 3. This showed that the cut-off point for low level of psychopathy was 5 and the cut-off point for high level of psychopathy was 11. From the sample, 11.8% of the respondents had a low level of

psychopathy ($n = 21$), 71.9% of the respondents had a moderate level of psychopathy ($n = 128$), and 16.3% of respondents had a high level of psychopathy ($n = 29$).

The mean of envy was 19, and the standard deviation was 7. This showed that the cut-off point for low level of envy is 12 and the cut-off point for high level of envy is 26. From the sample, 13.5% of the respondents had a low level of envy ($n = 24$), 68.5% of respondents had a moderate level of envy ($n = 122$), and 18% of respondents had a high level of envy ($n = 32$).

The mean of schadenfreude was 27, and the standard deviation was 6. This showed that the cut-off point for low level of schadenfreude was 21 and the cut-off point for high level of schadenfreude was 33. From the sample, 16.9% of the respondents had a low level of schadenfreude ($n = 30$), 67.4% of the respondents had a moderate level of schadenfreude ($n = 120$), and 15.7% of the respondents had a high level of schadenfreude ($n = 28$).

Table 4.2

Frequency Distribution of Topic-Specific Characteristics (i.e., Narcissism, Machiavellianism, Psychopathy, Envy and Schadenfreude) ($n = 178$)

	<i>n</i>	%	<i>M</i>	<i>SD</i>	Min	Max
Narcissism			11	4	4	19
Low (≤ 6)	16	9				
Moderate ($7 < \text{score} \leq 15$)	134	75.3				
High (≥ 16)	28	15.7				
Machiavellianism			10	3	4	18
Low (≤ 6)	35	19.7				
Moderate ($7 < \text{score} \leq 13$)	120	67.4				
High (≥ 14)	23	12.9				
Psychopathy			8	3	4	17
Low (≤ 4)	21	11.8				

Moderate ($5 < \text{score} \leq 11$)	128	71.9				
High (≥ 12)	29	16.3				
Envy			19	7	8	28
Low (≤ 11)	24	13.5				
Moderate ($12 < \text{score} \leq 26$)	122	68.5				
High (≥ 27)	32	18				
Schadenfreude			27	6	12	45
Low (≤ 20)	30	16.9				
Moderate ($21 < \text{score} \leq 33$)	120	67.4				
High (≥ 34)	28	15.7				

Note. n = number of cases; % = percentage; M = mean; SD = standard deviation; Min = minimum value; Max = maximum value

Data Diagnostic and Missing Data

Data Cleaning

From the total of 399 responses obtained, 102 cases (25.56%) were excluded from subsequent analyses owing to data quality concerns. Specifically, 84 participants did not complete the full survey, 16 disagreed on the consent, one reported an implausible age, and another indicated an unrelated university affiliation. Thus, 297 complete responses were retained for further analysis.

Post Data-collection Exclusion

The review of the completed responses revealed that several participants did not meet the inclusion criteria. There were 6 participants who were non-Malaysian, 13 participants were currently enrolled in a foundation, 3 were diploma students, 10 were pursuing a Master's degree, and 4 participants were not currently enrolled in a degree program. Additionally, 81 participants had failed to answer the attentional check question set by the

researchers. Therefore, a total of 117 responses (29.32%) were excluded, and the analysis proceeded by using the remaining 180 responses.

Data Transformation

The Schadenfreude Scale was the sole instrument that contained negative items (Items 1, 2, 5, 8, 9, and 11) among all the instruments implemented in this study. Consequently, these items were reverse-coded on the five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). For instance, the response of 1 was recoded as 5, while the response of 2 was recoded as 4. After data transformation, total scores were computed and used for subsequent statistical analyses.

Statistical Outliers

Univariate Outliers

Based on the boxplot generated (refer to Appendix D), case 44 was detected as an outlier in the variables of Machiavellianism, Psychopathy, and Envy. Another outlier was also detected in psychopathy (Case 79). For schadenfreude, five outliers were detected (Case 4, 53, 75, 133, and 149), with case 133 being the extreme outlier. On the contrary, there was no outlier detected in the variable of narcissism. Case 44 and case 133 were removed from the data set as univariate outliers, while other cases (Case 4, 53, 75, 79, and 149) were mild outliers and retained for further statistical analysis. Identifying and removing outliers from an overall sample of data is crucial in almost every quantitative statistic since they are data that differ significantly from the rest of the data being collected (Dash et al., 2023). Hence, a total of 178 data were maintained after removing the two outliers.

Multivariate Outliers and Influential Cases

As indicated by the Casewise Diagnostics, cases 4, 136, and 147 were identified as potential multivariate outliers (refer to Appendix E). To further examine whether these cases were influential, the Mahalanobis Distance, the Cook's Distance, and the Centered Leverage

Value were applied. As suggested by Barnett and Lewis (1978), an appropriate threshold for the Mahalanobis Distance in a sample of 100 is less than 15. Additionally, Cook and Weisberg (1982) suggest that observations with a Cook's Distance exceeding 1 can be considered influential outliers. Moreover, the cut-off point for the Centered Leverage Value was calculated using the formula proposed by Hoaglin and Welsch (1978), which is $(p + 1)/n$. Based on this formula, a value of 0.028 was obtained. This value was then multiplied by 2 to determine the cut-off threshold, resulting in a final value of 0.056. Referring to the case summaries (refer to Appendix F), none of the three identified outliers exceeded the suggested thresholds for the three diagnostic tests, and none of the outliers were removed. In short, all data were retained and carried forward for statistical analysis.

Assumption of Normality

In this study, there were five indicators being used to test the normality assumption, which were the histogram, Q-Q Plot, skewness and kurtosis value, and the Kolmogorov-Smirnov test.

Histogram

A histogram is an approximated visual representation of numerical data distribution, and a bell-shaped histogram often indicates a normal distribution (Yang & Berdine, 2021). The histograms of narcissism and schadenfreude were normally distributed by displaying bell-shaped curves, indicating that these two variables did not violate normality. Furthermore, the histogram of Machiavellianism displayed a roughly bell-shaped with a longer tail towards the left, and it was negatively skewed, showing that most data clustered on the higher end. While the histogram of envy also displayed a roughly bell-shaped, but with a longer tail towards the right, and it was positively skewed, indicating that most data was clustered on the lower end. Lastly, the histogram of psychopathy showed a clear positive skewed distribution

with a long tail towards the right, and most data were clustered on the lower end of the distribution, indicating that this variable had violated the normality assumption. Thus, except for the variable of psychopathy, all histograms of the other four variables showed no significant violation from normality (refer to Appendix G).

Q-Q Plot

A Q-Q plot is formed by the data quantile and the theoretical distribution quantile. If the two quantiles are positively correlated, the plotted points should fall close to the straight line (Yang & Berdine, 2021). The Q-Q plots of five variables, which were narcissism, Machiavellianism, psychopathy, envy, and schadenfreude, indicated no violation of normality, where the observed values closely followed the diagonal line with minimal deviation. (refer to Appendix H).

Skewness and Kurtosis

According to Geaorge and Mallery (2010), the values of skewness and kurtosis ranging from +2 to -2 are considered as normal distribution. According to Table 4.3, the skewness value of the variables of schadenfreude, Machiavellianism, psychopathy, narcissism, and envy ranged from -.131 to .552, while the kurtosis value ranged from -.857 to .046. Thus, there is no violation of normality found for all variables, as all the skewness and kurtosis values fell within the acceptable range between +2 and -2.

Table 4.3

<i>Skewness and Kurtosis value</i>		
	Skewness	Kurtosis
Narcissism	-.131	-.857
Machiavellianism	.195	-.650
Psychopathy	.552	-.185
Envy	.474	-.432
Schadenfreude	.184	.046

Kolmogorov-Smirnov Test

According to Mishra et al. (2019), if the variable showed a significant value of more than .05, it indicates the variable is statistically insignificant, which the data is normally distributed. According to table 4.4, for all five variables which are Machiavellianism, $D(178)=.000$, $p<.001$, psychopathy, $D(178)=.000$, $p<.001$, narcissism $D(178)=.000$, $p<.001$, envy $D(178)=.000$, $p<.001$, and schadenfreude $D(178)=.003$, $p<.05$, showed a significant value lower than .05, which indicated the data are not normally distributed. Thus, all five variables of Machiavellianism, psychopathy, narcissism, envy, and schadenfreude violated the Kolmogorov-Smirnov test.

Table 4.4

<i>Kolmogorov-Smirnov Test</i>			
	Kolmogorov-Smirnov		
	Statistic	<i>df</i>	Sig.
Narcissism	.103	178	.000
Machiavellianism	.103	178	.000
Psychopathy	.141	178	.000
Envy	.098	178	.000
Schadenfreude	0.85	178	.003

Summary of Normality Assumption

All five variables showed no violation in three indicators of the Q-Q plot, skewness, and kurtosis. However, the variable of psychopathy violated the normality indicator of the histogram. Furthermore, all five variables also violated the Kolmogorov-Smirnov test by showing a significant value less than .05. In conclusion, all variables fulfilled the normality assumption, as no more than three indicators were being violated.

Assumption of Simple Linear Regression (SLR)

Linearity

There should be a linear relationship between the independent and dependent variables, which is indicated by a straight line (Koirala, 2025). The scatterplot for four pairs of independent and dependent variables, which are narcissism and schadenfreude, Machiavellianism and schadenfreude, psychopathy and schadenfreude, together with envy and schadenfreude, indicated no violation of linearity, where the residuals were randomly dispersed above and below the zero line with no apparent curvature (refer to Appendix I).

Independence of Data

The independence of the data of this study was examined by the Durbin-Watson test, and the results are shown in Table 4.5. According to Field (2013), the values of the Durbin-Watson test ranging from 1 to 3 are considered acceptable; the closer it is to 2, the better it meets the assumption. In this study, the results of the Durbin-Watson test for narcissism were 2.256, Machiavellianism were 2.238, psychopathy were 2.253, and envy were 2.224; all values fall within the range between 1 to 3. Thus, no violation of the assumption was detected.

Table 4.5

Independence of Data Test

Model	Durbin-Watson
Narcissism	2.256
Machiavellianism	2.238
Psychopathy	2.253
Envy	2.224

Statistical Analyses

Pearson's Correlation Coefficient

Pearson's Correlation Coefficient was conducted to examine the direction and the significance of the relationship between the independent variables of narcissism, Machiavellianism, psychopathy, and envy and the dependent variable of schadenfreude. Pearson's Correlation Coefficient results showed that there was a positive and significant but weak relationship between schadenfreude and narcissism, $r(176) = .211, p = .005$. The results also indicated that there was a positive and significant but weak relationship between schadenfreude and Machiavellianism, $r(176) = .294, p < .001$. Additionally, it also showed that there's a positive and significant but weak relationship between schadenfreude and psychopathy, $r(176) = .223, p = .003$. It also indicated that there was a positive and significant but weak relationship between schadenfreude and envy, $r(176) = .202, p = .007$.

Table 4.6

Correlation among variables (n = 178)

Variables	1	2	3	4	5
1. Narcissism	-				
2. Machiavellianism	.433**	-			
3. Psychopathy	.323**	.493**	-		
4. Envy	.443**	.432**	.369**	-	
5. Schadenfreude	.211**	.294**	.233**	.202**	-

** Correlation is significant at the .01 level (2-tailed)

Simple Linear Regression Analysis

H₁: There is a significant positive relationship between narcissism and schadenfreude among undergraduates in Malaysia.

Simple linear regression was performed to examine whether narcissism is a significant predictor of schadenfreude. Results from Table 4.7 show that the model was

significant, $F(1,176) = 8.23$, $p = .005$, and specified that the variable of narcissism explains 4.5% of variance in schadenfreude. By using the formula $f^2 = R^2 / (1 - R^2)$, the effect size of $f^2 = .047$ was computed, indicating a small effect size as it does not exceed the threshold of .15 (Cohen, 1992). The results from Table 4.8 indicated that narcissism was a significant predictor of schadenfreude ($\beta = .359$, $p = .005$). This highlights that the variable of narcissism significantly and positively predicts schadenfreude. Thus, the hypothesis was supported.

Table 4.7*Regression Model Summary (Narcissism)*

	<i>df</i>	<i>F</i>	<i>p</i>	<i>R</i> ²
Regression	1	8.231	.005	.045
Residual	176			
Total	177			

Note. Dependent Variable = Schadenfreude.

Table 4.8*Coefficients (Narcissism)*

	Std. β	<i>t</i>	<i>p</i>
(Constant)		15.562	.000
Narcissism	.211	2.869	.005

Note. Dependent Variable = Schadenfreude.

***H*₂: There is a significant positive relationship between Machiavellianism and schadenfreude among undergraduates in Malaysia.**

Simple linear regression was carried out to examine the predictability of Machiavellianism to schadenfreude. According to Table 4.9, the regression model showed that Machiavellianism was a significant predictor of schadenfreude, $F(1,176) = 16.65$, $p < .05$. The model explained 8.6% of the variance in schadenfreude, $R^2 = .086$. The effect size

was calculated using the formula $f^2 = R^2 / (1 - R^2)$. The calculation showed that the effect size was $f^2 = .094$, indicating a small effect size. The results indicated that Machiavellianism positively and significantly predicts schadenfreude ($\beta = .561, p < .001$). The hypothesis was supported.

Table 4.9*Regression Model Summary (Machiavellianism)*

	<i>df</i>	<i>F</i>	<i>p</i>	<i>R</i> ²
Regression	1	16.651	.000	.086
Residual	176			
Total	177			

Note. Dependent Variable = Schadenfreude.

Table 4.10*Coefficients (Machiavellianism)*

	Std. β	<i>t</i>	<i>p</i>
(Constant)		15.776	.000
Machiavellianism	.294	4.081	.000

Note. Dependent Variable = Schadenfreude.

***H*₃: There is a significant positive relationship between psychopathy and schadenfreude among undergraduates in Malaysia.**

Simple linear regression was carried out to examine the predictability of psychopathy to schadenfreude. It was shown from the regression model in Table 4.11 that psychopathy significantly predicts schadenfreude, $F(1,176) = 9.23, p = .003$. The model explained 5.0% of the variance in schadenfreude, $R^2 = .050$. By using the formula $f^2 = R^2 / (1 - R^2)$, the effect size was calculated to be $f^2 = .053$, indicating a small effect size. The results indicated that psychopathy positively and significantly predicts schadenfreude ($\beta = .472, p = .003$). The hypothesis was supported.

Table 4.11*Regression Model Summary (Psychopathy)*

	<i>df</i>	<i>F</i>	<i>p</i>	<i>R</i> ²
Regression	1	9.233	.003	.050
Residual	176			
Total	177			

Note. Dependent Variable = Schadenfreude.

Table 4.12*Coefficients (Psychopathy)*

	Std. β	<i>t</i>	<i>p</i>
(Constant)		17.189	.000
Psychopathy	.223	3.039	.003

Note. Dependent Variable = Schadenfreude.

H₄: There is a significant positive relationship between envy and schadenfreude among undergraduates in Malaysia.

Simple linear regression was carried out to examine whether envy significantly predicts schadenfreude among undergraduates in Malaysia. According to Table 4.13, the model was statistically significant, $F(1, 176) = 7.464$, $p < .05$, and accounted for 3.5% of variance, which indicated that the variable of envy explained 3.5% of the variation in schadenfreude. By using the formula $f^2 = R^2 / (1 - R^2)$, the effect size of $f^2 = .042$ was computed, a small effect size (Cohen, 1992) was indicated. Besides, the variable of envy ($\beta = .202$, $p = .007$) was also found to be a significant predictor of schadenfreude, with the significant value lower than 0.05. This indicated that envy significantly and positively predicts schadenfreude. Hence, the hypothesis was supported.

Table 4.13*Regression Model Summary (Envy)*

	<i>df</i>	<i>F</i>	<i>p</i>	<i>R</i> ²
Regression	1	7.464	.007	.041
Residual	176			
Total	177			

Note. Dependent Variable = Schadenfreude.

Table 4.14*Coefficients (Envy)*

	Std. β	<i>t</i>	<i>p</i>
(Constant)		16.956	.000
Envy	.202	2.732	.007

Note. Dependent Variable = Schadenfreude.

Chapter 5

Discussion and Conclusion

This study investigated the relationships between narcissism, Machiavellianism, psychopathy, envy and schadenfreude among undergraduates in Malaysia. The predictive roles of narcissism, Machiavellianism, psychopathy and envy on schadenfreude were also further studied. Derived from the statistical analyses, all hypotheses were supported.

Narcissism and Schadenfreude

The results of our study support the H_1 hypothesis that there is a significant positive relationship between narcissism and schadenfreude among undergraduates in Malaysia. This outcome is consistent with several past studies that indicate narcissism is correlated with schadenfreude (Erzi, 2022; James et al., 2014; Yee & Lee, 2022; Zadegan et al., 2024). A previous study done by Ezri (2020) further supports our finding, which highlights that narcissism correlated more significantly with schadenfreude among undergraduate students in an academic context, such as in situations of peers' GPA outcomes are dropping. These findings reveal that individuals with a greater level of narcissism are more prone to experience pleasure in the misfortunes of others.

For individuals who are high in narcissism, witnessing another's misfortune addresses their fundamental need to preserve a favourable self-view, thereby eliciting feelings of schadenfreude (van Dijk et al., 2011, as cited in Karaosmanoğlu & Kandemir, 2025). This notion suggests that narcissistic individuals often perceive others as extensions of themselves and rely on them to regulate their self-esteem (Levy et al., 2011, as cited in Karaosmanoğlu & Kandemir, 2025). For this reason, the misfortune of others provides narcissistic individuals with chances to preserve and enhance their sense of self, which serves as a contributing factor for the feeling of schadenfreude (Karaosmanoğlu & Kandemir, 2025). Further explained by the social comparison theory, narcissistic individuals experience schadenfreude as a form of

social comparison. Observing others' misfortune enables narcissistic individuals to engage in social comparison, thereby sustaining their self-evaluations (Brubaker et al., 2021). This motivation has preserved a positive self-perception, which may prompt individuals to engage in such comparisons more frequently, consequently increasing the likelihood of experiencing schadenfreude (van Dijk et al., 2011, as cited in Karaosmanoğlu & Kandemir, 2025). While narcissistic individuals who are low in self-esteem may initially engage in upward social comparisons, the misfortune of others, particularly those high-status individuals, allows narcissistic individuals to perform downward social comparisons and reinforce positive self-assessments (Smith et al., 2009, as cited in Karaosmanoğlu & Kandemir, 2025). This aligns with the findings of James et al. (2014), who reported that greater levels of narcissism are correlated with stronger experiences of schadenfreude in contexts involving downward social comparison, where another's poor work performance enhances one's own self-perception and improves external evaluations. Taken together, these findings reinforce the relationship between narcissism and schadenfreude, suggesting that narcissistic individuals derive pleasure from others' misfortunes to bolster their self-esteem.

Machiavellianism and Schadenfreude

The H_2 hypothesis stated a significant positive relationship between Machiavellianism and schadenfreude among undergraduates in Malaysia existed, which was supported by the findings. The findings were aligned with several previous studies (Durmuş, 2024; Erzi, 2022; Greenier, 2018, as cited in Pagan, 2022; James et al., 2014, as cited in Bacile et al., 2025; Kartol & Söner, 2023; Parton & Chester, 2025). Another study also found that there's a relationship between Machiavellianism and schadenfreude (Brubaker et al., 2021). That study highlighted that schadenfreude is a mediator of Machiavellianism to trolling behaviours online, showing that their relationship exists.

According to Shukla and Upadhyay (2025), Machiavellianism had a negative relationship with empathy. Another study noted that empathy had a negative relationship with schadenfreude (Durmuş, 2024). This showed that people with high Machiavellianism had a greater chance of having high levels of schadenfreude due to their lack of empathy. Another study found that people with high Machiavellianism tended to see others as their competition and would do anything they could to be presented or known better than the others (Jahangir et al., 2024). According to Lo (2021), people with high Machiavellianism also tend to have emotional detachment, making it easier for them to manipulate and discard others for their own benefits. This could explain why people with high Machiavellianism would have high schadenfreude, as they may see the failure and misfortune of others as their success. By relating to social comparison theory, people with high Machiavellianism tend to want to be the best among people and would do anything to achieve their goal (Borukanlu & Manee, 2023). Comparison with others occurred due to people wanting to have a more thorough appraisal of themselves (Sun et al., 2024). Therefore, they would be actively using downward social comparison to compare themselves with others and feel joy whenever others encounter failures and misfortunes.

Psychopathy and Schadenfreude

From the findings, the hypothesis H_3 stated that among the undergraduates in Malaysia, a significant positive relationship between psychopathy and schadenfreude was supported. The findings are in line with those reported in past studies (Durmuş, 2024; Erzi, 2022; Erzi, 2020; James et al., 2014, as cited in Shahab & Taklavi, 2021; Ostrovsky et al., 2019, as cited in Atak et al., 2025; Kartol & Söner, 2023). These articles showed findings of psychopathy having a positive correlation with schadenfreude, which was similar to our findings.

Since psychopathy is characterised by impulsivity, lack of empathy, guilt, or remorse (Velotti et al., 2024), it makes sense for people with high psychopathy to have high schadenfreude. According to Durmuş (2024), people who experienced schadenfreude lacked empathy. It was also found that empathy had a negative correlation with psychopathy (Erzi, 2022). This explained that people with high psychopathy usually have low empathy, causing them to experience schadenfreude. Additionally, it was also found that psychopathy had overlapping traits with sadism (Bonfá-Araujo et al., 2024). Sadism and schadenfreude were similar in a way that they were traits of people who enjoy watching the suffering of others (Parton & Chester, 2025). Therefore, it could be explained that people with high psychopathy would also have high schadenfreude. By relating to the social comparison theory, it was found that people with high psychopathy would present schadenfreude as a form of humorous social aggression and belittle others to gain a higher level of self-satisfaction as they compared themselves with people worse than them (Yee & Lee, 2022).

Envy and Schadenfreude

The H_4 , which hypothesised that there is a significant relationship between envy and schadenfreude, was supported. These results correspond with those reported in past studies (Schindler et al., 2015; Shimul et al., 2021; Atak et al., 2025), indicating a correlation between envy and schadenfreude.

According to social comparison theory, people tend to avoid upward comparison as it usually will lead to lower self-esteem, subjective well-being and bad mood when compared with the superior one (Guyer & Vaughan-Johnston, 2018). The feeling of inferiority will arise, which becomes a threat to one's self-worth and reflects a drop in one's social position, then causes the emotion of envy towards the one who is always better and succeeds easily (Vrabel et al., 2018). Hence, when the superior one loses their privileges or advantages, the status gap between them will decrease, emotion of envy will be satisfied, which then elicits

the feeling of pleasure towards their downfall. This was supported by Karaosmanoğlu and Kandemir (2025), stated that when misfortune falls on the person who is envied, the feeling of inferiority arose from envy will be replaced by the feeling of superiority as it finally ends the advantageous position of the superior one, thereby changing the upward social comparison to downward social comparison, which would make them feel better. This aligns with evidence from Okan et al. (2023), which stated that the misfortune of superior others would reduce inequality and fulfil comparative concerns, and then lead to an increase in the schadenfreude emotion of the inferior self.

With the emotion of envy, people will perceive their disadvantages as unchangeable and think that others' advantages as undeserved. Smith and van Dijk (2018) expressed that the sense of unfairness was likely due to the inability to change or control the advantages, as well as a feeling of undeserved inferiority above one's control and fault. Study of van Dijk et al. (2015) further supported that people who envy believe that the envied superior one did not deserve the advantage they had, as it violated the rule that similar others should have similar outcomes. Furthermore, it also argued that people insisted undeserved advantages were usually based on factors other than one's own capability, such as appearance, luck, and inherited wealth. Hence, the sense of resentment and injustice towards others' advantages will grow in private, causing additional irritation and hatred. Therefore, this will contribute to an appealing sense of justice and deservingness when the misfortune befalls the envied one, which indicates a rise in schadenfreude (Smith & van Dijk, 2018).

Implications

Theoretical Implications for Future Research

The present study employed Festinger's (1954) social comparison theory to explain the relationship between Dark Triad, envy and schadenfreude. Our findings revealed the significant positive relationship between Dark Triad, envy and schadenfreude, where Dark

Triad traits and envy served as significant predictors of schadenfreude. This supports that social comparison explains that individuals with dark triad traits and high envy are more inclined to experience malicious joy. As mentioned in past studies, the likelihood of those with high levels of dark triad traits to undertake in downward social comparison (Goncalves & Campbell, 2014), where they use downward social comparison to put themselves in a more favourable situation by taking pleasure from other people's misery (James et al., 2014). Similarly, envy is more prevalent among individuals who frequently engage in upward social comparisons with highly successful others (Wang et al., 2020) and who derive feelings of superiority when witnessing the misfortune of those they envy (Ramadhana, 2024).

Moreover, this study contributes theoretically by investigating the relationship between the Dark Triad traits, envy, and schadenfreude within a single framework, rather than conceptualising envy solely as a mediator or moderator of these relationships. This implication suggests that future studies could explore more complex models, including potential mediating and moderating pathways such as deservingness, moral disengagement and self-esteem regulation. Additionally, it is worth noting that only one comparable study has been conducted within the Malaysian context, carried out by Yee and Lee (2022). By situating the investigation within the Malaysian undergraduate context, this study enriches the cross-cultural literature and supports the generalisability of theories linking the Dark Triad, envy, and schadenfreude. This provides a valuable perspective on social context, as most of the similar past research was carried out in Western, individualistic cultures, whereas Malaysia represents a collectivist (Syasya Firzana Azmi et al., 2023) and multicultural setting. Consequently, the findings also contribute to understanding whether social comparison theory is universally applicable or whether cultural values shape how Dark Triad, envy and schadenfreude are expressed.

Practical Implications for Programs and Policies

The present study on the relationship between the Dark Triad, envy, and schadenfreude offers insight into how personality traits and feelings shape the emergence of certain social emotions. This is important because individuals who score high on these traits may be at greater risk of developing antisocial behaviours (Kanz, 2015; Wang et al., 2019). One practical implication is the use of self-assessments to identify potential underlying issues, which can help individuals increase awareness of their thoughts and feelings in daily life. In addition, the findings provide a deeper understanding of the psychological mechanisms linking the Dark Triad, envy, and schadenfreude, which may benefit the development of clinical assessments and intervention strategies. For instance, counselling and therapeutic approaches could be tailored to address these tendencies, thereby supporting healthier emotional regulation and social functioning.

By drawing attention to the connection between the Dark Triad traits, envy, and schadenfreude, this study highlights behavioural signs of manipulateness or aggression (Brownell et al., 2021) that may otherwise go unnoticed. Recognising these patterns at an earlier stage enables timely interventions, thereby supporting the prevention of maladaptive social behaviours and promoting healthier peer interactions. On the other hand, understanding how dark personality traits and envy contribute to schadenfreude has practical value for awareness and school-based programs, particularly those aimed at reducing bullying, social exclusion, and cyberbullying from an early stage. Suggesting that the higher institution could strengthen and promote school regulations targeting bullying and related behaviours, thereby preventing manipulative, narcissistic, or exploitative conduct among students.

Limitations

Firstly, the limitation that arose in this study was the use of a non-probability sampling method. The reliance on purposive sampling had constrained the generalisability of the study's outcomes. According to Thomas (2022), there were several disadvantages to this

method, such as being highly subject to investigator bias, which could affect the data of the survey. However, due to time constraints, this method was chosen for this study as this method was reported to save time (Thomas, 2022).

Next, since this study collected data by providing online self-report questionnaires to the participants, response bias may be present. It was natural to doubt the accuracy of self-report questionnaires as people might be fallible observers of their behaviour (Lange et al., 2023). By using self-reporting questionnaires, it enables the risk of negative response bias and positive response bias (Giromini et al., 2022). In this study, negative response bias could occur when participants exaggerate their responses by choosing ‘strongly agree’ and overreporting. Positive response bias was possible for this study if the participants wanted to present themselves favourable to the investigators instead of being truthful with their responses by choosing ‘strongly disagree’ or ‘disagree’ for the questions regarding dark triad, envy, and schadenfreude. The presence of these biases due to self-reporting questionnaires may affect the accuracy of the data.

Lastly, the demographic of the participants showed that there were more female participants recruited for this study than male participants and that the majority of the participants were Chinese. According to Hartung et al. (2021), socially aversive personality traits, such as the dark triad traits, were found to be higher in males compared to females. Another study also found that males have higher levels of narcissism (Weidmann et al., 2023). In addition, this study was done in the Malaysian context, and Malaysia is a country with multiethnicity and multiculturalism with different beliefs and values that may influence their behaviour and personality. This made it hard to generalise the findings of this study to the population.

Recommendations

First, future research should consider the use of random sampling techniques, where each and every individual has an equal chance to be chosen as a sample in the study, which could avoid sampling bias, as well as be able to generalise the findings to the population better (Alvi, 2016). For example, researchers can get the name list of the undergraduates from a particular university and allot a number to each name. Then, a computer can be used to generate a random number, and the undergraduates with that number will be chosen as a sample.

Next, to reduce response bias, future researchers can conduct the study in an experimental design which complements the online questionnaire with experiments, such as observing sample schadenfreude reactions by providing scenarios to reduce self-perception. Besides, researchers are also recommended to stay beside the sample when they fill out the questionnaire, as well as be ready to resolve any confusion the sample may have during the process to avoid any misunderstanding which could contribute to inaccurate responses.

Last but not least, future researchers could use a stratified sampling method to recruit samples, in which subgroups will be formed based on similar characteristics, then samples will be randomly chosen from each subgroup to ensure the presence of every subgroup (Alvi, 2016). For example, the potential sample will be categorised into subgroups based on gender and race. Then, the samples will be randomly selected from each subgroup. This could avoid the inaccurate generalisation of findings based on a single gender or race. Moreover, future researchers are also recommended to replicate their related studies in more diverse cultural contexts, such as populations from other Southeast Asia or Western countries, to examine whether results vary across different belief systems.

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Appendices

Appendix A

Sample Size Calculation

Independent Variable 1: Dark Triad (Narcissism, Machiavellianism, Psychopathy)

$r = .33$ (Crysel & Webster, 2018)

The effect size for narcissism and schadenfreude:

$$f^2 = \frac{(0.33)^2}{1 - (0.33)^2} = 0.1222$$

$r = .61$ (Crysel & Webster, 2018)

The effect size for Machiavellianism and schadenfreude:

$$f^2 = \frac{(0.61)^2}{1 - (0.61)^2} = 0.5926$$

$r = .50$ (Crysel & Webster, 2018)

The effect size for psychopathy and schadenfreude:

$$f^2 = \frac{(0.50)^2}{1 - (0.50)^2} = 0.3333$$

Independent Variable 2: Envy

$r = .57$ (Crysel & Webster, 2018)

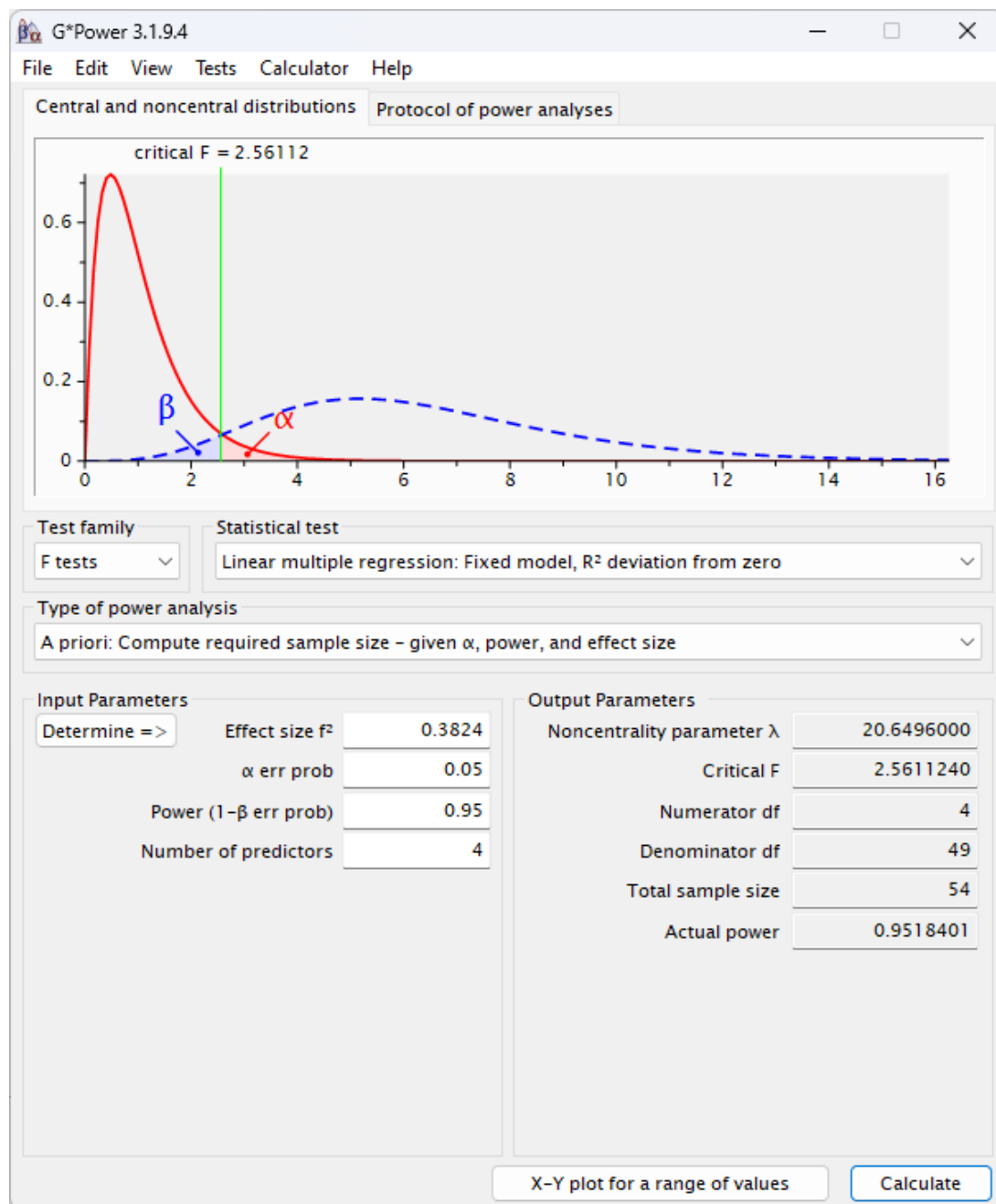
The effect size for envy and schadenfreude:

$$f^2 = \frac{(0.57)^2}{1 - (0.57)^2} = 0.4813$$

Average

$$f^2 = \frac{0.1222 + 0.5926 + 0.3333 + 0.4813}{4}$$

$$f^2 = 0.3824$$



Appendix B

Ethical Clearance Approval Letter


UNIVERSITI TUNKU ABDUL RAHMAN

DU012(A)

Wholly owned by UTAR Education Foundation

Co. No. 578227-M

Re: U/SERC/78-421/2024

26 December 2024

Mr Tay Kok Wai
 Head, Department of Psychology and Counselling
 Faculty of Arts and Social Science
 Universiti Tunku Abdul Rahman
 Jalan Universiti, Bandar Baru Barat
 31900 Kampar, Perak.

Dear Mr Tay,

Ethical Approval For Research Project/Protocol

We refer to the application for ethical approval for your students' research project from Bachelor of Social Science (Honours) Psychology programme enrolled in course UAPZ3013. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	The Relationship Between Self-esteem, Social Connectedness, and Loneliness Among Undergraduate Students in Malaysia	1. Harkiran Kaur a/p Hardeu Singh 2. Lim Zi Yang 3. Toh Shao Xuan	Dr Ooh Seow Ling	26 December 2024 – 25 December 2025
2.	The Relationship Between Dark Triad, Envy and Schadenfreude Among Undergraduates in Malaysia	1. Lau Jia Le 2. Lim Wen Nee 3. Lim Yi Ling		

The conduct of this research is subject to the following:

- (1) The participants' informed consent be obtained prior to the commencement of the research;
- (2) Confidentiality of participants' personal data must be maintained; and
- (3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.
- (4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia

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Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia

Tel: (603) 9086 0288 Fax: (603) 9019 8868

Website: www.utar.edu.my



Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

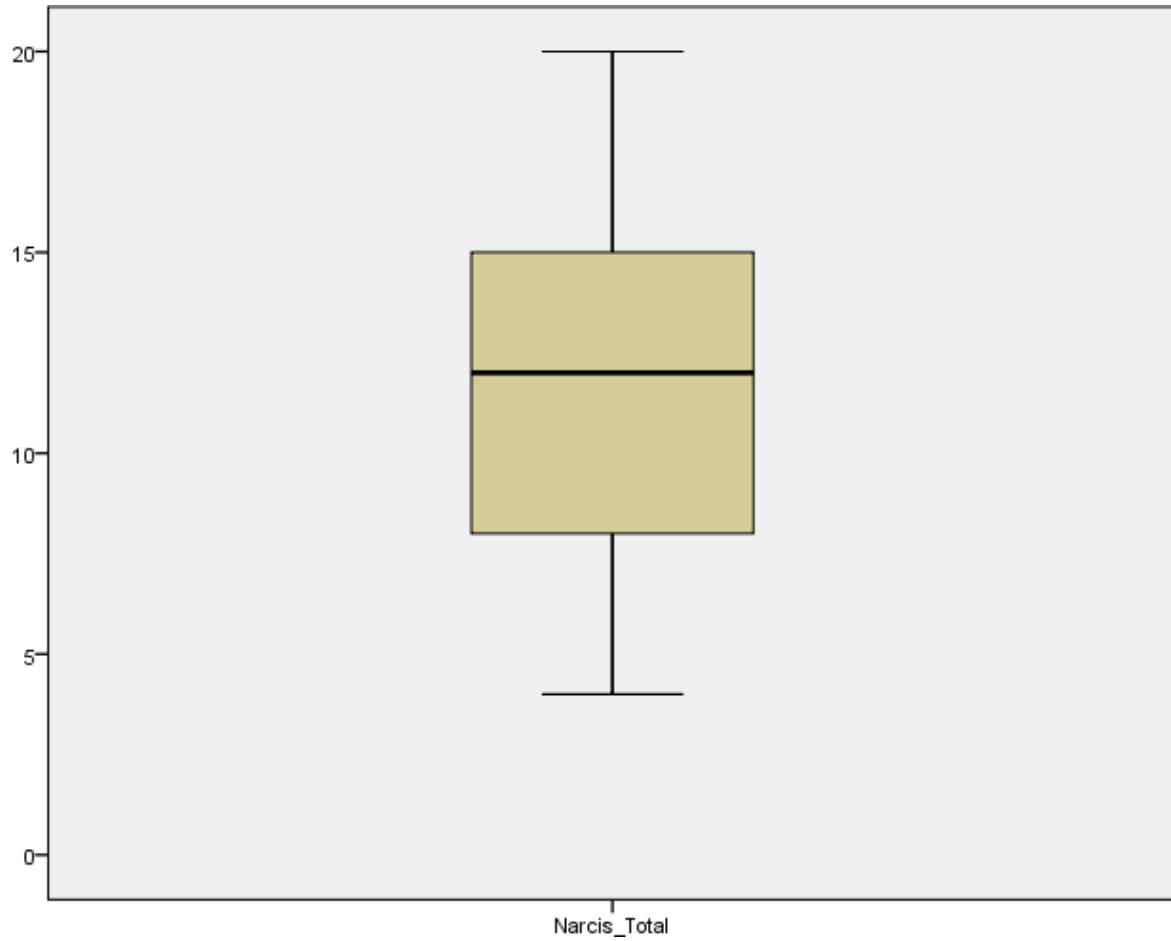
Thank you.

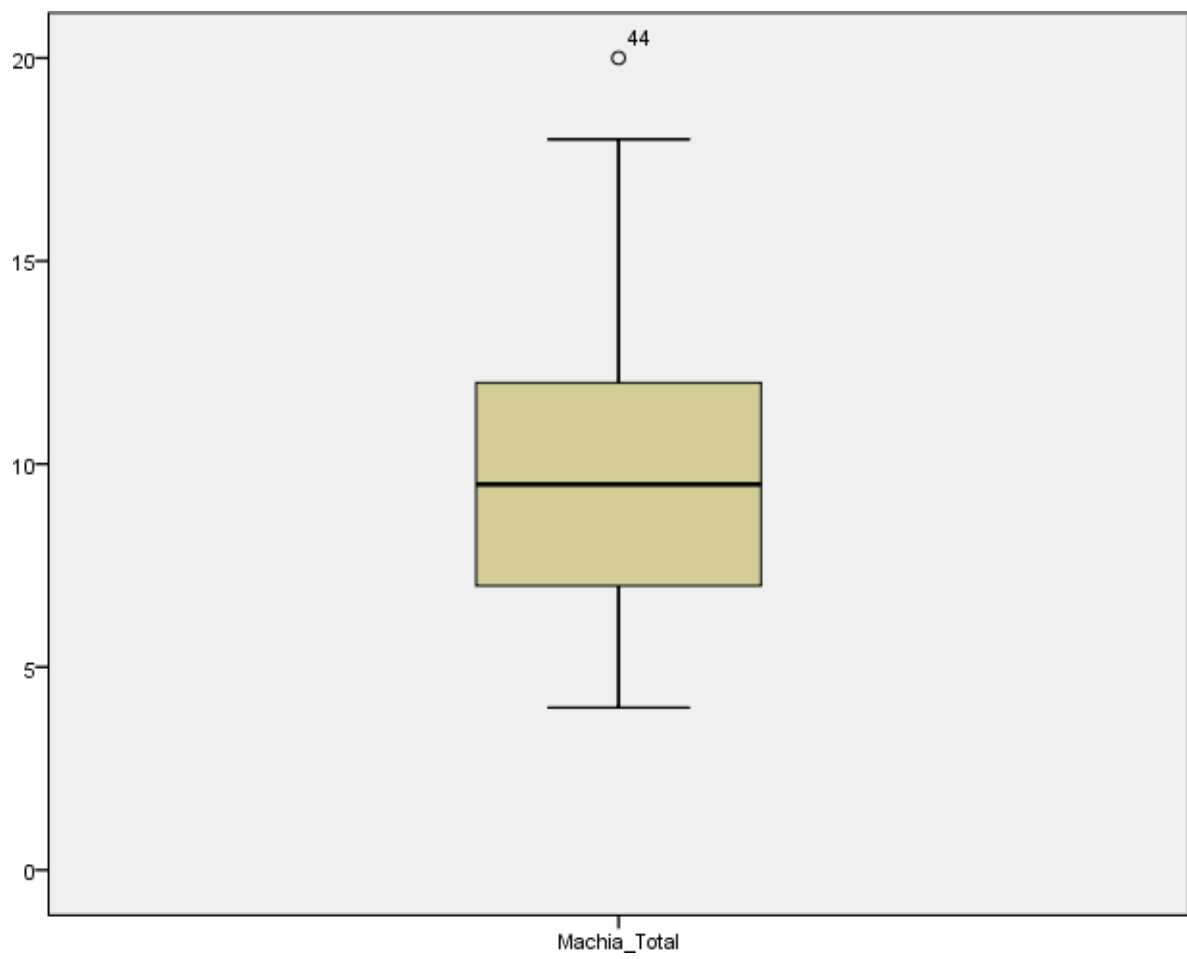
Yours sincerely,

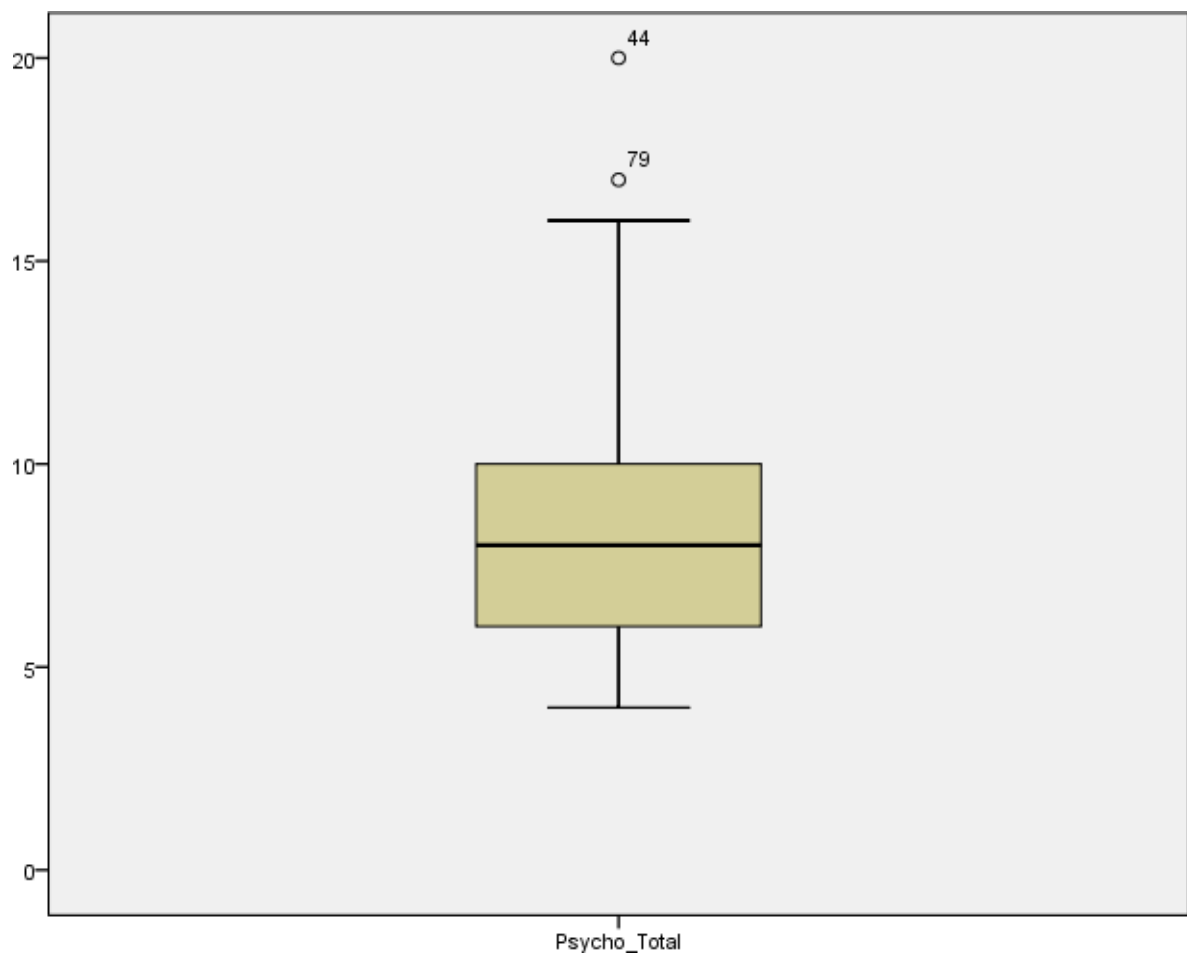


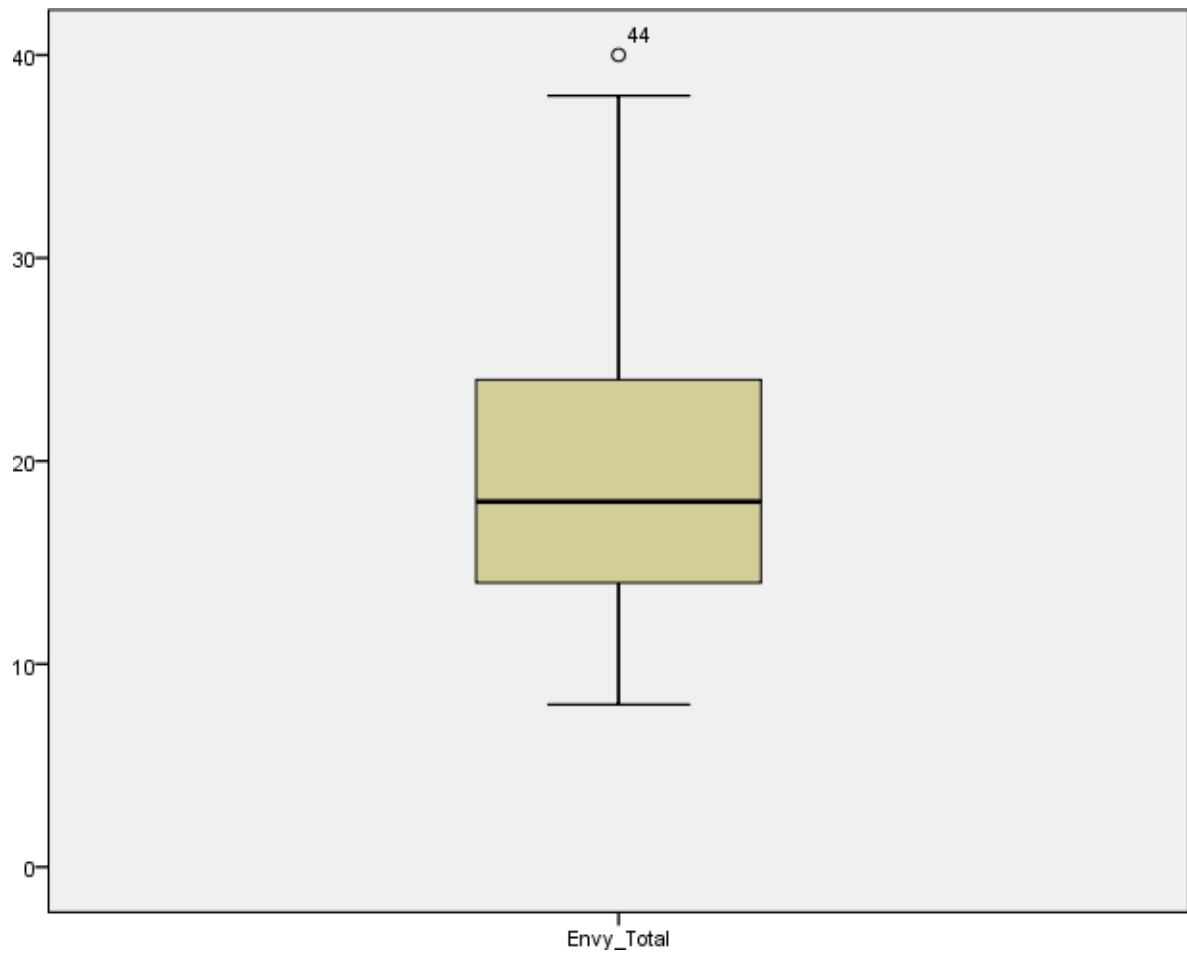
Professor Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

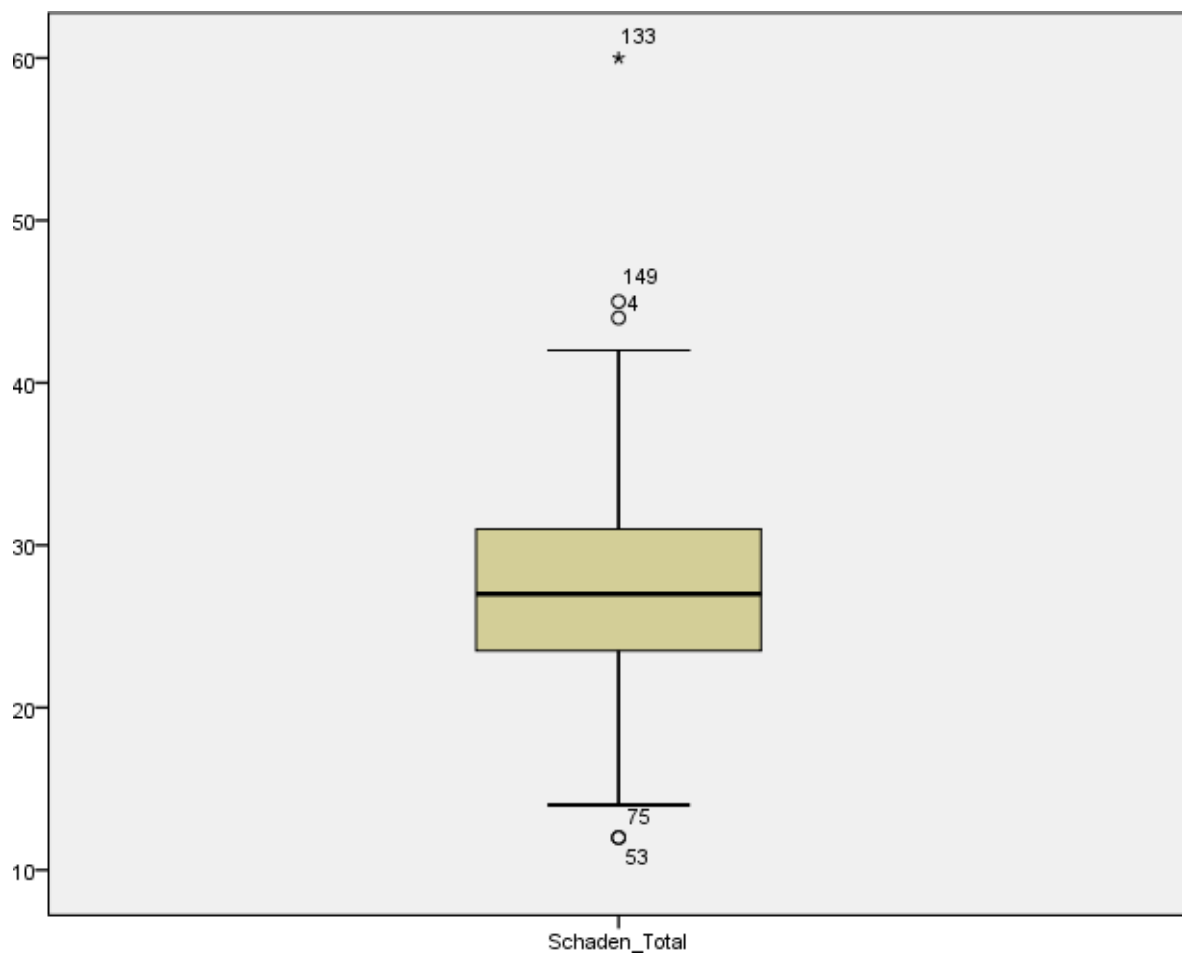
c.c Dean, Faculty of Arts and Social Science
 Director, Institute of Postgraduate Studies and Research

Appendix C**Boxplot***Narcissism*

Machiavellianism

Psychopathy

Envy

Schadenfreude

Appendix D

Casewise Diagnostics

Casewise Diagnostics^a

Case Number	Std. Residual	Schaden_Total	Predicted Value	Residual
4	2.120	44	31.10	12.904
136	2.043	39	26.57	12.435
147	2.670	45	28.74	16.256

a. Dependent Variable: Schaden_Total

Appendix E

Case Summaries Table

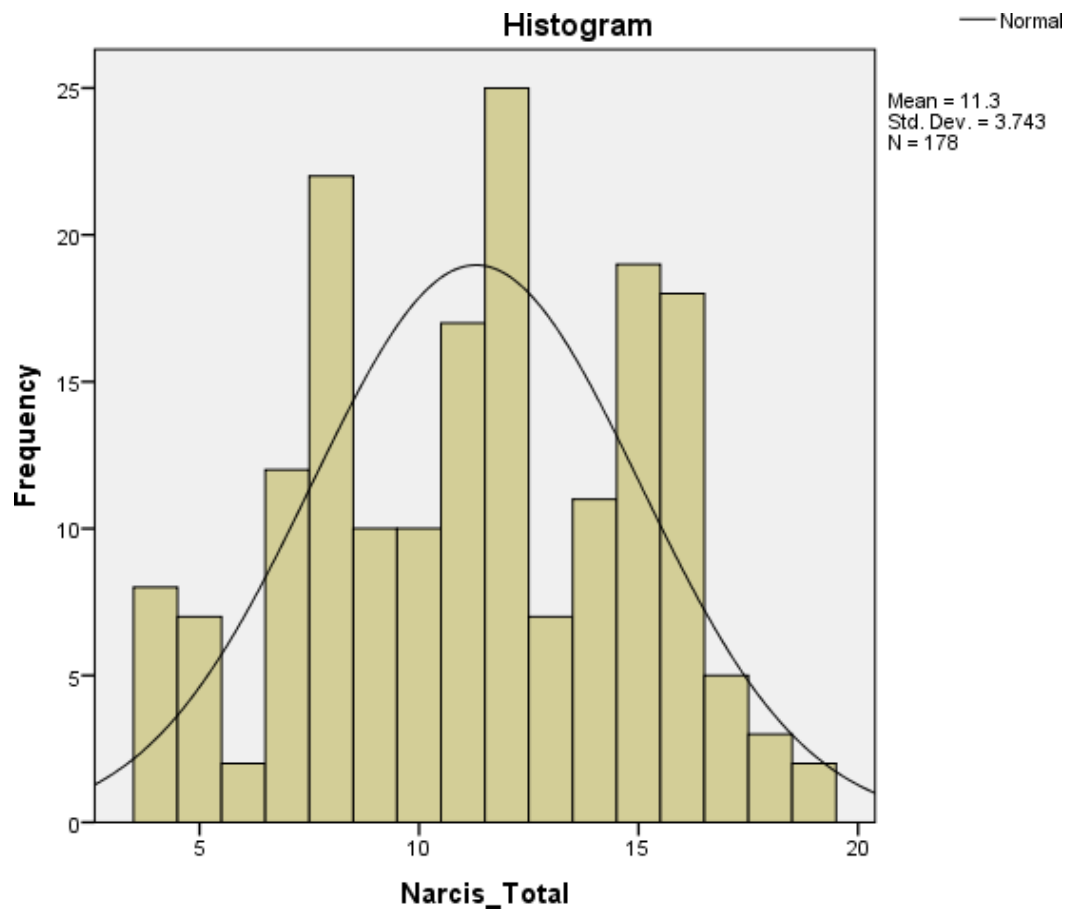
Case Summaries

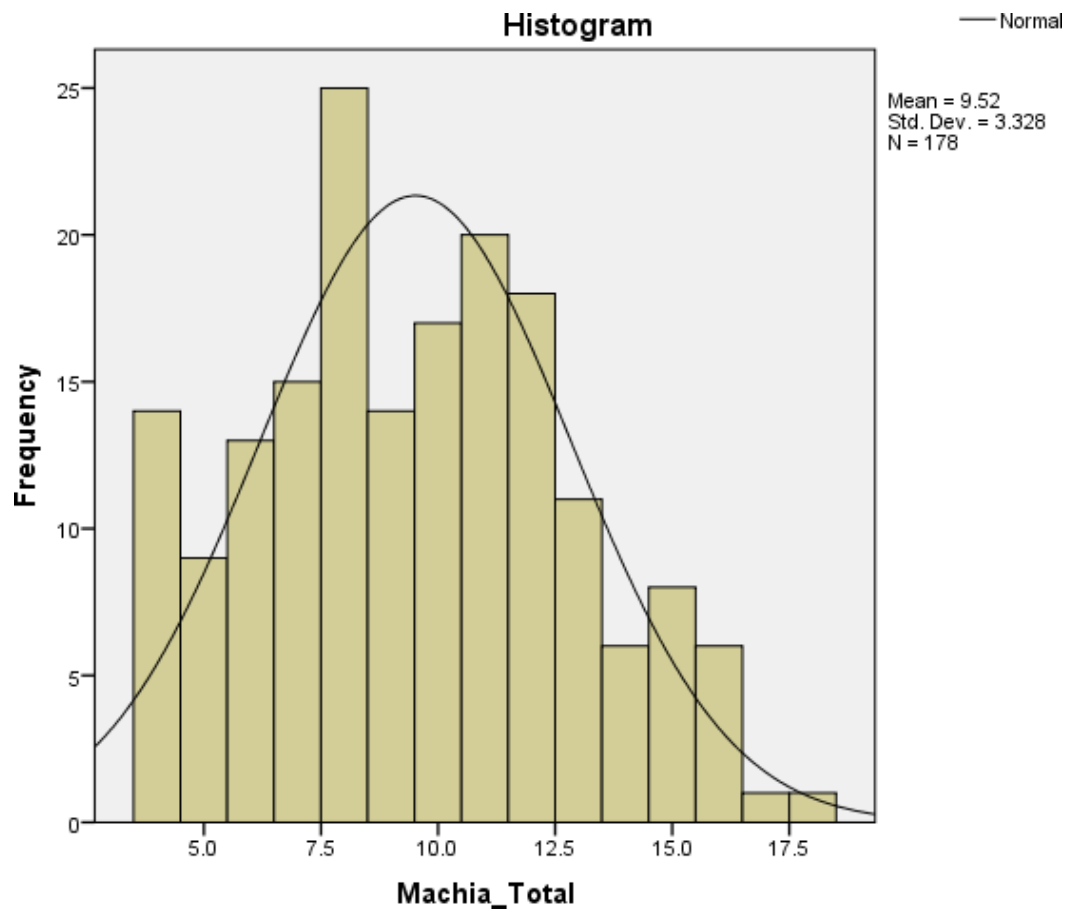
				Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value
Casewise	0	1		4	7.83327	.04965	.04426
		2		136	.55741	.00745	.00315
		3		147	2.27148	.02731	.01283
		Total	N		3	3	3
1		1		1	4.94125	.00065	.02792
		2		2	4.67951	.01532	.02644
		3		3	5.03899	.00730	.02847
		4		5	10.62131	.00111	.06001
		5		6	4.02707	.00064	.02275
		6		7	5.07789	.00240	.02869
		7		8	4.45625	.01088	.02518
		8		9	.50398	.00065	.00285
		9		10	4.41470	.02340	.02494
		10		11	5.89738	.02181	.03332
		11		12	5.48122	.01442	.03097
		12		13	2.27128	.00025	.01283
		13		14	4.55609	.01913	.02574
		14		15	6.29281	.00106	.03555
		15		16	2.75617	.00565	.01557
		16		17	5.39785	.00075	.03050
		17		18	.40652	.00000	.00230
		18		19	5.89159	.00893	.03329
		19		20	2.58879	.00058	.01463
		20		21	6.15754	.00599	.03479
		21		22	1.15177	.00102	.00651
		22		23	3.83828	.00019	.02169
		23		24	1.73729	.00014	.00982
		24		25	3.29097	.00009	.01859
		25		26	4.16615	.00410	.02354
		26		27	1.03885	.00101	.00587
		27		28	2.07010	.00063	.01170
		28		29	1.74517	.00001	.00986
		29		30	10.83137	.00393	.06119
		30		31	2.67529	.00012	.01511
		31		32	4.59429	.00078	.02596
		32		33	.93079	.00383	.00526
		33		34	2.81980	.00094	.01593
		34		35	4.42980	.00093	.02503
		35		36	7.50114	.00210	.04238
		36		37	4.17682	.00374	.02360
		37		38	4.07556	.01977	.02303
		38		39	3.72873	.00301	.02107
		39		40	2.26146	.00065	.01278
		40		41	5.76647	.00129	.03258

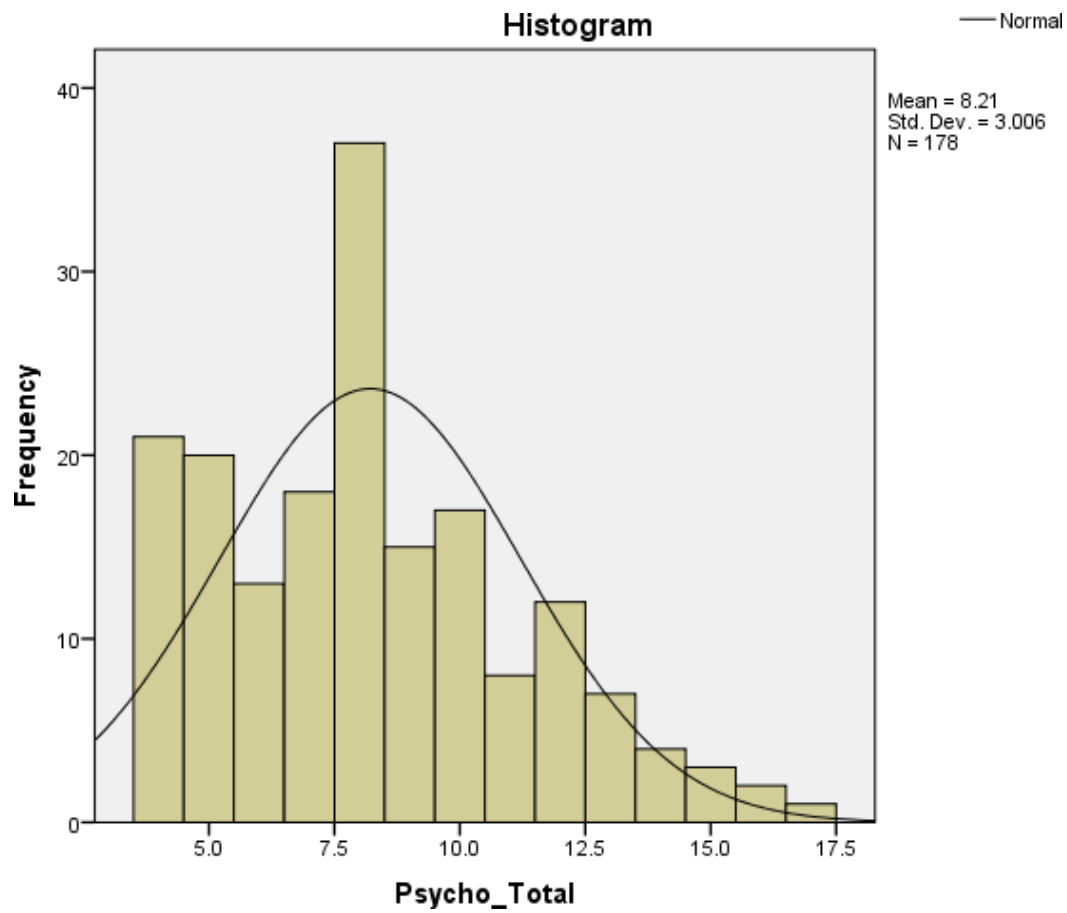
41	42	3.13466	.00362	.01771
42	43	1.25999	.00528	.00712
43	44	5.14555	.00749	.02907
44	45	3.50484	.00406	.01980
45	46	3.14266	.01227	.01776
46	47	4.85840	.00143	.02745
47	48	.31923	.00036	.00180
48	49	1.13307	.00061	.00640
49	50	.31092	.00000	.00176
50	51	3.83996	.00270	.02169
51	52	6.32618	.03286	.03574
52	53	.82723	.00161	.00467
53	54	9.09614	.00458	.05139
54	55	1.91355	.00010	.01081
55	56	10.42389	.03731	.05889
56	57	10.90347	.01918	.06160
57	58	1.82289	.00417	.01030
58	59	3.96284	.01491	.02239
59	60	2.06176	.00374	.01165
60	61	1.62531	.00151	.00918
61	62	.61682	.00020	.00348
62	63	2.95601	.00052	.01670
63	64	.02999	.00030	.00017
64	65	.98255	.00000	.00555
65	66	3.99219	.00815	.02255
66	67	3.69275	.00113	.02086
67	68	1.15651	.00003	.00653
68	69	4.15390	.00077	.02347
69	70	2.92898	.00099	.01655
70	71	14.34624	.02301	.08105
71	72	1.76558	.00032	.00998
72	73	7.97338	.02819	.04505
73	74	4.85678	.02366	.02744
74	75	1.71318	.00001	.00968
75	76	1.58560	.00007	.00896
76	77	3.56694	.00401	.02015
77	78	8.94649	.00621	.05055
78	79	1.67169	.00012	.00944
79	80	1.59738	.00006	.00902
80	81	5.98011	.02351	.03379
81	82	4.18331	.00275	.02363
82	83	2.75719	.00031	.01558
83	84	5.03605	.02382	.02845
84	85	1.84587	.00020	.01043
85	86	5.18096	.00950	.02927
86	87	4.06021	.00101	.02294
87	88	12.24354	.00046	.06917
88	89	7.83901	.00968	.04429
89	90	3.81897	.00010	.02158
90	91	1.70871	.00003	.00965
91	92	2.67019	.01263	.01509
92	93	1.75265	.00086	.00990
93	94	1.83190	.00611	.01035
94	95	5.12119	.02449	.02893
95	96	5.45313	.00005	.03081

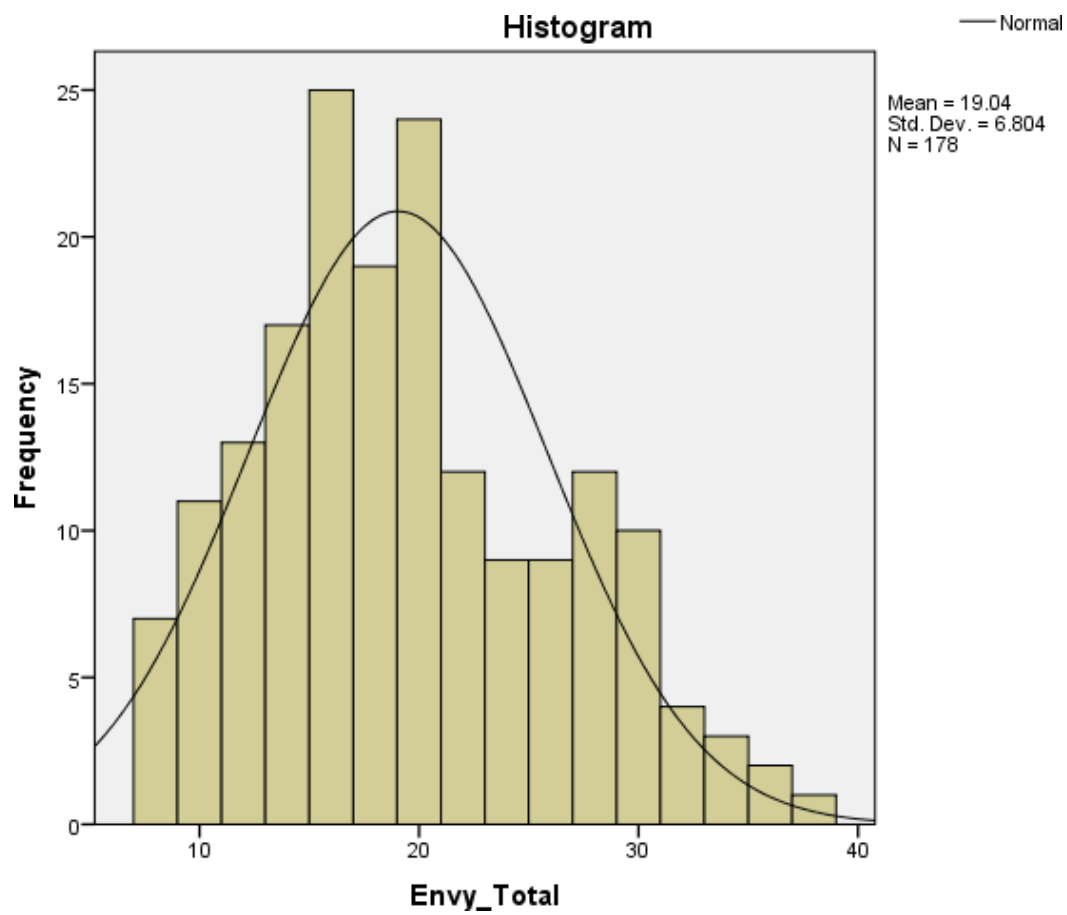
96	97	.03408	.00027	.00019
97	98	6.93537	.02634	.03918
98	99	5.12119	.00962	.02893
99	100	3.45204	.00001	.01950
100	101	4.14124	.00121	.02340
101	102	1.70774	.00007	.00965
102	103	3.52392	.00021	.01991
103	104	9.53230	.04107	.05385
104	105	2.54309	.00026	.01437
105	106	3.41758	.00679	.01931
106	107	3.61786	.00062	.02044
107	108	7.73261	.00142	.04369
108	109	4.31545	.01555	.02438
109	110	9.15539	.00003	.05173
110	111	10.53265	.00547	.05951
111	112	2.69214	.00008	.01521
112	113	1.09656	.00000	.00620
113	114	1.69055	.00601	.00955
114	115	2.96983	.00095	.01678
115	116	1.69881	.00073	.00960
116	117	1.65793	.00888	.00937
117	118	.86750	.00007	.00490
118	119	4.84754	.00078	.02739
119	120	1.47940	.00005	.00836
120	121	1.74133	.00009	.00984
121	122	5.11070	.00197	.02887
122	123	2.83029	.00006	.01599
123	124	8.78480	.04933	.04963
124	125	.53199	.00406	.00301
125	126	3.49224	.01654	.01973
126	127	2.43214	.00059	.01374
127	128	4.75706	.00987	.02688
128	129	4.62765	.01556	.02614
129	130	5.80211	.00297	.03278
130	131	1.22632	.00035	.00693
131	132	2.08595	.00348	.01179
132	133	4.23449	.02093	.02392
133	134	1.17853	.00008	.00666
134	135	3.84102	.02014	.02170
135	137	9.98356	.02538	.05640
136	138	2.14782	.00075	.01213
137	139	1.60962	.00001	.00909
138	140	4.34326	.00000	.02454
139	141	2.27064	.00022	.01283
140	142	3.05814	.00571	.01728
141	143	2.39109	.00100	.01351
142	144	8.00130	.00281	.04521
143	145	4.53271	.00224	.02561
144	146	1.26260	.00098	.00713
145	148	5.83122	.02519	.03294

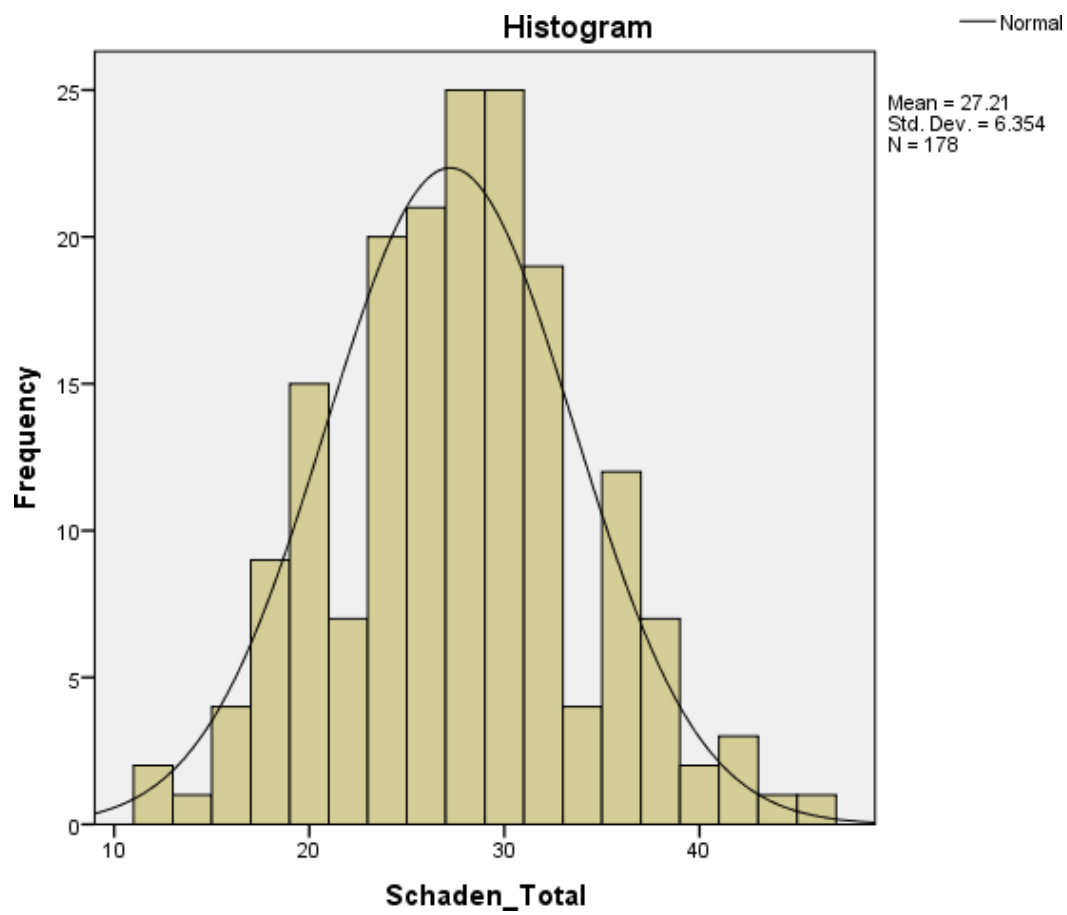
146	149	4.10030	.01877	.02317
147	150	4.50154	.01761	.02543
148	151	3.16140	.01550	.01786
149	152	4.11390	.02053	.02324
150	153	3.11569	.00364	.01760
151	154	1.19462	.00461	.00675
152	155	5.47015	.00036	.03090
153	156	3.52424	.00077	.01991
154	157	4.74061	.01730	.02678
155	158	3.05273	.00190	.01725
156	159	4.10319	.00009	.02318
157	160	4.10453	.00000	.02319
158	161	11.57892	.00451	.06542
159	162	6.08874	.00002	.03440
160	163	1.33073	.00201	.00752
161	164	4.24705	.00000	.02399
162	165	1.08513	.00004	.00613
163	166	8.11145	.00180	.04583
164	167	2.67838	.00131	.01513
165	168	2.26869	.00015	.01282
166	169	2.01259	.00013	.01137
167	170	1.59625	.00027	.00902
168	171	2.83558	.00072	.01602
169	172	7.15518	.01967	.04042
170	173	3.98658	.00677	.02252
171	174	2.88929	.00423	.01632
172	175	10.14869	.00038	.05734
173	176	2.45003	.00319	.01384
174	177	5.06662	.02418	.02862
175	178	3.83695	.01807	.02168
Total	N	175	175	175
Total	N	178	178	178

Appendix F**Histogram***Narcissism*

Machiavellianism

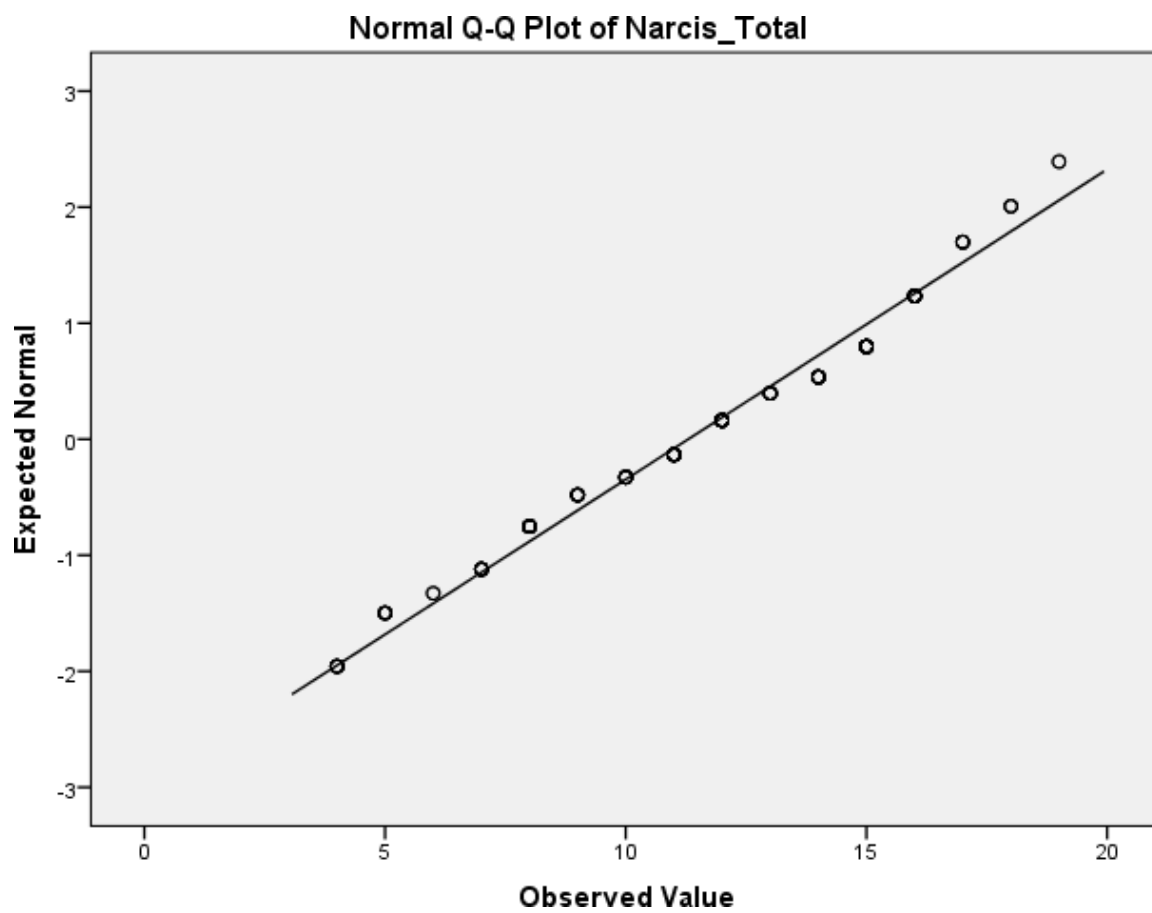
Psychopathy

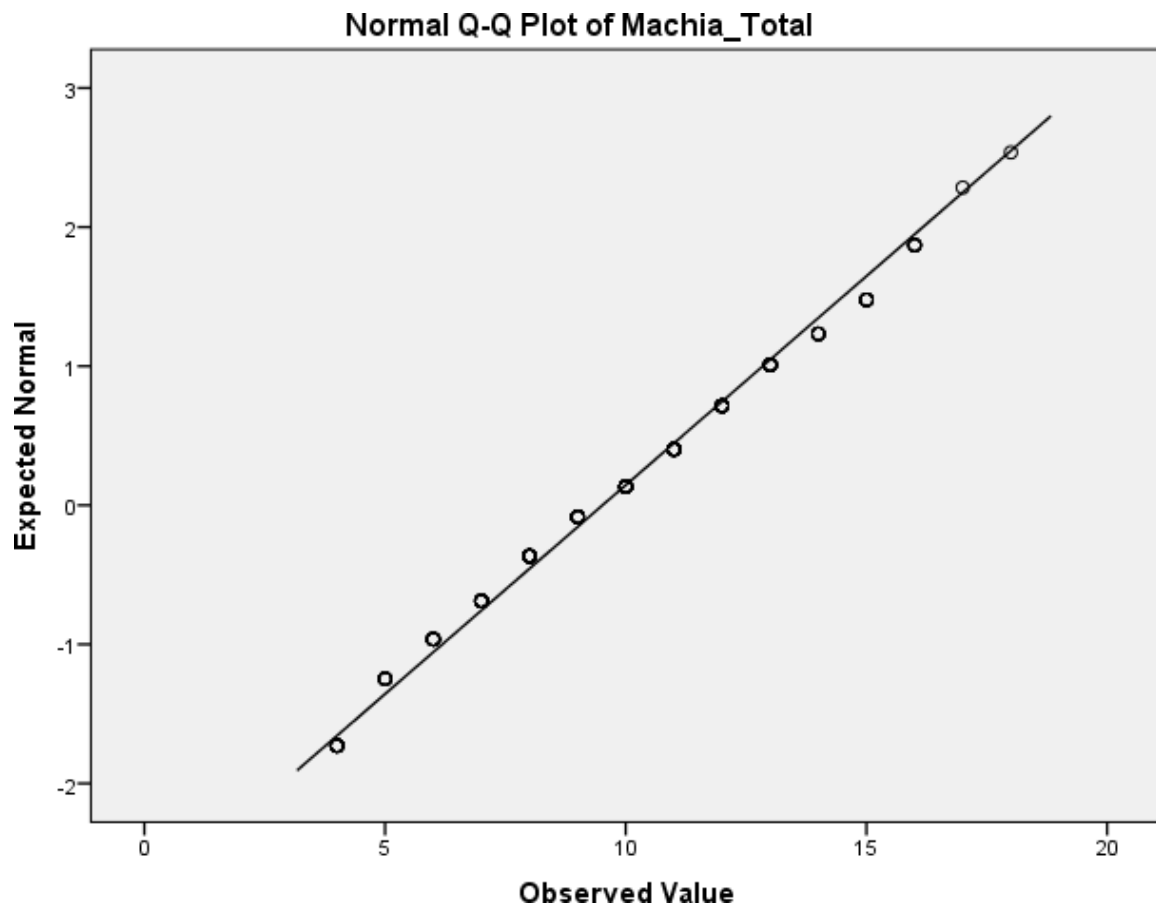
Envy

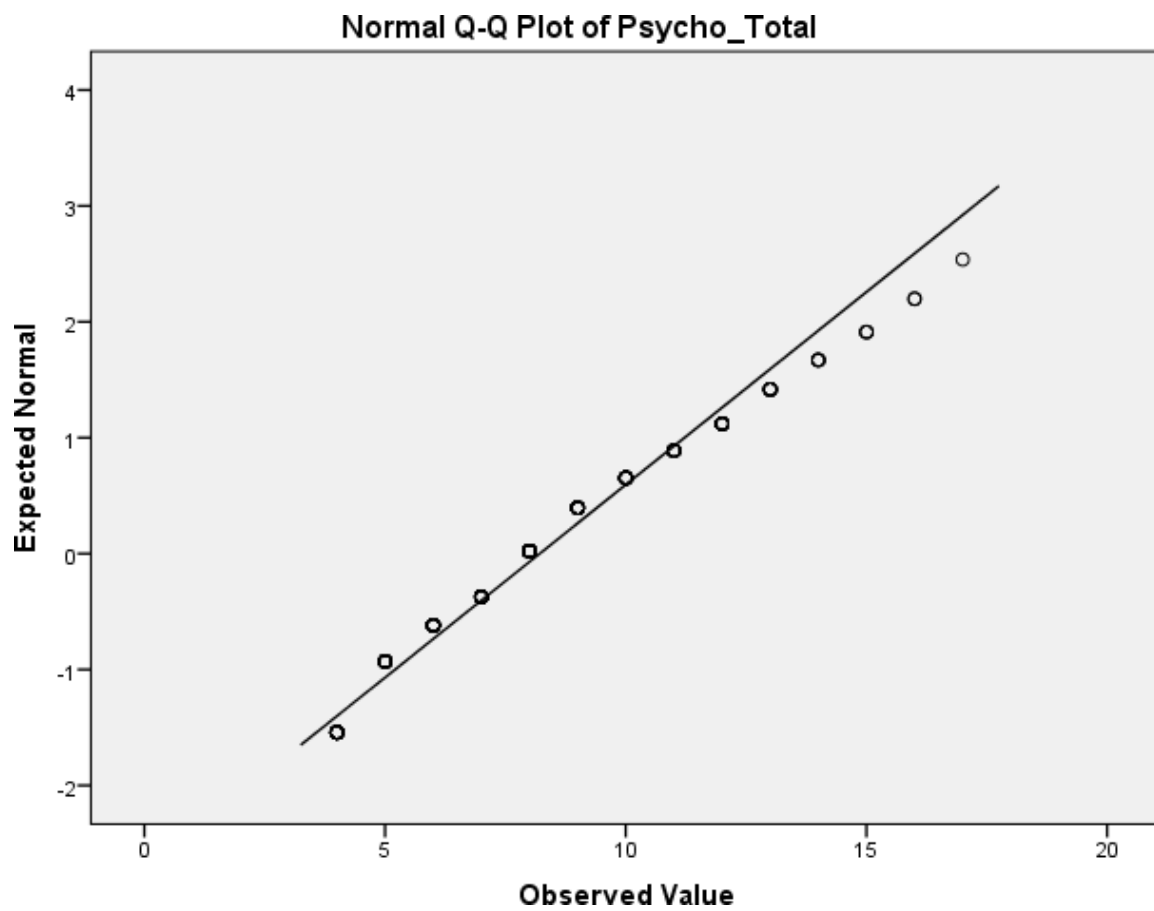
Schadenfreude

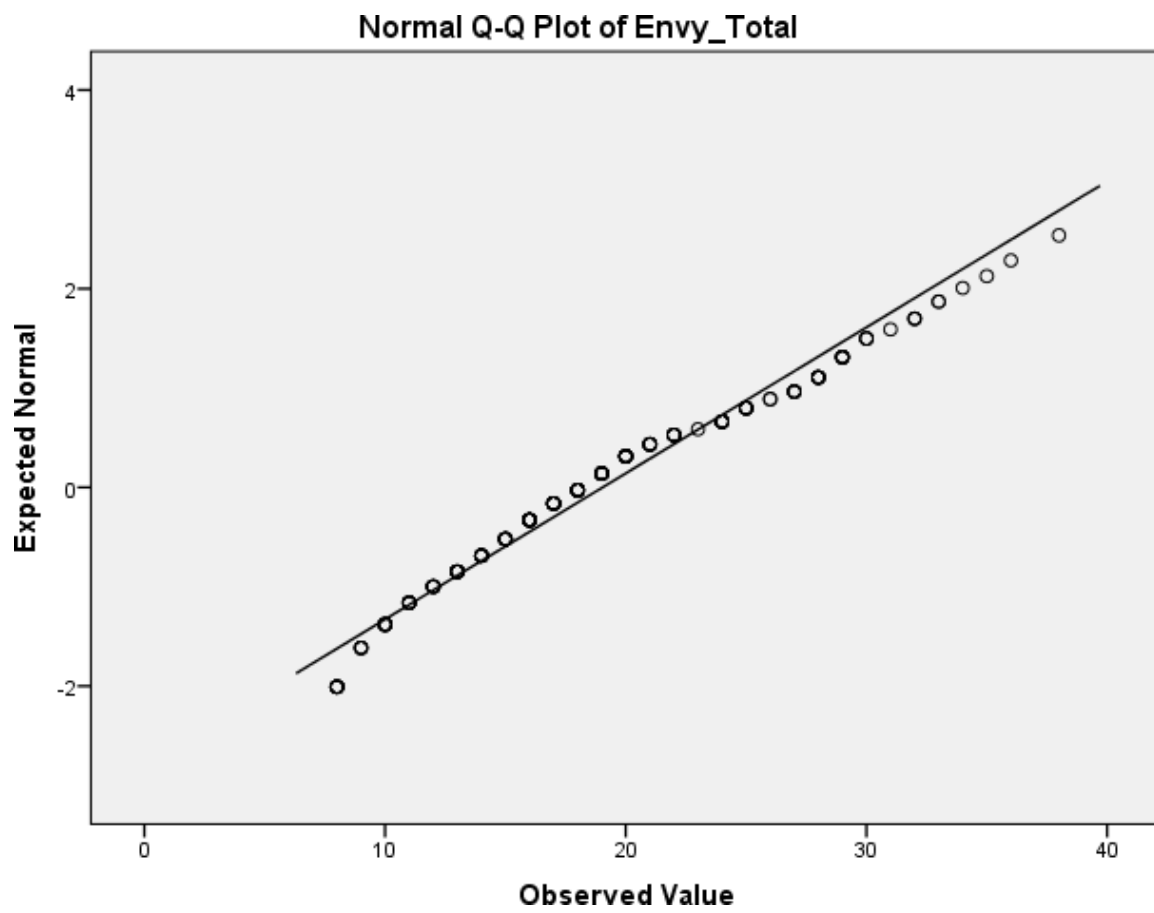
Appendix G

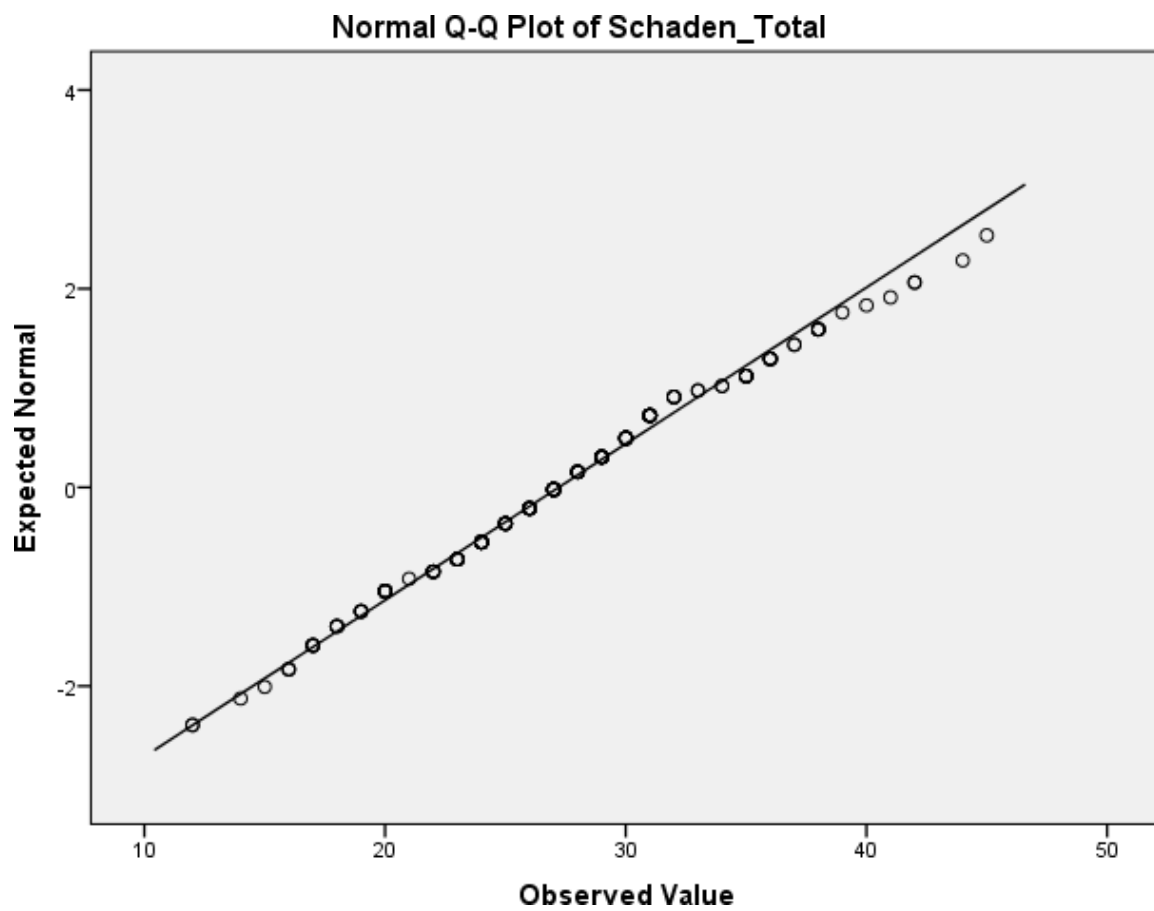
Q-Q Plot

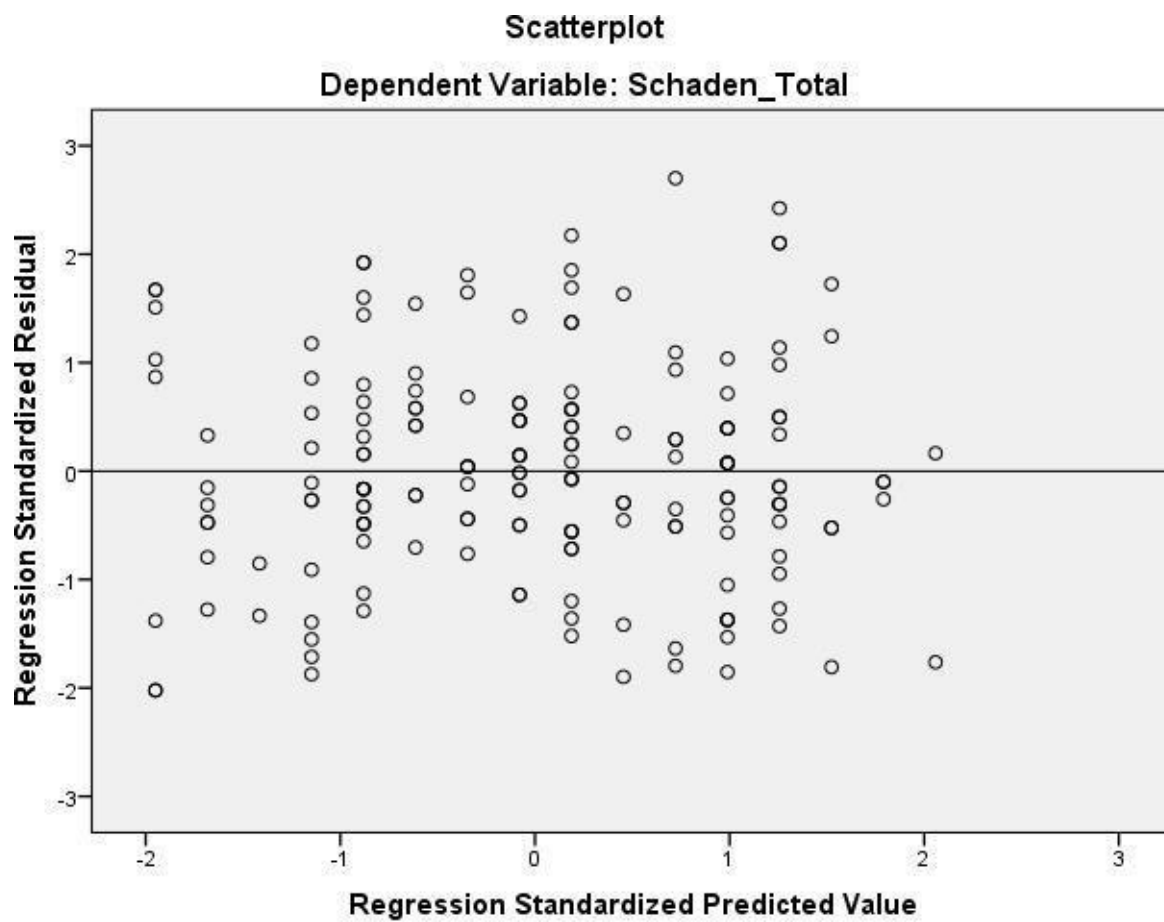
Narcissism

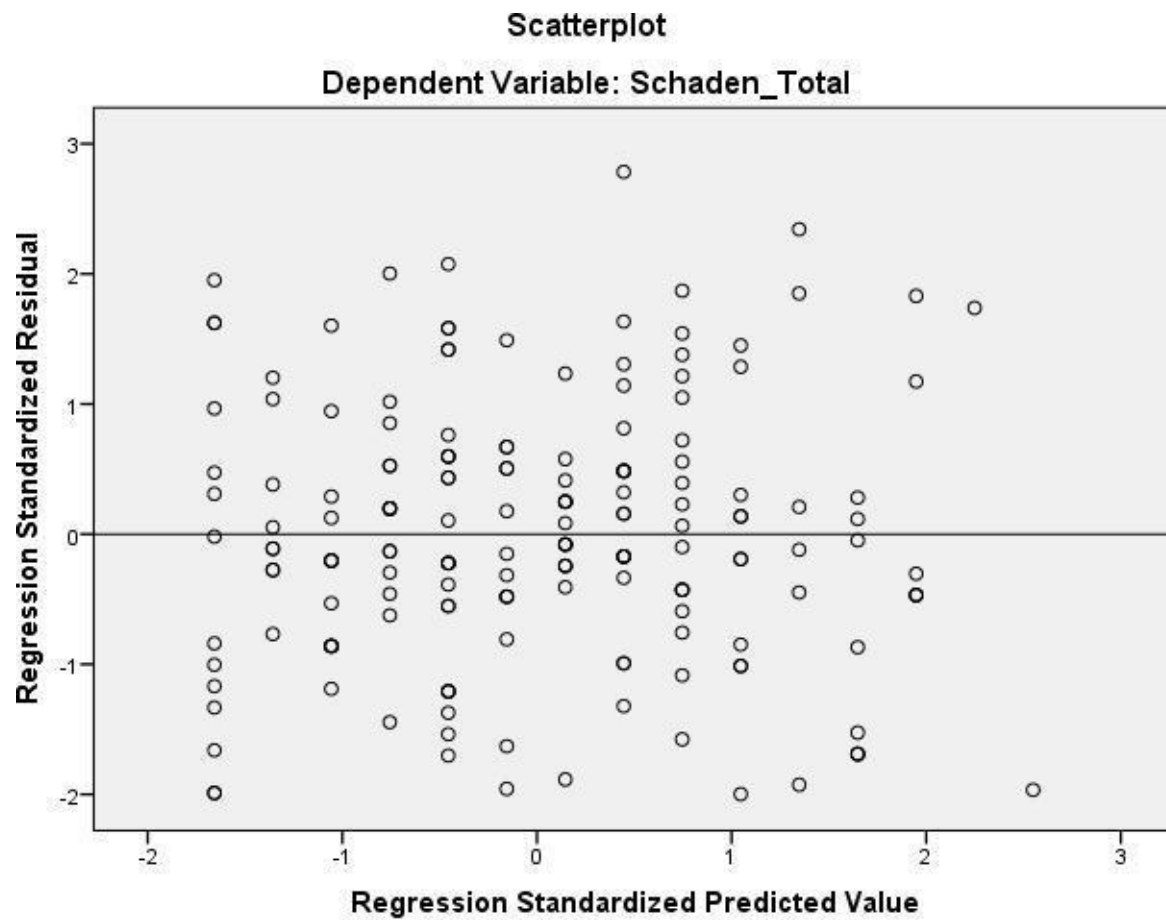
Machiavellianism

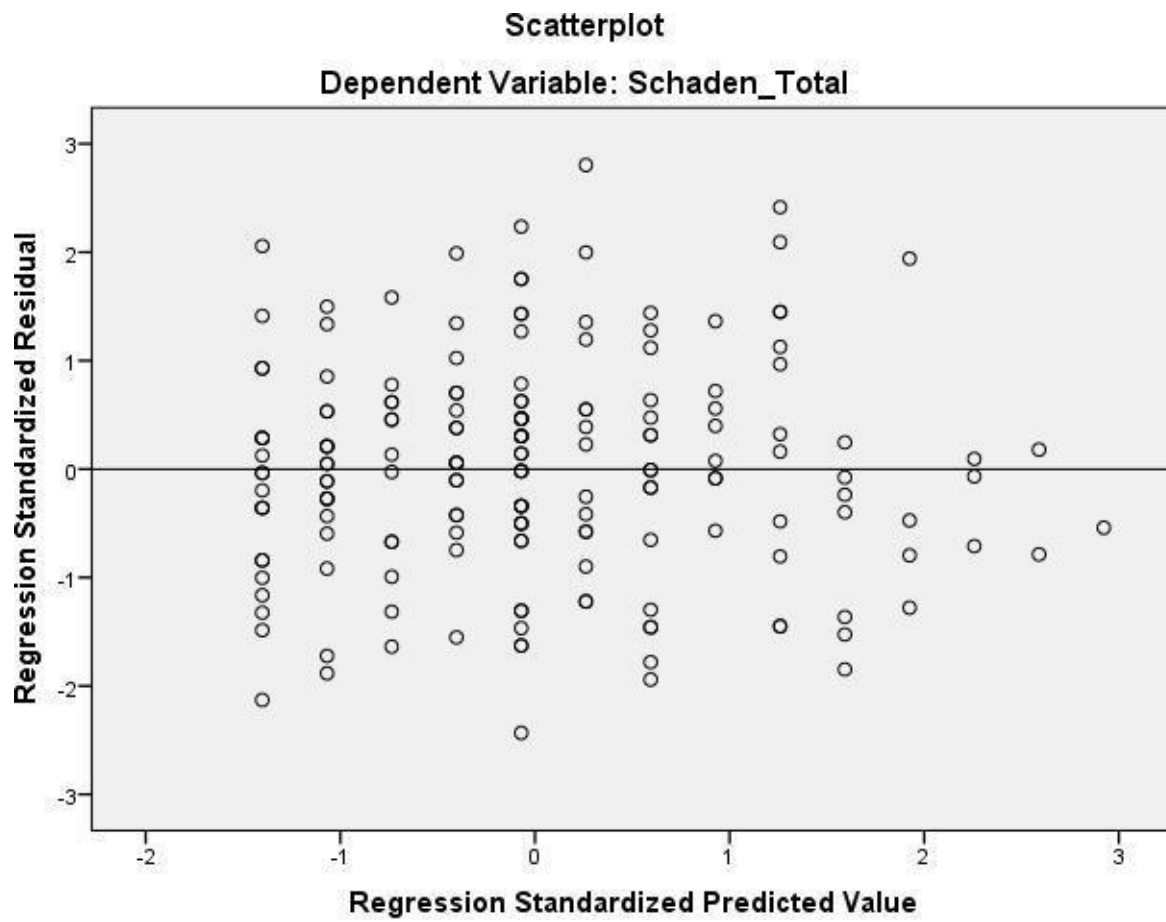
Psychopathy

Envy

Schadenfreude

Appendix H**Scatterplot for Linearity***Narcissism and Schadenfreude*

Machiavellianism and Schadenfreude

Psychopathy and Schadenfreude

Envy and Schadenfreude