PERCEIVED STRESS, LONELINESS, AND SELF-ESTEEM AS PREDICTOR OF AGGRESSIVE BEHAVIOUR AMONG YOUNG ADULTS IN MALAYSIA.

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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 “Perceived Stress, loneliness, and self-esteem as predictor of aggressive behaviour among young adults in Malaysia” prepared and submitted by “Fong Heng Liang, Toh Wei Siang, and Hoo Jun Kit” in partial fulfilment of the requirement for the Bachelor of Social Science (Hons) Psychology is hereby accepted.

Date: 21 MAY 2025

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Abstract

This study aimed to examine whether perceived stress, loneliness, and self-esteem predict aggressive behaviour among young adults in Malaysia. A cross-sectional quantitative design was applied, and data was collected using purposive and snowball sampling methods. A total of 129 Malaysian young adults had completed self-report questionnaires via an online survey generated through Qualtrics. Current study recruited Malaysian young adults aged 18 to 24 years. Inclusion criteria required participants to be Malaysian, regardless of employment status, gender, or ethnicity. The instruments used were the Perceived Stress Scale (PSS), UCLA Loneliness Scale Version 3, Rosenberg Self-Esteem Scale (RSES), and Buss-Perry Aggression Questionnaire (BPAQ). Using multiple linear regression analysis in IBM SPSS, the results indicated that perceived stress ($\beta = .218$, $p = .016$) and loneliness ($\beta = .318$, $p = .001$) significantly and positively predicted aggressive behaviour. However, self-esteem ($\beta = .072$, $p = .424$) was not a significant predictor and showed positive relationship toward aggressive behaviour. These findings support the General Aggression Model (GAM). The findings suggest aggression results from the interaction of personal and situational factors. Current study emphasizes the need to explore moderating variables like emotional regulation and social support. Practically, it calls for targeted interventions, mental health programs, and policy support to reduce aggression and promote youth well-being. Future research should consider longitudinal or mixed-method approaches, examine additional variables, and explore cross-cultural comparisons to gain deeper insights into the predictors of aggressive behaviour.

Keywords: Aggressive behaviour, perceived stress, loneliness, self-esteem, young adult, Malaysia

Subject area: H1-99, Social sciences (General)

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Abbreviations	
DOSM	Department of Statistics Malaysia
GAM	General Aggression Model
PSS	Perceived Stress Scale
RSES	Rosenberg Self-Esteem Scale
BPAQ	Buss-Perry Aggression Questionnaire
SPSS	Statistical Package for the Social Sciences
MLR	Multiple Linear Regression
VIF	Variance Inflation Factor
Q-Q Plot	Quantile-Quantile Plot
K-S Test	Kolmogorov-Smirnov (K-S) Test

CHAPTER 1: INTRODUCTION

Background of study

Aggressive behaviour is a type of behaviour that consists of negative, harmful and open social interaction with others. It includes most of the negative emotions such as anger, aggression, and the impulse on harming other individuals or objects, which will cause others to feel uncomfortable (Yilmaz et al., 2022). Previous study also stated that individuals who are currently experiencing stress, facing some challenges or experiencing negative emotions will fail to control and prevent their aggressive or impulsive behaviour because they are using the wrong strategies to express or minimize their negative emotion which will lead to aggressive behaviour and leading to more negative emotion like anger or aggression (Darmadi & Badayai, 2021).

A study by Fatma (2021) found that the higher levels of perceived stress are significantly associated with aggressive behaviour in young adults. Perceived stress can be defined as an overwhelming feeling that causes one to feel anxious and nervous, or a physical body reaction toward the sudden change of the environment. It is a common occurrence in daily life and young adults find it easier to expose themselves to stressful environments. The sources of stress from young adults can come from academic or workload, financial problems, relationship problems, and health-related problems (Martin Ebenezer et al., 2020). It also can be defined as an individual failing to manage their psychological and cognitive distress in everyday life, it is a psychological response toward external factors. A high level of perceived stress of an individual had shown to be struggling in experience stress for a certain time (Huh et al., 2021). According to Fatma (2021), stress is common in various aspects of life, such as family, business, and social activities. It manifests as a combination of psychological, physiological, and behavioural

responses to challenging or threatening events. Nonetheless, when young adults fail to manage their stress, it will lead to aggression, causing aggressive behaviour to happen.

Nevertheless, loneliness has also shown a positive relationship with aggressive behaviour by previous studies, especially those young adults who had experienced social exclusion by society or peers (Brinker et al., 2022; Sun et al., 2020). Loneliness can be described as a feeling of being cut off from the outside world and a feeling of not belonging. Studies have shown that young adults and college students are more likely to feel lonely because they have to establish new social networks while attending school and have to move away from home (Hysing et al., 2020). A study by Yilmaz et al. (2022) has stated that loneliness can also be explained as an individual's relationships quantity and quality with others or society become worse. Additionally, Sun et al. (2020) also stated that individuals who are experiencing loneliness are more likely to behave more aggressively and easier to have negative thoughts about self and others. Therefore, an individual who is experiencing the feeling of loneliness may result in a higher level of aggression and a higher chance of having aggressive behaviour.

A study by Orth and Robins, (2022) has stated that young adults with low self-esteem are always associated with aggressive behaviour such as interpersonal deviance and organizational deviance. Self-esteem can be defined as a person's total subjective assessment of their own value. It includes self-perceptions like self-assurance, self-acceptance, and self-respect. Self-esteem can influence how individuals think, feel, and behave, impacting their own mental health and interpersonal relationships. Previous study also found that self-esteem acts as a protective factor for individuals as it can help in decreasing individuals’ risk behaviours such as aggressive behaviour, substance use, self-harm and bullying (Martínez-Casanova et al., 2024).

Problem Statement

The problem of aggressive behaviour has increased significantly in recent years, especially among young adults in Malaysia. According to Department of Statistics Malaysia (DOSM) (2024), the crime index in Malaysia had risen 3.2% in year 2023 which are from 50,813 cases in 2022 rises to 52,444 cases in 2023. The crime action included assault crime (rape, murder, robbery and cause injury to other) and property crime (house break-in and theft, vehicles theft, and other theft actions).

In addition, cyberbullying is generally understood to mean as an aggressive and intentional action that is done by an individual or a group of people towards a victim who is unable to defend themselves over a period of time in a virtual world (Giumetti & Kowalski, 2022). There are consists of several type of cyberbullying included sending threats to others; take part in verbal abuse to other and cause the victim being distress; and being an active bystander on cyberbullying action (Giumetti & Kowalski, 2022). Study found that the victims from cyberbullying usually are suffer or experienced from the act of hurtful comments from others, and the most common environment that take place is social media like Facebook and Instagram (Samsudin et al., 2023). The victims who suffer from physical or cyber bullying will have a higher chance to show negative psychological symptoms included having psychological distress, self-harm, having suicidal thoughts, or taking suicidal actions (Yang et al., 2021).

Moreover, Kuzhiyengal and Kotian (2023) has stated that young adults that go through aggressive behaviour may suffer some serious consequences and one of it is that they may face difficulty on academic or occupational problem during their lifetime, as these aggressive acts may cause them to have decrease in their academic performances, getting disciplinary action

from school and even disengagement from their school. While in the working environment, they may face some problems like decreased productivity, job dissatisfaction and even getting fired by organizations.

Additionally, there are limited studies discussing the relationship between perceived stress, loneliness, and self-esteem with aggressive behaviour in Malaysia. There is limited generalization on the prediction between self-esteem and loneliness with aggressive behaviour among young adults in Malaysia on previous study (Jamaludin & Nor, 2021). Most of the studies were carried outside of Malaysia, like Egypt and Pakistan (Sabra & Hassan, 2020; Khaliq et al., 2020). The previous studies were more focused on other predictors like the gender differences as the predictor and did not fully explore the predictor of aggressive behaviour in Malaysia (Jamaludin & Nor, 2021). This research is to design to have a comprehensive understanding of perceived stress, loneliness, self-esteem and aggressive behaviour among young adults in Malaysia context. Moreover, it also aims to fill up the literature gaps, and quantitative analysis of questionnaires will be distributed to young adults in Malaysia.

Research objectives:

1: To examine whether perceived stress positively predicts aggressive behaviour among young adults in Malaysia.

2: To investigate whether loneliness positively predicts aggressive behaviour among young adults in Malaysia.

3: To investigate whether self-esteem negatively predicts aggressive behaviour among young adults in Malaysia.

Research Question:

RQ_1: Does perceived stress predict aggressive behaviour positively among young adults in Malaysia?

RQ_2: Does loneliness predict aggressive behaviour positively among young adults in Malaysia?

RQ_3: Does self-esteem predict aggressive behaviour negatively among young adults in Malaysia?

Research Hypothesis:

H_1: Perceived stress predicts positively aggressive behaviour among young adults in Malaysia.

H_2: Loneliness predicts positively aggressive behaviour among young adults in Malaysia.

H_3: Self-esteem predicts negatively aggressive behaviour among young adults in Malaysia.

Significant of study:

This study may contribute to the body of knowledge by deepening the understanding of how perceived stress, loneliness, and self-esteem influence aggressive behaviour among young adults in Malaysia. By examining the interplay of these variables, it provides direct evidence for psychological theories related to aggression and its social determinants. The findings could inform future research, offering a clear framework for studying aggression within specific cultural and socioeconomic contexts. It will also serve as a valuable resource for academics and mental health practitioners looking to design interventions tailored to the Malaysian demographic.

Nevertheless, this study underscores the importance of recognizing and managing stress and emotional well-being. It provides insights into how stress, loneliness and self-esteem issues can lead into aggression, equipping young individuals with knowledge to seek appropriate coping mechanisms. The findings could empower them to better understand their emotional triggers and adopt healthier behavioural strategies, promoting personal growth and harmonious interpersonal relationships.

Lastly, this study offers valuable implications for policy making, workplace environments, and community programs like public health campaigns, educational programs that aim to reduce aggressive behaviour. Organizations can use the findings to create stress-reduction initiatives, foster a sense of belonging, and build programs to enhance self-esteem among employees, particularly young professionals. Therefore, it will help in contributing to build a safer society in Malaysia.

Conceptual Definition

Aggressive Behaviour

Aggressive behaviour is conceptually defined as intentional acts aimed at causing physical, verbal, or emotional harm to others, including behaviours ranging from verbal abuse and social manipulation to direct physical aggression (Badruddin et al., 2024).

Perceived Stress

Perceived stress is conceptually defined as an individual's subjective evaluation of life challenges, influenced by their resources and coping abilities. It encompasses internal and external factors that impact mental health, resilience, and emotional responses, with higher levels often linked to negative outcomes (Liu et al., 2021). A high level of perceived stress of an individual will always cause some negative mental health outcomes, as high levels of perceived stress will affect an individual's resilience and emotional response against challenges (Liu et al., 2021).

Loneliness

Loneliness is conceptually defined as the subjective experience of social isolation or the lack of companionship, regardless of the size or frequency of one's social network (Loades et al., 2020).

Self-esteem

Conceptually, self-esteem is defined as a crucial component of self-concept, which representing a person's overall perception of their own value and worth. It includes self-efficacy,

self-acceptance, and self-confidence, shaped by life experiences and crucial for mental well-being and resilience (Albarracin et al., 2024). All of these beliefs were influenced by an individual's life experience, and they are important elements that affect their resilience and mental well-being, including their emotional response and social interactions (Albarracin et al., 2024).

Young Adult

Lastly, young adults are conceptually defined as individuals in the developmental stage between adolescence and full adulthood, typically aged 18–24 years (Stone et al., 2012).

Operational Definition

Aggressive Behaviour

For this study, aggressive behaviour is measured operationally using the Buss-Perry Aggression Questionnaire (Buss & Perry, 1992), which evaluates a few dimensions of aggression such as anger, physical and verbal aggression and hostility. The higher the score of the questionnaire indicates the higher level of aggressive behaviour that will be for the participants, the highest score for this scale is 145 and the lowest score is 29.

Perceived Stress

Perceived stress is assessed using the Perceived Stress Scale (Cohen et al., 1983), which reflects the extent to which individual believe that their lives is stressful. The higher the total score that the participant indicates, the higher level of perceived stress the participant has. The highest score for this scale is range from 27-40, while the lowest score is range from 0-13.

Loneliness

Operationally, loneliness is measured using the UCLA Loneliness Scale (Version 3) (Russell, 1996). Same as the previous questionnaire, the higher the total score from the questionnaire, the higher the level of loneliness the individual experiences. The highest score for this scale is 80 and lowest is 20.

Self-esteem

Self-esteem is evaluated using the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The greater the self-esteem scale score, the more self-esteem the person possesses and the highest score for this scale is 40 and lowest is10.

Young Adult

Lastly, the inclusion criteria for young adults which are our targeted participants in this study are Malaysian, either working or studying, with multicultural backgrounds such as Malay, Indian, Chinese, Kadazandusun, Iban and others. The age range are from 18-24.

CHAPTER 2: LITERATURE REVIEW

Aggressive Behaviour

Aggression is an action or inclination that is designed to injure another person, both physically, verbally, and psychologically (Tian et al., 2019). In schools, aggressive behaviours often emerge from various sources, such as peer group dynamics or individual attempts to assert dominance. Some pupils may use hostility as a way to command respect or establish superiority over their peers (Osiesi et al., 2023). These behaviours can disrupt the learning environment, strain teacher-student relationships, and create a culture of fear among classmates. Hence, extreme cases of aggression will result in student removal, police intervention, and legal action (McMahon et al., 2020).

Perceived stress

Perceived stress is determined by individual's assessment of a stressor as harmful or friendly, as well as one's own coping abilities, for example, perceived effectiveness or resources for responding to the threat (Liu et al., 2020). Mandal and Roy (2024) concluded there was a distinction between positive and negative stress. They stated that positive stress is regarded as being within our coping capacities, feeling exciting, and improving performance, whereas negative stress is perceived as being outside of our coping abilities, feeling unpleasant, decreasing performance, and potentially leading to mental and physical disorders (Mandal & Roy, 2024). According to AlAteeq et al. (2020), university students had much greater levels of stress than students from intermediate and secondary schools, which means that the overall well-being of the university students will show a lower degree due to the higher levels of stress.

Supporting this, Bukhari et al. (2021) discovered a strong negative correlation between perceived stress and life satisfaction, indicating that as stress levels rise, life satisfaction declines.

Loneliness

Loneliness, as a subjective experience, can represent variances in people's cognitive patterns, behaviour, and environmental reactions (Pourriyahi et al., 2021). According to Pourriyahi et al. (2021), lonely persons have a harder time subjectively adjusting to a stressful circumstance, so tough settings may affect the lonely individual more adversely. The analyses found that loneliness has medium to substantial effects on all health outcomes, with the greatest effects on mental health and general well-being (Park et al., 2020). Loneliness will significantly be found especially during the Covid-19 pandemic. Loneliness among young adults during the pandemic was found to be substantially associated with increased social media use and decreased social support seeking (Lisitsa et al., 2020).

Self-esteem

Self-esteem is the most researched variable in the behavioural and social sciences, with numbers of studies conducted yearly by psychologists and researchers from other disciplines. (Orth & Robins, 2022). According to Orth and Robins (2022), high self-esteem plays a crucial role in helping individuals adapt and thrive across various aspects of life. It is associated with more fulfilling relationships, better academic and professional performance, improved mental and physical health, and a reduced likelihood of engaging in antisocial behaviour. Additionally, physical activity and exercise have been shown to improve satisfaction and standard of life by positively altering both physical self-concept and self-esteem (Kim & Ahn, 2021).

Relationship between Perceived Stress and Aggressive Behaviour

Aggressive behaviour has been demonstrated to be significantly influenced by perceived stress. Environmental stress might trigger aggressive thoughts (Budi & Alfian, 2020). Despite environmental stress, social stress has also been found to have a strong impact on behaviour, with some displaying aggression, victory, or dominance, while others expressing defensiveness, defeat, or subservient behaviours (Atrooz & Salim 2021).

Beyond from childhood influences on the neural development of emotional control, current stressors in the lives of young adults may exacerbate reactions to conflicts that result in growing anger and violence. For example, if individuals experience more life stressors, their likelihood of violence against peers increases (Mumford et al., 2018).

Research suggests that individuals struggling with sleep disturbances and emotional regulation are especially vulnerable to the adverse effects of stress, which can manifest as heightened levels of anger, hostility, and verbal aggression. Improving emotional control may therefore serve as a key intervention to help reduce such aggressive responses (Demichelis et al., 2022). In particular, poor sleep can also prolong the activation of the sympathetic nervous system, potentially affecting neuroanatomical areas responsible for managing stress, which may exacerbate aggressive tendencies (Demichelis et al., 2022).

Additionally, stress within specific contexts, such as parenting, has been linked to behavioural issues in children, with higher parenting stress often corresponding to more significant behavioural challenges in children (Mak et al., 2020). A recent study discovered that higher levels of perceived stress are connected with more burnout symptoms and aggression (Spaan et al., 2024). Stress-induced aggression is also evident in educational settings, where

increased stress levels in students are associated with higher levels of hostility and aggressive behaviour (Mandal & Roy, 2024). This correlation has been similarly observed in adolescents, where heightened stress levels were strongly linked to more frequent aggressive behaviours (Fatma, 2021). Besides, Increased stress levels could be a factor in intensifying the link between internet gaming disorder and aggression (Li et al., 2023). These results demonstrate a strong link between aggression and perceived stress, indicating that reducing stress may be crucial to reducing violent conduct.

Relationship between Loneliness and Aggressive Behaviour

Research indicates that loneliness is closely linked to aggressive behaviour. Aggression and alienation were also associated to loneliness (Freilich et al., 2022). People who are lonely think negatively about other people and characterize themselves negatively, which can contribute to social withdrawal and exacerbate feelings of isolation (Yilmaz et al., 2022). According to Sun et al. (2020), shyness can lead to a negative self-perception of individuals and interfere with their ability to express their emotions appropriately. This can lead to unwarranted aggression as a result of the repression of emotions. In addition to increasing the likelihood of social isolation, aggressive behaviour can destroy the growth of healthy interpersonal relationships and raise feelings of loneliness (Sun et al., 2020).

Moreover, lonely individuals may be more prone to reacting aggressively toward those around them, including those who have not intentionally excluded them, potentially because they misinterpret social cues through a lens of perceived exclusion (Brinker et al., 2022). According to Yavuzer et al. (2018), Lonely people also experience feelings of isolation, defencelessness, inadequacy in relationships, spiritual emptiness, pessimism, and lack of appreciation. Some

lonely persons express anger towards others because they perceive that these people are hesitant to help them overcome their loneliness.

During Covid-19 pandemic, social isolation and loneliness will occur due to the MCO, when someone is unable to attain a desired aim, such as travel outside of home while spending time socialising at a favoured place with loved ones, the resulting negative emotional state predisposes individuals to violent inclinations, which can manifest in a variety of ways, including but not limited to physical and verbal aggression (Killgore et al., 2021). Given the blockade strategy, the pandemic had limited people's daily outings, and the public's Internet use time had increased, resulting in some mental health issues. These negative feelings can lead to harmful behaviours, including aggressive behaviour, which has a negative impact on public life (Zhang et al., 2022).

The use of technology, such as computers and smartphones, can also foster a solitary environment, increasing the likelihood of online aggression, including cyberbullying (Varela et al., 2022). According to T'ng et al. (2020), some lonely individuals may exhibit both internalized aggressions, like anger and resentment, and externalized aggression, such as verbal or physical confrontations, further isolating themselves by rejecting potential social connections. Individuals that are aggressive may have poor social skills, increasing their chances of social rejection and isolation, and so contributing to feelings of loneliness (Di Stasio et al., 2020). This creates a self-perpetuating cycle, where loneliness fuels aggression, leading to further social isolation and escalating feelings of loneliness and aggression over time (T'ng et al., 2020).

Relationship between Self-esteem and Aggressive Behaviour

The relationship between self-esteem and aggressive behaviour has been extensively researched in the literature. Self-esteem, a significant personality characteristic that influences our mood, cognition, motivation, and behaviour, has been proven to have a negative correlation with aggression (Yu et al., 2022). Individuals with low self-esteem may lack confidence in their capacity to manage emotions, particularly in controlling impulsive impulses, making this mechanism more troublesome and prone to aggressive reactions (Stefanile et al., 2017). Research suggests that aggression tends to decrease with high self-esteem and increase with low self-esteem (Muarifah et al., 2022).

There is a study indicated that individuals who have strong self-esteem and a desire to hurt and shame others are more likely to engage in trolling (March & Steele, 2020). However, a study demonstrated a contrary viewpoint: adolescents classified in the self-derogation profile appeared to be more prone to participate in both bullying/cyberbullying and victimization/cybervictimization behaviours compared to those in other profiles (Palermiti et al., 2022). According to Pascual-Sanchez et al., (2021), lower levels of self-esteem are to be expected in individuals who engage in bullying violence, and they may even increase in those who engage in cyberbullying as compared to traditional bullying.

Adolescent offenders with histories of childhood abuse are more likely to exhibit this pattern since they frequently have low self-esteem, which may increase their propensity for aggressive behaviour (Xie & Su, 2022). According to Fritz et al. (2020), self-aggressiveness, which is defined by self-destructive ideas or behaviours, has demonstrated a significantly negative correlation with self-esteem, making it a possible predictor of suicidality as well.

Furthermore, the statistics imply that boosting the self-esteem of those who have low self-esteem may result in a reduction in their aggressive conduct (Amad et al., 2020). Additionally, aggressive adolescents often display emotional rudeness, rage, and defensive behaviours in social interactions, with characteristics like egocentrism, anxiety, and extreme self-esteem levels, which can hinder their ability to navigate challenging situations constructively (Tolibdjanovna, 2024). With ramifications for therapies meant to lessen aggressiveness by boosting self-esteem, these findings highlight the intricate relationship between aggression and self-esteem.

Theoretical Framework

Craig Anderson and Brad Bushman (2002) developed the General aggressiveness Model (GAM), which is a well-known theoretical framework for explaining aggressiveness. This model posits that aggressive behaviour arises from a complex interplay between individual characteristics and situational factors (Bushman & Anderson 2020). It highlights the role of various factors, such as personality traits, emotional states, and environmental influences, in shaping aggressive responses. GAM is particularly valuable in research examining how multiple psychological factors contribute to aggression, making it a suitable framework for understanding the dynamics between perceived stress, loneliness, self-esteem, and aggressive behaviour in young adults.

GAM is highly applicable to the research variables, as it considers both individual and situational inputs in explaining aggressive behaviour. The decision to respond aggressively in a social contact is determined by the person and situational characteristics, as well as the individual's cognition, affect, and physiological response at the moment of the encounter

(Simmons et al., 2020), which means individual characteristics, such as self-esteem, interact with situational factors like perceived stress and loneliness to influence aggression.

The General Aggression Model also provides a mechanistic explanation for how these factors interact to produce aggressive behaviour. In theory, someone who has aggressive thoughts, feels furious within, or is stressed out is more likely to respond aggressively than an individual who does not have violent thoughts, feels angry, or is stressed (Bushman & Anderson 2020). Furthermore, as the GAM implies, if an online contact is perceived as stressful by the user, or if the user believes that he or she lacks sufficient resources (social or otherwise) to deal with it, the user may respond with cyberbullying (Kowalski et al., 2014). Moreover, the GAM posits that inflated self-esteem, a prominent feature of narcissistic personality disorder, is related with anger and violence when this self-image is threatened (Anderson and Bushman, 2002).

Conceptual Framework

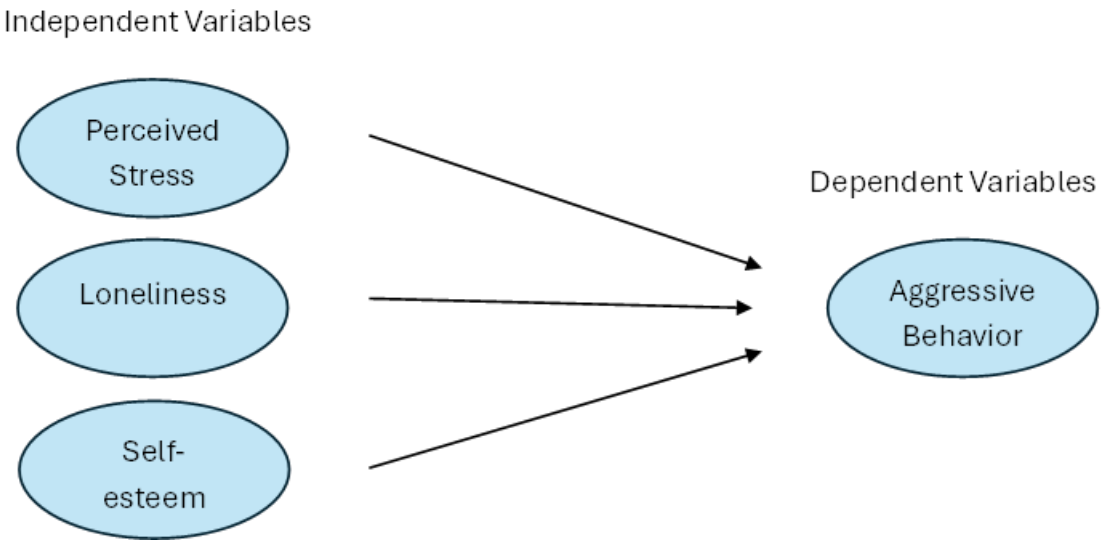


Figure 2.1 Conceptual framework of the association between Perceived Stress, Loneliness, Self-esteem, and Aggressive Behavior.

The Perceived Stress, Loneliness, and Self-esteem serve as the predictors of Aggressive Behaviour among young adults in Malaysia. In this study, Perceived Stress. Loneliness, and Self-esteem will serve as the independent variables while the Aggressive Behaviour serves as a dependent variable.

Chapter 3: METHODOLOGY

Research Design

It was a quantitative and descriptive research, and this research mainly explored that perceived stress, loneliness and self-esteem were the predictors of aggressive behaviour among young adults in Malaysia. According to Ghanad (2023), descriptive research was the most effective method for identifying traits, frequency, trends, and groupings. A well-developed study plan was necessary to produce a reliable and valid outcome.

Basically, the goal of a cross-sectional research was to capture a "slice" or "snapshot" of a population and characterize several attributes at a single point in time (Singh, 2024). It was comparatively easy, affordable to carry out and the most effective method for figuring out prevalence and might be used to investigate the relationships between various exposures and results (Wang & Cheng, 2020). Therefore, this research focused on a cross-sectional study design that was used to collect individual data across ages, genders, and races to investigate whether perceived stress, loneliness and self-esteem could be predictors of aggressive behaviour among young adults in Malaysia.

Research Procedures

In this study researchers created the survey by using Qualtrics software and distributed it through online form in several platform, such as WhatsApp, Facebook, Instagram and Messenger. When the participants were given the Qualtrics link survey, they might be given the appropriate informed consent, which included the target participants, the study's goal, the estimated time needed to complete the survey, and confidentiality. The email addresses of researchers were provided to help participation and handle any questions. The time of data

collection was 90 days and IBM SPSS Statistics 23 was the software that used to analyse the collected data.

Sampling Method

The sampling method of this study was using purposive sampling which was a non-probability sampling method technique. Purposive sampling, often referred to as judgemental or expert sampling, selects participants based on the researcher's assessment of who would be beneficial for gathering the necessary data (Andrade, 2020). Therefore, purposive sampling could help researchers to study the relationship between independent variables and dependent variables in the specific population. Meanwhile, according to Campbell et al. (2020), purposive sampling might be characterized by the four qualities of credibility, transferability, dependability, and verifiability which enhanced research rigor. Therefore, researchers focused on delivering surveys to participants from a specific population in Malaysia by filtering their age, gender, races and employment status to fit the study's research objectives.

In addition, snowball sampling method is also applied in current study. Snowball sampling is a non-probability technique where initial participants are identified by the researcher, and these participants help in recruiting additional individuals to take part in the study (Leighton et al., 2021). The reason we use the snowball sampling method is that it is easier to collect the sample data from participants in a short period.

Sample size

The researchers had found the prediction of predictors and outcome, which were perceived stress, loneliness and self-esteem predicting aggressive behaviour from the prior studies. According to the formula to calculate each effect size of three predictors with aggressive behaviour and divided the total number of predictors showing a final effect size with 0.14 (Appendix 1). Furthermore, inserting the final effect size 0.14 at .05 level of significance by using G*Power 3.1.9.4 version of software to define the sample size for this study. Finally, G*Power had suggested a total sample size as 127 and the actual power was .95 (Appendix 2). Therefore, by including the criteria of this study, there were 127 young adults in Malaysia who would be our target participants.

Inclusion Criteria and Exclusion Criteria

The study included individuals aged between 18 and 24 years, encompassing a demographic representative of young adults. Participants must be Malaysian citizens, irrespective of their employment status, ensuring inclusive of both employed and unemployed individuals. Furthermore, the study would incorporate participants of both genders, allowing for a balanced and comprehensive analysis across male and female groups. Based on the multicultural nature of Malaysia, the participants should also include the main and minority races, such as Malay, Chinese, Indian, Orang Asli and others. These inclusive criteria aimed to ensure a diverse and representative sample for the research.

Moreover, the study excluded individuals diagnosed with serious physical health issues, as such conditions may interfere with the study's focus. Additionally, individuals experiencing serious mental health issues or notable psychological disorders, particularly those undergoing

treatment or taking medication, were excluded. These exclusion criteria were designed to ensure that the study results were not influenced by factors that could significantly alter participants' mental or physical functioning.

Instruments

Perceived Stress Scale (Cohen et al., 1983)

The scale included 10 items using the 5-point Likert scale. The scope of the scale was from 0 (*absent at all*) to 4 (*very frequent*). Items 4,5,7, and 8 were reversed and the scores for all items were summed to obtain the final score. The final score could be categorized into three ranges for stress level levels: low (0–13), moderate (14–26), and high (27–40), with higher scores indicating higher levels of perceived stress. Based on Sun et al. (2018) had shown excellent internal consistency, with Cronbach $\alpha = 0.810$ and test-retest reliability (intraclass correlation coefficient = 0.954). Nevertheless, the scale was not outdated based on the latest article Pačić-Turk and Pavlović (2020) also used the same scale with our present study.

UCLA Loneliness Scale (Version 3) (Russell, 1996)

The scale consisted of 20 items using a 4-point Likert scale ranging from 1 (*never*) to 4 (*always*). Items 1,5,6,9,10,15,16,19, and 20 were reversed and summed up all the items to obtain a total score. The total scores were ranged from 20 to 80, with higher scores indicating higher levels of loneliness. Russell (1996) showed UCLA scale (Version3) was very reliable with Cronbach α=0.89 to 0.94 across the samples. Moreover, the latest study from Lin et al. (2022) had mentioned that three UCLA Loneliness Scale (Version 3) versions (i.e., 20-item, 8-item, and 3-item versions) that were assessed had high psychometric qualities in terms of known-group validity, factorial validity, convergent validity, and scale score reliability.

Rosenberg Self-Esteem Scale (Rosenberg, 1965)

The scale consisted of 10 items using a 4-point Likert scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Items 2,5,8 and 9 were negative and reversed. The total scores were ranged from 10 to 40 and the lower scores indicate higher levels of self-esteem. There was excellent internal consistency shown by the RSE's Guttman scale coefficient of repeatability of 0.92 and test-retest reliability was Cronbach α=0.85 to 0.88 (Rosenberg, 1979). One of the latest articles from Park et al. (2019) had used the same scale with present study to measure explicit self-esteem in his research.

Buss-Perry Aggression Questionnaire (Buss & Perry, 1992)

The questionnaire consisted of 29 items and replicated factor analyses yielded 4 scales: (physical aggression consisted of 1-9 items, verbal aggression consisted of 10-14 items, anger consisted of 25-21 items and hostility consisted of 22-29 items) and using 5-point Likert ranging from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*). Item 9 of physical aggression and item 16 of anger were reversed. The range of total scores was 29 to 145, with the higher total scores indicated a higher level of aggressive behaviour. Zimonyi et al. (2021) had shown an outstanding internal consistency, with Cronbach α=0.90 and its subscales from 0.64 to 0.84 which were proving BPAQ was reliable and up to date.

Procedures of Ethical Clearance Approval

This study was conducted as part of the undergraduate research at Universiti Tunku Abdul Rahman (UTAR). Ethical approval for the research was obtained from the UTAR Scientific and Ethical Review Committee (SERC) prior to the commencement of data collection.

The application for ethical clearance included the submission of the research proposal, participant information sheet, informed consent form, and detailed description of the measurement instruments used. All participants were briefed on the purpose of the study and provided informed consent before participating. The research was conducted by following the principles outlined with ethical referral code: U/SERC/78-460/2025 provided by SERC.

Pilot Study

Pilot test enabled researchers to evaluate feasibility, validate research instruments, and found and corrected design problems (Hassan et al., 2006). Chhetri and Khanal (2024) demonstrated how pilot studies supported the validity and reliability of survey instruments. All things considered, pilot studies improved the calibre, legitimacy, and effectiveness of the primary study.

A total of 30 participants were included in the pilot test and 129 participants were included in actual study to evaluate the reliability of the questionnaires by using IBM SPSS Statistics 23. According to Raharjanti et al. (2022) had mentioned .60 to .08 was the acceptable range of reliability. Therefore, Table 3.1 had shown the comparison test results of both tests and the pilot study's result showing an acceptable reliability with all scales' Cronbach's alpha within the range. Moreover, the actual study indicated that the perceived stress scale and Rosenberg Self-Esteem scale with acceptable reliability (α=.697) and (α=.647) respectively, whereas the UCLA loneliness scale demonstrated a good reliability with Cronbach's alpha value (α=.773). Additionally, the Buss-Perry Aggression Questionnaire had an excellent reliability with Cronbach's alpha value of .937.

Table 3.1

Comparison reliability of instruments pilot study(n=30) and actual study (n=129)

	Number of items	**Cronbach's alpha (α)**	
		Pilot Study	**Actual Study**
Perceived stress scales	10	.700	.697
UCLA loneliness scales	20	.757	.773
Rosenberg Self-Esteem scale	10	.707	.647
Buss-Perry Aggression Questionnaire	29	.932	.937

Chapter 4: RESULT

Univariate Outliers

Based on table 4.1 that showed our data was staying between the range of univariate outliers which was -3.29<z>3.29 thus that was no outlier removed from data set.

Table 4.1

Univariate Outlier Test

Zscore	***N***	***Minimum***	***Maximum***
Zscore(T_S)	*130*	*-3.06034*	*2.82218*
Zscore(T_L)	*130*	*-2.29622*	*2.28809*
Zscore(T_SE)	*130*	*-2.05839*	*2.52514*
Zscore(T_AB)	*130*	*-2.21585*	*2.83873*
Valid N (listwise)	*130*		

Note. T_S = Total score of perceived stress； T_L = Total score of loneliness； T_SE= Total score of self-esteem； T_AB = Total score of aggressive behaviour

Multivariate Outliers

According to Ghorbani (2019) had mentioned with three variables, a Mahalanobis distance exceedingly approximately 16.27 ($p < 0.001$) would indicate a potential outlier. Thus, that was one case had been found higher than Mahalanobis distances. Due to promote model accuracy, it was removed from further analysis (refer to Appendix 5).

Data cleaning

Total of 189 responses were collected, and 52 data were removed due to incomplete survey responses and 7 data were removed due to disagreement to process personal data. Another one case was detected as outlier and removed from data set. Hence, 60 data were removed after

the data cleaning and the valid responses would be 129 responses to be used in the further analysis.

Demographic characteristics

According to Table 4.2, this study had collected 129 valid responses from target participants with a mean age 21.82, who were 54 male participants (41.9%) and 75 female participants (58.1%). Most of participants were Chinese (77.5%), the remaining two races were Indian (13.2%) and Malay (9.3%). The majority responses came from Johor, accounting for 55 responses (42.6%), followed by Selangor with 22 responses (17.1%) Perak with 20 responses (15.5%), Penang (8 responses, 6.2%), Melaka (7 responses, 5.4%), Kedah and Sabah each with 4 responses (3.1%) and Sarawak contributed 3 responses (2.3%), while Kelantan had 2 responses (1.6%). The remaining states — Pahang, Negeri Sembilan, Terengganu, and Perlis each recorded 1 response (0.8%). Simultaneously, student occupied 73.6%, employee (20.9%) and unemployed (5.4%) in the employment status.

Table 4.2

Demographic Information of Participants and Variables

Variable	n	%	M
Age			21.82
Gender			
Male	54	41.9	
Female	75	58.1	
Ethnicity			
Malay	12	9.3	
Chinese	100	77.5	
Indian	17	13.2	
State			
Sabah	4	3.1	
Sarawak	3	2.3	
Kedah	4	3.1	
Johor	55	42.6	
Kelantan	1	1.6	
Pahang	22	.8	
Selangor	7	17.1	
Melacca	8	5.4	
Penang	1	6.2	
Negeri Sembilan	1	.8	
Terenggamu	1	.8	
Perak	20	15.5	
Perlis	1	.8	
Total	129	100	
Employment Status			
Student	95	73.6	
Employed	27	20.9	
Unemployed	7	5.4	
Total	129	100	

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

Normality Assumptions

It was hoped that a thorough examination of normalcy would lead to more significant research, the findings and interpretations of which would eventually be given priority for approval and publishing (Singh & Masuku, 2021). Furthermore, Ghasemi and Zahediasl (2012) had mentioned the violation of normality assumptions might lead to inaccurate result. Therefore, the normality of this study would be examined by histogram, Quantile-Quantile (Q-Q) plot, Skewness and Kurtosis, and Kolmogorov–Smirnov Test.

Histogram

Histogram was used to assess the normality distribution with regarded to perceived stress, loneliness, self-esteem and aggressive behaviour. The histogram shows a roughly symmetrical and bell-shaped distribution closely centred with their means which were fulfilled the normality assumption of histogram (refer to Appendix 6).

Quantile-Quantile (Q-Q) plot

From the results of Q-Q plot were showing that the points of each variable were aligning along with the diagonal line that fulfilled the assumption of normality (refer to Appendix 7).

Skewness and Kurtosis

Table 4.3 had shown the Skewness and Kurtosis values of perceived stress, loneliness, self-esteem and aggressive behaviour. The Skewness of each variable was .071, -.189 and .135 fallen within acceptable range from -2 to +2 and aggressive behaviour's value was slightly higher than range but acceptable if that was not higher than ± 1 (Simon, 2009). Moreover, their

Kurtosis value .576, -.335, -.519 and -.227 were stayed within the acceptable range between -7 to +7 (Kim, 2013). Therefore, the result of four variables were not violated the assumption.

Table 4.3
Skewness and Kurtosis Value for Each Variable

Variables	Skewness	Kurtosis
Perceived Stress	.071	.576
Loneliness	-.189	-.355
Self-Esteem	.135	-.519
Aggressive behaviour	.229	-.227

Kolmogorov-Smirnov (K-S) test

Table 4.5 was shown the result by utilizing K-S Test as normality assumption of this study. The *p* value higher than .05 represented failed to reject normality which meant residuals were normally distributed (Mishra et al., 2019). The result showed self-esteem [D (129) =.067, p>.05] and aggressive behaviour [D (129) =.054, p>.05] which represented not violated assumption. However, perceived stress [D (129) =.085, p<.05] and loneliness [D (129) =.083, p<.05] were violated assumption that meant their residuals did not normality distributed.

Table 4.4
Kolmogorov-Smirnov (K-S) Test

Variables	Significant value
Perceived Stress	.023
Loneliness	.030
Self-Esteem	.200
Aggressive behaviour	.200

Summary for normality assumptions

The normality assumption of histogram, Q-Q plot, Skewness and Kurtosis were not violated in examined perceived stress, loneliness, self-esteem and aggressive behaviour. Although the last assumption K-S Test was not fully fulfilled the like two variables violated normality assumption, while other variables did not. However, according to Zygmont (2023) combining statistical and visual techniques was the best way to evaluate normalcy. Despite imperfect normality, parametric tests were nevertheless reliable for large sample sizes. Overall, the remaining normality assessments indicated no violations and K-S Test showed a minor violation, which represented this study had been conducted by following a normal distribution.

Multiple Linear Regression Assumption

Multicollinearity

The present study examined the inter-correlations among the independent variables through using Variance Inflation Factor (VIF) and Tolerance statistics. According to Salmerón Gómez et al. (2020), low multicollinearity was considered when tolerance was higher .01 and VIF was lower 10. Table 4.6 had shown all independent variables displayed Tolerance and VIF values within acceptable thresholds, indicating multicollinearity was not violated.

Table 4.5
Collinearity Statistics

Variables	Tolerance	VIF
Perceived Stress	.750	1.334
Loneliness	.653	1.530
Self-Esteem	.424	1.369

Note. Dependent variable = Aggressive behaviour

Independence of error

The assumption of residual required staying the range of Durbin-Watson was between 0 to 4 and 1.5 to 2.5 were relatively normal (Kenton, 2024). As the result of Table 4.7 had shown the Durbin-Watson statistic was 2.036, indicating no evidence of autocorrelation among the residuals. Thus, this supports the assumption of independence in the regression model.

Table 4.6

Independence of Residual	
Durbin-Watson	2.036

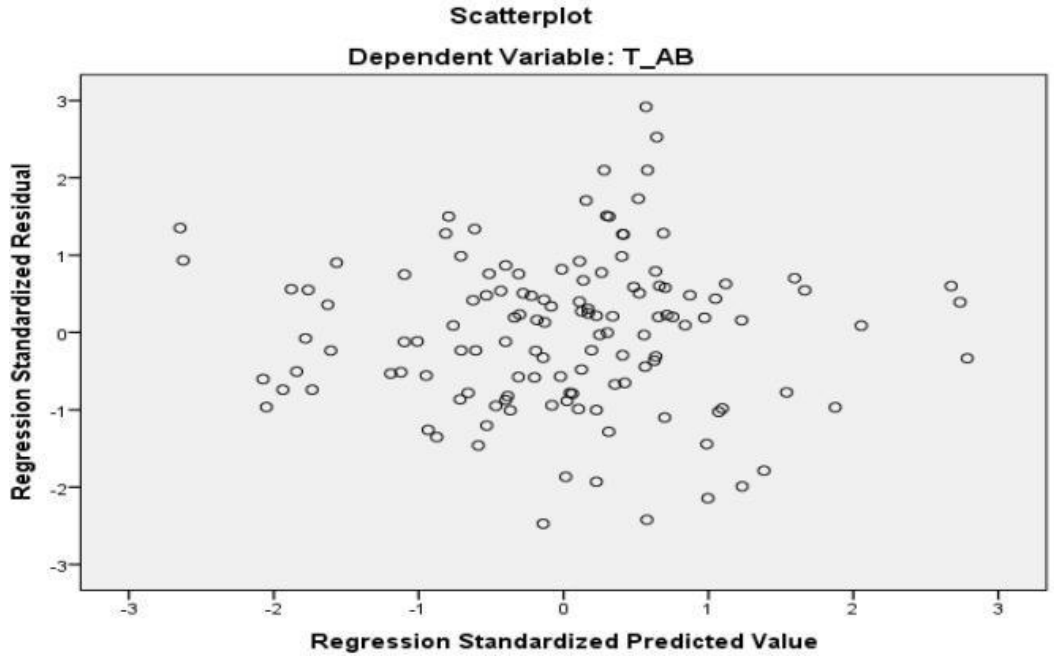
Note. Dependent variable = Aggressive behaviour

Test of Normality of Error, Linearity of Error, and Homoscedasticity

This study utilized the residual scattershot to analyse tests of normality of error, linearity of error and homoscedasticity. Figure 4.1 had shown that residuals were randomly and evenly distributed around the zero line. Hence all three assumptions were not violated.

Figure 4.1

Scatterplot of Standardized Predicted Value and Standardized Residual



Multiple Linear Regression Analysis

Multiple Linear Regression Analysis was utilized to evaluate the contribution of three predictors, perceived stress, loneliness and self-esteem on the outcome variable, aggressive behaviour. Table 4.8 shows that the model was highly statistically significant because F (3,125) =14.223, p<.001, and accounting for variance of 25.45%. The value of R^2 was more than .02, .13 and .26 which stood for small, medium and high effect sizes, respectively (Cohen, 1988). Thus, the result showed .02545 which was closed with a large effect as .26. Furthermore, the result from Table 4.8 the perceived stress (β=.218, p=.016) and loneliness (β=.318, p=*.001*) significantly and positively predicted aggressive behaviour among young adult in Malaysia. However, the self-esteem (β=.072, p=.424) non-significantly and positively predicted aggressive behaviour among young adult in Malaysia. In conclusion, the first and second hypothesis were supported, and the third hypothesis was not supported.

Table 4.7

Result of Regression Model

	df	***F***	***p***	**Adj. R^2**
Regression	3	14.223	<.001	.237
Residual	125			
Total	128			

Note. Dependent variable = Aggressive behaviour. Predictors = Perceived stress, loneliness and self-esteem.

Chapter 5: DISCUSSION

RO1: To examine whether perceived stress positively predicts aggressive behaviour among young adults in Malaysia.

The results of our study support the hypothesis that perceived stress predicts positively toward aggressive behaviour among young adults in Malaysia. This outcome aligns with previous research suggesting that individuals experiencing higher levels of perceived stress are more likely to engage in aggressive behaviour (Fatma, 2021; Thomas, 2019; Guo et al., 2023). Furthermore, a study conducted by Alshammari et al. (2021) provides additional support for our findings, highlighting a significant and positive association between perceived stress and aggression. These findings underscore the importance of considering perceived stress as a potential risk factor for the emergence of aggressive behaviour among young adults.

Our study had shown a significant and positive prediction of perceived stress toward aggressive behaviour, indicating that higher levels of perceived stress will show the higher level of aggressive behaviour of the individual have. One potential explanation on this is that perceived stress is negatively impacted by individual's ability to regulate emotion and behaviour (Yunus & Chaudhary, 2023; Drigas & Mitsea, 2021). A study by Baumeister et al. (2018) had stated that individuals with higher levels of perceived stress were found to exhibit lower self-control, which result in more in more frequent aggressive outbursts. The main cause of stress – induced aggression is the exhaustion of the resources of self-control, which mean that when individual suffer from stress, they are more likely to experience ego depletion and causing them to be more impulsive and act aggressive behaviour.

Besides that, previous study by Bègue et al. (2022) had mentioned that chronic stress can make individuals more emotionally sensitive, making it harder for them to control their reactions. As a result, they may respond more aggressively when faced with stressful situations, as stress can increase feelings of frustration, anger, and irritability. Another potential explanation on this hypothesis is that stress coping mechanisms also play a crucial role in determining how perceived stress impact on individuals' aggressive behaviour. Research suggested that individual with maladaptive coping strategies, such as withdrawal or cyberloafing, are more likely to use aggressive behaviour to respond to stress. These coping styles often prevent individuals from effectively processing their emotions or resolving stressors, leading to heightened frustration and aggressive reactions (Khawaja et al., 2021).

However, it is important to acknowledge that while most studies have reported a positive or significant relationship, the prediction of perceived stress toward aggressive behaivour may be influenced by various moderating and mediating factors. For example, coping strategies play a crucial role, individuals who use adaptive strategies linked to reduced aggression under stress, while individuals with maladaptive coping strategies—such as avoidance, withdrawal, or cyberloafing—are more likely to respond to stress with aggressive behaviour (Guo et al., 2023; Khawaja et al., 2021). Moreover, social competencies have also been found to moderate this relationship, where individuals with higher perceived social skills show weaker associations between distress and aggression (Karam et al., 2024).

RO2: To investigate whether loneliness positively predicts aggressive behaviour among young adults in Malaysia.

The result from current study had supported the hypothesis, showing that loneliness significantly and positively predicts aggressive behaviour. This had shown that individual with higher level of loneliness may have a greater likelihood of conducting aggressive behaviour or vice versa. The result of current study aligns with previous research findings (Sun et al., 2020; Jamaludin & Nor., 2021; T'ng et al., 2019; Kamaluddin et al., 2024).

Firstly, a research study by T'ng et al. (2019) had demonstrated a similar pattern which loneliness was positively associated with various components of aggression, such as physical aggression, verbal aggression, anger and hostility among Malaysian university students and working adults. Their study further noted that prolonged isolation and unhealthy digital coping mechanisms may amplify aggressive tendencies. Similarly, Jamaludin and Nor (2021) found a significant relationship between loneliness and aggressive behaviours, in which loneliness had positive prediction toward aggressive behaviour, particularly in the form of anger and physical aggression. This further prove the concept that social disconnection and lack of meaningful interpersonal relationships may provoke frustration and reactive aggression among young adults. Other than that, another possible reason on loneliness can predict on individual's aggressive behaviour is because of the insecure attachment style, especially on avoidant and anxious attachment will significantly affect predicted aggressive behaviour (Kamaluddin et al., 2024). The study had proved that young adult, especially female with avoidant and anxious attachment styles were more prone to relational aggression in romantic relationships, which supported that insecure attachment and loneliness in daily life will lead to aggressive tendencies. Furthermore, research also indicates that individuals with insecure attachment may also experience loneliness

and reduce social support and will potentially lead to aggressive behaviour (Khodarahimi et al., 2016).

RO3: To investigate whether self-esteem negatively predicts aggressive behaviour among young adults in Malaysia.

The current study hypothesized that self-esteem would negatively predict aggressive behaviour among young adults in Malaysia. However, the results showed a non-significant but positive prediction, indicating that individuals with higher self-esteem were slightly more likely to exhibit aggressive behaviour. Thus, the hypothesis was not supported.

This could be because individuals with high but unstable self-esteem may react aggressively when their self-worth is threatened. Baumeister et al. (1996) proposed that people with inflated self-esteem, especially narcissistic traits, may exhibit aggression as a defensive response to ego threats. Furthermore, previous study also shown that high levels of self-esteem were found to correlate with increased aggression, potentially due to competitive environments reinforcing assertive or dominant behaviour (Mohad Anizu, M. N et al., 2023).

However, most of the studies had indicate the results showing that the negative prediction of self-esteem toward aggressive behaviour among young adults. For instance, Hu et al. (2023) found that low self-esteem negatively predicted aggressive behavior in Chinese, with jealousy and self-control acting as mediators. Similarly, Jamaludin and Nor (2021) reported a significant negative correlation between self-esteem and aggression in Malaysia, suggesting that lower self-esteem was associated with higher levels of aggression. In contrast, a study by Gurung et al. (2019) found that higher self-esteem was linked to lower aggression and highlighted the protective role of self-esteem.

The prediction of self-esteem toward aggressive behaviour remains a topic of debate in research, and one potential reason for this inconsistent finding may be the influence of gender and cultural differences. Gender and cultural differences also play an important role in shaping how self-esteem predict toward aggression. Research has shown that men tend to exhibit more overt or physical forms of aggression, while women with narcissistic traits may display aggression through more relational or covert means. Moreover, women also show stronger link between self-esteem and aggression compared to men (Amad et al., 2020; Bhattacharyya & Goswami, 2024). Furthermore, cultural background influences how self-esteem is developed and expressed, which may affect the manifestation of aggressive behaviours. Previous study had stated that individualistic cultures such as the United States and Canada are more likely to enhance and protect their self-worth, while people from collectivistic cultures like China may appear to report lower self-esteem due to cultural tendencies toward modesty, moderate responding, and dialectical thinking (Teng et al., 2015).

Theoretical Framework Analysis

The findings across all of the research objectives can be interpreted through the General Aggression Model (GAM). GAM proposes that inputs such as perceived stress, loneliness, and self-esteem affect an individual’s internal state, specifically emotions, cognition, and arousal, which will shape their appraisal and decision processes, potentially resulting in aggressive behavior (Allen et al., 2022). In our study, perceived stress and loneliness were found to significantly predict aggressive behavior, which aligns with GAM's theory that stressful and isolating situations can increase the likelihood of aggression due to impaired self-regulation and heightened emotional sensitivity. Although self-esteem did not significantly predict aggression in

our study, the GAM still provides a relevant lens that individuals with unstable self-esteem may interpret ego threats as provocations, leading to aggressive responses, particularly when combined with low emotional control or narcissistic traits (Baumeister et al., 1996). Similar applications of GAM can be seen in recent studies, such as Kersten and Greitemeyer (2024), which demonstrated how internal affective states predicted aggression in daily life, Dou et al. (2024), which linked stressful life events to online aggression through moral disengagement, and Han et al. (2024), which applied the model to understand how social comparison led to aggression via emotional mediators. Collectively, these studies support the usefulness of GAM in understanding the psychological mechanisms driving aggression, especially among young adults navigating stress, loneliness, and identity-related challenges.

Implications

Theoretical Implication

The study's conclusions have several key theoretical implications for future research. Primarily, the study reinforces the General Aggression Model (GAM) as a theoretical framework for explaining the elements that contribute to aggressive conduct among young adults. This study supports the GAM's key notion that violent responses are influenced by both personal attributes and situational stressors by demonstrating how perceived stress, loneliness, and self-esteem interact. Findings indicate the model's high relevance for explaining aggressiveness in people's daily lives. The occurrence of aggression cannot be attributed to single causes in isolation but appears to be the outcome of an interaction between circumstance and person characteristics (Kersten & Greitemeyer, 2024). This shows that GAM may be broadened and verified in a variety of cultural and socioeconomic contexts, increasing its generalisability across populations.

Furthermore, the interaction of psychological variables shown in this study highlights the need for further research to investigate potential moderating and mediating variables. For example, emotional control, social support, or resilience may have an impact on the intensity or direction of the correlations between stress, loneliness, self-esteem, and violence. Research has shown that high self-esteem improves problem-solving and emotional regulation, whereas low self-esteem is frequently associated with various disorders and socially incompatible behaviours; social support serves as an important external resource in buffering the negative effects of stress, and resilience strengthens emotional regulation by increasing self-esteem and perceived social support (Surzykiewicz et al., 2022). Understanding these intermediary processes may provide a more comprehensive explanation for aggressive behaviours as well as deeper insights into GAM's hypothesised mechanisms.

Additionally, because the current study used a cross-sectional methodology, future research should examine longitudinal methods to track changes in these psychological characteristics over time. Cross-sectional studies are better for stable, well-defined constructs with a strong theoretical basis, while longitudinal studies are ideal for tracking changes over time and addressing temporal dynamics (Rindfleisch et al., 2008). This would allow researchers to investigate the developmental history of aggression, as well as how long-term stress or chronic loneliness influences behavioural outcomes.

Lastly, the increasing prevalence of cyber aggression and virtual interactions opens a new avenue for applying the GAM in digital contexts. According to a study, college students are first victims of cyberbullying before becoming bullies themselves. The stress involved with their cyberbullying experience changes their way of thinking and causes them to retaliate violently by engaging in cyberbullying to relieve themselves of the stress caused by their bullying encounters

(Luo et al., 2023). Future studies could explore how stress perceived in online environments, such as social media or gaming platforms, contributes to cyberbullying or other forms of digital aggression. Such research could broaden the theoretical scope of GAM and provide timely insights into modern forms of aggressive behaviour.

Practical implication

This study provides direct benefits to young adults by shining light on how psychological factors, particularly perceived stress, loneliness, and self-esteem, influence aggressive behaviour. By identifying these crucial indicators, the study lays the groundwork for young people to develop self-awareness and early intervention skills. For example, young adults can use this knowledge to reflect on their own emotional states and behavioural responses, as well as becoming more aware of how uncontrolled stress or feelings of isolation affect their interactions with others. A study discovered that loneliness and despair positively predict aggression, emphasising the necessity of managing emotional states to reduce aggressive behaviours (Coutts-Smith, & Phillips, 2023). This knowledge may prompt individuals to seek healthier coping mechanisms, such as peer support, mindfulness, or professional counselling, before aggressive inclinations emerge. Coutts-Smith and Phillips (2023) found that higher levels of mindfulness help mitigate the negative impacts of loneliness on mental health. Also, an exploratory study discovered that combining peer support and mindfulness activities improved mental health indices among medical students. The peer-led method was very effective, as students frequently opted to seek assistance from peers over professional services (Moir et al., 2016).

Besides, the results of this study carry significant practical implications for the development of effective programs and policies aimed at reducing aggressive behaviour among

young adults in Malaysia. Given the strong links between perceived stress, loneliness, low self-esteem, and aggression, educational institutions, workplaces, and community organizations should implement targeted intervention programs that address these psychological factors. A stress management program can assist a person dealing with stress and aggressive behaviour (Mandal & Roy, 2024). Besides, schools can strengthen different assessment systems for students so that they can find self-worth in real-life situations, as well as give professional services such as psychological counselling and group counselling activities for persons with aggression to alleviate students' symptoms (Li et al., 2023). Therefore, stress management workshops, mental health counseling services, and self-esteem enhancement programs could be introduced in universities and youth centers to equip young adults with healthier coping mechanisms and emotional regulation strategies.

Moreover, public health campaigns can be designed to increase awareness about the negative repercussions of unresolved stress and loneliness, while also promoting social connectedness and mental well-being. These campaigns should include help in recognising social isolation, loneliness, and their detrimental impacts on stress and coping, as well as selecting appropriate solutions (Wu, 2020). These campaigns could be supported through digital platforms, where many young adults are active, to ensure greater outreach and engagement. In addition, anti-bullying and cyberbullying prevention policies should be reinforced. Most interventions should focus on educating people to become active and responsible digital citizens, aware of their rights and responsibilities, the importance of following rules, and the value of respectful behavior, and to promote a positive and safe online environment (Tozzo et al., 2022).

On a larger scale, the results of this study can also help the government and related organizations improve their mental health policies. If the government is serious about enhancing

people's well-being and overcoming Malaysians' growing mental health challenges, they must ensure that policies and interventions are developed based on an in-depth understanding (Hamzah & Othman, 2024). For example, policies can be created to help identify and support young people who are at risk of aggressive behaviour due to high stress, loneliness, or low self-esteem. These policies could include providing more free or low-cost mental health services, especially for those who may not have easy access. Government agencies, NGOs, and mental health professionals can work together to develop support programs that focus on emotional well-being and conflict management. According to Berry et al. (2020), tailored mental health programs may be well received by young people and help reduce stigma and encourage help-seeking among vulnerable groups. Their willingness to support others suggests they could act as 'culture carriers,' spreading positive mental health messages and promoting support across generations. By doing so, Malaysia may work towards creating a safer and more supportive society for its young people.

Limitations of the study

While the study provides valuable insights into the predictors of aggressive behaviour among young adults in Malaysia, several limitations should be acknowledged. Firstly, the use of a cross-sectional research design restricts the ability to establish causal relationships between perceived stress, loneliness, self-esteem, and aggressive behaviour. The findings only reflect associations at a single point in time, rather than changes or developments over a longer period. According to Sedgwick (2014), cross-sectional studies are rapid, simple, and inexpensive, and they frequently use questionnaires. Follow-up is unnecessary because individuals are only surveyed once. These studies are capable of assessing several risk factors and outcomes at the

same time. However, non-response bias may occur if participants differ from non-participants, resulting in a non-representative sample. Most significantly, because the data was obtained at a particular point in time, only relationships, not causation, could be drawn (Sedgwick, 2014).

Secondly, the study relied on self-report questionnaires, which may be influenced by social desirability bias or inaccurate self-assessments, potentially affecting the validity of the responses. A study demonstrates that individuals may downplay expressions of anger in self-reports due to social desirability, potentially undermining the validity of such assessments (Fernandez et al., 2018). Participants might underreport aggressive tendencies or overstate their self-esteem levels to present themselves in a more favorable light.

Another limitation lies in the sampling method. The study employed purposive sampling, which may limit the generalizability of the findings to the broader population of Malaysian young adults. According to Palinkas et al. (2015), while purposive sampling is useful for in-depth qualitative studies, it may limit the generalisability of findings due to the non-random selection of participants. Participants were selected based on specific criteria, and those who chose to respond may differ in important ways from those who did not, such as being more open about mental health or more tech-savvy. Additionally, Malaysia's multi-ethnic society creates distinct cultural contexts, which may limit the findings' application to other areas or ethnic backgrounds (Bakar & Connaughton, 2019).

Lastly, while the study focused on perceived stress, loneliness, and self-esteem, it did not investigate other potential predictors of aggressive conduct, such as family background, peer influence, or personality factors. For example, Lu et al. (2022) found that psychological security, parental conflict, and impulsivity as top predictors of aggression, emphasising the complex

nature of violent behaviour; Lone and Albotuaiba (2022) found that certain personality traits, like high neuroticism and low agreeableness, as well as poor familial situations, are significant predictors of violent behaviour; and Malonda et al. (2019) discovered that intimate interactions with peers and a positive familial environment can operate as protective factors against violence, underscoring the importance of social environments. Incorporating these elements into future research could provide a more complete picture of the multifaceted nature of hostility. Despite its limitations, the study provides a solid framework for future research and practical treatments.

Recommendations for Future Research

Based on the current study's findings and limitations, numerous recommendations for further research can be made. First, increasing the sample size and employing probability sampling methods, such as stratified or random sampling, would improve the findings' generalisability to a larger population of Malaysian young people. For instance, Armum and Osman (2023) used probability sampling methods to investigate factors influencing employability in Malaysian adolescents, demonstrating their efficiency in improving generalisability. Secondly, future research should investigate using a longitudinal design to examine changes in perceived stress, loneliness, self-esteem, and violent conduct across time. For example, Laustsen et al. (2023) examines the long-term relationship between loneliness and perceived stress, emphasising the significance of temporal designs in understanding these dynamics. This would help researchers better grasp the causal links and developmental patterns between these variables

In addition, future study could use qualitative approaches, such as interviews or focus group discussions, to acquire a better understanding of the personal experiences and societal

situations that lead to violence. Välimäki et al. (2022) performed focus group interviews with several stakeholders in mental facilities to better understand perspectives of patient violence. The qualitative method provided a full understanding of the elements that contribute to violent behaviour in clinical settings. These methods can supplement quantitative findings and assist identify elements that standardised questionnaires may not capture. Researchers are also advised to include other characteristics such as family dynamics, social influence, socioeconomic position, or digital media usage, which may all have a role in predicting aggressive behaviour. For instance, Li et al. (2024) investigates how different parenting methods and the general family environment affect children's violent behaviour, and it emphasises the value of positive parenting and a supportive family environment in reducing aggression.

Lastly, cross-cultural comparisons between young adults in Malaysia and those from other countries could be conducted to determine whether cultural factors influence the relationships between psychological traits and aggression. The findings show that cultural characteristics influence the interpretation of aggression (Gallardo-Pujol et al., 2019), implying that models of violent behaviour should include cultural aspects. Such studies would contribute to a more global understanding of aggression and inform culturally sensitive intervention programs. Overall, future research should aim for a more comprehensive and holistic exploration of the factors contributing to aggressive behaviour in youth.

Conclusion

This study looked at whether perceived stress, loneliness, and self-esteem impact aggressive conduct among Malaysian young adults. According to the findings, subjective stress and loneliness significantly and positively predicted aggression, while self-esteem was not a significant predictor. These findings confirm the General Aggression Model (GAM), which states that aggression is the result of the combination of personal and situational factors. The study's conclusions have theoretical and practical implications. They support the GAM's applicability in Malaysian contexts and propose that interventions addressing stress and loneliness could help reduce violent conduct. Educational institutions, community initiatives, and legislators should collaborate to provide mental health support, stress management programs, and awareness campaigns for young people. However, purposeful sampling, use of self-report questionnaires, and the cross-sectional methodology limit the data generalisability. Future research should use more diverse populations, broader variables, and longitudinal designs to gain a better understanding of aggression in young people. In conclusion, this study adds to our understanding of aggressiveness among Malaysian young and emphasises the necessity of treating psychological well-being to achieve a better and safer society

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APPENDICES

Appendix 2

Effect size calculation

1. **Perceived Stress (Wei et al., 2024)**

$r = 0.396$

$$f^2 = \frac{0.396^2}{1 - 0.396^2}$$

$f^2 = 0.186$

Table 2

Pearson correlation coefcients of Alexithymia and Aggressive Behavior, Perceived Stress, n = 754, *P < 0.05, ** P < 0.01.p values were calculated using Pearson's bivariate correlation. M: Mean. SD: Standard Deviation. r: Correlation Coefficient.

Measures	M	SD	r		
			1	2	3
1.Alexithymia	53.304	7.791	1.00		
2.Aggressive Behavior	64.414	11.042	0.410**	1.00	
3.Perceived Stress	41.992	6.830	0.602**	0.396**	1.00

2. **Loneliness** (Yilmaz et al., 2022)

$r = 0.141$

$$f^2 = \frac{0.141^2}{1 - 0.141^2}$$

$$f^2 = 0.020$$

Table 3 Correlations between smartphone addiction, loneliness and aggression

From: The role of loneliness and aggression on smartphone addiction among university students

		Smartphone Addiction	Loneliness	Aggression
Smartphone Addiction	r			
Loneliness	r	.187**		
Aggression	r	.452**	.141**	

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

3. **Self-esteem (Hu et al., 2023)**

$r = -0.42$

$$f^2 = \frac{(-0.42)^2}{1-(-0.42)^2}$$

$f^2 = 0.214$

Variable	M±SD	1	2
1. Gender	0.51 ± 0.50	–	
2. Self-esteem	26.96 ± 4.65	0.12**	–
3. Jealousy	40.02 ± 6.97	−0.12**	−0.18**
4. Self-control	54.92 ± 11.72	0.04	0.56**
5. Aggressive behavior	53.09 ± 13.36	−0.10**	−0.42**

*p<0.01; gender("0" = female, "1" = male).

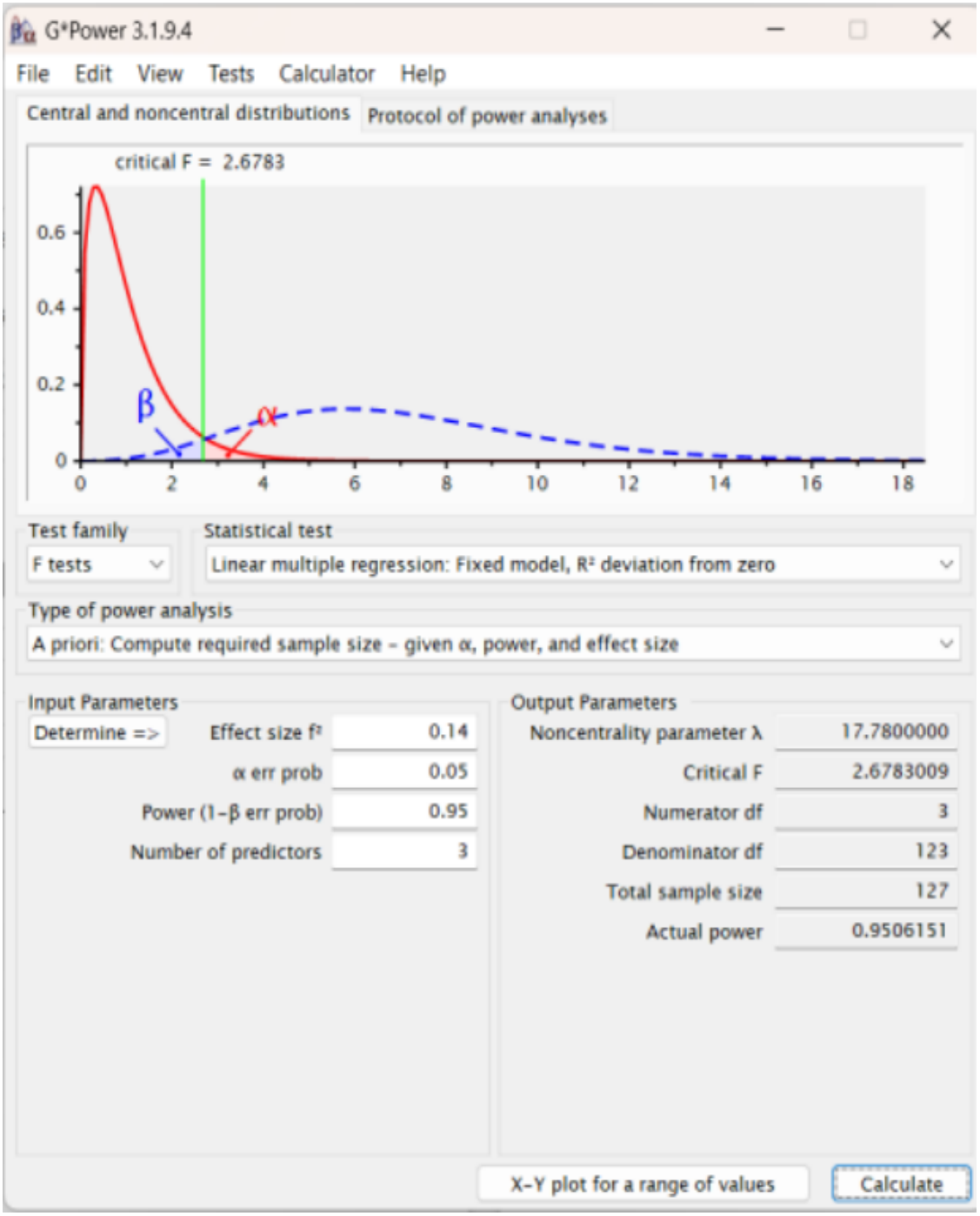
$$\text{Average } f^2 \text{ value} = \frac{0.186 + 0.020 + 0.214}{3}$$

Average f^2 value = 0.14

Effect Size = 0.14

Appendix 3

G-Power- Sample size, actual power



Appendix 4

Reliability (Compare between pilot study and actual study)

Perceived Stress Scale

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.707	.706	10

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.697	.686	10

UCLA loneliness scales

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.757	.736	20

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.773	.763	20

Rosenberg Self-Esteem scale

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.700	.689	10

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.647	.658	10

Buss-Perry Aggression Questionnaire

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.932	.932	29

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.937	.936	29

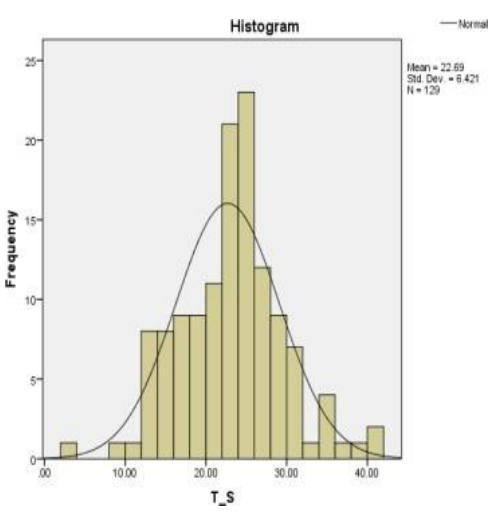
Appendix 4

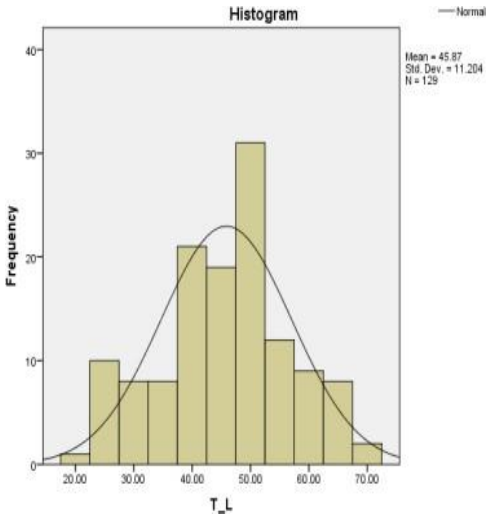
Multivariate outlier

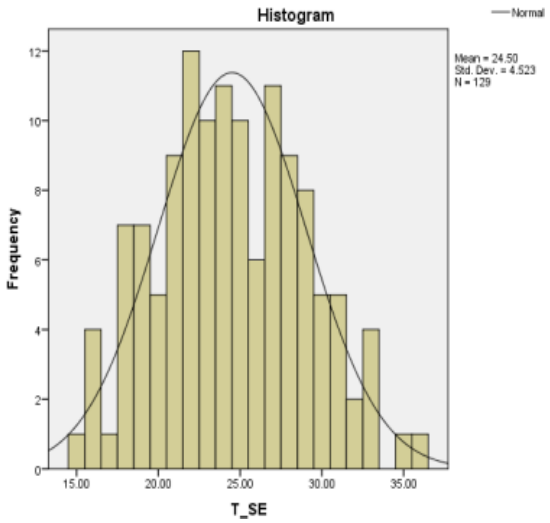
	16_26	Q16_27	Q16_28	Q16_29	T_S	T_L	T_SE	T_AB	MAH_1	PMAH_1
1	1	1	3	1	33.00	69.00	15.00	55.00	16.49529	.00090
2	1	1	1	1	12.00	23.00	33.00	51.00	15.35080	.00154
3	1	3	2	1	13.00	32.00	35.00	83.00	14.11371	.00275
4	1	2	2	2	12.00	65.00	33.00	81.00	13.77299	.00323
5	1	1	1	1	34.00	26.00	21.00	60.00	12.19238	.00675
6	4	4	2	1	41.00	67.00	36.00	103.00	10.78668	.01294
7	1	1	1	1	3.00	27.00	17.00	71.00	9.77093	.02062
8	4	1	2	1	30.00	25.00	22.00	75.00	8.84818	.03138
9	4	5	3	5	40.00	69.00	33.00	115.00	8.43894	.03776
10	2	4	1	1	31.00	29.00	20.00	84.00	8.02384	.04552
11	4	1	4	1	14.00	62.00	25.00	88.00	7.53273	.05672
12	5	5	4	4	38.00	72.00	30.00	118.00	7.25042	.06433
13	3	1	5	1	9.00	20.00	16.00	78.00	7.16335	.06687
14	2	2	3	2	35.00	41.00	29.00	69.00	7.04650	.07043
15	2	2	2	2	21.00	61.00	19.00	79.00	6.28057	.09873
16	1	1	1	1	25.00	25.00	19.00	60.00	5.88488	.11735
17	4	3	3	2	30.00	32.00	21.00	92.00	5.71141	.12653
18	1	1	1	1	15.00	23.00	16.00	50.00	5.21638	.15662
19	1	1	1	1	15.00	26.00	15.00	49.00	5.16234	.16029
20	3	2	2	1	17.00	47.00	32.00	64.00	5.09491	.16498
21	2	3	4	2	21.00	56.00	18.00	83.00	5.07860	.16613
22	1	1	1	1	11.00	33.00	16.00	62.00	5.05479	.16783
23	2	2	1	2	18.00	59.00	21.00	62.00	4.96910	.17407
24	1	1	1	1	12.00	27.00	16.00	44.00	4.93807	.17639
25	3	3	1	1	13.00	48.00	19.00	70.00	4.71824	.19363
26	2	2	3	1	21.00	34.00	30.00	71.00	4.70925	.19437
27	3	4	3	4	35.00	64.00	31.00	103.00	4.54605	.20822

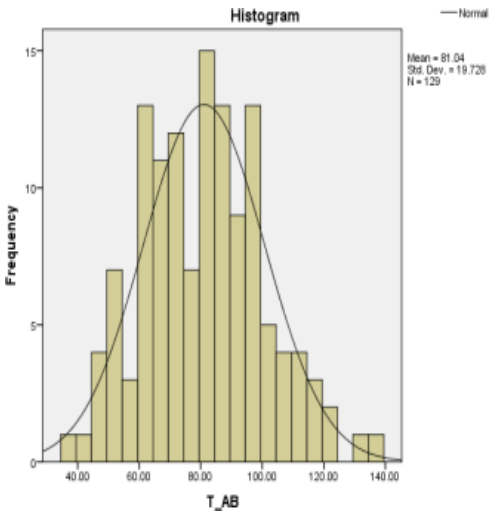
Appendix 6

Histogram



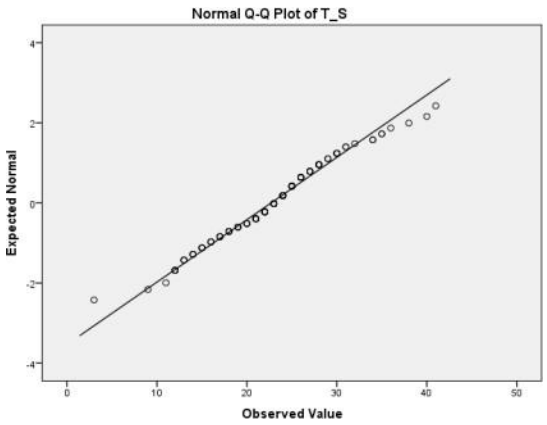


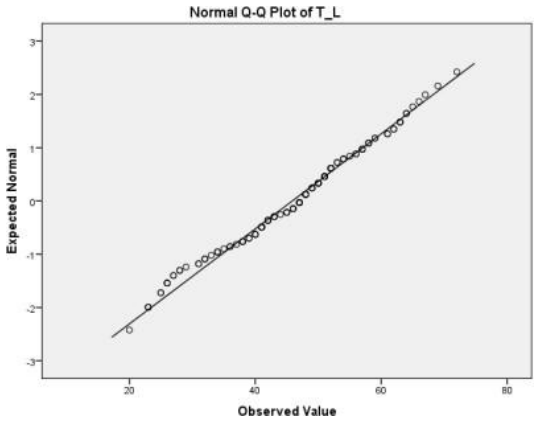


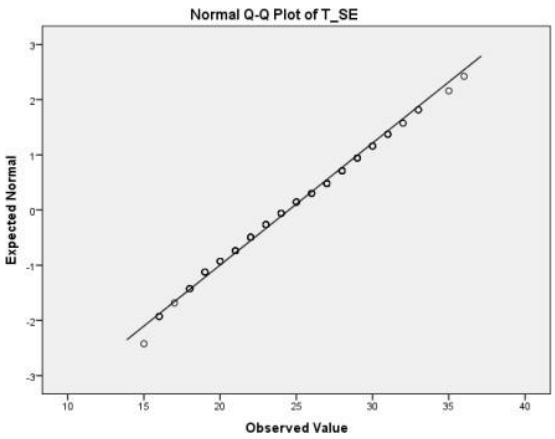


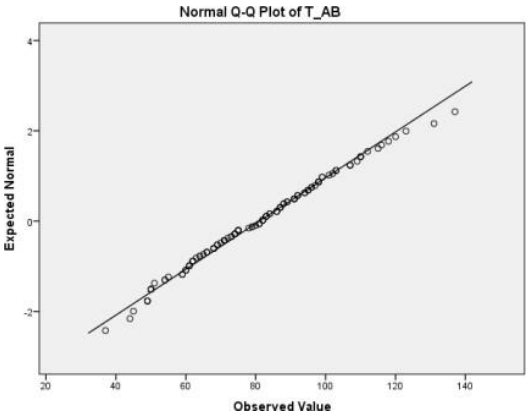
Appendix 7

Q-Q plot









Appendix 8

Skewness and Kurtosis

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
T_S	129	3.00	41.00	22.6899	6.42115	.071	.213	.576	.423
T_L	129	20.00	72.00	45.8682	11.20364	-.189	.213	-.355	.423
T_SE	129	15.00	36.00	24.5039	4.52273	.135	.213	-.519	.423
T_AB	129	37.00	137.00	81.0388	19.72839	.229	.213	-.227	.423
Valid N (listwise)	129								

Appendix 9

K-S test

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
T_S	.085	129	.023	.985	129	.171
T_L	.083	129	.030	.985	129	.151
T_SE	.067	129	.200*	.987	129	.256
T_AB	.054	129	.200*	.991	129	.579

*. This is a lower bound of the true significance.

Appendix 10

Multiple linear regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.504[a]	.254	.237	17.23740	.254	14.223	3	125	.000	2.036

a. Predictors: (Constant), T_SE, T_S, T_L

b. Dependent Variable: T_AB

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12677.814	3	4225.938	14.223	.000[b]
	Residual	37140.993	125	297.128		
	Total	49818.806	128			

a. Dependent Variable: T_AB

b. Predictors: (Constant), T_SE, T_S, T_L

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	32.417	8.917		3.635	.000	14.769	50.066		
	T_S	.670	.274	.218	2.443	.016	.127	1.212	.750	1.334
	T_L	.560	.168	.318	3.328	.001	.227	.893	.653	1.530
	T_SE	.316	.394	.072	.802	.424	-.464	1.096	.730	1.369

a. Dependent Variable: T_AB

Appendix 11

Ethical Review Committee (SERC) of Universiti Tunku Abdul Rahman Scientific

UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
Wholly owned by UTAR Education Foundation Co. No. 578227-M

Re: U/SERC/78-444/2025

14 February 2025

Dr Lee Wan Ying
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 Dr Lee,

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.	Loneliness, Escapism and Peer Influence as Predictors of Gaming Addiction Among University Students in Malaysia	1. Claven Tiong Kung Yiik 2. Ngeow Hui Min	Dr Nurul Iman Binti Abdul Jalil	14 February 2025 – 13 February 2026
2.	Grit, Mindset, and Resilience as Predictors of Psychological Wellbeing Among University Students in Malaysia	1. Tan Ying Xuan 2. Wan Jee Wai		
3.	Perceived Stress, Loneliness, and Self-esteem as Predictor of Aggressive Behaviour Among Young Adults in Malaysia	1. Fong Heng Liang 2. Toh Wei Siang 3. Hoo Jun Kit		

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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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

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Appendix 12

Turnitin Summary Report

FYP Oct 24 G1 Fong Heng Liang

ORIGINALITY REPORT

11%	10%	2%	3%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	eprints.utar.edu.my Internet Source	2%
2	www.researchgate.net Internet Source	1%
3	www.mdpi.com Internet Source	1%
4	pdfs.semanticscholar.org Internet Source	<1%
5	Submitted to uic Student Paper	<1%
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