UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF ARTS AND SOCIAL SOCIENCE

UAPC3093 Project Paper II

TITLE: Predict Malaysia University Student Anxiety from Social Media Comparison and Emotional Regulation

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UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF ARTS AND SOCIAL SCIENCE

DEPARTMENT OF PSYCHOLOGY AND COUNSELLING

UAPC3093 PROJECT PAPER II

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DEPARTMENT OF PSYCHOLOGY AND COUNSELING

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UAPC3093 PROJECT PAPER II

Student's Name	ID	*Total (40%)	**Final score (20%)
Ong Jing Xuan	2205497		

*Total Score ÷ 2 = **Final Score
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SCORE / TRAITS	SCORE	EXCELLENT 4	GOOD 3	AVERAGE 2	LACKING 1
POSTER PRESENTATION PREPARATION					
Organisation		Title/author of paper clearly displayed. Concise presentation of introduction, review of literature, methodology, findings and conclusions.	Shows title/author. Adequately presents introduction, review of literature, methodology, findings and conclusions.	Shows title/author. Presents main ideas of introduction, review of literature, methodology, findings and conclusions.	Title/author are missing. Insufficient coverage of main points of introduction, review of literature, methodology, findings and conclusions.
Competency		Student demonstrates competent knowledge of the subject by explaining the subject with details.	Student is able to provide sufficient information to enable audience to understand main ideas. Able to answer questions	Student is able to provide basic information with vague and disjointed ideas.	Student is unable convey the information fluently to the audience/examiner.

		Able to answer questions posted by the audience/examiners fluently with confidence.	posted by the audience/examiners with noticeable interval.	Student tried to answer the questions posted by the audience/examiner using common-sense rather than evidence-based answer.	Student is not able to answer the questions posted by the audience/examiner.
Visual Presentation		Visually appealing poster with appropriate colours, organization, and font sizes enhance readability. Strategically positioned graphics and text.	Overall visually appealing. Organisation of content enhances readability. Appropriate font size enhances readability. Content arrangement easily understood. Graphics enhances text.	Visual appeal is adequate. Colours and layout somewhat cluttered. Font size affects readability. Confusing content arrangement. Graphics help to highlight some content.	Visuals lack appeal. Colours and layout cluttered. Hinders readability. Inconsistent font sizes and content arrangement Mismatch of graphics and text.
Mechanics		The slides are flawless with no misspelling, punctuation, or grammatical errors. Provide essential sources and citations using 7th edition APA style.	2 – 3 misspelling, punctuation and/ or grammatical errors in the slides. Provided excessive and cluttered sources and citations.	4 misspelling, punctuation and/ or grammatical errors detected in the slides. Inconsistent citation styles detected.	Slides are riddled with multiple spelling, punctuation and/ or grammatical errors. Does not cite sources.

SCORE / TRAITS	SCORE	EXCELLENT 4	GOOD 3	AVERAGE 2	LACKING 1
VERBAL SKILLS					
Enthusiasm		Demonstrates a strong, positive feeling about topic during entire presentation.	Occasionally shows positive feelings about topic.	Shows little positive feelings toward topic presented.	Shows absolutely no interest in topic presented.
Delivery		Uses a clear voice and speaks at a good pace so audience can hear presentation. Does not read off slides.	Presenter's voice is clear. The pace is a little slow or fast at times. Audience can hear presentation.	Presenter's voice is low. The pace is much too rapid/slow. Audience has difficulty hearing presentation.	Presenter mumbles or talks very fast and speaks too softly for audience to hear and understand.
Language		Excellent and competent use of subject-related vocabulary and correct pronunciation.	Presentation shows competent use of subject-related vocabulary and correct pronunciation.	Some parts of lapse into colloquialism with inappropriate vocabulary and pronunciation.	Mostly inappropriate vocabulary and pronunciation.
NON-VERBAL SKILLS					
Eye Contact		Student maintains eye contact with audience, seldom returning to notes.	Student maintains eye contact most of the time but frequently returns to notes.	Student occasionally uses eye contact, but still reads most of report.	Student reads all of report with no eye contact.
Body Language & Facial Expression		Movements seem fluid. Displays relaxed, self-confident nature about self, with no-mistakes. Appropriate facial expression without a zoned-out or confused expression.	Made movements or gestures that enhance articulation. Makes minor mistakes, displays little or no tension. Occasionally demonstrate either a zoned-out or confused expression during presentation.	Rigid movement or descriptive gestures. Displays mild tension; has trouble recovering from mistakes. Occasionally demonstrate both zoned-out or confused	No movement or descriptive gestures. Tension and nervousness are obvious; has trouble recovering from mistakes. Consistently zoned-out or displays confused

				expressions during presentation.	expression during presentation.
Timing		Within 10 to 15 minutes of allotted time.	Within 17 minutes of allotted time OR too short (<10 minutes).	Within 20 minutes of allotted time OR too short (<5 minutes).	Too long (>20 minutes) or too short (<3 minutes).
***TOTAL**					

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DECLARATION

I declare that the materials and contents in this paper are the end results of my own work, and that due acknowledgement has been given in the bibliography and references to ALL sources, by the printed, electronic, or personal.

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Student ID: 2205497

Signature:

Date: 24/4/2026

Table of Contents

Abstract

The tendency for university students to overuse social media has increased, as has the use of social media in relation to social comparison, which may result in psychological suffering, particularly worry. Social media and mental health are widely discussed, but few studies have examined how social media comparison and emotional regulation control predict anxiety in Malaysian university students, particularly in the local cultural setting. The study aim to investigate the relationship and predictive power between social media comparison, emotional regulation and anxiety, alongside exploring potential gender differences. Data were collect from 283 Malaysia university student which from age of 18 to 23 by using purporsive sampling. There validated self-report scales were used in the research to determine the presence of social media comparison, emotional regulation and anxiety. The relationships and predictive effects between the variables were analyzed and studied using JASP software. Result indicated that there was a statistically significant positive correlation between social media comparison and anxiety among the university students. Nonetheless, the emotion regulation did not have a strong influence on the levels of anxiety. Additionally, there were no differences in social media comparison and emotional regulation between the genders. The results have feasible implications on university counsellors, educators and policymakers to consider creating specific mental health interventions, including social media literacy programmes to assist students with their mental health during the digital age.

Keywords: Social Media Comparison, Emotional Regulation, Anxiety, University Students, Malaysia.

Subject Area: BF636-637 Applied psychology

Chapter 1 Introduction

Background of the study

The last decade has witnessed an exponential rise in social media use globally, and particularly among young adults and university students. Instagram, TikTok, Facebook and others are integrated into virtually all aspects of student life, including maintaining contact with friends, self-expression, working in groups, and even spending time. Their characteristics, such as fast posting, photo and video sharing, peer feedback, and algorithm-based feeds, make the online space buzz and interactive. The level of internet and social media usage amongst the young population in Malaysia is enormous, and thus, university students are constantly exposed to digital environments (Nordin, 2025). As an example, the analysis of Malaysian university students by the end of 2019 revealed that the use of social media is not only highly widespread among students but also offers them both social and academic benefits but can be detrimental to mental health (Thangaveloo & Chetiyar, 2024). Social media is no longer a peripheral activity; it has become central to our daily lives.

Social comparison is one of the psychological processes which are particularly applicable in this digital era. The classic social comparison theory (Festinger, 1954) holds that university students compare themselves to others when no objective standards are available. On social media, this is enhanced; university students are bombarded with edited and frequently idealised images of the lives of peers; their successes, appearance, lifestyle, and they are prone to judge upwards and downwards to do so. These comparison cycles shape their perceptions of themselves, emotions, and their behaviours (Tian et al., 2024).

It has been found that upward social comparison on social media is associated with decreased self-esteem, envy, Anxiety, and decreased well-being (Valkenburg et al., 2021). In Malaysia, there are indicators that social comparison on social media is related to negatively perceiving themselves and mental health risks. A single study was able to find a considerable correlation between social media addiction, social comparison, and self-esteem in Malaysian university students (Yi & Ahmad, 2023). Since university students compare themselves across various aspects, including academia, appearance, social life, and career ambitions, and because social media provides unlimited exposure to peers and near-peers, the role of social comparison in influencing our emotions and psychology is of monumental relevance.

Anxiety has emerged as a major concern among university students due to academic pressures, career uncertainty, and increased digital dependency (Renjith R & Arundev P R, 2024). It is academic pressures, career confusion, social changes, and, for many of us, a more digital study space after COVID-19. According to a Malaysian study, 67.3 per cent of the surveyed local university students reported feeling Anxiety during the pandemic (Afif et al., 2022). The use of social media in Malaysia was also discussed through a systematic review that identified Anxiety, depression, loneliness, technostress, and other psychological problems as the result of problematic use of social media or the internet (2024). Life at the university is a stressful period for mental health, as students have to deal with assignments, social drama, and transitions. Moreover, add to those mental health risk factors, the continual buzz of social media, and those factors may go through the roof. It has ceased to be just a peripheral concern to treat social media as part of our psychological ecosystem; it has become central.

Nevertheless, although social comparison and the use of social media may be a dangerous situation, the ability to regulate our own emotions is a factor that influences the

outcome of such risks, such as Anxiety. The regulation of emotions is the manner in which they can shape the emotions experienced, the timing of these emotions and the way they experience and express them (Gross, 1998; etc.). Cognitive reappraisal or problem-solving are examples of adaptive strategies associated with improved mental health, whereas suppression or avoidance are examples of maladaptive strategies associated with worse outcomes.

Digital emotion regulation (DER) is a new concept in this sense: the assumption that university students are not merely passive consumers of social media but are in control of their emotional reactions to its contents, to compare themselves to others, to receive feedback, or to view curated images. According to Bajwa et al. (2023), social comparison orientation mediates the relationship between smartphone or social media addiction on the one hand and the adverse consequences, such as phubbing, on the other hand, mediated by loneliness and, potentially, emotion regulation. Thus, the emotion-regulation ability can moderate or mediate the relationship between social-media-based comparison and Anxiety; students with high emotional-regulation skills may be less susceptible to upward comparison, whereas students with weaker emotional-regulation skills are more susceptible.

In conclusion, university students are all on social media, and the effects on university students' moods vary. On the good side, it keeps them active and on track with their schoolwork. However, it also creates mental health traps, particularly when university students continue to judge themselves against others. Looking at all those flawless photos on the internet may cause Anxiety and a lack of self-confidence, making them feel like they are not keeping up. However, when they can control our emotions, they are in a more advantageous position to cope with that comparison pressure, reducing stress and other

mental health issues. Therefore, developing strong emotional control may be an effective way to combat the negative energy of the digital world.

Problem statement

Social media has become an integral part of university students' daily life, serving not only as a communication platform but also as a space for self-presentation and comparison. Instagram, TikTok, and Facebook all present to the public a perfect image of the achievements of classmates, their appearance, lifestyle, and relationships. It has become a social comparison game in the past ten years of our lives, whereby they compare themselves with what they see on the internet. Studies are identifying that this is the actual mental health stuff going on with college students who are already experiencing academic stress, transitioning to life and social expectations. As an example, A research done in 2023 have concluded that concluded that social-media intensity increased upward comparison, which in turn had a spiking effect on social Anxiety (Xu & Li, 2024). That is an indication of a real risk of being psychologically strained and emotionally overwhelmed as a result of scrolling.

In the context of social media comparisons, the direction of comparison whether upward or downward plays a significant role in shaping individuals' emotional responses and self-perception. Comparisons that are upwards, i.e., comparing oneself to others whom they believe are superior or prettier, are associated with low self-esteem, a feeling of being left out, increased rumination, which can lead to Anxiety. Even a more recent study demonstrated that upward comparison was causing social Anxiety because of deprivation and rumination (Xu & Li, 2024). Downward comparison is normally audible however, it can be counterproductive in collectivist societies, and they might feel guilty or obligated rather than feel improved about themselves. Although these differences are beginning to be unravelled

by scholars, we currently possess very little research that disaggregates them, particularly in relation to the populations of Southeast Asian students.

Emotional Regulation is another important aspect, and it is the manner in which we form the way we feel and are able to convey our feelings. Two primary strategies, cognitive reappraisal and expressive suppression, have received increased attention in the recent past. Reappraisal, in which they re-test the situation, to alter the emotional hit, generally assists them to feel good as well as reduce Anxiety (Cutuli, 2014). It is probably associated with greater Anxiety and stress as suppression, which can be defined as the act of pushing feelings down. In 2025, a study among undergraduates found that lower use of cognitive reappraisal and higher use of expressive suppression were associated with greater anxiety, depression, and stress (Öztekin et al., 2025). Emotional Regulation is a strong predictor of mental health in higher education students across different cultures (Xu & Li, 2024). When examining Anxiety in students, therefore, we shall have to look at both good and bad methods of managing emotions.

Furthermore, even though the literature regarding Social Media Comparison and Emotional Regulation has increased, there are still considerable contextual gaps in research. The majority of Social Media Comparison and Emotional Regulation research has been conducted in Western and East Asian contexts, so it is unclear whether these results apply to Malaysian students. The cultural specificities of Malaysia, including its rich ethnic heritage, collectivist culture, and family expectations, affect the development of comparison, Emotional Regulation, and coping processes. Such cultural aspects can contribute to the presence of various dynamics compared to the Western context, indicating a gap in the current literature. As an example, Malaysian young people express themselves through social media and adhere to cultural behavioural rules of emotional control and modesty (Maliki et

al., 2024). This cultural effect implies that the scale of social comparison and Emotional Regualation effects may be different in various contexts and across cultures, which is not comprehensively covered in existing literature.

Second, studies tend to investigate comparison or regulation on their own, even though they are interconnected. Social comparison may have an emotional effect that we attempt to regulate, and independent testing of emotions does not capture their interaction to contribute to Anxiety. There have been very few studies that have actually investigated the role of regulation in intensifying, buffering or mediating the correlation between online comparison and Anxiety. Without integrating Emotional Regulation and social comparison, existing theories fail to fully explain how digital habits translate into stress, highlighting a significant theoretical gap. Moreover, there is limited focus on distinguishing between different types of anxiety, such as social anxiety versus generalized anxiety, further contributing to the theoretical gap in the literature. The lack of focus on the relationship between social media comparisons and anxiety leaves a gap in understanding the specific emotional responses in Malaysian university students. Given that upward comparison appears to be more of a factor in social Anxiety than general Anxiety, disentangling such differences might be crucial to the issue of specific challenges that Malaysian students have to grapple with (Hong et al., 2022).

Fourth, research on university students in Malaysia remains limited, with local studies primarily focusing on general social media usage, self-expression, and communication patterns, rather than exploring the psychological processes that link social comparison and Emotional Regulation to anxiety. This creates a population gap in understanding the specific challenges faced by Malaysian students. Sahharon et al. (2024) discovered, as one example, that Malaysian youths tend to rely on social networking sites as a way of handling uncertainty

and Anxiety, yet they did not elaborate on the comparison and regulation. The absence of specific psychological research is a significant drawback, given the fact that Anxiety among Malaysian undergrads is increasing. Campus mental-health services and support programmes could be inaccurate without culturally specific evidence.

Besides that, another population gap which is recent research indicates that excessive scrolling on social media among university students may result in constant comparison, disruption of our emotional perception, and an increase in anxiety. But it seems that researchers have not excavated the variations of such effects between the genders. For example, Sandor et al. (2025) found that the impact of smartphone use on Emotional Regulation and social anxiety varies substantially across male and female students. Furthermore, Naz et al. (2025) also indicated that female students who were associated with the use of social media experienced more psychological distress. It is against this backdrop that this project will attempt to investigate the relationship between social media comparison, Emotional Regulation, and Anxiety, particularly when we consider the gender differences between Malaysian university students.

All these gaps combine to make it difficult to develop concrete and evidence-based mental-health interventions in Malaysian universities. Since Anxiety continues to increase among our colleagues, it is indeed requiring studies that bridge the digital behaviour (social-media comparison) and internal mechanisms (regulation). Such research would focus on theory and practice, particularly in our diverse campuses.

Lastly, even though the Social Media Comparison and Emotional Regulation are acknowledged as the critical factors that can impact anxiety among university students, the gap in the literature is still apparent, particularly regarding gender variations and the Malaysian cultural background. The majority of studies are conducted in Western or East

Asian contexts, without considering the cultural dynamics unique to Malaysian students. The proposed research will address this gap by investigating the relationships among social media comparison, Emotional Regulation, and anxiety, and how these relationships may be mediated by gender differences among Malaysian students.

Significance of the study

This study contributes meaningfully by investigating a few things that are important to university students, such as social usage, Anxiety, and what is happening in Malaysia's higher education environment, in terms of gender and culture. The paper closes significant gaps in social comparison of various types on socials and coping with Anxiety by examining how we handle our emotions, providing practical advice regarding the research and student life in general.

Theoretical Significance

The present study has contributed to the academic literature on the issue by examining the association among social media use, anxiety, and Emotional Regulation among Malaysian university students. It also fills an important research gap by combining the influence of different forms of social media comparisons (academic, appearance, lifestyle) and the moderating effect of Emotional Regulation on the anxiety-inducing effects of such comparisons. The study builds on the available literature on social comparison (Festinger, 1954) by integrating it with recent theories of Emotional Regulation (Gross, 2002) and digital emotion regulation (DER) (Verma et al., 2023). In contrast to studies, which are most often carried out in Western contexts, this study examines the impact of cultural factors and the overuse of social media on the mental health of students in Malaysia. The results contribute to insight into how social comparison online influences feelings of anxiety in a Malaysian

setting, which can be regarded as a valuable addition to the relevant dimensions of the models of social comparison theory and Emotional Regulation.

Practical Significance

The results of the research have significant implications to the real world, especially to university counsellors, mental health practitioners, and the Ministry of Higher Education in Malaysia. This study can be used to establish specific interventions like reappraisal training, mindfulness training, and social media literacy programmes since it is possible to recognise students who tend to use upward social comparison and those with ineffective Emotional Regulation (Mohd Salleh Sahimi et al., 2022). Such interventions will help lower the levels of anxiety associated with social media comparison, which will increase the mental health and academic success of students. Some of the research suggestions are also to improve the policy of digital well-being in universities, such as incorporating Emotional Regulation education in orientation or creating awareness programmes about the psychological impact of social comparison and emotional responses to social media materials. Moreover, the paper examines gender-specific variations in Emotional Regulation and comparison tendencies and offers gender-sensitive intervention strategies. By understanding the influence of collectivist values, family pressures, and cultural diversity on Malaysian students' social media use, one can strive to provide culturally sensitive and effective mental health support and interventions to improve the university experience and students' achievements.

Research Objective

1. To examine the level of Anxiety, Social Media Comparison and Emotional Regulation among university students in Malaysia.

2. To examine the relationship between Social Media Comparison, Emotional Regulation and Anxiety among university students in Malaysia.

3. To examine the significant influence of Social Media Comparison and Emotion Regulation on Anxiety among university students in Malaysia.

4. To examine significant differences in Social Media Comparison, Emotion Regulation and Anxiety between male and female university students in Malaysia.

Research Question

1. What is the level of Anxiety, Social Media Comparison and Emotional Regulation among university students in Malaysia?

2. What is the relationship between Social Media Comparison, Emotional Regulation and Anxiety among university students in Malaysia?

3. What is the significant influence of Social Media Comparison and Emotion Regulation on Anxiety among university students in Malaysia?

4. Do significant differences exist in Social Media Comparison, Emotion Regulation and Anxiety between male and female university students in Malaysia?

Research Hypotheses

H_1: There is a relationship between Social Media Comparison, Emotional Regulation and Anxiety among university students in Malaysia.

H_{1a}: There is a significant positive correlation between Social Media Comparison and Anxiety among university students in Malaysia.

H_{1b}: There is a significant negative correlation between emotion regulation and Anxiety among university students in Malaysia.

H_{1c}: There is a significant positive correlation between emotion regulation and Social Media Comparison among university students in Malaysia.

H_2: There is a significant influence of Social Media Comparison and Emotion Regulation on Anxiety among university students in Malaysia.

H_{2a}: There is a significant influence of Social Media Comparison on Anxiety among university students in Malaysia.

H_{2b}: There is a significant influence of Emotion regulation on Anxiety among university students in Malaysia.

H_3: There is a significant differences in Social Media Comparison, Emotion Regulation and Anxiety between male and female university students in Malaysia.

H_{3a}: There are significant differences in Social Media Comparison between male and female university students in Malaysia.

H_{3b}: There are significant differences in Emotion Regulation between male and female university students in Malaysia.

H_{3c}: There are significant differences in Anxiety between male and female university students in Malaysia.

Conceptual Definition

Social Media Comparison

Social Media Comparison is the process by which individuals attest to their personal features, including looks, accomplishments, or even their social existence, by comparing themselves with others on social media. The comparison may either be downwards

(comparing oneself to the individuals who are viewed as inferior) or upward (comparing oneself to the individuals who are viewed as superior) (Gibbons & Buunk, 1999). Such comparisons tend to influence self-esteem and emotional health, resulting in anxiety or dissatisfaction. This concept is measured on the INCOM-11 scale (Gibbons & Buunk, 1999), which assesses the frequency of upward and downward social comparisons made on social media platforms (Instagram, Facebook, and TikTok). The scale is directly related to the conceptual notion of social media comparison, as it measures the frequency and emotional effects of such comparisons.

Emotional Regulation

Emotional Regulation is the capacity to respond to and control emotional experiences, either adaptively or maladaptively. It contains strategies such as cognitive reappraisal (modifying thoughts about a situation to change its emotional effect) and expressive suppression (helping not to express emotions). Positive mental health outcomes are accomplished through effective Emotional Regulation, and negative outcomes are related to ineffective Emotional Regulation strategies of suppression and anxiety and stress (Gross & John, 2003). This concept is assessed through the Emotion Regulation Questionnaire (ERQ) (Gross & John, 2003), which evaluates the frequency of employing cognitive reappraisal and expressive suppression as one of the Emotional Regulation strategies. This working definition relates to the conceptual notion of Emotional Regulation, as measured by the extent to which individuals apply these strategies to control their emotions.

Anxiety

Anxiety is a condition of excessive worry and nervousness, which is usually accompanied by physical symptoms of restlessness and lack of concentration, usually in reaction to perceived threats or uncertainties (Chand & Marwaha, 2023). Within the context

of social media use, anxiety may be provoked by social comparison, especially upward social comparison, when people believe they are not competing with idealised images they see on social media. The measure of the severity of anxiety symptoms is the Generalised Anxiety Disorder-7 (GAD-7) scale (Spitzer et al., 2006), which determines the frequency with which people experience such symptoms as worry, nervousness, and restlessness. Such an operational definition corresponds to the conceptual interpretation of anxiety in that it measures the intensity of anxiety. It attributes it to emotional experiences, such as those created by social comparison.

Operational Definition

Social Media Comparison

The comparison of social media will be assessed by means of the INCOM-11 (Social Media Comparison) scale that will be created by Gibbons and Buunk (1999). This scale consists of 11 items that evaluate how often we draw parallels with other people in social networks like Instagram, Facebook, or TikTok. It determines upward (comparing oneself to others who are seen as better) and downward (comparing oneself to others who are seen as worse) social comparisons. The participants will be requested to rate their frequency of social comparison using a 5-point Likert scale (con1 = Never, 5 = Always). The positive scores show a higher inclination to Social Media Comparison (Gibbons & Buunk, 1999).

Emotional Regulation

The Emotion regulation questionnaire will be used to measure emotion regulation by measuring Gross and John's (2003) Emotion Regulation Questionnaire. The questionnaire is a self-reported 10-item measure that evaluates two emotion regulation strategies, one of which (cognitive reappraisal, or the possibility to redefine an experience of negative emotion so that

it cannot affect the level of its emotional impact) and another one (expressive suppression, or the act of suppressing the expression of emotions). The respondents will evaluate the frequency of these strategies on a 7-point Likert scale (1 = Strongly Disagree, 7= Strongly Agree). A more positive score on the cognitive reappraisal subscale indicates more adaptive strategies of emotion regulation, while a more positive score on the expressive suppression subscale indicates more maladaptive ones (Gross & John, 2003).

Anxiety

The degree of Anxiety will be assessed through the Generalised Anxiety Disorder-7 (GAD-7) scale, which was created by Spitzer and his team (2006). It is a 7-item questionnaire that measures the intensity of anxiety symptoms in the last fortnight. The subjects will report the frequency of frustration of anxiety symptoms, including nervousness, worry, and restlessness, on a 4-point scale (0 = Not at all, 3 = Nearly every day). The sum of all the responses will be summed, and a high score will imply high anxiety levels. The scores are interpreted as follows: 0-4 (minimal anxiety), 5-9 (mild Anxiety), 10-14 (moderate Anxiety), and 15-21 (severe Anxiety) (Spitzer et al., 2006).

Chapter 2 Literature review

Introduction

The chapter is a review of the literature on the connections among social media comparison, Emotional Regulation, and anxiety among university students in Malaysia. It describes the important variables, examining the relationship between Social Media Comparison and Emotional Regulation and anxiety, and analyzes gender differences. The conversation begins with self-comparison on social media and the influence it has on self-perception and emotional state through online communication. It then examines emotional control, detailing its importance in alleviating the adverse effects of Social Media Comparison and demonstrating how individuals can use regulation skills to reduce anxiety. The chapter also explores the relationship between Social Media Comparison and anxiety and how the two concepts affect mental health. It examines the connection between Emotional Regulation and anxiety in the context of anxiety-buffering effects of Emotional Regulation. Lastly, the theoretical and conceptual models on which this study is based are addressed, and their ability to explain the interdependence among Social Media Comparison, Emotional Regulation, and Anxiety is discussed. This literature review aims to develop a framework for understanding how psychological processes operate and how they apply to Malaysian university students.

Social Media Comparison

Services such as Instagram, Facebook, and TikTok allow people to present themselves and interact with other people. However, these platforms encourage the use of social comparison, particularly by encouraging others to compare the experiences they have with the life carefully crafted and often idyllic discussions with the lives of others (Blanc-

Brillon et al., 2025). Comparing oneself with others on social media is a natural process in the human mind, during which a person compares themselves with another person, their characteristics, success, and life circumstances to those of others whom that encounter on the Internet. The concept of social comparison theory was introduced by Festinger (1954), and the theory assumes that people are always inclined to compare themselves with other individuals to determine their personal capacity and self-esteem. Under the influence of social media, these comparisons might have a profound impact on mental health, including such issues as anxiety, self-esteem, and overall well-being. Comparisons in social media can be mainly divided into two such: upward and downward. When one compares themselves with others who they believe to be doing better in certain things, e.g., physical attractiveness, wealth, or lifestyle, this can be referred to as upward comparison. On the other hand, downward comparison occurs when people compare themselves with other people whom they believe to be less fortunate or less successful.

Measuring oneself against others in the social media platform has been linked to several negative psychological consequences, including low self-esteem and mental health disorders. Studies have indicated that contact with the social media idealised images of social media peers may lead to feelings of inadequacy or envy and anxiety. McComb et al. (2023) added to the existing meta-analyses and discovered a significant correlation between upward social comparison and negative emotional responses, including anxiety, depression, and low self-esteem. Social media can also be a false impression of life as it includes images of success, achievements, and moments of happiness of people, which distorts the perception of reality of the viewers or users. This misleading notion creates the sense of relative deprivation, whereby people feel that they are not as good as other people on the Internet, and they are even more dissatisfied and anxious.

Tian et al. (2024) investigated the effect of upward social comparison on social anxiety. The results quote that people who frequently compare themselves to others upwards frequently develop a heightened sense of social anxiety especially when they consider other people as more appealing or more successful than themselves. This becomes more dramatic when the individuals keep thinking about these comparisons and resulting in them losing their emotional and psychological health.

Even though upward comparison is mostly associated with negative implications, downward comparison can occasionally result in temporary self-esteem to the person being viewed as higher as people might discover to be more optimistic about the situation regarding oneself when others compare us against the other person believed to be deprived. However, this power is not always positive, especially in collectivist societies like Malaysia, where empathetic and modest ideas have a great sense of importance (Nie et al., 2024). According to Valkenburg et al. (2021), downward comparisons often bring about an element of shame or responsibility rather than long-term self-esteem. This implies that despite the short-term emotional relief that downward comparison might cause, it is not always followed by long-term well-being and satisfaction.

Social Media Comparisons have great implications to the mental health of university students, as they are especially susceptible to the negative impacts of social comparison (Arigo et al., 2024). Constant exposure to the ideal images of academic accomplishments, social activities, and physical image among peers increases pressure to meet academic and social expectations in Malaysia. Kunhao et al. (2024) discovered that comparison via social media among adolescents in Malaysia is substantially associated with increased social anxiety, stress levels, and problem in self-esteem. The results have shown that teenagers who frequently use upward comparisons on social media are more likely to struggle with mental

health issues, because they internalise the perceived differences between their current realities and the idealised ones found online.

Widespread use of social media by Malaysian university students has become a cause of major concerns about the effects that social media has on the well-being of the learners. Thangaveloo and Chetiyar (2024) found out that the more time students spend on social media, the greater the chance of developing social anxiety and despair. The study illuminated that Social Media Comparison plays a major role in enhancing the deterioration of such adverse consequences because students tend to face a well-planned highlight reel of the success of fellow students. Such constant comparison creates a feeling of inadequacy and self-doubt, specifically when people feel inadequate in comparison to their friends.

In addition, the cultural context of Malaysia has also been highlighted in recent literature that demonstrates that, in this region, individualism blended with collectivism affects the way students perceive the comparison of social media (Kunhao et al., 2024). Children may also find it reassuring to make bad comparisons and they may feel guilty or pressured especially when their social media interactions are monitored by family and friends. This is an important cultural dimension in exploring the psychological impact of Social Media Comparison in that it would determine how the students interpret and react to the online image they are exposed to (Lee & M, 2022).

The mechanisms involved in instigating the effects of Social Media Comparison are diverse psychologically. The relative deprivation principle, according to which people feel inferior or inadequate in comparison with other people who seem to live better lives, can also be a important factor in the negative outcomes connected with upward social comparison (Xu & Li, 2024). The effect of deprivation can be feelings of inadequacy and anxiety, particularly when people feel they cannot achieve the success or the way of living as portrayed on the

internet. Moreover, social comparison is likely to lead to rumination, where people live to think about their perceived inadequacies in comparison to others, making their anxieties and depressive feelings worse.

Besides, the endless cycle of unhappiness and reduced self-esteem can be strengthened by the practice of self-comparisons with others on social media (Blanc-Brillon et al., 2025). The people in comparison end up being compelled to improve their presence in social media to match the perceived views of success (Meier & Johnson, 2022). This constant pursuit of inclusion and validation can form an endless loop of emotional discomfort, as people feel the need to portray an ideal him/herself online and this tool can determine the misrepresentation of a person. This stress to live up to this appearance may cause burnout, stress, and a twisted view of self-worth.

In short, the comparison using social media actually influences the mental state of Malaysian university students, particularly when they compare themselves to other people, which results in increased anxiety and a decrease in self-esteem. Even in cases where they tend to downward compare in the name of a short-term feel-good, it tends to add guilt or shame to the equation, which is quite typical in our collectivist culture. This research shall venture into the relationships between anxiety, social media comparison, and Emotional Regulation amongst college students, and also verify whether gender has anything to do with these vibes. These findings are intended to inform strategies to mitigate the negative effects of social media on our psychological health and to develop healthier ways to manage their feelings.

Emotional Regulation

According to Martinez-Priego et al. (2024), Emotional Regulation is defined as the control, planning, and management of the emotional state to reach the goals or to address the

needs of the environment. This framework represents how the field has developed, rather than continuing to be simply categorised in terms of techniques that are adaptive and maladaptive. It also recognises that the success or failure of any strategy depends on the individual, the circumstances, and the targeted objectives of the regulation (Stanoi & Ochsner, n.d.).

According to recent research, Emotional Regulation is an important issue in terms of psychological well-being. A study conducted in 2025 established that the way people cope with sadness is intricately connected with the rates of depression and anxiety. Namely, low levels of depressive symptoms related to positive cognitive reappraisal, religious coping, and supportive-seeking, and higher levels of symptoms were linked with rumination (Zaid et al., 2025). In addition, good emotional control improves human relationships since it builds emotional expressiveness, empathy, which is crucial in maintaining healthy relationships.

Neurologically speaking, when deciding on a matter, the reactivation of some brain areas when processing emotional stimuli (i.e., emotion regulation) has been shown to be correlated with greater resilience and more adaptive decision-making in times of stress (Researchers Map How the Brain Regulates Emotions, 2024). Lack of Emotional Regulation can result in biased decision-making processes where emotions get the better of sensible evaluation. As an example, research on decision-making under stressors has revealed that unregulated emotions such as anxiety or frustration led to poorer decision-making that can be very disruptive to the long-term goals (Tugade & Fredrickson, 2024). In turn, emotion management will improve the quality of life, as well as the ability to make considered and not rushed decisions.

The existing research on Emotion Regulation continuously singles out the basic repertoire of approaches to changing the emotional experience or expression. One of the best-

researched approaches is cognitive reappraisal, which is a type of antecedent-focused control, which is changing one's interpretation of an emotionally coloured situation to impact its emotional impact. A difficult job deadline can be taken as an opportunity of promotion rather than a threat. The study by Martinez-Priego et al. (2024) has shown that out of ten models of emotion regulation, the cognitive dimension has remained the most prominent. The ways of focusing more on the other sides of emotions are common. Research has shown that consistent reappraisal helps in the improvement of psychological adaptation and general well-being.

Expressive suppression is a response-based strategy where expression of feelings like tears or anger are suppressed once already expressed like crying or being angry. Research suggests that a high frequency of resorting to suppression can lead to physiological and negative mental health outcomes, although it can be used to attain short-term goals, like maintaining social decency. The authors showed that many models and representations include suppression, but the intentions behind regulation determine the flexibility of suppression mechanisms (Martínez-Priego et al., 2024). This subtext also depicts how suppression is not necessarily bad but rather its effectiveness depends on the objectives of the individual and the situation where it was used.

One of these accepted approaches is acceptance purposely designed approach in which people allow emotions to rise to the surface without evaluation or even trying to change them or suppress them. The idea of acceptance is now recognised as a positive approach in the management of emotion in the case of chronic stress or in other circumstances that are uncontrollable even though it has been underscored in the current models (Martínez-Priego et al., 2024). had some analysis on other previous models which had not explicitly mentioned acceptance. Today the body of knowledge on emotion regulation

recognises acceptance as a workable approach and therapeutic interventions currently emphasise acceptance-based therapy. A single research review has identified studies indicating that nature experience may be beneficial to adaptive coping, such as mindfulness and acceptance, and harmful in reducing rumination (Vitale & Bonaiuto, 2024).

There are several factors that are involved in how individuals deal with their emotions. Neurobiological data is used to emphasise the importance of brain systems in a study in 2024, the use of prefrontal cortical areas in regulation as compared to emotion generation was also discovered to be neurobiologically activated by the brain systems, and people who can activate brain systems more effectively are more resilient (Dartmouth, 2024). University students are very likely to react emotionally when using social media, especially when we are constantly comparing ourselves to others. Literature indicates that students engaging in a consistent comparison of themselves with other students on these platforms develop more anxiety and stress (Vengurlekar et al., 2025). Strategies such as mindfulness and cognitive reframing are known to reduce the negative emotional effects of such comparisons. Longitudinal research indicates that the capacity to control emotions is crucial for reducing anxiety among students (Zuo & Zan, 2025).

Emotional Regulation is a crucial element and a part of resilience which is described as the ability to recover after stress or hardship. Those who adopt adaptive regulation methods, including reappraisal and acceptance, in the case of difficult situations tend to be psychologically well. The research on emotion regulation published in 2025 found that showed that the maladaptive behaviours, including rumination, are associated with increased anxiety and depressive symptoms, which signify a lack of resilience (Puglisi et al. 2024). Similarly, regulatory interventions, such as nature-based exposures are promising in strengthening coping abilities (Vitale & Bonaiuto, 2024). It can help the person to control

their emotions and cope with stress successfully through the use of active coping skills such as problem-solving, finding social support and inclusion of relaxation activities.

In brief, learning to improve control over our emotions is central to mental health, evaluation, and well-being. Studies have also found that cognitive reappraisal and acceptance are some strategies that enhance resilience and reduce anxiety and depression. On the other hand, poor behaviours like rumination may negatively affect psychological performance. Our emotion regulation is influenced by environmental and cultural factors, and it is shaped by the cognitive styles we have and the ways we express our feelings. The Emotional Regulation should be reviewed on a variety of levels, i.e., personal, group and societal, since a strategy may be effective in one individual but not as effective in a collective. It is crucial to analyse the gender differences as well. Men and women have different expectations and emotional experiences in society, which influence how they manage their emotions. The awareness of these differences allows us to create more customised and effective interventions so that the Emotional Regulation strategies will be suitable and reach all individuals.

Anxiety

Anxiety is one of the serious mental problems that university students would be prone to because of their coursework and exposure via social media. Even though social media can improve social interaction, it causes anxiety because of social comparison and false impressions of social success and makes students feel inferior (Jiang, 2021). Furthermore, the important coping skill to anxiety is Emotional Regulation since the lack of Emotional Regulation increases anxiety prone to stress (Fruehwirth et al., 2024). The state of anxiety disorders thrives in the setting of higher education as stress and emotional instability are frequently mentioned by the students (Xu & Wang, 2023). The interdependence between the use of social media, emotional control, anxiety, and other variables should be researched to

inform interventions that enhance the mental well-being of students in general (Inscore, 2023). Anxiety disorders can be viewed as a heterogeneous band, and these disorders have their own features that affect people differently.

Generalised Anxiety Disorder (GAD) is the neurotic and excessive cognitive and emotional worry in various areas, such as academic achievement and interpersonal connections. GAD is frequently found in university students, which is associated with academic performance-related stress and social comparison of online-based conditions (American Psychiatric Association, 2021). The most frequent consequence of panic episodes of brief, intense fear or discomfort, which may include somatic symptoms, tachycardia, etc., may cause prolonged anticipatory anxiety about the future; social media, in most cases, can trigger panic (Meyer and Williams, 2022). The social anxiety disorder also has particular features of a strong phobia of negative evaluation in interpersonal relationships as well as being magnified by the social media conditions that continuously fuel the process of comparing people to each other. The feeling of inadequacy and self-doubt can be cultivated through exposure to idealised images of peers (Friedrich et al., 2023).

The Anxiety disorders are a product of complex interaction between genetic, environmental, neurobiological and cognitive factors. Twin and family designs show that there is a genetic subject to anxiety disorders that may be triggered by environmental stressors and that it is increased by the widespread use of social media among students (Kendler et al., 2022). The catalysts can be environmental factors (e.g., academic failure or problems in relationships). The pressures are amplified by social media with a promulgated success, and anxiety and dissatisfaction are continually experienced (Dixon et al., 2021). Amygdala and prefrontal cortex are key brain regions, which are vital in the regulation of anxiety; excessive use of social media has been identified to deregulate these areas, hyper

stimulating the amygdala, and enhancing the degree of anxiety (Swartz et al., 2024). TIL Processes, such as catastrophising and perceptions of risk are also central to anxiety and often social comparisons on social media can significantly increase these distortions, therefore resulting in anxiety (Dugas et al., 2022).

The somatic effects of anxiety are severe and include cardiovascular complications, gastrointestinal malfunctions, and immunosuppression, making people vulnerable to numerous diseases. Academic stressors and social media influence are the commonly occurring antecedents of these physiological changes, leading to a high level of cortisol and a prolonged state of anxiety that worsens the health condition and overall well-being (Steiner et al., 2022). Depression is commonly comorbid with anxiety, and this affects the cognitive functions (concentration, decision-making, and memory). The comparison of oneself constantly with idealised online images leads to feelings of incompetence and depression, which contributes to the increased anxiety (Walker et al., 2021). The current practise of negative self-comparison predisposes the vulnerability to psychological and emotional stress and has large scale consequences on everyday operation.

Anxiety can have a negative impact on academic results and interpersonal communication. People with anxiety can barely develop healthy relationships and meet the academic goals; the issues are exacerbated by social media where constant comparison, stress inflammation, and dissatisfaction with life in general are encouraged (Choudhury et al., 2022). Proposals should be effective and aim to reduce anxiety and improve the mental state of students in general.

The mitigation of anxiety and resilience are important elements in avoiding the acquisition of anxiety disorders. Deep breathing, progressive muscle relaxation, and effective time management techniques should be used to eliminate the symptoms of anxiety and reduce

physiological responses to stress. The development of resiliency would provide the students with the ability to resist stress and anxiety. Individuals who build resilience by means of affirmative self-speak, social support, and adaptive coping skills are in a better place to overcome educational and social obstacles, which are increased by the social media. Resilience enables the minimization of anxiety disorder prevalence and increases the coping of academic and personal problems (Beck et al., 2022).

Anxiety among university students is often triggered by academic pressures and social media exposure, leading to social comparison and false perceptions of success. Emotional Regulation is crucial in managing anxiety, as a lack of it can worsen stress. Social media exacerbates anxiety by fostering unrealistic comparisons. Anxiety disorders, such as GAD, PTSD, and social anxiety, are linked to genetic, environmental, and neurobiological factors. Treatment options include Cognitive Behavioral Therapy (CBT), Exposure Therapy, and complementary therapies like exercise and acupuncture. Building resilience through coping strategies helps mitigate anxiety and improve students' well-being, reducing the impact of academic and social stress.

Social Media Comparison and Anxiety

Social Media Comparison (SMC) refers to the idea that people always feel they are being evaluated by others online, especially when they come across hyper-edited, idealised posts churned out day to day (Tian et al., 2024). In one of the studies, it has been established that when people compare themselves with others who seem to be more successful, prettier, or have more connections, their anxiety levels are heightened and result in them getting too preoccupied with the way they look and feel. Tian et al., 2024). It is not the length of time people spend staring at screens, but rather specific actions that encourage them to compare, such as scrolling through endless highlight reels, that truly exacerbate anxiety (Marciano et

al., 2024). This entire SMC is enormous, since it is composed of students of both male and female identities, and it is therefore during this period that people are most seat-up-sensitive. They should create interventions to reduce destructive comparison behaviours and reform the digital world to avoid psychological detriment (Bonfanti et al., 2024).

The primary offender in this regard is the passive scrolling that repeatedly fills our feed with images of perfectionism and flawlessness, only contributing to the upward comparison that fuels anxiety (Marciano et al., 2024). However, in the case of people commenting or sending private messages, it is a less strong connection to stressful emotions. In other words, the manner of engagement is important to the tune of time spent (Marciano et al., 2024). The site that emphasises appearance, such as Instagram, increases this pressure, which manifests as dissatisfaction with the body and an inability to be at home with (Merino et al., 2024). The images are polished when others see them and enhance instant anxiety about our appearance- and this anxiety can be long-lasting (Tian et al., 2024). The systematic reviews indicate that there is indeed a correlation between big-picture social media use and anxiety; however, the impact thereof is everywhere, as long as it depends on the platform, the person using said technique, and what it is they do online (Ahmed et al., 2024; Marciano et al., 2024).

Age and gender affect the entire SMC-Anxiety formula due to the dependency on peer approval in college. The disease type is generally found between appearance comparisons and anxiety more in females than in males. However, males may experience the same pressure in arenas such as building status or simply engaging in overall social boasting (Merino et al., 2024). Longitudinal studies conducted in 2025 further explored that there may be a suggestion that the pathways are also different, with girls potentially experiencing anxiety when they see the bodies of others, and guys potentially feeling it when they compare

their social or performance status (Zhang et al., 2025). Even the construction of apps makes them compare the Instagram feed with its emphasis on pictures, TikTok with its loops, and the popularity levels all contribute to increased exposure to idealised content (Taylor & Armes, 2024).

Besides, the entire algorithm game further emphasises hot content, offering comparison opportunities, and it can stimulate anxiety among students who use all of these channels (Hall & Keenan, 2025). Among features, image-oriented apps allow users to pose appearance comparisons, and video-oriented or social-chat-based platforms excel at fostering achievement or popularity vibes, which are risk factors for mental health (Taylor & Armes, 2024). Moreover, that is why the most recent studies focus on reducing lazy scrolling, developing digital literacy, curating feeds, calming the SMC buzz, and lowering anxiety levels (Bonfanti et al., 2025).

In brief, current studies from 2021 to 2025 indicate that making comparisons about themselves on social media actually impacts their emotional states, particularly when it comes to increasing anxiety levels, since they are constantly bombarded with idealised and edited content. Upward comparison, passive scrolling, platform design and algorithm-driven feeds contribute to that anxiety, and it is even higher in younger adults and gender differences. Although social media might help keep them connected, the data indicate that targeted solutions, such as reducing passive use, becoming digitally literate, and altering social media's functions, can reduce the psychological damage caused by social media comparison. As the platform continues to develop, it is essential to learn more about and deal with these mechanisms of comparison to make our digital lives healthier.

Emotional Regulation and Anxiety

Emotional Regulation (ER) has an important role in mental health, particularly in relation to the formation and management of anxiety. The article highlights that challenges in Emotional Regulation such as the inability to control or manage emotions, are associated with increased anxiety symptoms (Niu et al., 2023). (Niu et al., 2023). Precisely, maladaptive ER behaviours like rumination, catastrophizing, and suppression are more likely to be positively associated with anxiety, whereas adaptive behaviours, specifically, cognitive reappraisal, were found to have negative relationships (Daros et al., 2021). This fact highlights a crucial role that ER plays in the development and stability of anxiety, and it may be considered an effective way to alleviate anxiety because of its improvement (Kozubal et al., 2023).

It is also necessary to comprehend the relation between ER and anxiety, as ER is a factor that could be changed and addressed with the help of psychosocial interventions. Through increasing ER, we may decrease the total anxiety of various populations (Whitmoyer et al., 2024). As an example, further individualization and targeted interventions may be achieved by focusing on the particular ER strategies that cause anxiety in various individuals (Reynard et al., 2022). This method is particularly applicable in the context of a public health scenario, where specific programmes have the potential to cover the individual disparities in the ER and anxiety levels.

The impact of the various ER strategies on anxiety is significant. As an example, cognitive reappraisal (replacing the way one thinks about a situation to change its emotional effect) has always been associated with reduced levels of anxiety (Garke et al., 2025). Conversely, the inhibition of expressiveness, that is, when an individual represses emotional outbursts, has been considered to be related to anxiety and poorer psychological results (Garcia-Fernandez et al., 2025). Rumination, worry, and avoidance are maladaptive coping

strategies, which have shown medium-to-large positive correlations with anxiety severity in both adults and children, and represent another important reason to consider such coping strategies in anxiety treatment (Antuna-Camblor et al., 2024). Like distraction and problem-solving, some of the strategies have mixed effects: distraction may alleviate negative emotions in the short run but has a lower effect on chronic anxiety unless combined with adaptive processing (Whitmoyer et al., 2024).

According to cross-sectional studies and treatment-outcome studies, ER problems can anticipate more anxiety symptoms and worse treatment outcomes where ER problems are not addressed (Kozubal et al., 2023). Furthermore, experiments involving ecological momentary assessment (EMA) methods prove that real-time rumination and suppression may predict the increase in negative affect and consequential anxiety (Reynard et al., 2022). Social and generalised anxiety disorder. They have additionally determined that the deficiency of reappraisal and the high levels of catastrophizing are usually associated with the severity of symptoms (Garke et al., 2025).

In addition, longitudinal studies give additional knowledge as to the relationship between ER and anxiety. To illustrate, studies have shown that specific ER tactics, such as rumination and catastrophizing, may be used to anticipate the increase of anxiety in the course of months or years (Niu et al., 2023). On the contrary, reappraisal practice has proven to result in anxiety alleviation in the long term (Antuna-Camblor et al., 2024). However, there is also longitudinal evidence that there is a reciprocal relationship forming, in which anxiety can decrease the flexibility of ER, which further enhances the reliance on maladaptive strategies and perpetuates the symptoms of anxiety (Sahib et al., 2024).

Besides the overall consequences of ER on anxiety, gender and age differences also play a significant role in the use and consequences of ER strategies on anxiety. Researchers

have established that more adaptive ER can be employed by older adults, but they might be less adaptable in adapting their plans to new circumstances (Whitmore et al., 2024). It has also been found that gender differences exist, and females are generally characterised by more internalising symptoms and ER problems, including rumination, whereas males may be more emotionally suppressive (Novotny et al., 2024). These results imply that anxiety and ER interventions might require age and gender-specific interventions to be as effective as possible.

In conclusion, the connection between Emotional Regulation and anxiety is established in the recent literature, and the ER-oriented interventions may have the potential to improve anxiety management. The poor adaptive ER strategies are always linked with the elevated level of anxiety, whereas the adaptive ones, such as cognitive reappraisal, provide safeguarding. Knowledge of how the various ER strategies and moderators, including gender and age, impact anxiety can also help in designing specific remedies that will lead to a reduction in anxiety.

Social Media Comparison and Emotional Regulation

The social-comparison game has continued to be intensified by social media, and thus, emotionally controlling themselves (Emotional Regulation or ER) has become a gigantic thing for university students of late. In essence, Emotional Regulation is the way they frame the way they feel, whether they express it or suppress it. Recent research is also indicating that Instagram, TikTok, and Snapchat have never had as many ER visits induced by seeing people (Lia & Iswinarti, 2025). It makes them compare their appearance, shoes, and entire lives to these perfectly curated profiles, and this is worse when they are making upward comparisons, i.e., when they consider people who appear to be better (Zuo & Zan, 2025). No wonder they are continuing to be less cool about themselves, either in the

classroom or during our recreational time. However, recently, the fascination with social media has made them believe that they are approaching a time in which our emotional distress can be intensified, particularly among students (McAlister et al., 2024). Making the Emotional Regulation and Social Media Comparison connection is critical since it allows them to perceive how their daily scrolling impacts their mental health and create interventions that are likely to keep them balanced.

Additionally, the Social Media Comparison serves not only as an emotional trigger, as evidenced by research, but also as a crucial platform for Emotional Regulation efforts. People cannot help but feel anxious about how this person can be seen in a simpler, more basic form, and in some cases, even their self-worth (Xu, 2024). Experience sampling or survey studies suggest that they immediately experience a mood change and attempt to deal with it by simply scrolling, browsing, and seeking reassurance, even altering how they post (Lia & Iswinarti, 2025). However, not all those coping strategies help. Psychologically, general scrolling can directly worsen feelings of dissatisfaction, as individuals remain inundated with those celestial profiles. In contrast, more deliberate approaches, such as reframing what is happening, can reduce perceived negativity (Yue et al., 2021). As Social Media Comparison resides within the design of the platforms, it is like a trigger, but also where they are continually trying to refine our Emotional Regulation tactics.

In the last year, articles have revealed, through extensive research, the significance of Emotional Regulation strategies for Social Media Comparison hits. Reappraisal, such as re-evaluating a situation to alter how they feel, is an effective defence that helps shield university students against the negative influence of social media comparisons (Zuo & Zan, 2025). Feeling positive after looking at a competitor feed is a skill that they can maintain when they are good at reappraisal (Yue et al., 2021). On the other hand, repression may

backfire for them, particularly when a teenager already struggles to manage negative emotions (Tedjawidjaja & Christanti, 2022). The stuck-in-your-thoughts loop immediately after the comparison, also known as rumination, is also poorly associated with well-being, so a bad mood cannot be easily eliminated in that case (Peker & Yildiz, 2022). Therefore, it is not only that Emotional Regulation tactics can be an inert reaction to social media comparison. In fact, they can determine whether a comparison will be processed as a painful psychological experience or a light annoyance.

Furthermore, another important angle is the intensity and use of social media. Some sources claim that a problematic user, who scrolls mindlessly, tries to gain likes, and is exhaustively preoccupied with online content, only serves to exacerbate the emotional harm caused by Social Media Comparison (Peker & Yildiz, 2022). It results in increased upward comparisons among heavy users, which perpetuates spiralling emotional dysregulation, and the person resorts to the platform as a relief, forming a vicious cycle (McAlister et al., 2024). The evidence indicates that upward comparisons indeed reduce well-being by reducing self-esteem and Emotional Regulation demonstrating that social media comparisons are an emotional stressor that accumulates over time (Zuo & Zan, 2025). Thus, the two-way nature of the relationship means that university students become dysregulated by social media comparisons, and this dysregulation increases their tendency to keep scrolling aimlessly.

Due to these issues becoming acute, interventions that emphasise Emotional Regulation are attracting our attention in the social media context. Recent studies indicate that digital wellness courses, which teach participants mindfulness, self-compassion, and reappraisal, are associated with fewer emotional injuries from comparison (Xu, 2024). Appearance anxiety and comparison habits are also reduced by psycho-educational interventions that encourage them to read social media content critically (Lia & Iswinarti,

2025). Self-compassion education appears particularly counter-asthmatically regarding a psychological cost-buffer of upward comparisons, as well as allowing us to appreciate the positive effects of posts (Xu, 2024). Other projects have gone so far as to implement platform fixes, such as encouraging them to reduce the number of comparison-inducing accounts or creating weblogs that elicit positive feelings rather than negative ones (McAlister et al., 2024). All these findings, taken together, indicate that the most effective solution to the problem of Social Media Comparison should reduce the emotional load on a case-by-case basis by tuning social media use and enhancing our Emotional Regulation capabilities.

Furthermore, there are gender and age differences in the processes of experiencing Social Media Comparison and emotion regulation. Studies indicate that adolescent girls and young women tend to experience more negative emotions during an upward comparison, particularly about appearance, and they are notably less able to control these emotions (Peker & Yildiz, 2022). Across the fence, research indicates that males may not be so bad when they are making appearance comparisons but may respond vigorously to status or achievement comparisons (Hu et al., 2025). Age parameters are also significant: teens are more vulnerable to struggles with Emotional Regulation due to social media comparisons, whereas elderly individuals are less prone to comparison behaviours and their associated emotional consequences (Lia & Iswinarti, 2025). Such gender and age differences underscore the need for age- and gender-sensitive Emotional Regulation interventions that build on our knowledge of social media-related issues.

In general, Social Media Comparisons a predictable evocation of emotional response, and the choice of Emotional Regulation strategies of people defines the emergence of stress or an effective response to it. Concurrently, as upward comparison becomes a more common experience, particularly among social media users, it may weaken over time, leaving

individuals more susceptible to emotionally charged circumstances. The studies also show that these effects are mediated by gender, age, and social media habits, suggesting that the relationship between Emotional Regulation and Social Media Comparison is neither simple nor stable. This set of findings underscores the need for interventions to increase emotional self-regulation and promote healthier use of social media. As digital spaces continue to develop, the perception of the intersection between Emotional Regulation and Social Media Comparison remains essential to preserving psychological well-being in a more digitalised world.

Theoretical Framework

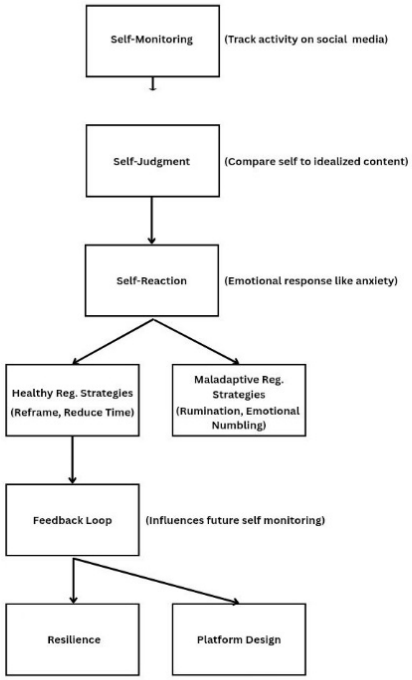

Figure1: *Theoretical Framework of "Predicting Malaysia University Students Anxiety from Social Media Comparison and Emotional Regulation"*

The research is based on Self-Regulation Theory (SRT), which holds that people control their behaviours and feelings by following a feedback mechanism. This loop

comprises three stages: self-monitoring, self-judgement, and self-reaction (Reinecke et al., 2021). A hypothesis of SRT suggests that people monitor their actions, compare them with a set of goals or standards, and modify their actions accordingly. Nevertheless, this regulatory process is highly contentious in universities, particularly when social media is widely used.

The initial step in the feedback loop is self-monitoring, during which students reflect on their own behaviour using social media platforms such as Instagram and TikTok. The act of comparing oneself to idealised self-images or selected content shared by peers significantly influences self-monitoring (Dreier et al., 2024). As students keep viewing these romanticised images of life, they start comparing themselves to them, which, in most cases, makes them feel inadequate and anxious.

Then the students transition to the self-judgement stage and determine their worthiness by these comparisons. In case they believe that other people are living better or more successful lives, they might feel negative emotions like self-doubt or frustration (Rebello et al., 2024). This step is important because it is the step that initiates self-judgement- the process of evaluating the self against the idealised counterparts of the other.

After that, followed by the self-reaction stage, characterised by the emotional impact of self-judgement. Self-judgement is usually expressed in negative terms (anxiety, frustration, or self-doubt), which are common outcomes of Social Media Comparison (McComb et al., 2023).

The Emotional Regulation strategies play a crucial role at this stage. The students can deal with the emotional distress of social comparison by applying such methods as cognitive reframing (altering the approach to perceiving the negative emotions) or diminishing their screen time (Tian et al., 2024). Nevertheless, in cases of maladaptive responses among students, such as rumination, emotional numbing, and others, anxiety is likely to persist and

increase (Tugade & Fredrickson, 2024). Such counterproductive measures increase the self-evaluation process, and it is hard to overcome the emotional influence of social comparison.

The self-monitoring can also be affected by the feedback loop, as students' emotional responses can sustain their online behaviour, leading them to use social media more and make further comparisons. When repeated, it may also lead to an augmented feeling of apprehension, which further aggravates the unfavourable feeling reaction (Sala et al., 2024).

Self-control and resilience are important keys to ending this cycle. It means that students who are resilient enough will be better positioned to handle the emotional effects of social comparison, and students with stronger self-control will be able to limit their use of social media, thereby reducing their exposure to damaging comparisons (Yam et al., 2024). Nevertheless, social media design, including algorithms that organise content and deliver notifications, can threaten self-regulation by continually re-engaging users and promoting more comparisons (Reinecke et al., 2021).

In theory, SRT provides a useful framework for understanding to social media comparisons can be an emotional agitator. It is efficient in the way it brings into focus the feedback loop of self-monitoring, self-judgement, and self-reaction, and how these processes lead to anxiety. In practice, the break in the cycle can be supported by interventions such as cognitive reframing and reduced screen time. The required Emotional Regualation can be achieved through resilience and self-control. However, the social media platform structure also plays an important role, and platform changes might help people engage with social media more healthily (Vitale & Bonaiuto, 2024).

Conceptual Framework

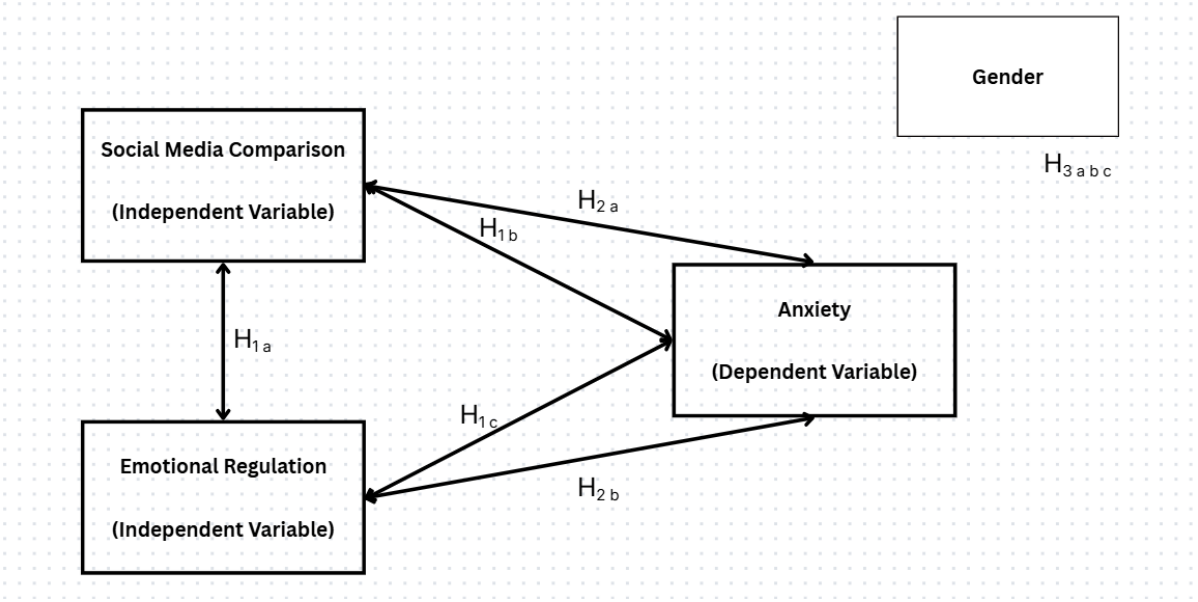

Figure 2: *Conceptual framework of "Predicting Malaysia University Students Anxiety from Social Media Comparisonand Emotional Regulation."*

This study aims to explore the relationship between social media comparison, Emotional Regulation, and anxiety levels in university students. This study identifies anxiety as the dependent variable (DV), while Social Media Comparison and Emotional Regulation serve as the independent variables (IV). The quantitative approach will be applied to determine the correlation model ($H_{1\ a\ b\ c}$), regression model ($H_{2\ a\ b)}$, and T-test model ($H_{3\ a\ b\ c}$) concerning social media comparison, Emotional Regulation, and anxiety.

Chapter 3 Methodology

Introduction

This study used a quantitative, correlational research approach to predict anxiety among Malaysian university students based on social media comparison and emotional regulation. Purposive sampling was employed to choose Malaysia citizens who study in Malaysia university students aged from18 to 23. The study employed Google form to design a questionnaire, which was distributed online and in person via several social media channels. G*Power 3.1.9.7 predicted a sample size of 280, accounting for potential non-responses and missing data. The self-administered survey consisted of three sections which are informed consent, demographic questions, and three validated instruments: the 11-item INCOM-11, 10-item EQR, and 7-item GAD.

Research design

The current study used a quantitative, correlational approach to investigate the relationship between social media comparison, emotional regulation, and anxiety in a sample of Malaysian university students. The quantitative study design enabled statistical analysis of data to explain the patterns and strength of interaction among the variables of interest (Cresswell, 2014). Furthermore, the quantitative research approach proved effective for examining large samples and producing numerical data that could be verified against a hypothesis (Field, 2024).

The empirical phase of the study involved collecting primary data through standardised questionnaires that assessed factors such as social media comparison, emotional regulation, and anxiety levels. The data were gathered using validated tools such as the Social Comparison Orientation Scale, the Emotion Regulation Questionnaire, and the Generalised Anxiety Disorder 7-item Scale (GAD-7). A cross-sectional design was employed to examine

the correlation between the variables, with data collected at a particular moment in time. Furthermore, the quantitative research design enabled the study of the effects of social media comparison and emotional regulation on anxiety among Malaysian university students. According to Creswell (2014), quantitative research was ideal for hypothesis testing and investigating correlations between variables. The strategy produced numerical data that could be examined statistically, making it suitable for high sample numbers (Field, 2013).

In addition, purposive sampling was employed to recruit participants from multiple universities, resulting in a diverse sample that represented different student groups. Data was collected using online questionnaires, which allowed the study to reach a vast population while also reassuring participants.

Furthermore, the research design allowed for the investigation of the predictive potential of emotional regulation and social media comparison on anxiety levels, so contributing to the development of a more detailed layer of mental health determinants at the university level. Field (2013) employed correlation and regression methods to evaluate data and estimate the degree and direction of these correlations.

Sampling Procedures

Sampling Method

This study used a non-probability purposive sampling technique to identify university students in Malaysia who satisfied the study's inclusion criteria. This method permitted the effective selection of individuals who were most relevant to the research aims. Purposive sampling allowed the researcher to carefully select participants, ensuring that the sample represented the demographic most sensitive to social media comparison, emotional control, and anxiety disorders. The study focused on Malaysian university students aged 18 to 23, as

studies have shown that this age group is extensively engaged in social media, which affects their well-being and emotional adjustment (Bhadra & Bhadra, 2025). Participants were recruited utilising the Google Form platform and social media platforms such as X, WhatsApp, Instagram, Microsoft Teams and Facebook, all of which are extensively utilised by Malaysian university students, to ensure broad geographic coverage across both East and West Malaysia.

In this study, a purposive sample strategy was utilised, which is a non-random sampling methodology in which participants were chosen based on study-relevant criteria. Purposive sample participants were chosen on purpose because they satisfied predetermined inclusion criteria and had unique characteristics that qualified them for the study (Etikan, 2016). This sampling strategy was particularly useful when researchers wanted to discover or select people who were most likely to contribute useful information about the topic under investigation.

Inclusion criteria for this study were as follows: participants had to be Malaysian residents, undergraduate students at Malaysian universities, and between the ages of 18 and 23. Furthermore, each of the participants had previously taken part in at least one extracurricular activity. This was because kids who participated in extracurricular activities were more likely to utilise social media. They may update their activities, accomplishments, and relationships with others, subjecting them to increased social comparison. Students who were more prominent on social media were more likely to compare themselves to others, causing worry and tension (Fardouly et al., 2015). These criteria ensured the selection of a sample of students who were likely to be under pressure from social media comparisons and anxiety, which could be influenced by their academic and social activities.

Malaysian students studying abroad were excluded from this study due to potential differences in academic expectations and social media usage patterns. In addition, postgraduate students were excluded since their academic and social processes differed from those of undergraduate students. Furthermore, students with a clinical history of social media addiction or emotional regulation were not permitted to participate because their experiences were likely to be drastically different from those of the target demographic, thereby biasing the findings.

Location of Study

In the current study, data was collected using Google Form, an online survey tool for creating and distributing self-report questionnaires. Participants were recruited from Malaysian colleges using social media platforms such as X, WhatsApp, Instagram, Microsoft Teams and Facebook. The sample included students from Malaysian universities in both East and West Malaysia, ensuring comprehensive geographic coverage.

Ethical Clearance Approval

The researcher submitted the ethical clearance approval to Mr. Lee Wei Rong, the supervisor of this project. The dean of the faculty of arts and social science, Professor Dr. Zuraidah Abd Manaf, and the director of the department of psychology and counselling, Dr. Lee Wan Ling, then approved ethical clearance by the UTAR Scientific and Ethical Review Committee. As a result, the researcher was granted permission to carry out this study on (Re: U/SERC/78-684/2026, see Appendix A). The pilot test ran from February 2, 2026, to February 7, 2026. The real study began on February 11, 2026, and concluded on March 3, 2026.

Sample Size, Power and Precision

Sample Size

The sample size generator software G*Power 3.1.9.7 was used to calculate the sample size for this study. Several G*Power strategies were used to establish the sample size for the current study, and at least 200 responders were needed. Furthermore, depending on the minimum number of responders (n = 200), the researcher raised the sample size by 40%. After the data collection was finished, it was utilised to prepare for the potential of missing or unresponsive data (Salkind & Frey, 2019). The current survey required 280 respondents in total after a 40% increase.

Actual Sample Size

A sample size of 280 was suggested. During the data collection process, 292 replies were gathered. Meanwhile, the current study removed nine faulty responses from further analysis. As a result, the actual sample size for the current study was 283 university students.

Power Analysis

Sample size for this study was determined using the G*Power 3.1.9.7 edition. The statistical power was 80%, indicating an 80% possibility of obtaining a significant result, and the regarded significant threshold was 5%, implying the margin error was.05 (Bhandari, 2021).

The current study used Pearson Product-Moment Correlation (PPMC) and G*Power 3.1.9.7 to identify the sample size of H_1 for the association between Social Media Comparison, Emotional Regulation, and Anxiety. Previous research on the relationship between Social Media Comparison (SMC), Emotional Regulation (ER), and Anxiety revealed an effect size of r =.25 (Yang et al., 2023), r =.112 (Zsido et al., 2021), and r =.157 (Sheng et

al., 2024). Small effect sizes were indicated by the average effect sizes of.17. G*Power then recommended a total sample size of 210. The three pairs actually had a power of.80.

The sample size of H_2 for the assessment of SMC and ER as predictors of anxiety using Single Linear Regression was determined by the current study using G*Power 3.1.9.7. In earlier research, the effect sizes of SMC and ER as predictors of anxiety were f^2 = 1.89 (Tian et al., 2024), f^2 =.37 (Sheng et al., 2024), and f^2 =.41 (García-Fernández et al., 2025). Large effect sizes were indicated by the average effect sizes of.89. G*Power then recommended a total sample size of 15. In reality, the power was.83.

Data Collection Procedures

Inclusion and Exclusion Criteria

The research study's inclusion criteria were as followed: (i) only Malaysian citizens enrolled in undergraduate programs at Malaysian universities were allowed to participate; (ii) participants had to be between the ages of 18 and 23 because this age group was most susceptible to higher levels of social media comparison; and (iii) participants had to have previously participated in at least one extracurricular activity, which guaranteed their exposure to a range of social settings and potential stressors. The criteria were designed to produce a sample that was representative of the target population's anxiety-related experiences.

The study's exclusion criteria were as follows: (i) Malaysian students studying abroad because they might have had very different results in social media comparison and emotional regulation; (ii) students enrolled in postgraduate programs because they might have encountered different academic stressors and social media use patterns; and (iii) students with a clinical history of social media and emotional regulation problems because they might have

had very different results than students studying domestically. Furthermore, participants with incomplete or erroneous survey responses were not permitted to be included in the data.

Plan of Obtaining Consent

Participants in the current study were first presented with an informed consent form that described the study's objectives, inclusion requirements, potential risks, and their freedom to participate. Additionally, by noting that participant comments were anonymous, this statement gave obvious indicators of secrecy and privacy. Additionally, the investigator's email address was accessible for questions or complaints.

Participants didn't move on to the main questionnaire until their consent to participate in the study was verified. Additionally, they were told that participation was entirely optional and that they might leave at any moment without punishment or explanation. In order to guarantee that the participants' information was handled with the utmost care and confidentiality, the consent form explicitly stated that any data acquired would only be used for academic purposes.

Data Collection Procedures

The survey was designed in Google Form, as it was very user-friendly and provided all the capabilities required without any inconvenience. To receive the maximum number of responses, a personalised URL and QR code were posted on social media platforms such as WhatsApp, Instagram, Facebook, and Microsoft Teams. Anonymity was guaranteed, no personal information was needed, and confidentiality was upheld.

Meanwhile, data collection started on 2nd February 2026 and ended on 3rd March 2026. After collecting all responses, they were consolidated into Microsoft Excel for cleaning, including removal of incomplete or out-of-scope responses. Then the clean data

were analysed using JASP to execute statistical tests, including correlation and regression analyses, to explore the research questions.

Pilot Study

Before moving on to a more extensive research endeavour, a pilot study was regarded as a quick, small-scale, exploratory investigation. It sought to ascertain the efficacy of the study design as well as the validity and dependability of the research techniques and instruments. Thirty responders were selected as representations of the target demographic for this initial phase. The larger study framework was preceded by this pilot (Hertzog, 2008).

The pilot was started after ethical approval to make sure the tools and technique were comfortable before launching the main trial. As a scaled-down version of the entire project, the pilot offered a chance to evaluate procedures, spot possible problems, and make the necessary adjustments (S. Vogel & Draper-Rodi, 2017). The 30 responders, who represented the target demographic as a whole, were college students with a variety of academic backgrounds.

Actual Study

The primary study started gathering data between February 11 and March 3 after the instruments' suitability and dependability were verified. The primary investigation employed the same instruments as the pilot. After the data collecting was finished, the analysis started. The real study used all three instruments without any changes, as previously demonstrated acceptable dependability. The researcher created the link and QR code so that the online survey (Google Form) could be sent to the study participants both virtually (through social media) and directly (when they met in person). Only 283 of the 292 replies that were gathered for this study were analysed by the researcher. As shown by their high internal

consistency, the actual study also found all three instruments to be satisfactory (see Table 3.1).

Table 3.1

Reliability of Instruments in Pilot Study (n=30) and Actual Study (n=283)

Instrument	Pilot Study (Cronbach's alpha)	Actual Study (Cronbach's alpha)
INCOM-11	0.761	0.802
ERQ	0.775	0.843
GAD-7	0.889	0.896

Note. INCOM-11=Iowa-Netherlands Comparison Orientation Measure (11 items), ERQ= Emotion Regulation Questionnaire, GAD-7= Generalized Anxiety Disorder Scale – 7 Item.

Three sections made up the questionnaire. Section A contains the informed consent form. Participants were informed about the purpose of the study, how confidentiality would be maintained, and that participation was completely voluntary. Six demographic factors age, gender, ethnicity, education level, university, this year, and program were covered in Section B. Incorporate three quick screening questions to make sure participants are included in the study: nationality, whether they have ever participated in a student exchange, and whether they have internships and practicums during the pilot and main phases. If a participant does not fit the requirements (Malaysian, 18–24, on campus), they will be removed from the survey. The 7-item Generalised Anxiety Disorder Scale (GAD-7), the Emotion Regulation Questionnaire (ERQ), and the INCOM11 have all been validated under section C. These

included anxiety, emotional control, and social media comparisons. Participants who don't pass the screening or leave their answers blank will not be included in the final statistics.

Instruments

INCOM-11 (Interpersonal Comparison Orientation Measure-11)

The INCOM-11, developed by McComb et al. (2023), evaluates an individual's tendency to engage in social media comparison across various dimensions, focusing on both upward and downward comparison. The scale includes eleven items, some measuring how often individuals compare themselves to others on social media (items related to upward comparison) and others assessing how they perceive their social standing relative to others (items related to downward comparison). There are several key items like "I often compare my life to others' posts on social media" and "I feel I am doing better than others when I see their posts."

The INCOM-11 uses a five-point Likert scale to rate the eleven items, ranging from 1 (strongly disagree) to 5 (strongly agree). The items focus on how individuals perceive their status, accomplishments, and social life based on the content they see on social media platforms such as Instagram, Facebook, and TikTok. Reverse scoring is applied to some items (e.g., those assessing downward comparison), ensuring a balanced reflection of both negative and positive comparisons. To calculate the total score, responses to all items are summed, with higher scores indicating stronger tendencies toward upward social comparison and more frequent engagement in comparing oneself to idealized portrayals of others. A median split will be used to interpret the high and low scores for this questionnaire, as it lacks a general cut-off score. Past studies using the INCOM-11 have reported strong reliability coefficients, which is .80 (McComb et al., 2023), demonstrating its effectiveness in measuring tendencies to compare on social media across diverse populations.

EQR Emotional Regulation Questionnaire

The Emotional Regulation Questionnaire (EQR), developed by Gross and John (2003), is designed to assess an individual's habitual use of emotional regulation strategies, specifically cognitive reappraisal (CR) and expressive suppression (ES). These two strategies are central to understanding how individuals manage their emotions in response to external and internal stimuli. The EQR consists of 10 items, some focus on how individuals change their thoughts about emotions (cognitive reappraisal) and others on how they suppress outward emotional expressions (expressive suppression). Sample items include "I control my emotions by changing the way I think about the situation" (cognitive reappraisal) and "I control my emotions by not expressing them" (expressive suppression).

The EQR uses a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), to assess the frequency and intensity of emotional regulation strategies. The total score is calculated by summing the responses, with higher scores indicating a greater tendency to use emotional regulation strategies. A median split will be used to interpret the high and low scores for this questionnaire, as it lacks a general cut-off score. Scores are typically categorised into higher or lower tendencies for cognitive reappraisal and expressive suppression, with higher scores in cognitive reappraisal reflecting better emotional management and lower scores in expressive suppression reflecting more adaptive emotional expression. Past studies using the EQR have reported a reliability coefficient of .85 (Gross & John, 2003), demonstrating its robustness in measuring emotional regulation tendencies (Yu et al., 2021).

GAD-7 (Generalized Anxiety Disorder 7)

The Generalized Anxiety Disorder 7 (GAD-7) scale, developed by Spitzer et al. (2006), is a self-report tool designed to assess the severity of anxiety symptoms. It focuses on

the most prevalent signs of generalized anxiety disorder, including restlessness, excessive worry, and trouble focusing. The GAD-7 consists of 7 items that assess how often the individual has experienced these symptoms over the past 2 weeks. Sample items include "Feeling nervous, anxious, or on edge" and "Worrying too much about different things."

The GAD-7 uses a four-point Likert scale, ranging from 0 (not at all) to 3 (nearly every day), to rate the frequenc y of anxiety symptoms. The total score is calculated by summing the responses, with higher scores indicating greater anxiety severity. Scores ranging from 5 to 9 indicate mild anxiety, 10 to 14 moderate anxiety, and 15 or higher severe anxiety. The GAD-7 has demonstrated strong reliability and validity, with a Cronbach's alpha coefficient of .89 (Spitzer et al., 2006) and is widely used in both clinical and research settings to assess anxiety in diverse populations (Yu et al., 2021).

Chapter 4 Result

Descriptive Statistics

Demographic Characteristics

The Table 4.1 below reported the participants' demographic characteristic in the present study. The present study included 283 university students from 18 to 23 years old (*M* = 20.54; *SD* = 1.55). Precisely, there were 6.0% (*n* = 17) of university students aged 18 years old, 18.4% (*n* = 52) of 19 years old, 25.8% (*n* = 73) of 20 years old, 20.1% (*n* = 57) of 21 years old, 18.4% (*n* = 52) of 22 years old, and 11.3% (*n* = 32) of 23 years old. The largest group of participants in the present study were university students aged 20 years old. In addition, the present study included 38.5% (*n* = 109) of male participants, which was less than the female participants (*n* = 174; 61.48%). Furthermore, the majority of the participants with the ethnicity of Chinese 96.5% (*n* = 273), followed by Indian 2.8% (*n* = 8) and others 0.7% (*n* = 2).

Based on the result, most of the participants were students from Universiti Tunku Abdul Rahman (UTAR) (*n* = 264; 93.3%). Besides that, they were several universities included in the present study: Multimedia University, Sunway University, Tunku Abdul Rahman University of Management and Technology (TARUMT), Talor's University, University College Sedaya International (UCSI), HELP University, INTI International University, Universiti Putra Malaysia (UPM), Universiti Teknologi Malaysia (UTM), Universiti Tun Hussein Onn Malaysia (UTHM), Universiti Malaya (UM), Institut Pendidikan Guru Kampus Ilmu Khas.

Table 4.1 *Demographic Information of Respondents (n=283).*

	n	%	M	SD	Min	Max
Gender						
Male	109	38.5				
Female	174	61.48				

Age						
18	17	6.0	20.54	1.55	17	23
19	52	18.4				
20	73	25.8				
21	57	20.1				
22	52	18.4				
23	32	11.3				
University						
UTAR	264	93.3				
SUNWAY	2	0.7				
TAYLOR	2	0.7				
TARUMT	1	0.4				
HELP	2	0.7				
INTI	1	0.4				
UM	2	0.7				
UCSI	1	0.4				
MMU	1	0.4				
IPG KAMPUA ILMU KHAS	1	0.4				
UTHM	1	0.4				
UTM	2	0.7				
UPM	3	1.1				
Ethnicity						
Chinese	273	96.5				
Malay	0	0.0				
Indian	8	2.8				
Others	2	0.7				

Note, n = number of respondents; *%* = percentage; *M* = mean; *SD* = standard deviation; *Min* = minimum value; *Max* = maximum value

Topic-Specific Variables Characteristics

Descriptive statistics such as mean, standard deviation, minimum and maximum were used to check the characteristics of the study variables. All the variables have been calculated

using a total sample of 278 respondents as depicted in Table 4.2, and there are no reported missing data.

For INCOM-11, the mean score was 37.43 (*SD* = 6.64), with values ranging from 20 to 54. This shows that there is moderateness of social comparison among the respondents with the scores evenly dispersed around the mean. The standard deviation is not particularly large, implying that responses of participants were not very different, and there has not been increased variation in the answers.

In terms of emotional regulation (ERQ), the mean score was 48.04 (*SD* = 9.12), with a minimum value of 26 and a maximum value of 70. ERQ showed the largest standard deviation compared to the other variables, with more variability in the respondents with respect to the emotional regulation capabilities. This indicates that there was a greater variation among the participants in the control of emotions.

To assess the levels of anxiety with the GAD-7, the mean of the anxiety levels was 9.62 (*SD* = 5.02) with a range of 0 to 21. This shows an average anxiety among the respondents whereby there is variation in anxiety level among people. The entire spectrum of scores indicates that the sample represented the respondents whose levels of anxiety were rather small to comparatively high.

Comprehensively, the descriptive statistics suggest that the variability and distribution of all three variables is reasonable within their scales. The lack of missing data and a range of full scores makes the data more reliable and representative, which can be used to analyze it further.

Table 4.2

Descriptive Statistics

	SUM INCOM-11	SUM ERQ	SUM GAD-7
Valid	283	283	283
Missing	0	0	0
Median	38.00	48.00	9.000
Mean (arithmetic)	37.08	47.92	9.650
Std. Deviation	7.076	9.405	5.036
Skewness	-0.461	0.020	0.041
Std. Error of Skewness	0.145	0.145	0.145
Kurtosis	0.064	0.533	-0.475
Std. Error of Kurtosis	0.289	0.289	0.289
Shapiro-Wilk	0.980	0.986	0.981
P-value of Shapiro-Wilk	< .001	.009	< .001
Minimum	16.00	10.00	0.000
Maximum	54.00	70.00	21.00

Data Diagnostic and Missing Data

Frequency and Percentage of Missing Data

Since Google Forms is set up by default to require all questions to be answered before submitting their response, there were no missing data and unengaged responses within this study. However, there were several invalid responses from the data set and it was removed from the study. Next, the number of valid samples (*n* =283) reached the sample size (n=280)

suggested by G*Power and an additional 40% of participants were added to adjust for missing data before data diagnostic analysis.

Methods Employed for Addressing Missing Data

To ensure completeness of responses, the researcher marked each item in the survey as needed, which meant that participants had to answer all questions and could not leave any blank. To ensure no missing data, obtained data was rigorously reviewed using Microsoft Excel. The function "=COUNTBLANK(A2:BD2)" includes columns for demographic information and questionnaire items. The function returned a value of "0" for all rows, indicating no missing data.

Criteria for Post Data-Collection Exclusion of Participants

Three responses were eliminated from the data collected. The first criterion for exclusion following data collection was to exclude unengaged responses. In the current study, the unengaged responses were determined by computing the standard deviation of all the items answered by each respondent with Microsoft Excel using the function "=STDEV.P(I2:BD2)". There were no unengaged responses in the resent study because no numbers had standard deviation below.4.

Besides, 9 responses were excluded as the responses failed to meet the inclusion criteria or meet the exclusion criteria of the research participants. This included 7 non-Malaysians, and 1 respondent are not University Students, who failed to meet the inclusion criteria during the actual study

Criteria for Imputation of Missing Data

Missing data should be imputed depending on the level of data. For instance, the nominal level of data should be replaced by mode, the ordinal level of data should be

replaced by median and interval data should be replaced by mean. However, there is no missing data in the present study, thus no imputation of missing data was needed.

Defining and Processing of Statistical Outliners

Boxplot analysis in JASP was conducted to detect unusual data points, or outliers, within the three variables examined in this study: Social Media Comparison, Emotional Regulation and Anxiety. The results (Appendix B) revealed a total of seven outliers, corresponding to cases 25, 73, 144, 178 and 199. To ensure the integrity of the subsequent data analysis, these seven cases were removed from the dataset.

Data Transformation

In data transformation, reserve-scored items were reversed in Microsoft Excel using the function "=IF(K2=1,5, IF(K2=2,4, IF(K2=3,3, IF(K2=4,2, IF(K2=5,1,"")))))". The reversal of scores was done for the item 5 and 11 in Iowa-Netherlands Comparison Orientation Measure (INCOM-11) so that higher scores would indicate greater higher social media comparison, which would facilitate the results interpretation. As for the data computation, the scores of scales were sum up using the Microsoft Excel function "=SUM(I2:BD2)". This included Iowa-Netherlands Comparison Orientation Measure (INCOM-11), Emotional Regulation Questionnaire (ERQ) and General Anxiety Disorder - 7 (GAD-7).

Analyses of Data Distributions

According to this work, skewness and kurtosis, and Shapiro-Wilk test were used to assess the normality. The values of the skewnesses of all the variables according to Table X were within the acceptable limit of ±2.000 which meant that the distributions were not significantly different than the normal ones. Specifically, the skewness value for INCOM-11 was -0.273, ERQ was 0.245, and GAD-7 was 0.027. These values imply that the INCOM-11

is skewed marginally towards the negative, and ERQ and GAD-7 are skewed marginally towards the positive, but all the values are reasonably near zero thus indicating approximately symmetrical distributions.

Moreover, the kurtosis values of all variables were also within the acceptable range of several ranges of ±2.000, which also confirms the assumption of the normal distribution. The kurtosis values were -0.285 for INCOM-11, -0.079 for ERQ, and -0.496 for GAD-7. These results prove that the distributions are a bit platykurtic, which implies a less sharp distribution than a normal distribution, but not significant deviation.

The results of the Shapiro-Wilk test, however, were that all the variables were found to be statistically significant since the p-values were less than the cut-off point of.05. Specifically, INCOM-11 yielded a value of 0.986 (p = .008), ERQ was 0.987 (p = .012), and GAD-7 was 0.981 (p < .001). This suggests that the assumption of normality is violated when assessed using this test.

Nevertheless, it should be mentioned that Shapiro-Wilk test is very susceptible to large samples. Since the current research has a relatively high number of participants (n = 278), at least slight non-conformance to normality can lead to statistically significant results. Given that the skew and the kurtosis value are in the acceptable limits, the data can be thought of as being nearly normally distributed. Hence, the parametric statistical analyses of all variables are plausible.

Data analysis

Predicting Malaysia University Student Anxiety from Social Media Comparison and Emotional Regulation

H_1: To examine the relationship between Social Media Comparison, Emotional Regulation and Anxiety among university students in Malaysia.

The present study used Spearman Correlation to examine the relationship between Social Media Comparison and Anxiety, Emotional Regulation and Anxiety as well as Social Media Comparison and Emotional Regulation. For these hypotheses, one-tailed test was conducted.

H_{1a}: There is a significant positive correlation between Social Media Comparison and Anxiety among university students in Malaysia.

As part of the assumption of Spearman Correlation, both multivariate normality and Bivariate normality were observed. As for the bivariate normality of Shapiro-Wilk test = 0.984, p = .001 was reported to have been lower than the standard p = .05, indicating the data was not normal. Therefore, the present study used the non-parametric test, Spearman Correlation to examine the relationship between Social Media Comparison and Anxiety.

As shown in Table 4.5, the result reported r = (281) =0.142, p = .008. There was a statically significant relationship between Social Media Comparison and Anxiety. The p-value was below .05, the present study rejects the null hypothesis, H_{1a} was supported.

The results of Spearman correlation showed that, r_s (281) = .142, p = .008. The direction of the correlation was positive, which means the higher the Social Media Comparison the higher the Anxiety. Using Guildford's rule of thumb, the effect size was negligible relationship.

Table 4.5

Correlation

Spearman's Correlations

Variable		SUM INCOM-11	SUM GAD-7
1. SUM INCOM-11	Spearman's rho	—	
	p-value	—	

Spearman's Correlations

Variable		SUM INCOM-11	SUM GAD-7
2. SUM GAD-7	Spearman's rho	0.142**	—
	p-value	.008	—

Note. All tests one-tailed, for positive correlation.

* p < .05, ** p < .01, *** p < .001, one-tailed

Table 4.6

Assumption checks

Shapiro-Wilk Test for Multivariate Normality

Shapiro-Wilk	p
0.984	< .001

Shapiro-Wilk Test for Bivariate Normality

			Shapiro-Wilk	p
SUM INCOM-11	-	SUM GAD-7	0.984	< .001

H_{1b}: There is a significant negative correlation between Emotion Regulation and Anxiety among university students in Malaysia.

The PPMC assumptions on normal distribution were not met. The univariate analysis found a normal distribution for perceived social support and help-seeking intentions, as indicated by skewness and kurtosis values. The bivariate normality analysis demonstrated that the two variables were not normally distributed, as shown in Table 4.7. The Shapiro-

Wilk p-value of p =.001 was found to be lower than the conventional *p* =.05. This suggested that the combined distribution of Emotional Regulation and Anxiety did not follow the typical distribution. Therefore, H_{1b} was determined by using the non-parametric test, Spearman Rank Correlation Coefficient (see Table 4.7)

As shown in Table 4.7, the result reported that r (281) = .011, $p < .575$. There was a statistically significant negative relationship between Emotional Regulation and Anxiety. Given the relationship was in a negative direction. The p-value was above .05, the null hypothesis failed to reject null hypothesis, H_{1b} was not supported. According to Guilford's rule of thumb (1973), the strength of the relationship between Social Media Comparison was negligible relationship.

Table 4.7

Correlation

Spearman's Correlations

Variable		SUM ERQ	SUM GAD-7
1. SUM ERQ	Spearman's rho	—	
	p-value	—	
2. SUM GAD-7	Spearman's rho	0.011	—
	p-value	.575	—

Note. All tests one-tailed, for negative correlation.

* p < .05, ** p < .01, *** p < .001, one-tailed

Assumption checks

Shapiro-Wilk Test for Multivariate Normality

Shapiro-Wilk	p
0.985	< .001

Shapiro-Wilk Test for Bivariate Normality

			Shapiro-Wilk	p
SUM ERQ	-	SUM GAD-7	0.985	< .001

H_{1c}: There is a significant positive correlation between Emotion Regulation and Social Media Comparison among university students in Malaysia.

To investigate if there was a statistically significant relationship between Emotional Regulation and Social Media Comparison, a Spearman's correlation was computed. Due to the bivariate normality of Shapiro-Wilk test =0.983, p = <0,001, indicating the data was not normal; therefore, Spearman's correlation was used instead. The results of Spearman correlation showed that, r_s (281) = .268, p = <.001. The direction of the correlation was positive, which means the better the Emotional Regulation the lower the Social Media comparison. Using Guilford's rule of thumb, the effect size was low relationship.

Table 4.8

Correlation

Spearman's Correlations

Variable		SUM INCOM-11	SUM ERQ
1. SUM INCOM-11	Spearman's rho	—	

Spearman's Correlations

Variable		SUM INCOM-11	SUM ERQ
	p-value	—	
2. SUM ERQ	Spearman's rho	0.268***	—
	p-value	< .001	—

Note. All tests one-tailed, for positive correlation.

* p < .05, ** p < .01, *** p < .001, one-tailed

Assumption checks

Shapiro-Wilk Test for Multivariate Normality

Shapiro-Wilk	p
0.983	< .001

Shapiro-Wilk Test for Bivariate Normality

			Shapiro-Wilk	p
SUM INCOM-11	-	SUM ERQ	0.983	< .001

H_2: To examine the significant influence of Social Media Comparison and Emotion Regulation on Anxiety among university students in Malaysia.

H_{2a}: There is a significant influence of Social Media Comparison on Anxiety among university students in Malaysia.

The assumptions of Simple Linear Regression were observed, including linear relationship, normally distributed, no multicollinearity, no autocorrelation and

homoscedasticity. Simple Linear Regression was conducted to investigate how well Social Media Comparison influence on Anxiety. The result was statically significant F (1,281) = 7.450, p = .007. The adjusted R squared value was 0.026. This indicates that 2.6% of the variance in Anxiety was explained by Social Media Comparison. According to Cohen (1988), the effect size of f^2 = 0.027 was small.

Table 4.9

Linear Regression

Model Summary - SUM GAD-7

					Durbin-Watson		
Model	R	R^2	Adjusted R^2	RMSE	Autocorrelation	Statistic	p
M_0	0.000	0.000	0.000	5.036	0.043	1.913	.463
M_1	0.161	0.026	0.022	4.980	0.078	1.841	.179

Note. M_1 includes SUM INCOM-11

ANOVA

Model		Sum of Squares	df	Mean Square	F	p
M_1	Regression	184.7	1	184.7	7.450	.007
	Residual	6968	281	24.80		
	Total	7152	282			

Note. M_1 includes SUM INCOM-11

Note. The intercept model is omitted, as no meaningful information can be shown.

Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p
M_0	(Intercept)	9.650	0.299		32.24	< .001
M_1	(Intercept)	5.409	1.582		3.419	< .001
	SUM INCOM-11	0.114	0.042	0.161	2.730	.007

Descriptives

	N	Mean	SD	SE
SUM GAD-7	283	9.650	5.036	0.299
SUM INCOM-11	283	37.08	7.076	0.421

Collinearity Diagnostics

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Intercept)	SUM INCOM-11
M_1	1	1.982	1.000	0.009	0.009
	2	0.018	10.59	0.991	0.991

Note. The intercept model is omitted, as no meaningful information can be shown.

H_{2b}: There is a significant influence of Emotion Regulation on Anxiety among university students in Malaysia.

The assumptions of Simple Linear Regression were observed, including linear relationship, normally distributed, no multicollinearity, no autocorrelation and homoscedasticity. Simple Linear Regression was conducted to investigate how well Emotional Regulation influence on Anxiety. The result was statically significant F (1,281) = 0.112, p = .783. The adjusted R squared value was -0.003. This indicates that 0% of the variance in Anxiety was explained by Social Media Comparison. According to Cohen (1988), the effect size of $f^2 = 0$ was small.

Table 4.10

Linear Regression

Model Summary - SUM GAD-7

Model	R	R^2	Adjusted R^2	RMSE	Durbin-Watson		
					Autocorrelation	Statistic	p
M_0	0.000	0.000	0.000	5.036	0.043	1.913	.463
M_1	0.020	0.000	-0.003	5.044	0.042	1.914	.469

Note. M_1 includes SUM ERQ

ANOVA

Model		Sum of Squares	df	Mean Square	F	p
M_1	Regression	2.851	1	2.851	0.112	.738
	Residual	7150	281	25.44		

ANOVA

Model		Sum of Squares	df	Mean Square	F	p
	Total	7152	282			

Note. M_1 includes SUM ERQ

Note. The intercept model is omitted, as no meaningful information can be shown.

Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p
M_0	(Intercept)	9.650	0.299		32.24	< .001
M_1	(Intercept)	10.16	1.560		6.516	< .001
	SUM ERQ	-0.011	0.032	-0.020	-0.335	.738

Descriptives

	N	Mean	SD	SE
SUM GAD-7	283	9.650	5.036	0.299
SUM ERQ	283	47.92	9.405	0.559

Collinearity Diagnostics

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Intercept)	SUM ERQ
M_1	1	1.981	1.000	0.009	0.009
	2	0.019	10.31	0.991	0.991

Note. The intercept model is omitted, as no meaningful information can be shown.

H_3: To examine significant differences in Social Media Comparison, Emotion Regulation and Anxiety between male and female university students in Malaysia.

H_{3a}: There are significant differences in Social Media Comparison between male and female university students in Malaysia.

An independent samples t-test was conducted to examine whether there were significant differences in Social Media Comparison between male and female university students in Malaysia. The results indicated that there was no statistically significant difference in Social Media Comparison between male and female students, t (281) = 0.17, p = .866. Since the p-value was greater than the conventional significance level of .05, the null hypothesis was not rejected.

The mean difference between the two groups was −0.151, suggesting that the average level of Social Media Comparison between male and female students was very similar. Furthermore, the 95% confidence interval ranged from −1.85 to 1.55, which includes zero, providing additional evidence that there was no meaningful difference between the groups. The effect size was extremely small (*Cohen's d* = −0.021), indicating a negligible practical difference in Social Media Comparison between male and female students.

Therefore, these findings suggest that gender does not play a significant role in influencing Social Media Comparison among university students in Malaysia. Based on the statistical results, H_{3a} was not supported, and the null hypothesis failed to be rejected.

Table 4.11

Independent Samples T-Test

Independent Samples T-Test

						95% CI for Mean Difference			
	t	df	p	Mean Difference	SE Difference	Lower	Upper	Cohen's d	SE Cohen's d
SUM INCOM-11	-0.175	281	.861	-0.151	0.866	-1.856	1.553	-0.021	0.122

Note. Student's t-test.

Assumption Checks

Test of Normality (Shapiro-Wilk)

Residuals	W	p
SUM INCOM-11	0.981	< .001

Note. Significant results suggest a deviation from normality.

Test of Equality of Variances (Brown-Forsythe)

	F	df_1	df_2	p
SUM INCOM-11	0.144	1	281	.704

H_{3b}: There are significant differences in Emotion Regulation between male and female university students in Malaysia.

An independent samples t-test was conducted to determine whether there were significant differences in Emotion Regulation between male and female university students in Malaysia. The analysis revealed that there was no statistically significant difference in Emotion Regulation between male and female students, t (281) = 1.21, p = .221. Since the p-value exceeded the significance level of .05, the null hypothesis was not rejected.

The mean difference between male and female students was 1.396, indicating that although there was a slight difference in Emotion Regulation scores, the difference was not statistically meaningful. The 95% confidence interval ranged from −0.864 to 3.65, which includes zero, further supporting the conclusion that the difference between the groups was not significant. Additionally, the effect size was small (*Cohen's d* = 0.149), suggesting that the magnitude of the difference in Emotion Regulation between male and female students was minimal.

Overall, the results indicate that male and female university students demonstrate similar levels of Emotion Regulation, and gender does not significantly influence Emotion Regulation in this sample. Therefore, H_{3b} was not supported, and the null hypothesis was failed to be rejected.

Table 4.12

Independent Samples T-Test

Independent Samples T-Test

						95% CI for Mean Difference			
	t	df	p	Mean Difference	SE Difference	Lower	Upper	Cohen's d	SE Cohen's d
SUM ERQ	1.216	281	.225	1.396	1.148	-0.864	3.655	0.149	0.122

Note. Student's t-test.

Assumption Checks

Test of Normality (Shapiro-Wilk)

Residuals	W	p
SUM ERQ	0.988	.021

Note. Significant results suggest a deviation from normality.

Test of Equality of Variances (Brown-Forsythe)

	F	df_1	df_2	p
SUM ERQ	2.370	1	281	.125

H_{3c}: There are significant differences in Anxiety between male and female university students in Malaysia.

To examine whether anxiety levels differ significantly between male and female university students, an independent samples *t*-test was conducted. Prior to performing the analysis, key statistical assumptions were assessed. The Shapiro–Wilk test indicated that the anxiety scores deviated from normality, $W = 0.983$, $p = .002$. Although this suggests a violation of the normality assumption, the independent samples *t*-test is considered robust to such violations, particularly when the sample size is relatively large. Furthermore, the assumption of homogeneity of variances was met, as indicated by the Brown–Forsythe test, $F(1, 281) = 3.726$, $p = .055$, which is greater than the .05 threshold.

The results of the independent samples *t*-test revealed that there was no statistically significant difference in anxiety levels between male and female students, $t(281) = 0.43$, $p = .665$. The mean difference between the two groups was small ($M = 0.267$), indicating that, on average, anxiety scores for males and females were very similar. This finding is further supported by the 95% confidence interval for the mean difference, which ranged from -0.94 to 1.47. As this interval includes zero, it suggests that the true difference in population means could be negligible or non-existent.

In addition, the effect size, as measured by *Cohen's d*, was 0.053, which is considered a negligible effect. This indicates that gender accounts for an extremely small proportion of the variance in anxiety levels among the participants. Even if the result had been statistically significant, the practical significance of such a small effect would be minimal.

Overall, these findings suggest that gender does not play a significant role in influencing anxiety levels among university students in Malaysia. Therefore, H_{3c} is not supported. The absence of a significant difference may imply that both male and female

students experience similar academic pressures, social expectations, and environmental stressors within the university context, leading to comparable levels of anxiety.

Table 4.13

Independent Samples T-Test

Independent Samples T-Test

						95% CI for Mean Difference			
	t	df	p	Mean Difference	SE Difference	Lower	Upper	Cohen's d	SE Cohen's d
SUM GAD-7	0.433	281	.665	0.267	0.616	-0.946	1.479	0.053	0.122

Note. Student's t-test.

Assumption Checks

Test of Normality (Shapiro-Wilk)

Residuals	W	p
SUM GAD-7	0.983	.002

Note. Significant results suggest a deviation from normality.

Test of Equality of Variances (Brown-Forsythe)

	F	df_1	df_2	p
SUM GAD-7	3.726	1	281	.055

Chapter 5 Discussion and Conclusion

Discussion

The current study examined the relationship between Social Media Comparison, Emotional Regulation and Anxiety. Moreover, this study examined whether Predict Malaysia University Student Anxiety from Social Media Comparison and Emotional Regulation.

Social media comparison and Anxiety

The results of this research suggest that social media comparison and anxiety have a statistically significant and positive correlation with each other among Malaysian university students. Our correlation analysis using the Spearman correlation showed that there is a weak but significant correlation (r =.142, p=.008): people who social compare more in social media websites are more likely to report high levels of anxiety. Despite the fact that the effect size is deemed insignificant, the given result is still significant since it shows that even low levels of social comparison can lead to psychological distress. This conclusion aligns with the previous studies, which have found that there is a positive relationship between problematic social media use and anxiety symptoms in young adults (Du et al., 2024).

A potential reason behind this connection is that social media sites often subject users to idealized and edited content, which promotes upward social comparison. Comparing oneself to others who seem to be much more successful, attractive or fulfilled may result into feelings of inadequacy and anxiety. Past research efforts have demonstrated that upward comparison in platforms like Instagram plays a major role in causing insecurity and negative self-perceptions among university students (Hutabarat, 2025). Likewise, Chen et al. (2023) discovered that social comparison was a mediating variable between social media use and anxiety whereby more anxious people develop when they perceive less than others online.

Additionally, the results are consistent with the existing larger body of empirical results that show that social media use is linked to numerous mental health indicators, such as anxiety, depression, and psychological distress among university students (Osman, 2025). It is also supported by research that those who are more heavily involved with platforms like Instagram and TikTok are more likely to report anxiety symptoms Landa-Blanco et al. (2024) that can be, in part, explained by the combination of more exposure to social comparison and validation-seeking behaviors.

The low strength of the correlation in this research, however, implies that social media comparison is not the only factor that contributes to anxiety. There may be other variables, self-esteem, coping strategies, and social support systems which have a stronger influence on psychological outcomes. An example of this is the fact that coping style mediates the connection between social media consumption and psychological distress, showing that individual differences play a key role in determining the effects of social media on mental health (Shiraly et al., 2024) . Moreover, meta-analytic data show that the relationship between social media use and anxiety is positive, but most of these associations are small to moderate which supports the multifactorially of anxiety (Wu et al., 2024).

It is also noteworthy that not every use of social media has negative consequences. Other studies claim that the effect of social media on mental health is a matter of the type of interaction as opposed to the length of time spent on the internet. To illustrate, passive consumption and comparison-based behaviours are more prone to augment anxiety, whereas active and meaningful interactions could have neutral or even beneficial effects (Chen et al., 2023). This underscores the need to differentiate various patterns of social media usage in the interpretation of the results.

Regarding the methodological aspects, the fact that the correlation is based on Spearman is a valid approach to support the validity of the findings because it is applicable in

cases of ordinal data and non-parametricity. However, the study design that is correlational does not permit causality determination. It is not yet clear if social media comparison results in more anxiety, or whether more anxious individuals are more likely to display comparison behaviours. The future studies may take longitudinal or experimental design to effectively explain the directionality of this relationship.

All in all, the results indicate that social media comparison is not a highly influential one; however, it is a major psychological determinant affecting anxiety in university students. Thus, digital literacy interventions, unhealthy comparison behaviours reduction, and self-awareness interventions can be useful in alleviating anxiety in this group.

Emotional Regulation and Anxiety

The results of the present study point to the fact that no significant relationships exist between emotional regulation and anxiety among university students. The relationship is very weak and statistically non-significant ($p > .05$) even though the correlation coefficient ($r = -0.011$) is negative. This means that emotional regulation might not be a key factor of levels of anxiety in this sample.

This result is somewhat in conflict with the previous studies, which show that successful emotional regulation is not positively related to high levels of anxiety. Indicatively, the recent research on populations in the university demonstrates that the adaptive emotion regulation methods, including cognitive reappraisal have the potential to reduce anxiety in the long term (Zou et al., 2025). Likewise, a study of college students under stressful events revealed that emotion regulation strategies are significant factors that predict anxiety and emotional performance (Xiao et al., 2025). Through these studies we get the notion that this relationship is usually meaningful, but can be affected by context, nature of strategy or moderating variants.

A possible reason why the finding in this study was not significant is because anxiety is multifactorial. Emotional regulation does not exist in vacuum but relates with other psychological and environmental factors including academic stress, resilience and social support. It has been found that emotional regulation can indirectly affect psychological outcomes, such as by mediating variables such as resilience or life satisfaction (Guo et al., 2025). This implies that the lack of direct relationship in the current study does not imply that emotional regulation is irrelevant, but it could be the case that its effect is indirect or conditional.

Further, the past literature points out the fact that emotional regulation difficulties are associated with overall psychological symptoms, such as depression and stress in university students (Liu et al., 2025). But these associations are usually complicated, and they are engraved in networks of emotional and cognitive reactions instead of straightforward linear associations. This complexity might be the reason why a simple bivariate correlation in the present study brought insignificant outcomes.

There are also methodological issues that could be contributing to the findings. These data in this study were not normally distributed (Shapiro-Wilk $p < .001$), and Spearman has to be used to get the correlation. Although suitable, non-parametric tests can be less sensitive to the identification of subtle associations especially when the effect size is small. In addition, the variations in the measurement instruments as an example the types of emotion regulation strategies measured) may affect the findings of studies.

Another factor to consider is the cultural context. Social norms that focus on emotional restraint and harmony may influence emotional expression and control in collectivist cultures like Malaysia. Consequently, people can be seen to be in control of emotions and at the same time be affected by inner anxiety. The present cultural dynamic may dilute the apparent association between emotional regulation and anxiety in this sample.

In addition, there is more general evidence indicating that emotional regulation is a stronger predictor of overall psychological well-being and prevention of burnout and does not directly predict a particular symptom such as anxiety only (Iuga & David, 2024) . This helps the hypothesis that emotional regulation can play the role of a general protective factor but not necessarily a direct predictor.

Finally, even though this study did not find that emotional regulation and anxiety had a significant relationship, the literature indicates that the relationship is usually complicated, indirect, and situational. Instead of being a linear predictor, emotional regulation may mediate variables and/or work under particular circumstances to affect anxiety. To achieve a deeper insight into anxiety among university students, future studies need to include other variables like stress, coping behaviours, and the cultural factors.

Social Media Comparison and Emotional Regulation

Social media comparison and emotional regulation are increasingly recognised as interconnected psychological processes that influence individuals' well-being, particularly among university students. Social media platforms create an environment where users are constantly exposed to curated and idealised representations of others' lives, which intensifies social comparison tendencies, especially upward comparison such as comparing oneself to those perceived as better off. Research has consistently shown that such comparisons are associated with negative emotional outcomes, including reduced self-esteem, anxiety, and depressive symptoms (Iuga & David, 2024).

Recent empirical evidence further demonstrates that the impact of social media on mental health is not solely dependent on usage frequency, but rather on how individuals cognitively and emotionally engage with content (Castillo-Gualda et al., 2026). For instance, found that higher levels of social comparison combined with maladaptive emotional regulation strategies for instance, rumination, catastrophizing significantly predict poorer

mental health outcomes, including increased anxiety, depression, and anger. This suggests that emotional regulation plays a critical mediating role in determining whether social media use becomes harmful or manageable.

Emotional regulation refers to the ability to monitor, evaluate, and modify emotional responses in adaptive ways (Von Scheve, 2012). Individuals with stronger emotional regulation skills are better equipped to cope with the negative emotions triggered by social comparison. One widely studied adaptive strategy is cognitive reappraisal, which involves reframing a situation to alter its emotional impact. Research indicates that cognitive reappraisal can significantly reduce negative emotions arising from upward social comparison on social media (Xu, 2024). This highlights the protective function of emotional regulation in digital environments.

Moreover, emotional intelligence, which includes emotional regulation as a core component, has been identified as a key factor in adolescents' and young adults' ability to navigate social media experiences. A systematic review by Piccerillo and Digennaro (2024) emphasizes that individuals with higher emotional intelligence are more capable of managing emotional responses and are less vulnerable to the adverse effects of online interactions. This aligns with the idea that emotional regulation does not necessarily reduce the occurrence of social comparison but mitigates its psychological impact.

In addition, real-time studies have shown that social media comparisons can produce immediate, momentary fluctuations in self-esteem and emotional states, even within short time frames (Desjarlais, 2024). This supports the notion that social comparison is a dynamic process that continuously interacts with an individual's emotional regulation capacity.

Relating this to your findings, the significant but weak positive correlation ($r = .268$) suggests that individuals who engage more in emotional regulation may also be more aware of or involved in social comparison processes. However, their ability to regulate emotions

likely buffers them from experiencing severe negative consequences. This aligns with contemporary research, which indicates that emotional regulation does not eliminate exposure to comparison but modifies its psychological effects.

In conclusion, current literature supports the view that social media comparison and emotional regulation are closely linked but complexly related constructs. While social comparison can negatively impact emotional well-being, effective emotional regulation strategies particularly adaptive ones like cognitive reappraisal serve as protective mechanisms. Therefore, interventions aimed at improving emotional regulation skills may be crucial in helping university students manage the psychological challenges associated with social media use.

Predictors of Anxiety

Results of the study have revealed that social media comparison is a small predictor of anxiety, and emotion regulation is not a strong predictor among Malaysian university students. These findings align with the growing body of literature on the focus of psychological effects of upward social comparison within digital contexts.

The high positive correlation between social media comparison and anxiety is consistent with the latest empirical studies indicating that people, who actively practice upward social comparison on social media networks, face increased anxiety symptoms. As an example, Tian et al. (2024) found that upward social comparison can have a strong positive impact on the appearance-related anxiety of young adults because people are more inclined to compare themselves with idealized and edited images, they see online. Equally, it showed that social media use indirectly raises anxiety, by social comparison, and low self-esteem, indicating a comparison process is another major psychological channel between social media and anxiety (Jin et al., 2024).

Furthermore, there is wider meta-analytic evidence about the linkage between problematic social media use and anxiety. Recent systematic review Du et al. (2024) concluded by showing that excessive or maladaptive use of social networking sites has a significant relationship with anxiety symptoms. It implies that it is not the use of social media as such, but the cognitive process of how people use social media that leads to psychological distress especially in comparison. These results support the conclusion of the current research that even though the variance explained by social media comparison is low (R^2 =.026), it is still a statistically significant predictor of anxiety.

Nevertheless, the limited effect size in this study is not the only factor that is in line with the current literature, as it is shown that the correlation between social media and mental health has a small but significant value. To illustrate, small and mixed associations between social media use and well-being outcomes were reported and it is important to note that the effects of anxiety are likely to be affected by a combination of diverse interacting factors beyond social media use (Ansari et al., 2024). This indicates that although the social media comparison is a contributor of anxiety, it can only be perceived as amongst the many contributing risk factors and not the common cause.

Contrary to that, the conclusion that emotion control is not a significant predictor of anxiety highlights contradicting some of the previous research but can be interpreted in the context of the general literature. Despite the fact that emotion regulation is commonly linked to the outcomes of mental health, recent studies indicate that its effects might be context-dependent and rely on measurement procedures. As an example, Meynadier et al. (2025) have discovered that factors like fear of missing out (FoMO), loneliness, and social media-related mentalities can have a more direct impact on anxiety than overall emotional control skills. This suggests that domain-specific emotional mechanisms for example, responses to online

communications can be more useful than general emotion regulation abilities to predict worry in the social media case.

Also, the fact that the result is non-significant can be used to suggest that the university students are already moderately or adaptively advanced in emotion regulation, and thus, there is no variability in the data, and the predictive ability of the results is limited. Alternatively, other external stress factors like academic pressure, financial issues and social expectations can eclipse the role of the internal emotional processes in the anxiety level determination process.

Altogether, the results convey that external, socially motivated cognitive processes such as comparison have a greater predictive power than internal regulatory processes like, emotion regulation in this sample in predicting anxiety. This underscores the significance of addressing maladaptive comparison behaviors, especially on the Internet, when working with students to alleviate anxiety.

Gender differences in Social Media Comparison, Emotional Regulation and Anxiety

This study evaluated the levels of social media comparison, emotional control, and anxiety among Malaysian university students and found no difference between male and female students. These findings indicate that there are no gender differences in psychological processes across the above variables, and that gender may not be a major predictor of the variables in a modern university setting.

These findings remain consistent and could be attributed to university students' similar experiences and surroundings. Men and women endure identical intellectual, social, and developmental problems. These stressors (academic pressures, financial concerns, and job aspirations) could influence psychological aspects like anxiety and emotion control (Ahmed et al., 2023). Similarly, exposure to the same digital ecosystems, such as social

media platforms like TikTok and Instagram, may cause both males and females to compare themselves to others on social media (Pan et al., 2022).

Furthermore, as the use of digital technology and social media has become more common, gender inequalities may have diminished. Social media is a comprehensive platform for communication, social presentation, and social interactions in which both men and women are exposed to similar material, such as lifestyle updates, academic achievements, and photographs. As a result, boys and girls may experience identical social comparison processes. This is consistent with recent research indicating that social media use and its psychological repercussions are becoming increasingly gender neutral among young adults (Coyne et al., 2023).

Similarly, the absence of gender differences in emotional regulation may be attributed to environmental and educational influences. Today's young adults frequently have access to campus-based mental health services, such as counselling, emotional intelligence training, and stress reduction programs. These enable all students, male and female, develop emotional abilities. Recent research has also demonstrated that emotion regulation mechanisms (such as cognitive reappraisal and expressive suppression) are measurement invariant between genders, implying that both sexes regulate their emotions in similar ways. Furthermore, it is widely known that emotion regulation is linked to situational challenges and personal resources rather than gender (Rojas-Ruiz et al., 2024).

While previous research commonly revealed gender differences, such as higher levels of anxiety in women and variations in emotional expressiveness, more recent evidence suggests that these differences may be fading. For example, research has shown that gender inequalities in anxiety are shrinking among university students, most likely because to increased knowledge of mental health issues and lower stigma associated with mental health problems, particularly among men (Gil, 2024). Furthermore, shifting societal attitudes and

growing tolerance for emotional expression may result in a more balanced reporting of emotional pain by men and women.

Other factors, such as cultural and generational shifts, may also influence the outcomes. Young adults, particularly college students, are intimately connected through social media platforms and share common social norms, attitudes, and experiences. Peer pressure, online norms, and culture, rather than gender, appear to play a larger impact in behaviours such as social comparison, anxiety, and emotion regulation (Li et al., 2025). This indicates that psychological and environmental factors may be more predictive than demographic considerations.

Furthermore, the small impact sizes seen in all three variables suggest that gender has limited practical relevance. Other factors, such as self-esteem, personality, emotional intelligence, coping, and social support, are likely to have a larger role in predicting social media comparison, emotional regulation, and anxiety. Previous study has shown that psychological and environmental factors are more relevant in predicting mental health than gender (Yang & Shen, 2026; Liu & Wang, 2024).

Notably, certain studies continue to reveal gender differences in specific settings. Cultural and gender norms, for example, might influence emotional display patterns and emotion management methods (Yusoff et al., 2024), while contextual factors can lead to gender disparities in social comparison behaviours (Selvia & Kurniawan, 2025). These data suggest that gender disparities may not be worldwide, but can arise in certain circumstances, cultures, and assessment procedures.

To summarise, the findings of this study indicate that gender has no significant effect on social media comparison, emotional regulation, or anxiety among Malaysian university students. This is consistent with current research, which indicates that gender inequalities in psychological outcomes are decreasing in the digital age. Future research should look into

other aspects, such as psychological traits and environmental circumstances, to better understand these variables.

Implication of the Study

Theoretical Implications

This study makes significant theoretical contributions by expanding on Self-Regulation Theory (SRT) to better understand the impact of social media on anxiety and stress in students. SRT describes behavior as a feedback loop consisting of self-monitoring, self-judgment, and self-reaction (Reinecke et al., 2021), and our work contributes to the theory by demonstrating how this cycle occurs in online situations. In particular, the study shows that social media comparison is an important trigger in the self-monitoring phase, as university students are exposed to controlled and aspirational content that influences their self-evaluations (Dreier et al., 2024). This contributes to SRT by demonstrating that in the digital context, self-monitoring is heavily influenced by external digital stimuli.

Moreover, the study advances theory by providing empirical evidence for the function of self-judgment in turning social comparison into psychological impacts. Students' appraisals of their own ability in relation to unreachable norms on social media are more likely to result in negative self-evaluations, such as inferiority and self-doubt (Rebello et al., 2024). This observation validates and clarifies SRT by demonstrating that self-judgment can be distorted in the setting of social media, where comparison norms are often impractical to meet.

In addition, the findings advance our knowledge of the self-reaction stage by emphasizing the relevance of emotional regulation. According to the study, the ability to manage emotion determines the result of the self-regulation cycle. Adaptive methods, such as cognitive reappraisal, can mitigate the negative emotional impacts of comparison, but

maladaptive tactics, such as rumination, can exacerbate anxiety. This expands on the SRT by identifying emotional regulation as a critical aspect influencing feedback loop outcomes.

Furthermore, the study emphasizes the dynamic and cyclical nature of the SRT feedback loop in online environments. Emotional reactions during the self-reaction stage may lead to more social media use and comparison, creating a self-regulatory cycle that prolongs and/or amplifies anxiety (Sala et al., 2024). This finding contributes to theory by emphasizing that the SRT process is cyclical and recursive, particularly in situations designed for repeated usage.

Finally, the study contributes to our understanding of SRT by taking into account individual variations like as self-control and resilience, which may influence the effectiveness of the self-regulation process. Students with more self-control regulate their social media use, whereas students with higher resilience cope better with negative emotions (Yam et al., 2024). However, the study acknowledges that social media platform design, such as algorithms and notifications, can disrupt the self-regulation process by repeatedly activating the feedback loop (Vitale & Bonaiuto, 2024).

This study expands on Self-Regulation Theory by demonstrating that the self-monitoring → self-judgment → self-reaction cycle applies to social media use and is amplified when external digital triggers, emotional regulation, and social media platform features contribute to psychological outcomes like anxiety.

Practical Implications

The results of this paper have a number of practical implications to universities, mental health practitioners, and policymakers especially on the importance of dealing with anxiety among students in the digital era.

First, the study highlights the importance of emotion regulation–based interventions. As it has been shown, by enhancing adaptive strategies, including cognitive reappraisal, it is

possible to substantially decrease the anxiety symptoms in university students (Dong et al., 2024). Universities could as such have structured programs to concentrate on emotional regulation skills, such as mindfulness, cognitive restructuring and stress management techniques.

In addition, the results emphasize the need for social media literacy programs. The literature shows that the frequency of usage is not the only factor contributing to anxiety, but the way students interact with social media, specifically, upward comparison and passive scrolling, causes anxiety (Chen et al., 2023) . School programs would help to minimize the negative comparison processes by educating students to be critical of what they read on the internet and identify unrealistic portrayals.

Moreover, universities need to include digital well-being policies and preventive strategies. As recent research points, the interdependence between social media and emotional dysregulation, as well as psychological distress in students, is strictly intertwined with each other (Han and Xu, 2024). Healthier usage patterns can be encouraged in institutions through encouraging the use of screens in a balanced way, providing counselling services, and incorporating mental health awareness in the campus culture.

Furthermore, the research contributes to the creation of gender-based and personalized interventions. Gendered interventions can be effective since studies find that emotional regulation and social comparison effects depend on gender, and thus such differences can be addressed (Zuo and Zan, 2025). As an example, interventions that focus on appearance-based comparisons might be more beneficial to female students, whereas interventions based on status or performance comparisons would be more effective to male students.

Along with that, on a policy level, the results guide institutional stakeholders and the Ministry of Higher Education to develop empirical models of mental health. Recent studies

have underscored the role of social media-related stressors e.g., comparison, FoMO, information overload in getting students anxious, and thus the necessity of system-wide interventions (Li, 2025).

Besides that, the research has major consequences for university counsellors and students struggling with social media comparison anxiety. The authors advise that university counsellors use emotional regulation training, such as cognitive reappraisal and mindfulness, in counselling sessions and preventative education to help students overcome unpleasant emotions. Counsellors should also employ social media and comparison conduct in psychological testing because they are becoming more linked to student mental health. Universities could also use psychoeducational tactics and digital well-being programs to raise awareness of social media's effects and encourage healthy online habits, as well as gender-specific interventions. The findings can help university students learn emotional management and become more mindful of their social media habits, such as lower upward comparison and passive scrolling. Students are exhorted to be more engaged and purposeful online, self-compassing, and balanced in their offline lives, realising the unrealistic nature of social media content. Counselling is also vital to help early intervention and a good life when they feel nervous.

Lastly, the paper recommends that instead of banning the use of social media, the emphasis should be placed on improving the self-regulation of students since modern studies show that effective regulation of emotions is more effective than banning the use of social media (McAlister et al., 2024). This strategy enables students to cope with the online world better.

Limitation of Study

Although the study offers valid information regarding the interaction between social media comparison, emotional regulation and anxiety, there are a few limitations that must be noted.

To begin with, this research is limited due to its small age group of the respondents (1823 years). Although this population was the representative of the average population of undergraduates, it fails to reflect the experiences of older students, postgraduates, and working adults with varying degrees of emotional maturity, coping strategies, and a pattern of social media use. Younger people might be more susceptible to peer pressure and social comparison, but older people might be able to have greater skills of emotional regulation. Thus, the results might not be generalisable to other stages of development, which reduces the applicability of the findings.

Second, the study lack demographic diversity since most of the respondents are Chinese students of Universiti Tunku Abdul Rahman (UTAR). Malaysia is a multicultural country with a variety of ethnic communities (Malays, Indians, and other minorities), all of which are influenced by various cultural norms, values, and styles of emotional expression. The cultural background may have a great impact on the way individuals compare themselves in the social context, control their emotions, and feel anxious. As an example, the collectivist ethos can lead to different tendencies of comparison among the ethnic groups. Furthermore, the selection of students with the main consideration of a single private university can also be considered as institutional bias as students at other universities (e.g., public universities or other regions) can experience different academic, socioeconomic and social pressure. This leads to low external validity and generalizability of the findings.

Apart from that, the research design used is cross-sectional; thus, it is impossible to make causal conclusions about the variables. Although one can establish significant

relationships between social media comparison, emotional regulation and anxiety, the directionality of the relationships is not obvious. As an example, there is a possibility that it might be the case that more anxious people tend to compare themselves socially, instead of the fact that social comparison leads to anxiety. Moreover, emotional control can vary a bit with time depending on the circumstances. Longitudinal design would be more suitable to determine the causal relationship and changes in these variables with time.

Furthermore, the research is based on self-reported varieties of measures which can create various types of bias. Participants are also likely to give socially desirable responses, especially when they are reporting sensitive psychological constructs like anxiety or emotional regulation. Recall bias and subjective interpretation is also a possibility, and unrealistically evaluate and report their own behaviour and emotional conditions. Moreover, self-report measures might not be adequate to measure the complexity of the emotional regulation processes since they can take place unconsciously or without thinking. The limitation can have implications on the accuracy and reliability of the data collected.

Besides that, there is a restriction of the representativeness of the sample because of non-probability purposive sampling. The sample used might not be representative of the rest of the Malaysian population of university students since the sample was chosen on the basis of availability and certain inclusion criteria. This sampling technique exposes the researcher to selection bias, with some groups (e.g. those more active on social media) being more likely to respond. As a result, the results cannot be extrapolated to students of varying backgrounds, lifestyles, and the degree of social media use.

Other than that, the researchers concentrate on analyzing three key variables (social media comparison, emotional regulation, and anxiety) without taking into account other aspects that might have affected the results. Personality traits e.g., neuroticism, self-esteem, social support, academic stress, and social media usage patterns e.g., time spent, type of

platform may be also important variables that affect anxiety. Without these variables, the oneness of the study may not be fully understood and the explanatory power of the study might be limited because of the absence of these variables.

Also, the study lacks depth of differentiating types of usage of social media or platforms for example, Instagram, TikTok, Facebook as different platforms can support various types of comparison, appearance-based vs. achievement-based. Likewise, there is no in-depth discussion of the difference between active usage which are posting, interacting and passive usage scrolling, observing. This can be a blind spot on crucial details in the role of social media behaviour in the development of anxiety.

Overall, although this research makes significant contributions to the conception of the psychological effects of social media amongst Malaysian university students, these shortcomings indicate that the research results should be viewed quite cautiously. To solve these problems in future studies would contribute to making the research in this area more robust, generalisable and filled with understanding.

Recommendation for Research on the Future

Based on the limitations that were noted in this study, some recommendations are put forward on how future research should be done and how future research should be done to be in depth, valid and generalisable.

First, the age of individuals studying under 18-23 years old should be extended to other groups belonging to various developmental stages, i.e., adolescents, postgraduates and working adults. This would enable the researchers to test how social media comparison, emotional regulation, and anxiety occur at various phases in life. The differences in cognitive maturity, life responsibilities and coping mechanisms can be a major factor in these relationships. The wider age range would not only enhance the generalisability but also allow the comparative analyses to determine the age-specific vulnerabilities and protective factors.

In addition, it is necessary to focus future research on increased demographic and cultural diversity in sampling. It is advised that the researchers should involve people of various ethnic and social economic backgrounds and educational institutions in the research spread across Malaysia such as both public and privately owned universities and institutions in the different geographical locations. Considering the multicultural settings of Malaysia, cross-cultural comparisons could also be implemented in future research to study the influence of cultural values on shaping social comparison behaviours and emotional regulation strategies (e.g., collectivism, modesty, social harmony). This would increase external validity and present culturally representative results.

Moreover, longitudinal, experimental, or mixed longitudinal designs would be suitable to address the limitations of cross-sectional data in future studies. The longitudinal research would enable observing the changes and trends that occur over time, and offer more profound evidence as to the causation relationships and the directionality of variables. To illustrate, the researchers may investigate whether extended exposure to social media comparison is likely to lead to higher anxiety levels within a longer period or whether those whose anxiety levels higher tend to adopt comparison behaviours. Ways to prove causality and isolate certain psychological mechanisms further could be done by methods of experiments, including manipulating exposure to curated social media content.

Fourth, research in the future must be multi-method in order to minimize the use of self-reported data. Besides questionnaires, the researchers might also include objective data like digital monitoring of social media usage, observations, or physiological signs of stress for instance heart rate variability. The qualitative approach, such as interviews or focus groups, could also yield more information about the lived experiences and emotional reaction of people to social media. The combination of quantitative and qualitative methods would provide a more detailed and comprehensive insight into the investigated constructs.

Besides that, to improve representativeness, the next studies need to take into account probability sampling, e.g. stratified random sampling. This would make sure that various subgroups of the population would be represented well enough and minimise the chance of selection bias. The generalisability of the results would be enhanced by a more representative sample and more accurate conclusions about the larger population of Malaysian university students would be made.

Sixth, further psychological, behavioural and contextual variables should be in future research to create a more global model of anxiety. The mediators or moderators could be variables like self-esteem, personality traits (e.g., neuroticism, perfectionism), fear of missing out (FoMO), academic stress, and social support in the relationship between social media comparison and anxiety. It would be wise to consider these factors, which would increase the explanatory strength of the research model and offer a more comprehensive picture of the mechanisms involved.

On top of that, other patterns and types of social media use should be investigated in more detail in future research. In particular, to differentiate between active (e.g., posting, commenting, interacting) and passive (e.g., scrolling, observing) usage, which can have various psychological implications. Also, it would be helpful to conduct platform-specific analyses (e.g., Instagram, Tik Tok, Facebook) in that each platform would stress various forms of content (e.g., appearance, lifestyle, achievements) and can affect the process of comparisons in different ways. This would offer greater details on the contribution of particular digital settings to anxiety.

Apart from that, further studies are needed going forward to explore gender differences and other demographic variables in a more holistic approach. Although this paper takes into consideration gender differences, more research is required to comprehend the difference in social comparison tendencies and emotional regulation strategies of males and

females. A further investigation in the future could be the impact of other demographic factors as socioeconomic status, academic discipline, and year of study. This would aid in the creation of more specific and individualized interventions.

Lastly, it is recommended that more studies in the future be more intervention-based. Researchers might develop and test intervention programs to enhance their emotional regulation abilities or lessen their maladaptive social comparison behaviors instead of only trying to identify the connections between variables. As an illustration, the studies might evaluate the effectiveness of mindfulness training or cognitive reappraisal workshop or social media literacy program in alleviating anxiety. This type of applied research would be of practical use and could help in enhancing the well-being of students directly.

Conclusion

The purpose of this study was to examine the relationships and predictions of social media comparison and emotional control with anxiety among Malaysian university students, as well as gender differences. The findings validated some of the theories. Social media comparison was found to be positively associated to anxiety and strongly predicted anxiety (H_{1a} and H_{2a} supported). However, emotional control did not significantly predict anxiety (H_{2b} not supported). There were no gender differences in social media comparison or emotional control (H_{3a}, H_{3b} and H_{3c} not supported).

This study adds to the ideas of social comparison and emotional regulation in Malaysia by demonstrating that social media comparison is a better predictor of anxiety. Practically, the study advocates for the use of life skills and counselling to limit inappropriate comparisons via social media literacy and mental health interventions.

The study's weaknesses include its cross-sectional design, self-reports, and limited generalizability given the selective sample. Longitudinal studies that focus on specific types of emotional regulation, as well as more representative samples, are advised.

Overall, social media comparison is a powerful predictor of anxiety, indicating the need for interventions to reduce online comparison behaviour in order to increase student well-being.

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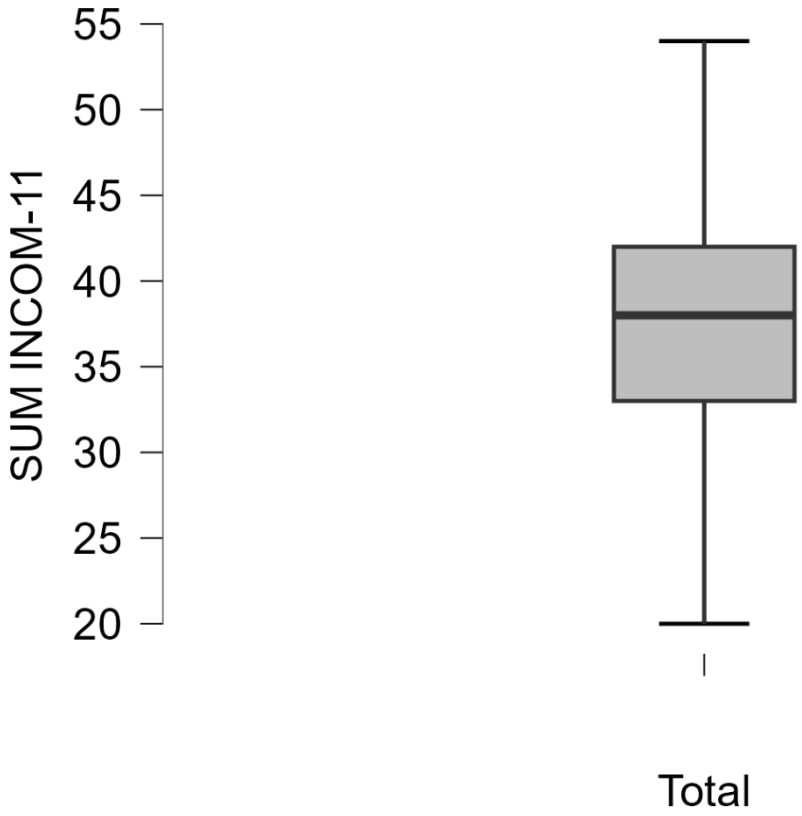
Appendix

Appendix A: Sample Size Calculation

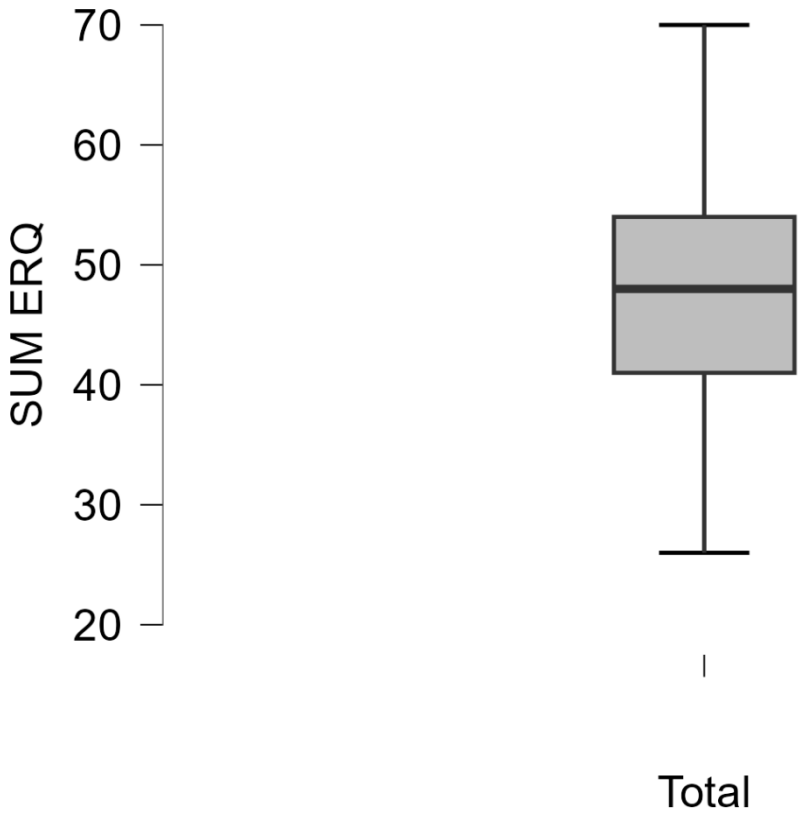
Appendix B: Boxplots

Boxplots

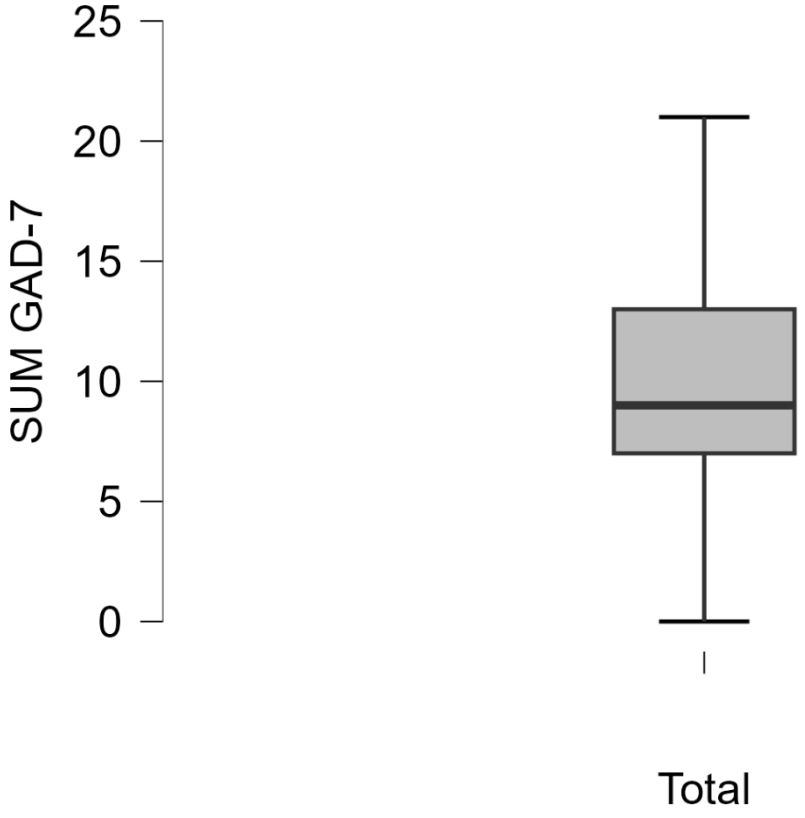
SUM INCOM-11



SUM ERQ



SUM GAD-7



Appendix C: JASP Output for Reliability in Pilot Study

INCOM-11

Frequentist Scale Reliability Statistics

			95% CI	
Coefficient	Estimate	Std. Error	**Lower**	**Upper**
Cronbach's α	0.761			

Note. The following item correlated negatively with the scale: Column2. The analytic confidence interval is not available for coefficient alpha/lambda2 when data contain

EQR

Frequentist Scale Reliability Statistics

			95% CI	
Coefficient	Estimate	Std. Error	Lower	Upper
Cronbach's α	0.775	0.070	0.639	0.912

Note. The following item correlated negatively with the scale: I keep my emotions to myself.

GAD-7

Frequentist Scale Reliability Statistics

			95% CI	
Coefficient	Estimate	Std. Error	Lower	Upper
Cronbach's α	0.889	0.031	0.828	0.949

Appendix D: JASP Output for Reliability in Actual Study

INCOM-11

Frequentist Scale Reliability Statistics

			95% CI	
Coefficient	Estimate	Std. Error	Lower	Upper
Cronbach's α	0.794			

Note. The following item correlated negatively with the scale: V19. The analytic confidence interval is not available for coefficient alpha/lambda2 when data contain missing and pairwise complete observations are used. Try changing to 'Delete listwise' within 'Advanced Options'.

ERQ

Frequentist Scale Reliability Statistics

			95% CI	
Coefficient	Estimate	Std. Error	Lower	Upper
Cronbach's α	0.839	0.023	0.794	0.885

GAD-7

Frequentist Scale Reliability Statistics

			95% CI	
Coefficient	Estimate	Std. Error	Lower	Upper
Cronbach's α	0.896	0.017	0.862	0.930

Appendix G: JASP Output for Single Linear Regression

Linear Regression

Model Summary - SUM GAD-7

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	df1	df2	p
M_0	0.000	0.000	0.000	5.036	0.000	0	282	
M_1	0.161	0.026	0.022	4.980	0.026	1	281	.007

Note. M_1 includes SUM INCOM-11

ANOVA

Model		Sum of Squares	df	Mean Square	F	p
M_1	Regression	184.7	1	184.7	7.450	.007
	Residual	6968	281	24.80		
	Total	7152	282			

Note. M_1 includes SUM INCOM-11

Note. The intercept model is omitted, as no meaningful information can be shown.

Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p
M_0	(Intercept)	9.650	0.299		32.24	< .001
M_1	(Intercept)	5.409	1.582		3.419	< .001

Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p
	SUM INCOM-11	0.114	0.042	0.161	2.730	.007

Descriptives

	N	Mean	SD	SE
SUM GAD-7	283	9.650	5.036	0.299
SUM INCOM-11	283	37.08	7.076	0.421

Collinearity Diagnostics

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Intercept)	SUM INCOM-11
M_1	1	1.982	1.000	0.009	0.009
	2	0.018	10.59	0.991	0.991

Note. The intercept model is omitted, as no meaningful information can be shown.

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
1	-0.835	7.000	11.13	-4.128	0.005
2	0.717	14.00	10.44	3.558	0.002
3	-1.382	3.000	9.870	-6.870	0.004
4	-0.439	7.000	9.183	-2.183	4.574×10^{-4}
5	0.964	15.00	10.21	4.787	0.002
6	-0.066	10.00	10.33	-0.327	1.314×10^{-5}
7	0.717	14.00	10.44	3.558	0.002
8	0.521	12.00	9.412	2.588	5.226×10^{-4}
9	-1.228	4.000	10.10	-6.098	0.003
10	-1.429	3.000	10.10	-7.098	0.005
11	1.183	14.00	8.154	5.846	0.011
12	-0.302	7.000	8.497	-1.497	4.955×10^{-4}
13	0.567	12.00	9.183	2.817	7.612×10^{-4}
14	-1.228	4.000	10.10	-6.098	0.003
15	-1.290	3.000	9.412	-6.412	0.003
16	-0.060	9.000	9.298	-0.298	7.581×10^{-6}
17	-0.661	5.000	8.268	-3.268	0.003
18	-0.485	7.000	9.412	-2.412	4.540×10^{-4}
19	-0.977	3.000	7.811	-4.811	0.011

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
20	0.877	14.00	9.641	4.359	0.001
21	-0.554	7.000	9.755	-2.755	5.540×10^{-4}
22	0.538	13.00	10.33	2.673	8.770×10^{-4}
23	-0.764	7.000	10.78	-3.785	0.003
24	-0.261	8.000	9.298	-1.298	1.440×10^{-4}
25	-0.867	3.000	7.239	-4.239	0.014
26	-0.267	9.000	10.33	-1.327	2.162×10^{-4}
27	-0.252	10.00	11.24	-1.242	5.560×10^{-4}
28	-1.110	3.000	8.497	-5.497	0.007
29	-1.050	5.000	10.21	-5.213	0.003
30	0.181	11.00	10.10	0.902	7.645×10^{-5}
31	0.987	15.00	10.10	4.902	0.002
32	-0.221	9.000	10.10	-1.098	1.135×10^{-4}
33	0.941	15.00	10.33	4.673	0.003
34	-0.966	6.000	10.78	-4.785	0.005
35	0.257	10.00	8.726	1.274	2.715×10^{-4}
36	-0.417	7.000	9.069	-2.069	4.678×10^{-4}
37	-1.654	2.000	10.21	-8.213	0.007
38	-0.348	7.000	8.726	-1.726	4.981×10^{-4}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
39	0.482	11.00	8.611	2.389	0.001
40	2.062	21.00	10.78	10.215	0.023
41	-1.274	4.000	10.33	-6.327	0.005
42	-0.848	6.000	10.21	-4.213	0.002
43	-1.523	3.000	10.56	-7.556	0.009
44	0.204	11.00	9.984	1.016	8.682×10^{-5}
45	-0.779	6.000	9.870	-3.870	0.001
46	-0.492	8.000	10.44	-2.442	8.440×10^{-4}
47	-0.100	8.000	8.497	-0.497	5.462×10^{-5}
48	-1.290	3.000	9.412	-6.412	0.003
49	2.239	21.00	9.870	11.130	0.010
50	0.941	15.00	10.33	4.673	0.003
51	-1.855	1.000	10.21	-9.213	0.009
52	0.694	15.00	11.59	3.415	0.006
53	-0.330	8.000	9.641	-1.641	1.932×10^{-4}
54	-1.586	0.000	7.811	-7.811	0.028
55	-1.855	1.000	10.21	-9.213	0.009
56	-0.192	8.000	8.955	-0.955	1.145×10^{-4}
57	0.090	11.00	10.56	0.444	3.222×10^{-5}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
58	1.009	15.00	9.984	5.016	0.002
59	-0.439	7.000	9.183	-2.183	4.574×10^{-4}
60	-0.244	9.000	10.21	-1.213	1.573×10^{-4}
61	-0.439	7.000	9.183	-2.183	4.574×10^{-4}
62	-0.014	9.000	9.069	-0.069	5.195×10^{-7}
63	-1.785	1.000	9.870	-8.870	0.006
64	-0.353	8.000	9.755	-1.755	2.249×10^{-4}
65	0.337	12.00	10.33	1.673	3.435×10^{-4}
66	-1.785	1.000	9.870	-8.870	0.006
67	-0.394	7.000	8.955	-1.955	4.799×10^{-4}
68	-0.446	8.000	10.21	-2.213	5.236×10^{-4}
69	1.929	19.00	9.412	9.588	0.007
70	-0.670	7.000	10.33	-3.327	0.001
71	0.981	13.00	8.154	4.846	0.008
72	0.653	13.00	9.755	3.245	7.684×10^{-4}
73	0.973	12.00	7.239	4.761	0.017
74	0.653	13.00	9.755	3.245	7.684×10^{-4}
75	-1.823	2.000	11.01	-9.014	0.023
76	0.009	9.000	8.955	0.045	2.594×10^{-7}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
77	0.970	14.00	9.183	4.817	0.002
78	-1.849	0.000	9.183	-9.183	0.008
79	-0.291	9.000	10.44	-1.442	2.942×10^{-4}
80	-0.999	3.000	7.925	-4.925	0.010
81	0.763	14.00	10.21	3.787	0.002
82	0.792	13.00	9.069	3.931	0.002
83	-0.895	6.000	10.44	-4.442	0.003
84	0.493	13.00	10.56	2.444	9.761×10^{-4}
85	0.529	11.00	8.383	2.617	0.002
86	2.107	20.00	9.526	10.474	0.008
87	0.660	12.00	8.726	3.274	0.002
88	0.993	14.00	9.069	4.931	0.003
89	-0.330	8.000	9.641	-1.641	1.932×10^{-4}
90	-1.940	0.000	9.641	-9.641	0.007
91	-1.405	3.000	9.984	-6.984	0.004
92	-0.508	7.000	9.526	-2.526	4.689×10^{-4}
93	-0.953	4.000	8.726	-4.726	0.004
94	-2.177	0.000	10.78	-10.785	0.025
95	0.544	12.00	9.298	2.702	6.246×10^{-4}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
96	1.480	17.00	9.641	7.359	0.004
97	-0.439	7.000	9.183	-2.183	4.574×10^{-4}
98	1.054	13.00	7.811	5.189	0.012
99	1.064	14.00	8.726	5.274	0.005
100	-0.008	8.000	8.039	-0.039	5.719×10^{-7}
101	-0.802	6.000	9.984	-3.984	0.001
102	-0.037	9.000	9.183	-0.183	3.225×10^{-6}
103	0.055	9.000	8.726	0.274	1.258×10^{-5}
104	1.188	16.00	10.10	5.902	0.003
105	-1.144	5.000	10.67	-5.670	0.006
106	-0.554	7.000	9.755	-2.755	5.540×10^{-4}
107	1.597	17.00	9.069	7.931	0.007
108	-0.244	9.000	10.21	-1.213	1.573×10^{-4}
109	-1.917	0.000	9.526	-9.526	0.007
110	0.544	12.00	9.298	2.702	6.246×10^{-4}
111	0.987	15.00	10.10	4.902	0.002
112	1.055	15.00	9.755	5.245	0.002
113	-0.577	7.000	9.870	-2.870	6.349×10^{-4}
114	-0.014	9.000	9.069	-0.069	5.195×10^{-7}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
115	0.360	12.00	10.21	1.787	3.415×10^{-4}
116	1.479	18.00	10.67	7.330	0.010
117	0.049	10.00	9.755	0.245	4.371×10^{-6}
118	-1.168	5.000	10.78	-5.785	0.007
119	-2.033	0.000	10.10	-10.098	0.010
120	1.148	15.00	9.298	5.702	0.003
121	-1.382	3.000	9.870	-6.870	0.004
122	-0.439	7.000	9.183	-2.183	4.574×10^{-4}
123	0.699	13.00	9.526	3.474	8.862×10^{-4}
124	0.630	13.00	9.870	3.130	7.555×10^{-4}
125	-0.485	7.000	9.412	-2.412	4.540×10^{-4}
126	-0.192	8.000	8.955	-0.955	1.145×10^{-4}
127	0.366	11.00	9.183	1.817	3.166×10^{-4}
128	-0.371	7.000	8.840	-1.840	4.907×10^{-4}
129	1.637	19.00	10.90	8.101	0.016
130	-0.454	9.000	11.24	-2.242	0.002
131	-1.097	5.000	10.44	-5.442	0.004
132	0.785	14.00	10.10	3.902	0.001
133	0.792	13.00	9.069	3.931	0.002

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
134	1.299	17.00	10.56	6.444	0.007
135	1.372	16.00	9.183	6.817	0.004
136	1.948	20.00	10.33	9.673	0.011
137	1.837	19.00	9.870	9.130	0.006
138	1.101	15.00	9.526	5.474	0.002
139	-0.169	8.000	8.840	-0.840	1.023×10^{-4}
140	0.159	11.00	10.21	0.787	6.626×10^{-5}
141	-0.459	6.000	8.268	-2.268	0.001
142	-0.158	10.00	10.78	-0.785	1.332×10^{-4}
143	-0.835	7.000	11.13	-4.128	0.005
144	2.731	21.00	7.582	13.418	0.102
145	0.946	14.00	9.298	4.702	0.002
146	0.831	14.00	9.870	4.130	0.001
147	0.429	12.00	9.870	2.130	3.499×10^{-4}
148	-0.325	7.000	8.611	-1.611	5.002×10^{-4}
149	0.768	13.00	9.183	3.817	0.001
150	0.314	12.00	10.44	1.558	3.438×10^{-4}
151	-0.439	7.000	9.183	-2.183	4.574×10^{-4}
152	0.003	10.00	9.984	0.016	2.142×10^{-8}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
153	-0.106	9.000	9.526	-0.526	2.036×10^{-5}
154	-0.261	8.000	9.298	-1.298	1.440×10^{-4}
155	0.319	11.00	9.412	1.588	1.968×10^{-4}
156	1.680	19.00	10.67	8.330	0.013
157	-1.267	3.000	9.298	-6.298	0.003
158	-0.089	10.00	10.44	-0.442	2.761×10^{-5}
159	-0.267	9.000	10.33	-1.327	2.162×10^{-4}
160	1.256	16.00	9.755	6.245	0.003
161	0.452	12.00	9.755	2.245	3.677×10^{-4}
162	0.607	13.00	9.984	3.016	7.651×10^{-4}
163	-1.804	0.000	8.955	-8.955	0.010
164	0.740	14.00	10.33	3.673	0.002
165	1.135	14.00	8.383	5.617	0.008
166	0.785	14.00	10.10	3.902	0.001
167	0.009	9.000	8.955	0.045	2.594×10^{-7}
168	0.970	14.00	9.183	4.817	0.002
169	-0.439	7.000	9.183	-2.183	4.574×10^{-4}
170	0.067	11.00	10.67	0.330	2.046×10^{-5}
171	-1.043	4.000	9.183	-5.183	0.003

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
172	-0.307	8.000	9.526	-1.526	1.712×10^{-4}
173	-1.021	4.000	9.069	-5.069	0.003
174	0.003	10.00	9.984	0.016	2.142×10^{-8}
175	1.101	15.00	9.526	5.474	0.002
176	0.118	10.00	9.412	0.588	2.697×10^{-5}
177	-0.279	7.000	8.383	-1.383	4.832×10^{-4}
178	0.492	10.00	7.582	2.418	0.003
179	1.087	14.00	8.611	5.389	0.006
180	-1.672	0.000	8.268	-8.268	0.020
181	0.970	14.00	9.183	4.817	0.002
182	2.084	20.00	9.641	10.359	0.008
183	0.829	15.00	10.90	4.101	0.004
184	-1.782	0.000	8.840	-8.840	0.011
185	0.964	15.00	10.21	4.787	0.002
186	0.630	13.00	9.870	3.130	7.555×10^{-4}
187	0.831	14.00	9.870	4.130	0.001
188	1.792	19.00	10.10	8.902	0.007
189	-0.624	7.000	10.10	-3.098	9.029×10^{-4}
190	0.964	15.00	10.21	4.787	0.002

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
191	-0.439	7.000	9.183	-2.183	4.574×10^{-4}
192	1.322	17.00	10.44	6.558	0.006
193	1.372	16.00	9.183	6.817	0.004
194	0.873	15.00	10.67	4.330	0.004
195	-1.135	4.000	9.641	-5.641	0.002
196	-0.485	7.000	9.412	-2.412	4.540×10^{-4}
197	1.075	16.00	10.67	5.330	0.005
198	1.546	18.00	10.33	7.673	0.007
199	0.696	11.00	7.582	3.418	0.007
200	0.049	10.00	9.755	0.245	4.371×10^{-6}
201	0.250	11.00	9.755	1.245	1.131×10^{-4}
202	-0.089	10.00	10.44	-0.442	2.761×10^{-5}
203	-1.312	2.000	8.497	-6.497	0.009
204	-0.267	9.000	10.33	-1.327	2.162×10^{-4}
205	0.136	11.00	10.33	0.673	5.557×10^{-5}
206	-0.554	7.000	9.755	-2.755	5.540×10^{-4}
207	-0.647	7.000	10.21	-3.213	0.001
208	-0.515	8.000	10.56	-2.556	0.001
209	-1.452	3.000	10.21	-7.213	0.006

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
210	-0.314	9.000	10.56	-1.556	3.956×10^{-4}
211	-0.360	9.000	10.78	-1.785	6.889×10^{-4}
212	-1.312	2.000	8.497	-6.497	0.009
213	0.854	14.00	9.755	4.245	0.001
214	0.245	12.00	10.78	1.215	3.194×10^{-4}
215	0.653	13.00	9.755	3.245	7.684×10^{-4}
216	0.424	13.00	10.90	2.101	0.001
217	0.412	11.00	8.955	2.045	5.255×10^{-4}
218	-0.848	6.000	10.21	-4.213	0.002
219	-0.999	3.000	7.925	-4.925	0.010
220	-0.279	7.000	8.383	-1.383	4.832×10^{-4}
221	0.877	14.00	9.641	4.359	0.001
222	-1.849	0.000	9.183	-9.183	0.008
223	-0.469	8.000	10.33	-2.327	6.648×10^{-4}
224	0.327	10.00	8.383	1.617	6.612×10^{-4}
225	0.768	13.00	9.183	3.817	0.001
226	1.998	21.00	11.13	9.872	0.031
227	0.699	13.00	9.526	3.474	8.862×10^{-4}
228	0.653	13.00	9.755	3.245	7.684×10^{-4}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
229	0.389	11.00	9.069	1.931	4.076×10^{-4}
230	0.630	13.00	9.870	3.130	7.555×10^{-4}
231	-1.849	0.000	9.183	-9.183	0.008
232	1.597	17.00	9.069	7.931	0.007
233	0.095	10.00	9.526	0.474	1.647×10^{-5}
234	0.768	13.00	9.183	3.817	0.001
235	2.062	21.00	10.78	10.215	0.023
236	-1.782	0.000	8.840	-8.840	0.011
237	1.171	15.00	9.183	5.817	0.003
238	0.854	14.00	9.755	4.245	0.001
239	0.424	13.00	10.90	2.101	0.001
240	-1.251	4.000	10.21	-6.213	0.004
241	2.019	21.00	11.01	9.986	0.028
242	-0.169	8.000	8.840	-0.840	1.023×10^{-4}
243	1.929	19.00	9.412	9.588	0.007
244	-0.835	7.000	11.13	-4.128	0.005
245	-0.825	6.000	10.10	-4.098	0.002
246	0.366	11.00	9.183	1.817	3.166×10^{-4}
247	1.396	16.00	9.069	6.931	0.005

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
248	0.062	8.000	7.696	0.304	4.727×10^{-5}
249	0.941	15.00	10.33	4.673	0.003
250	0.838	13.00	8.840	4.160	0.003
251	0.590	12.00	9.069	2.931	9.390×10^{-4}
252	0.624	11.00	7.925	3.075	0.004
253	0.630	13.00	9.870	3.130	7.555×10^{-4}
254	-0.238	8.000	9.183	-1.183	1.343×10^{-4}
255	1.389	17.00	10.10	6.902	0.004
256	-0.014	9.000	9.069	-0.069	5.195×10^{-7}
257	-0.152	9.000	9.755	-0.755	4.163×10^{-5}
258	0.429	12.00	9.870	2.130	3.499×10^{-4}
259	-0.825	6.000	10.10	-4.098	0.002
260	-0.205	10.00	11.01	-1.014	2.894×10^{-4}
261	-0.469	8.000	10.33	-2.327	6.648×10^{-4}
262	0.785	14.00	10.10	3.902	0.001
263	-0.462	7.000	9.298	-2.298	4.516×10^{-4}
264	-0.647	7.000	10.21	-3.213	0.001
265	-0.687	6.000	9.412	-3.412	9.086×10^{-4}
266	-0.291	9.000	10.44	-1.442	2.942×10^{-4}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
267	-0.492	8.000	10.44	-2.442	8.440×10^{-4}
268	-1.693	1.000	9.412	-8.412	0.006
269	-0.267	9.000	10.33	-1.327	2.162×10^{-4}
270	-1.228	4.000	10.10	-6.098	0.003
271	-1.228	4.000	10.10	-6.098	0.003
272	-1.228	4.000	10.10	-6.098	0.003
273	-1.452	3.000	10.21	-7.213	0.006
274	-1.452	3.000	10.21	-7.213	0.006
275	-0.261	8.000	9.298	-1.298	1.440×10^{-4}
276	-1.986	0.000	9.870	-9.870	0.008
277	-0.842	5.000	9.183	-4.183	0.002
278	0.366	11.00	9.183	1.817	3.166×10^{-4}
279	-1.871	0.000	9.298	-9.298	0.007
280	-0.325	7.000	8.611	-1.611	5.002×10^{-4}
281	0.429	12.00	9.870	2.130	3.499×10^{-4}
282	-0.577	7.000	9.870	-2.870	6.349×10^{-4}
283	0.475	12.00	9.641	2.359	3.994×10^{-4}

Linear Regression

Model Summary - SUM GAD-7

Model	R	R^2	Adjusted R^2	RMSE	Durbin-Watson Autocorrelation	Durbin-Watson Statistic	Durbin-Watson p
M_0	0.000	0.000	0.000	5.036	0.043	1.913	.463
M_1	0.020	0.000	-0.003	5.044	0.042	1.914	.469

Note. M_1 includes SUM ERQ

ANOVA

Model		Sum of Squares	df	Mean Square	F	p
M_1	Regression	2.851	1	2.851	0.112	.738
	Residual	7150	281	25.44		
	Total	7152	282			

Note. M_1 includes SUM ERQ

Note. The intercept model is omitted, as no meaningful information can be shown.

Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p
M_0	(Intercept)	9.650	0.299		32.24	< .001
M_1	(Intercept)	10.16	1.560		6.516	< .001

Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p
	SUM ERQ	-0.011	0.032	-0.020	-0.335	.738

Descriptives

	N	Mean	SD	SE
SUM GAD-7	283	9.650	5.036	0.299
SUM ERQ	283	47.92	9.405	0.559

Collinearity Diagnostics

				Variance Proportions	
Model	Dimension	Eigenvalue	Condition Index	(Intercept)	SUM ERQ
M_1	1	1.981	1.000	0.009	0.009
	2	0.019	10.31	0.991	0.991

Note. The intercept model is omitted, as no meaningful information can be shown.

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
1	-0.504	7.000	9.532	-2.532	0.001
2	0.843	14.00	9.767	4.233	0.003
3	-1.332	3.000	9.703	-6.703	0.004
4	-0.530	7.000	9.671	-2.671	5.199×10^{-4}
5	1.111	15.00	9.446	5.554	0.011
6	0.065	10.00	9.671	0.329	7.902×10^{-6}
7	0.825	14.00	9.885	4.115	0.008
8	0.443	12.00	9.778	2.222	9.128×10^{-4}
9	-1.124	4.000	9.660	-5.660	0.002
10	-1.334	3.000	9.713	-6.713	0.004
11	0.844	14.00	9.756	4.244	0.003
12	-0.522	7.000	9.628	-2.628	5.068×10^{-4}
13	0.454	12.00	9.713	2.287	5.125×10^{-4}
14	-1.124	4.000	9.660	-5.660	0.002
15	-1.327	3.000	9.681	-6.681	0.003
16	-0.144	9.000	9.724	-0.724	5.683×10^{-5}
17	-0.915	5.000	9.607	-4.607	0.002
18	-0.526	7.000	9.649	-2.649	4.909×10^{-4}
19	-1.314	3.000	9.617	-6.617	0.003

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
20	0.868	14.00	9.628	4.372	0.001
21	-0.539	7.000	9.713	-2.713	7.218×10^{-4}
22	0.676	13.00	9.596	3.404	0.001
23	-0.484	7.000	9.414	-2.414	0.003
24	-0.330	8.000	9.660	-1.660	1.946×10^{-4}
25	-1.300	3.000	9.532	-6.532	0.007
26	-0.118	9.000	9.596	-0.596	3.216×10^{-5}
27	0.078	10.00	9.607	0.393	1.288×10^{-5}
28	-1.305	3.000	9.564	-6.564	0.005
29	-0.932	5.000	9.692	-4.692	0.002
30	0.252	11.00	9.735	1.265	1.926×10^{-4}
31	1.063	15.00	9.649	5.351	0.002
32	-0.135	9.000	9.681	-0.681	3.564×10^{-5}
33	1.074	15.00	9.596	5.404	0.003
34	-0.723	6.000	9.639	-3.639	9.382×10^{-4}
35	0.063	10.00	9.681	0.319	7.791×10^{-6}
36	-0.539	7.000	9.713	-2.713	7.218×10^{-4}
37	-1.511	2.000	9.607	-7.607	0.005
38	-0.544	7.000	9.735	-2.735	9.000×10^{-4}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
39	0.241	11.00	9.788	1.212	3.012×10^{-4}
40	2.290	21.00	9.510	11.490	0.028
41	-1.100	4.000	9.521	-5.521	0.006
42	-0.711	6.000	9.575	-3.575	0.001
43	-1.311	3.000	9.596	-6.596	0.004
44	0.275	11.00	9.617	1.383	1.482×10^{-4}
45	-0.747	6.000	9.756	-3.756	0.002
46	-0.345	8.000	9.735	-1.735	3.622×10^{-4}
47	-0.349	8.000	9.756	-1.756	4.603×10^{-4}
48	-1.344	3.000	9.756	-6.756	0.007
49	2.248	21.00	9.681	11.319	0.010
50	1.067	15.00	9.628	5.372	0.002
51	-1.708	1.000	9.596	-8.596	0.007
52	1.120	15.00	9.414	5.586	0.015
53	-0.347	8.000	9.746	-1.746	4.081×10^{-4}
54	-1.892	0.000	9.478	-9.478	0.025
55	-1.718	1.000	9.649	-8.649	0.005
56	-0.341	8.000	9.713	-1.713	2.878×10^{-4}
57	0.283	11.00	9.575	1.425	2.238×10^{-4}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
58	1.084	15.00	9.553	5.447	0.004
59	-0.544	7.000	9.735	-2.735	9.000×10^{-4}
60	-0.137	9.000	9.692	-0.692	3.939×10^{-5}
61	-0.568	7.000	9.842	-2.842	0.003
62	-0.127	9.000	9.639	-0.639	2.890×10^{-5}
63	-1.729	1.000	9.703	-8.703	0.007
64	-0.345	8.000	9.735	-1.735	3.622×10^{-4}
65	0.458	12.00	9.692	2.308	4.380×10^{-4}
66	-1.724	1.000	9.681	-8.681	0.006
67	-0.544	7.000	9.735	-2.735	9.000×10^{-4}
68	-0.336	8.000	9.692	-1.692	2.355×10^{-4}
69	1.859	19.00	9.639	9.361	0.006
70	-0.530	7.000	9.671	-2.671	5.199×10^{-4}
71	0.703	13.00	9.478	3.522	0.003
72	0.665	13.00	9.649	3.351	7.852×10^{-4}
73	0.439	12.00	9.799	2.201	0.001
74	0.642	13.00	9.778	3.222	0.002
75	-1.501	2.000	9.542	-7.542	0.009
76	-0.146	9.000	9.735	-0.735	6.498×10^{-5}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
77	0.848	14.00	9.735	4.265	0.002
78	-1.936	0.000	9.735	-9.735	0.011
79	-0.142	9.000	9.713	-0.713	4.991×10^{-5}
80	-1.309	3.000	9.585	-6.585	0.004
81	0.846	14.00	9.746	4.254	0.002
82	0.659	13.00	9.681	3.319	8.454×10^{-4}
83	-0.727	6.000	9.660	-3.660	9.459×10^{-4}
84	0.681	13.00	9.575	3.425	0.001
85	0.232	11.00	9.842	1.158	4.471×10^{-4}
86	2.041	20.00	9.735	10.265	0.013
87	0.431	12.00	9.842	2.158	0.002
88	0.850	14.00	9.724	4.276	0.002
89	-0.319	8.000	9.607	-1.607	2.148×10^{-4}
90	-1.919	0.000	9.660	-9.660	0.007
91	-1.304	3.000	9.553	-6.553	0.006
92	-0.520	7.000	9.617	-2.617	5.309×10^{-4}
93	-1.116	4.000	9.617	-5.617	0.002
94	-1.888	0.000	9.414	-9.414	0.042
95	0.478	12.00	9.596	2.404	5.235×10^{-4}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
96	1.479	17.00	9.564	7.436	0.007
97	-0.568	7.000	9.842	-2.842	0.003
98	0.655	13.00	9.703	3.297	9.712×10^{-4}
99	0.903	14.00	9.478	4.522	0.006
100	-0.352	8.000	9.767	-1.767	5.188×10^{-4}
101	-0.703	6.000	9.532	-3.532	0.002
102	-0.146	9.000	9.735	-0.735	6.498×10^{-5}
103	-0.110	9.000	9.553	-0.553	4.167×10^{-5}
104	1.270	16.00	9.607	6.393	0.003
105	-0.952	5.000	9.778	-4.778	0.004
106	-0.524	7.000	9.639	-2.639	4.934×10^{-4}
107	1.437	17.00	9.788	7.212	0.011
108	-0.133	9.000	9.671	-0.671	3.279×10^{-5}
109	-1.900	0.000	9.553	-9.553	0.012
110	0.463	12.00	9.671	2.329	3.954×10^{-4}
111	1.067	15.00	9.628	5.372	0.002
112	1.045	15.00	9.746	5.254	0.004
113	-0.514	7.000	9.585	-2.585	6.652×10^{-4}
114	-0.125	9.000	9.628	-0.628	2.894×10^{-5}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
115	0.467	12.00	9.649	2.351	3.865×10^{-4}
116	1.670	18.00	9.596	8.404	0.006
117	0.082	10.00	9.585	0.415	1.713×10^{-5}
118	-0.930	5.000	9.681	-4.681	0.002
119	-1.893	0.000	9.489	-9.489	0.023
120	1.076	15.00	9.585	5.415	0.003
121	-1.300	3.000	9.532	-6.532	0.007
122	-0.544	7.000	9.735	-2.735	9.000×10^{-4}
123	0.670	13.00	9.628	3.372	8.344×10^{-4}
124	0.651	13.00	9.724	3.276	0.001
125	-0.542	7.000	9.724	-2.724	8.042×10^{-4}
126	-0.332	8.000	9.671	-1.671	2.035×10^{-4}
127	0.273	11.00	9.628	1.372	1.381×10^{-4}
128	-0.542	7.000	9.724	-2.724	8.042×10^{-4}
129	1.911	19.00	9.446	9.554	0.034
130	-0.127	9.000	9.639	-0.639	2.890×10^{-5}
131	-0.921	5.000	9.639	-4.639	0.002
132	0.862	14.00	9.660	4.340	0.001
133	0.636	13.00	9.810	3.190	0.003

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
134	1.479	17.00	9.564	7.436	0.007
135	1.305	16.00	9.468	6.532	0.013
136	2.104	20.00	9.468	10.532	0.034
137	1.882	19.00	9.542	9.458	0.014
138	1.067	15.00	9.628	5.372	0.002
139	-0.378	8.000	9.885	-1.885	0.002
140	0.283	11.00	9.575	1.425	2.238×10^{-4}
141	-0.750	6.000	9.767	-3.767	0.002
142	0.118	10.00	9.414	0.586	1.631×10^{-4}
143	-0.502	7.000	9.521	-2.521	0.001
144	2.239	21.00	10.06	10.944	0.163
145	0.844	14.00	9.756	4.244	0.003
146	0.864	14.00	9.649	4.351	0.001
147	0.441	12.00	9.788	2.212	0.001
148	-0.535	7.000	9.692	-2.692	5.960×10^{-4}
149	0.659	13.00	9.681	3.319	8.454×10^{-4}
150	0.456	12.00	9.703	2.297	4.714×10^{-4}
151	-0.548	7.000	9.756	-2.756	0.001
152	0.074	10.00	9.628	0.372	1.016×10^{-5}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
153	-0.108	9.000	9.542	-0.542	4.465×10^{-5}
154	-0.328	8.000	9.649	-1.649	1.903×10^{-4}
155	0.270	11.00	9.639	1.361	1.313×10^{-4}
156	1.882	19.00	9.542	9.458	0.014
157	-1.381	3.000	9.885	-6.885	0.022
158	0.089	10.00	9.553	0.447	2.720×10^{-5}
159	-0.125	9.000	9.628	-0.628	2.894×10^{-5}
160	1.277	16.00	9.575	6.425	0.005
161	0.494	12.00	9.521	2.479	0.001
162	0.657	13.00	9.692	3.308	8.999×10^{-4}
163	-1.888	0.000	9.414	-9.414	0.042
164	0.875	14.00	9.596	4.404	0.002
165	0.848	14.00	9.735	4.265	0.002
166	0.852	14.00	9.713	4.287	0.002
167	-0.133	9.000	9.671	-0.671	3.279×10^{-5}
168	0.866	14.00	9.639	4.361	0.001
169	-0.544	7.000	9.735	-2.735	9.000×10^{-4}
170	0.264	11.00	9.671	1.329	1.288×10^{-4}
171	-1.140	4.000	9.735	-5.735	0.004

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
172	-0.330	8.000	9.660	-1.660	1.946×10^{-4}
173	-1.122	4.000	9.649	-5.649	0.002
174	0.078	10.00	9.607	0.393	1.288×10^{-5}
175	1.084	15.00	9.553	5.447	0.004
176	0.070	10.00	9.649	0.351	8.600×10^{-6}
177	-0.524	7.000	9.639	-2.639	4.934×10^{-4}
178	0.095	10.00	9.521	0.479	4.309×10^{-5}
179	0.850	14.00	9.724	4.276	0.002
180	-1.889	0.000	9.425	-9.425	0.039
181	0.848	14.00	9.735	4.265	0.002
182	2.094	20.00	9.500	10.500	0.025
183	1.051	15.00	9.713	5.287	0.003
184	-1.916	0.000	9.649	-9.649	0.007
185	1.072	15.00	9.607	5.393	0.002
186	0.661	13.00	9.671	3.329	8.079×10^{-4}
187	0.854	14.00	9.703	4.297	0.002
188	1.877	19.00	9.564	9.436	0.011
189	-0.512	7.000	9.575	-2.575	7.299×10^{-4}
190	1.089	15.00	9.532	5.468	0.005

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
191	-0.553	7.000	9.778	-2.778	0.001
192	1.471	17.00	9.596	7.404	0.005
193	1.242	16.00	9.756	6.244	0.006
194	1.067	15.00	9.628	5.372	0.002
195	-1.145	4.000	9.756	-5.756	0.005
196	-0.522	7.000	9.628	-2.628	5.068×10^{-4}
197	1.285	16.00	9.542	6.458	0.006
198	1.695	18.00	9.500	8.500	0.017
199	0.262	11.00	9.681	1.319	1.335×10^{-4}
200	0.085	10.00	9.575	0.425	1.994×10^{-5}
201	0.292	11.00	9.532	1.468	3.642×10^{-4}
202	0.063	10.00	9.681	0.319	7.791×10^{-6}
203	-1.524	2.000	9.671	-7.671	0.004
204	-0.121	9.000	9.607	-0.607	3.063×10^{-5}
205	0.273	11.00	9.628	1.372	1.381×10^{-4}
206	-0.542	7.000	9.724	-2.724	8.042×10^{-4}
207	-0.556	7.000	9.788	-2.788	0.002
208	-0.311	8.000	9.564	-1.564	2.992×10^{-4}
209	-1.325	3.000	9.671	-6.671	0.003

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
210	-0.106	9.000	9.532	-0.532	4.777×10^{-5}
211	-0.125	9.000	9.628	-0.628	2.894×10^{-5}
212	-1.528	2.000	9.692	-7.692	0.005
213	0.852	14.00	9.713	4.287	0.002
214	0.465	12.00	9.660	2.340	3.866×10^{-4}
215	0.683	13.00	9.564	3.436	0.001
216	0.686	13.00	9.553	3.447	0.002
217	0.270	11.00	9.639	1.361	1.313×10^{-4}
218	-0.707	6.000	9.553	-3.553	0.002
219	-1.302	3.000	9.542	-6.542	0.006
220	-0.544	7.000	9.735	-2.735	9.000×10^{-4}
221	0.862	14.00	9.660	4.340	0.001
222	-1.936	0.000	9.735	-9.735	0.011
223	-0.311	8.000	9.564	-1.564	2.992×10^{-4}
224	0.059	10.00	9.703	0.297	7.890×10^{-6}
225	0.649	13.00	9.735	3.265	0.001
226	2.304	21.00	9.468	11.532	0.041
227	0.653	13.00	9.713	3.287	0.001
228	0.674	13.00	9.607	3.393	9.585×10^{-4}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
229	0.248	11.00	9.756	1.244	2.308×10^{-4}
230	0.681	13.00	9.575	3.425	0.001
231	-1.936	0.000	9.735	-9.735	0.011
232	1.441	17.00	9.756	7.244	0.008
233	0.076	10.00	9.617	0.383	1.135×10^{-5}
234	0.631	13.00	9.842	3.158	0.003
235	2.324	21.00	9.414	11.586	0.064
236	-1.893	0.000	9.489	-9.489	0.023
237	1.067	15.00	9.628	5.372	0.002
238	0.882	14.00	9.564	4.436	0.002
239	0.638	13.00	9.799	3.201	0.002
240	-1.138	4.000	9.724	-5.724	0.004
241	2.232	21.00	9.810	11.190	0.031
242	-0.315	8.000	9.585	-1.585	2.501×10^{-4}
243	1.857	19.00	9.649	9.351	0.006
244	-0.484	7.000	9.414	-2.414	0.003
245	-0.701	6.000	9.521	-3.521	0.002
246	0.258	11.00	9.703	1.297	1.503×10^{-4}
247	1.232	16.00	9.831	6.169	0.012

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
248	-0.319	8.000	9.607	-1.607	2.148×10^{-4}
249	1.051	15.00	9.713	5.287	0.003
250	0.676	13.00	9.596	3.404	0.001
251	0.478	12.00	9.596	2.404	5.235×10^{-4}
252	0.254	11.00	9.724	1.276	1.764×10^{-4}
253	0.668	13.00	9.639	3.361	8.006×10^{-4}
254	-0.345	8.000	9.735	-1.735	3.622×10^{-4}
255	1.490	17.00	9.521	7.479	0.011
256	-0.118	9.000	9.596	-0.596	3.216×10^{-5}
257	-0.125	9.000	9.628	-0.628	2.894×10^{-5}
258	0.452	12.00	9.724	2.276	5.613×10^{-4}
259	-0.707	6.000	9.553	-3.553	0.002
260	0.030	10.00	9.852	0.148	7.932×10^{-6}
261	-0.303	8.000	9.521	-1.521	4.346×10^{-4}
262	0.852	14.00	9.713	4.287	0.002
263	-0.528	7.000	9.660	-2.660	4.996×10^{-4}
264	-0.504	7.000	9.532	-2.532	0.001
265	-0.736	6.000	9.703	-3.703	0.001
266	-0.157	9.000	9.788	-0.788	1.275×10^{-4}

Influential Cases

Case Number	Std. Residual	SUM GAD-7	Predicted Value	Residual	Cook's Distance
267	-0.347	8.000	9.746	-1.746	4.081×10^{-4}
268	-1.712	1.000	9.617	-8.617	0.006
269	-0.144	9.000	9.724	-0.724	5.683×10^{-5}
270	-1.124	4.000	9.660	-5.660	0.002
271	-1.131	4.000	9.692	-5.692	0.003
272	-1.131	4.000	9.692	-5.692	0.003
273	-1.327	3.000	9.681	-6.681	0.003
274	-1.327	3.000	9.681	-6.681	0.003
275	-0.352	8.000	9.767	-1.767	5.188×10^{-4}
276	-1.888	0.000	9.414	-9.414	0.042
277	-0.926	5.000	9.660	-4.660	0.002
278	0.277	11.00	9.607	1.393	1.616×10^{-4}
279	-1.916	0.000	9.649	-9.649	0.007
280	-0.512	7.000	9.575	-2.575	7.299×10^{-4}
281	0.446	12.00	9.756	2.244	7.512×10^{-4}
282	-0.526	7.000	9.649	-2.649	4.909×10^{-4}
283	0.450	12.00	9.735	2.265	6.174×10^{-4}