FEAR OF UNCERTAINTY, ACADEMIC SELF-EFFICACY, AND PERCEIVED SOCIAL SUPPORT AS PREDICTORS OF LIFE SATISFACTION AMONG MALAYSIAN UNDERGRADUATE STUDENTS

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Fear of Uncertainty, Academic Self-Efficacy, and Perceived Social Support as Predictors of Life Satisfaction among Malaysian Undergraduate Students.

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This final year project report is submitted in partial fulfillment of the requirements for the degree of Bachelor of Social Science (Hons) Psychology at Universiti Tunku Abdul Rahman (UTAR).

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DECLARATION

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

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APPROVAL FORM

This research paper attached hereto, entitled "Fear of Uncertainty, Academic Self-Efficacy, and Perceived Social Support as Predictors of Life Satisfaction among Malaysian Undergraduate Students" prepared and submitted by Gah Kah Hee, Kor Fong Ming, and Tai Yi Ying in partial fulfilment of the requirements for the Bachelor of Social Science (Hons) Psychology is hereby accepted.

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Abstract

University life entails multiple challenges including academic and social adjustments, and future-related uncertainties, that heighten undergraduate students' vulnerability to mental health issues and ultimately affect their life satisfaction. Therefore, the present study aimed to investigate the predictive effects of fear of uncertainty, academic self-efficacy, and perceived social support on life satisfaction among Malaysian undergraduate students. A cross-sectional study was conducted using purposive sampling method. A total of 397 Malaysian undergraduate students between the age range of 18 to 24 were recruited via online platforms. The instruments used in the present study were Dark Future Scale, Academic Self-Efficacy Scale, Multidimensional Scale of Perceived Social Support, and Satisfaction with Life Scale. A linear regression model showed that academic self-efficacy and perceived social support positively predicted life satisfaction. Meanwhile, fear of uncertainty was not indicated as a significant predictor of life satisfaction. Self-Determination Theory was used as the theoretical framework in this study. The current study supports Self-Determination Theory by showing that academic self-efficacy (competence) and perceived social support (relatedness) significantly contribute to life satisfaction among Malaysian undergraduates, whereas future-oriented fear (future autonomy) does not influence life satisfaction. It extends the theory by situating these needs in an academic context, suggesting the potential role of meaningfulness, and the timing of needs fulfilment. This study contributes to the current literature by identifying potential predictors of life satisfaction in the context of Malaysian undergraduate students. Interventions aimed at improving life satisfaction among Malaysian undergraduate students should be implemented through fostering their academic self-efficacy and promoting their perceived social support.

Keywords: Fear of uncertainty, academic self-efficacy, perceived social support, life satisfaction, Malaysian undergraduate students

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

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List of Abbreviations

Abbreviation	
ASES	Academic Self-Efficacy Scale
CGPA	Cumulative Grade Point Average
DFS	Dark Future Scale
LR	Linear Regression
MSPSS	Multidimensional Scale of Perceived Social Support
QR	Quick Response
Q-Q	Quantile-Quantile
SDT	Self-Determination Theory
SERC	Scientific and Ethical Review Committee
SES	Socioeconomic Status
SPSS	Statistical Package for the Social Sciences
SWLS	Satisfaction with Life Scale
UTAR	Universiti Tunku Abdul Rahman

Chapter I

Introduction

Background of Study

Life satisfaction refers to the global evaluation of one's overall quality of life (Malvaso & Kang, 2022). It can be understood as the extent to which individuals feel content with their lives based on their subjective perception. Generally, when individuals believe that they have attained what they perceive as important in life, they tend to be satisfied with life (Diener et al., 1998). Life satisfaction is important for individuals as it can buffer against mental health problems such as anxiety and depression, thus contributing to better well-being (Liu et al., 2021; Tamarit et al., 2022; Trzebiński et al., 2024). The presence of positive personal and environmental factors such as self-esteem, social support, sense of security, and attainment of goals may promote individuals' life satisfaction (Liu et al., 2023; Szcześniak et al., 2022; Xu & Choi, 2023).

The shift from high school to university can be demanding for students as they need to adapt to a new environment and adjust various aspects of their lives to fit university life. Moving from a familiar setting to an unfamiliar one can lead to a period of disequilibrium, where the new information contradicts with the individuals' existing knowledge (Jackson, 2003). At the start of university life, students may be separated from close relatives and must manage increased personal responsibilities regarding academic tasks, self-care, greater freedom, and interpersonal relationships (Asikainen et al., 2020; Norfaezah, 2021; Thomas et al., 2020). Moreover, university courses are generally more demanding and complex than the coursework experienced in high school (Talal et al., 2024). Furthermore, beyond academic work, they need to balance extracurricular activities and equip themselves professionally

(Dangi & Mittal, 2023). Taken together, these new changes may influence undergraduate students' well-being (Thomas et al., 2020).

According to 2023 World Happiest Report, Malaysia was at the 55th happiest country out of 137 countries, descended 20 spots from the 35th in 2018. According to a poll conducted in 2022, individuals aged between 18 and 25 occupied the highest percentage of depression rate (13.1%), followed by individuals aged between 26 and 49, which occupied 7.7% (Muna Wadhiha et al., 2024). Studies also confirmed that mental health is related to life satisfaction (Zheng et al., 2020). Therefore, it is important to identify the status of life satisfaction among undergraduate students to reduce the risk of mental health problems that they may suffer from. An early assessment of any status of mental health can be counted as a prevention action to avoid the happening of worse problems.

Fear of uncertainty is one of the determinants of life satisfaction, defined as worry and concern about adverse events in one's own future (Rabei et al., 2020). It is fundamentally future-oriented, and in extreme circumstances, it can lead to a panic reaction in which a person experiences a catastrophic threat to their well-being (Rabei et al., 2020). This fear has been associated with increased anxiety, decreased happiness, and lower life satisfaction (Li & Song, 2024). In addition to having a negative impact on an individual's physical and mental health, fear of uncertainty can also lead to a loss of decision-making and problem-solving abilities (Yao et al., 2023). This heightened fear of uncertainty can negatively influence decision-making across personal, social, and cognitive domains, leading to various adverse effects on components that construct life satisfaction such as diminished subjective well-being, lower academic performance, and impaired relationships. Kartol (2023) reported that undergraduate students with high levels of fear of uncertainty tend to exhibit a pessimistic outlook, characterized by negative thoughts and emotions when confronted with ambiguity.

This finding aligned with Hammad (2016)'s study which showed that when students' aspirations clash with their pessimistic views about the future, anxiety becomes particularly intense. Furthermore, Lee (2024) found that anxiety related to future professions is a leading cause of burnout among undergraduates. Additionally, low levels of fear of uncertainty is associated with high levels of self-efficacy and career identity, which may significantly enhance life satisfaction, highlighting the important role of being clear about future in shaping youths' life satisfaction.

Furthermore, academic self-efficacy is important in the academic setting because it influences students' actions regarding their academic tasks. Academic self-efficacy refers to one's belief in their ability to execute and complete academic tasks or master specific skills (Bandura, 1977). Meanwhile, academic self-efficacy reflects students' confidence in their ability to effectively accomplish academic tasks at a desired level (Bong & Skaalvik, 2003). Studies have demonstrated that academic self-efficacy strongly correlates with, and is predictive of life satisfaction, as it helps students to improve their school experience, thereby enhancing their well-being and overall life satisfaction (Akanni, 2022; Castelli & Marcionetti, 2024; Zeng et al., 2022). Moreover, academic self-efficacy is particularly important for undergraduate students, as their beliefs in their capabilities can directly impact their confidence in performing academic tasks and subsequently may affect their academic life aspect. Undergraduate students with high academic self-efficacy tend to take actions that enhance their performance and learning progress. In contrast, undergraduate students with low academic self-efficacy tend to focus on their perceived limitations and may engage in behaviours that reduce their chances of achieving positive learning outcomes, such as putting in less effort, avoiding challenges, and opting for easier academic tasks when given a choice (Hanham et al., 2021). Consequently, students with high academic self-efficacy are better equipped to handle task effectively, which reduces anxiety and enhances their overall well-

being as they experience more positive emotions and greater satisfaction in life. On the contrary, students with low academic self-efficacy tend to struggle with their tasks, leading to frustration and negative emotions, which diminish their overall satisfaction (Bandura, 1997; Morelli et al., 2023). Ultimately, academic self-efficacy influence life satisfaction among undergraduate students.

Other than that, perceived social support has been shown as a crucial factor that is associated with life satisfaction (Kalaitzaki et al., 2020; Su et al., 2022; Yıldırım & Tanrıverdi, 2021). Perceived social support refers to an individual's subjective perception regarding the availability of support provided by family, friends, and significant others (Zimet et al., 1988). People with high perceived social support are more satisfied with their life. The sense of support provided by one's social network can buffer against the negative impacts of stress on individuals' psychological well-being (Szkody et al., 2020) and foster a sense of belonging (Reyes & Reyes, 2023), which contribute to higher levels of life satisfaction. In addition, perceived social support is essential for undergraduate students in order to successfully adapt and cope with the challenges of the transition from high school to university (Fan et al., 2024; Huang & Zhang, 2022; Kalaitzaki et al., 2020).

Given the significance of life satisfaction and its association with fear of uncertainty, academic self-efficacy, and perceived social support, this study aims to examine the predictive effect of fear of uncertainty, academic self-efficacy, and perceived social support on life satisfaction among Malaysian undergraduate students.

Problem Statement

The greatest rapid drop in life satisfaction takes place during late adolescence and early adulthood (Nurul Wahidatul Nasrah et al., 2020), a period in which people are more vulnerable to mental health problems. Moreover, university life presents a new environment where students face challenges such as adaptation, academic difficulties, relationship problems, and living independently, which contribute to an increase prevalence of mental health problems (Suhaili et al., 2022; Nurul Wahidatul Nasrah et al., 2020). If these problems are not recognized and treated in time, undergraduate students may suffer from heightened stress levels and serious psychological distress, even affecting their professional and personal lives (Nurul Wahidatul Nasrah et al., 2020). Mental health problems, such as anxiety and depression are significant determinants that decrease young people's life satisfaction and overall quality of life. The World Happiness Report 2024 reveals that happiness levels among young people aged 15 to 24 have decreased since 2019 in several countries including North America, Western Europe, South Asia, and the Middle East and North Africa (Helliwell et al., 2024), reflecting that young adults feel less happy with their lives. Moreover, a study conducted by Tsitsas et al. (2019) found that there were 63.4% among 200 university students reported that they were dissatisfied with their lives.

In Malaysia, the number of undergraduate students experiencing mental health problems has risen significantly. The prevalence of depression among undergraduate students has doubled, and the presence of suicidal symptoms has tripled over the past few years (Institute for Public Health, 2015). Report also indicated that depression, anxiety and stress are the top three mental health problem faced by Malaysian students (Malaysian Healthcare Performance Unit, 2017), contributing to suicidal symptoms that is significantly linked to life satisfaction (Lu et al., 2020; Yu et al., 2022). If left untreated, mental health problems can

persist into later adulthood, interrupting learning, productivity and overall quality of life (Schlack et al., 2021). Similarly, Syaheedatul Iman et al. (2022) found that subjective well-being among Malaysian undergraduate students declined during the Movement Control Order (MCO). Subjective well-being and life satisfaction are common general conception because both concepts involve a qualitative evaluation of one's holistic view of life (Marttila et al., 2021). However, there is limited recent information on life satisfaction among Malaysian undergraduate students. Therefore, it is important to examine the predictors of life satisfaction among Malaysian undergraduate students.

During emerging adulthood, a period of life transition marked by involving new learning environment, entering career paths and handling other adult responsibilities independently soon, undergraduate students tend to demonstrate intolerance when confronted with numerous unclear circumstances (Uzun & Karataş, 2020), particularly those concerning their future. First-year college students often expressed concern of uncertainty when they first enroll into college (Cameron & Rideout, 2020). In terms of academic, first-year students may experience ambiguity about their ability to handle various higher education demands and develop positive relationships with lecturers. In terms of personal aspect, freshmen may face uncertainty about their ability to complete assignments and perform tasks independently (Andrade & Fernandes, 2022). Other than academic challenges, interpersonal aspects such as comments from others can become a determinant of social uncertainty (Schweizer et al., 2023). Such situations can be distressing for undergraduate students without support from family and friends. Furthermore, many students feel uncertain in their second year, often labelled as the 'hardest year' for undergraduates. This uncertainty leads to anxiety due to a more challenging academic structure, causing a decline in confidence and self-doubt in navigating academic challenges (Cameron & Rideout, 2020).

This fear is not only caused by academic pressures, such as the fear of failure in their studies, but also stems from worries about limited job opportunities in the future. Economic and social changes have amplified fear of uncertainty, making it a main feature of undergraduates' life. As reported by the Department of Statistics Malaysia, the youth unemployment rate stood at 10.6% by the end of 2023, with 307,200 individuals aged 15 to 24 unemployed. In addition, this group makes up 76% of the 567,800 unemployed Malaysians (Oh, 2024). In addition, with job creation reportedly set to slow down by 2023 and as many as 6 million graduates wanting to enter the workforce, the youth unemployment problem becomes even more acute (Oh, 2024). The inability to predict future events or gather enough knowledge to construct a clear vision of the future heightens their fear of uncertainty (Hammad, 2016).

Academic self-efficacy is an important motivational element among students, as it reflects their belief in their capacity to complete difficult tasks and overcome obstacles in their academic studies (Talal et al., 2024; Gore, 2006). However, Luo et al. (2022) reported that academic self-efficacy gradually decreased over time among Chinese college students. During the first three-year in college, academic self-efficacy scores declined from 18.136 to 17.267, indicating that students' confidence in their academic abilities weakened as they progress through their studies. A decrease in academic self-efficacy has been associated with academic burnout (Kong et al., 2021). Kristanto et al. (2016) reported that 73.5% of university students at Monash University Malaysia experienced high academic burnout. Moreover, studies have shown that academic self-efficacy significantly influences life satisfaction because it influences how students perceive and respond to challenges, whether they are motivated to take initiatives or demotivated (Bandura, 1999; Zeng et al., 2022). Therefore, addressing academic self-efficacy among undergraduate students is essential.

Despite its importance, there are limited studies examining the predictive effect of academic self-efficacy on life satisfaction among Malaysian undergraduate students. Existing research on academic self-efficacy to life satisfaction predominantly focuses on adolescent, (Castelli & Marcionetti, 2024; Döş, 2023; Kim & Park, 2020; Zeng et al., 2022), overlooking the significance of academic self-efficacy for undergraduate students. Moreover, most studies have focused narrowly on academic outcomes, such as academic satisfaction in Malaysia, while neglecting how academic self-efficacy influences broader aspects of students' lives, such as life satisfaction (Obobanyi Momohjimoh et al., 2020; Shehadeh et al., 2020). Furthermore, previous findings have been inconsistent regarding the direct predictive effect of academic self-efficacy on life satisfaction among undergraduate students. While some studies suggest that academic self-efficacy significantly predicts life satisfaction (Kim & Park, 2020; Mao et al., 2022), others have reported no significant relationship (Wilcox & Nordstokke, 2019). These contradictory findings highlight the need for further research into the predicting role of academic self-efficacy in relation to life satisfaction among Malaysian undergraduate students.

According to Visible Network Labs (2022), 73% of young adults reported that they prefer seeking social support from their network of close friends, family, and significant others in times of need. 48.7% of them view family members as important sources of support, while 20.5% of them seek support from friends. This suggests that undergraduates in the life stage of young adulthood view social support as important in life. Additionally, social support is linked with life satisfaction among university students (Holliman et al., 2021; Kalaitzaki et al., 2020). However, undergraduates might face difficulties accessing supportive social networks as they enter college. For example, according to LeBouef and Dworkin (2021), undergraduate students reported a lack of effective social support from family and friends. Additionally, as revealed by Capannola and Johnson (2020), students rely heavily on their

family for emotional support during college years. The frequents phone calls, motivational words, and visits from family members motivated them to persevere through difficulties in college. Yet, not all undergraduates receive sufficient support. According to Sy et al. (2011), some students who felt the need for emotional support reported lacking it, which resulted in lower college adjustment. Furthermore, some students did not receive understanding from their family, some students' college decisions were not respected, and some had poor relationship with parents (Azmitia et al., 2018; Capannola & Johnson, 2020). Furthermore, many undergraduates live far from home, especially those attending universities in different cities. For many, this might be their first experience of living independently, and they may feel lonely without the companionship of their existing close friends and family (Caporale-Berkowitz, 2022).

In summary, undergraduate students are facing poorer mental well-being as resulted by lower life satisfaction. Additionally, they commonly feel uncertain about their future, experience burnout due to low academic self-efficacy, and may not receive adequate social support, affecting their life satisfaction. Given that factors such as fear of uncertainty, academic self-efficacy, and perceived social support are related to undergraduates' life satisfaction, therefore it is important to examine fear of uncertainty, academic self-efficacy, and perceived social support, as predictors of life satisfaction among Malaysian undergraduate students.

Significance of Study

Firstly, the findings of the current study can provide an understanding of how fear of uncertainty, academic self-efficacy, and perceived social support predicts undergraduate students' life satisfaction as an outcome variable, as undergraduate students are commonly

facing uncertainty about their future, and encountering challenges in university adjustment, both academically and socially.

Furthermore, given that life satisfaction is crucial for undergraduate students to strive for their personal goals in academic and in life (Eser & Doğan, 2023), identifying these potential predictors of life satisfaction could have important practical contributions to the development of interventions targeting at these factors to enhance their life satisfaction. By understanding that fear of uncertainty, academic self-efficacy, and perceived social support are the crucial elements in determining undergraduate students' life satisfaction, interventions such as stress-management training, academic mentorship program, and peer support groups can be developed to enhance their life satisfaction.

Additionally, this study can contribute to fill the literature gaps by examining the direct association between fear of uncertainty and life satisfaction, as there were no studies focusing on this direct association to date. Moreover, since there were limited studies assessing the predictive effect of fear of uncertainty, academic self-efficacy, and perceived social support on life satisfaction in the context of Malaysian undergraduate students, this study can provide an understanding into the situation in this context.

Research Objectives

The objective of this study is to examine the predictive roles of fear of uncertainty, academic self-efficacy, and perceived social support on life satisfaction among Malaysian undergraduate students. The predictors in this research are fear of uncertainty, academic self-efficacy, and perceived social support, while the outcome variable is life satisfaction.

1. To examine the predictive role of fear of uncertainty on life satisfaction among Malaysian undergraduate students.
2. To examine the predictive role of academic self-efficacy on life satisfaction among Malaysian undergraduate students.
3. To examine the predictive role of perceived social support on life satisfaction among Malaysian undergraduate students.

Research Questions

1. Does fear of uncertainty negatively predict life satisfaction among Malaysian undergraduate students?
2. Does academic self-efficacy positively predict life satisfaction among Malaysian undergraduate students?
3. Does perceived social support positively predict life satisfaction among Malaysian undergraduate students?

Research Hypotheses

H_1 : Fear of uncertainty negatively predicts life satisfaction among Malaysian undergraduate students.

H_2 : Academic self-efficacy positively predicts life satisfaction among Malaysian undergraduate students.

H_3 : Perceived social support positively predicts life satisfaction among Malaysian undergraduate students.

Conceptual Definitions

Life Satisfaction

Life satisfaction refers to an individual's self-evaluation of his or her life as a whole, and it had been referred to as various other terms such as subjective well-being, quality of life, and happiness (Diener et al., 2003; Veenhoven, 2015). Based on Diener et al. (2003), life satisfaction is the cognitive judgment about one's life. It also serves as a measure of individuals' ability to adapt to life circumstances.

Fear of Uncertainty

Fear of uncertainty is an attitude toward the future that prioritise negative cognitive and emotional processes that dominate over positive ones, with fear being more intense than hope. It is a fear of future occurrences and the belief that negative or undesirable developments are going to happen (Jannini et al., 2022).

Academic Self-Efficacy

Academic self-efficacy refers to students' belief in their ability to complete difficult tasks and overcome academic challenges, reflecting their perceived capability to achieve academic goals (Bandura, 1977; Gore, 2006).

Perceived Social Support

Perceived social support refers to an individual's belief regarding the availability of support from their family, friends, and significant others when needed. It can be in the form

of instrumental, informational, or emotional assistance leading to one's perceptions of being supported (Zimet et al., 1988).

Operational Definitions

Life Satisfaction

The Satisfaction with Life Scale (SWLS) developed by Diener et al. (1985) is a 5-item questionnaire to assess overall cognitive evaluations of life satisfaction. It uses a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A higher total score indicates greater life satisfaction.

Fear of Uncertainty

The Dark Future Scale (DFS) developed by Zaleski et al. (1996) is a 5-item self-report instrument to assess fear of uncertainty. It uses a 7-point Likert scale, ranging from 0 (*definitely untrue*) to 6 (*definitely true*) (Zaleski et al., 2017). The total score ranges from 0 to 30, with higher scores indicating greater levels of fear towards future.

Academic Self-Efficacy

The Academic Self-Efficacy Scale (ASES) developed by Chemers et al. (2001) is an 8-item self-report scale designed to measure students' level of confidence in their academic abilities. It utilizes a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Higher total scores on the scale represent a higher level of academic self-efficacy.

Perceived Social Support

The Multidimensional Scale of Perceived Social Support (MSPSS) developed by Zimet et al. (1988) consists of 12 items to assess an individual's perception of support from family, friends and a significant other. Items are rated on a 7-point Likert scale ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). A mean score is calculated, and a higher score shows a higher level of perceived social support.

Chapter II

Literature Review

Life Satisfaction

Life satisfaction can be defined as an individual's subjective judgement of his or her life as a whole. It is the cognitive evaluation of one's life based on one's personal standards (Diener et al., 1985). When people perceive their lives as fulfilling and feel happy about it, they are likely to experience high life satisfaction. Life satisfaction encompasses several domains, including work, health, family, leisure, and personal (Campbell, 1976; Rojas, 2006). Satisfaction in these major domains combine to form overall life satisfaction.

Life satisfaction is essential to physical well-being as well as mental well-being. In support of that, Kim et al. (2021) highlighted that life satisfaction results in better physical health, as indicated by reduced risk of chronic pain, sleep problems, and mortality. In terms of psychological well-being, the same study revealed that high levels of life satisfaction is associated with increased positive emotions, optimism, and decreased depression. Additionally, Karataş et al. (2021) identified that people with high life satisfaction are likely to have high levels of hope which enhance psychological well-being, and they also tend to interpret current and future situations more positively, even when routines are disrupted.

Life satisfaction is an important indicator of subjective well-being, playing a key role in personal development due to its various advantages (Norafefah et al., 2022, Hazhira et al., 2020). Among college students, life satisfaction not only supports personal growth and pleasure, but also promotes social harmony and contributes to societal progress. Satisfied students are prone to have better physical and mental health, which enables them to perform

well in different aspects, such as academic and professional development (Norafefah et al., 2022). Researchers have examined a number of contributing variables that affect life satisfaction of young populations, especially university students. These variables include social and family relationships, stress (Norafefah et al., 2022), self-esteem, money (Liu & Fu, 2022), and broader economic conditions such as recessions (Tavakoly Sany et al., 2021). A study in India found that college students who had strong relationships with peers and parents reported that they are highly satisfied with life (Thomas et al., 2023). In Turkey, research indicated that university students with higher life satisfaction were less likely to suffer from academic failures (Pekdoğan & Yurtçu, 2022). Similarly, a study on psychology students in Malaysia revealed that those who have positive self-evaluations experienced more favorable life outcomes and were more satisfied with their lives (Phang & Guan, 2023).

In the Malaysian context, as mentioned by Norfaezah (2021), university life presents significant challenges for students, as they have to cope with difficult academic tasks, financial problems, and interpersonal relationships. They are also expected to develop independence, improve time management, and take accountability for their actions (Norfaezah, 2021). According to Marlissa et al. (2020), year 2 and year 3 students at Universiti Teknologi Malaysia reported high stress levels. The students mentioned that they often had to meet assignment deadlines and only had a few hours of sleep each night. Moreover, there is a 29% prevalence of anxiety among Malaysian university students (Nurul Elyani et al., 2021). If no proactive measures are taken, the accumulated stress can escalate into mental health issues. Norfaezah (2021) stated that life is composed of multiple aspects that influence how we evaluate and experience satisfaction in life. For example, stress and mental health are aspects that can influence how students assess their life satisfaction. According to Diener et al. (1985), life satisfaction is crucial for fulfilling the needs of

undergraduate students and is considered more important than financial factors, further emphasizing the significance of life satisfaction in the lives of undergraduate students.

Fear of Uncertainty

Fear of uncertainty is described by Zaleski (1996) as a state of apprehension and unease, characterized by uncertainty and fear of undesirable changes anticipated in the future. It involves the perception of a potential threat, even if it may be unfounded, leading to heightened anxiety about what lies ahead. Similarly, Budner (1962) defined fear of uncertainty as an individual's response to perceived uncertainty, which can manifest in various behaviours, including: 1) repression and denial, 2) anxiety and discomfort, 3) destructive actions, and 4) avoidance. He emphasized that a person's reaction to uncertainty is shaped by their emotional response and individual perception. For some, uncertainty may feel stressful and overwhelming, while others may find it manageable and acceptable.

In the context of undergraduate, according to Sollitto et al. (2017), uncertainty significantly impacts college student's success and subsequent retention. College students who fail to cope with uncertainty in college might choose to drop out (Sollitto et al., 2017). Furthermore, fear of uncertainty provokes anxiety, as it amplifies sensitivity to the likelihood of undesirable events (Kartol, 2023). Higher anxiety levels are especially common in those with high fear of uncertainty, which can affect self-control and cognitive performance. This restriction makes it more difficult for them to implement proper coping strategies by making efficient use of the information that is accessible to them (Li & Song, 2024). Students with high fear of uncertainty often perceive uncertainty as highly stressful and strive to avoid unforeseen situations altogether (Gellisch et al., 2024; Yang et al., 2021). Meanwhile, These

individuals tend to prioritize their anxiety over seeking solutions to resolve uncertainty, which in turns contributes to a higher prevalence of anxiety disorders (Kartol, 2023).

Fear of uncertainty refers to a tendency to fear the unknown and excessively worry about potential negative outcomes, even when the likelihood of such events is minimal. The fear is especially noticeable when making important decisions, including deciding on an occupation or course of study (Arbona et al., 2021). In addition to this, failure to predict future events can lead to insecurity, negative expectations, and thus foster high levels of tension and anxiety in students (Hammad, 2016). Individuals with high fear of uncertainty often experience high levels of stress and emotional issues (Li & Song, 2024) and tend to adopt maladaptive coping strategies when faced with uncertain situations.

On the other hand, individuals with low fear of uncertainty tend to present a more optimistic, confident, and adventurous outlook. They view uncertainty as a challenge or an opportunity rather than a threat. They also embrace ambiguity, considering it beneficial and desirable, and showing little inclination to eliminate contradictions artificially. Hence, individuals with low fear of uncertainty experience less anxiety and are more likely to adopt positive and effective coping mechanism (Li & Song, 2024). Students with low future uncertainty often view their achievements and mistakes with optimism. They are risk-takers who act quickly on plans and engage in minimal self-reflection (Korobka, 2024). Additionally, they react proactively and effectively without suffering from destructive anxiety in unknown circumstances (Korobka, 2024). Moreover, fear of uncertainty positively predicts students' social anxiety levels (Li et al., 2020). Students with high fear of uncertainty are more likely to perceive ambiguous information as a threat and feel unsecure in social situations because believe they are not in control. They also tend to adopt a pessimistic coping style which includes passively waiting for results, withdrawing from overt or

constructive activities, adhering to conventional approaches and preventive actions aimed at preserving the status quo rather than seeking new opportunities (Li et al., 2020).

Gellisch et al. (2024)'s study on medical students revealed that fear of uncertainty is correlated with worrying, which leads to increased stress levels. According to Gellisch et al. (2024), levels of socioeconomic status (SES) was associated with fear of uncertainty in which students with a lower SES themselves experience greater difficulty in taking actions. In situations of uncertainty, they often feel paralyzed, perceive themselves as less competent, and experience greater emotional burden, such as difficulty relaxing or sleeping. The researchers also mentioned that first-year students tend to experience more uncertainty about their studies and future jobs. However, this uncertainty and resulting anxiety may diminish as they learn more and reach out to their profession (Gellisch et al., 2024).

Academic Self-Efficacy

Self-efficacy refers to an individual's belief in their ability to execute and complete certain tasks or master certain skills (Bandura, 1977). In an academic setting, academic self-efficacy refers to a student's belief in their capacity to complete difficult tasks and overcome challenges in their academic studies (Gore, 2006). The concept of academic self-efficacy encompasses self-trust, self-reliance and self-confidence in themselves (Musa, 2020). It reflects how effectively people believe they can achieve their academic goals (Bandura, 1977). Academic self-efficacy includes judgements made by students about their own ability to complete academic tasks and situations (Zimmerman & Kitsantas, 2005). This perception can impact their thoughts, thinking patterns and emotional arousals, which in turn affect their actions in the academic context (Bandura, 1982). Academic self-efficacy perceptions indirectly impact behaviours by influencing students' commitment levels to academic goals,

determination to persevere, and attitudes toward academic challenges (Bandura, 1997; Zimmerman & Kitsantas, 2005).

Academic self-efficacy plays a critical role in personal development. According to Eggen and Kauchak (1997), people with high self-efficacy beliefs are more willing to learn, work hard and develop diverse strategies to overcome problems. Similarly, Bandura (1992) highlighted that individual's preconceptions of their capabilities to complete certain tasks significantly influence outcomes. Therefore, a high level of academic self-efficacy is positively correlated with academic performance (Lei et al., 2022). In contrast, people with low academic self-efficacy often exhibit low motivation and commitment in achieving academic goals (Ryan & Deci, 2020). This may limit their ability and motivation to cope with the academic pressures and demands, potentially heightening negative emotions (Kristensen et al., 2023).

Academic self-efficacy also impacts students' emotional responses to challenges associated with academic goals. Beliefs about academic self-efficacy shape how people feel, think, and act when faced with academic tasks (Bandura, 1977). Furthermore, academic self-efficacy affects the use of self-regulated learning strategies. These strategies include self-monitoring, self-evaluation, the application of study tactics, and self-reaction during learning processes (Luo & Zhou, 2024). Students with high academic self-efficacy are more likely to employ these strategies, which positively impacts their academic performance (Zimmerman, 2000). Moreover, students' self-belief in their abilities significantly influence their motivation to succeed (Siti Sara et al., 2022). Ultimately, academic self-efficacy enhances learners' likelihood of success by empowering them with tools and perspectives for achieving a better quality of life (Musa, 2020).

University studies can be a stressful experience for undergraduates, as this stage of life requires them to prepare for the workforce and contribute meaningfully to society. This often involves navigating a challenging and demanding academic environment (Mona Hamid, 2020). In order to deal with academic challenges, academic self-efficacy is important for undergraduate students because it influences their academic actions, which in turn affects their academic performance. A study by Mahir Tahrir et al. (2021) showed that Malaysian university students' academic self-efficacy was significantly correlated to their academic performance. Therefore, academic self-efficacy can be considered as an essential trait for academic success among undergraduate students (Hill, 2002).

Academic self-efficacy comprises beliefs that individuals hold about their ability to succeed academically, enabling them to achieve their goals and improve themselves. It influences students' choices in academic tasks and activities, their persistence in working hard, and their determination to achieve their objectives (Abood et al., 2020). Abood et al. (2020) found that academic self-efficacy is a critical factor in achieving better academic performance, while Kristensen et al. (2023) demonstrated that academic self-efficacy is significantly related to academic motivation among Malaysian university students. Moreover, academic self-efficacy fosters optimism, achievement and flexibility in overcoming challenges, whereas low academic self-efficacy is associated with low ambition and weak commitment to goals (Bandura, 1998). Mutiu et al. (2021) found a negative relationship between self-efficacy and perceived academic stress among Malaysian university students. Students with high self-efficacy tend to perceive stress as a manageable challenge, while those with low self-efficacy are more prone to experience heightened academic stress, which can lead to depressive symptoms (Mutiu et al., 2021).

Perceived Social Support

Perceived social support can be defined as one's belief or perception regarding the availability of support from people in one's social network when needed (Zimet et al., 1988). Support may be provided in various forms, including emotional (expressing care and concern), instrumental (providing tangible assistance to meet practical needs), and informational (providing advice and factual information) (Ko et al., 2013; Morelli et al., 2015; Schultz et al., 2022). This support can be obtained through one's social network such as one's family, friends, or significant others in times of need (Lee, 2022). Perceived social support can be regarded as one's subjective evaluation of the adequacy of support received or satisfaction with support provided. This subjective perception of being supported has a greater influence on mental well-being than the actual received support (Grey et al., 2020).

Previous research has established that perceived social support has a protective role on one's well-being (Grey et al., 2020; Qi et al., 2020). It has been observed that a higher level of social support is associated with better psychological outcomes such as higher self-esteem, perceived social acceptance, and resilience (Lee, 2022; Yıldırım & Tanrıverdi, 2021). On the contrary, individuals who perceive having low social support are more likely to develop suicidal ideation, anxiety, depression, and engage in self-injurious behaviours, because they might not have someone they can rely on to provide them advice or to help them deal with their unpleasant emotions (Bedaso et al., 2021).

According to Fan et al. (2024), social support is important for university students' mental health, and it is positively correlated with psychological resilience, as well as optimism among university students. This is supported by another study which claimed that strong social support helps college students maintain optimistic attitudes toward challenges,

develop confidence in completing tasks, and persevere in the face of obstacles, therefore empowering college students to cope well with the challenges in university life (Huang & Zhang, 2022). In the context of Malaysia, Balan et al. (2022) found that perceived social support has a significant negative correlation with levels of depression, anxiety, and stress among university students. In addition to that, another local study also found that social support from friends and significant others is negatively associated with university students' level of loneliness (Siti Haslina et al., 2021).

Fear of Uncertainty and Life Satisfaction

Feelings of uncertainty can cause feelings of doubt and hopelessness about the future, especially when individuals feel a lack of control over their lives, hindering their ability to think clearly or plan effectively (Hammad, 2016). During the career decision-making process, college students often encounter uncertainties regarding future occupational opportunities and the development of their interests and skills, which significantly influence students' life satisfaction (Arbona et al., 2021). These findings are in line with previous research showing that young people who experience high levels of job search anxiety are associated with moderate levels of life satisfaction (Yazıcı et al., 2023). Another study by Yang et al. (2021) found that university students who reported higher life satisfaction experienced lower levels of career anxiety and general anxiety. Additionally, students with high fear of uncertainty who adopt negative coping styles are more likely to report mental health issues and lower level of satisfaction (Li & Song, 2024). This is because individuals who adopt a negative coping style tend to avoid or shelve problems, which leads to unresolved problems and creates greater stress and anxiety (Li & Song, 2024).

Moreover, students from higher education face academic uncertainty, and this is supported by the past findings revealing that fear of failure in academic is positively correlated with procrastination and negatively correlated with student's academic satisfaction (Duru et al., 2024). In other words, students feel anxious, uncertain and even doubt themselves on their ability to achieve academic success. In response to this fear and the resulting negative emotions, students are more likely to adopt procrastination as a defensive strategy (Covington, 1993). According to Liu et al. (2016), negative coping mechanism can decrease life satisfaction. Students who procrastinate tend to postpone their tasks and fail to complete assignment on time, leading to poor performance and unmet academic goals. As a result, they experience lower academic satisfaction (Duru et al., 2024). This statement can be supported by the findings of Scheunemann et al., (2021), which stated that procrastination negatively affects academic satisfaction as well as contribute to a stressful and unfulfilling academic life.

Other than future career anxiety and fear of failure in academic, undergraduate students may also encounter relationship uncertainty (McMillin et al., 2020), financial uncertainty (McMillin et al., 2020) and suffer from AI threat (Hemade et al., 2024) since emerging adulthood is a period of exploration that is characterized by open, complex and uncertainty which can affect the well-being of young adults (Beckert, 1996; Oliveira et al., 2014). According to Davey et al. (2021), students are most concerned about interpersonal relationships because they may be at an age where they are building their first strong, committed relationship. Similarly, McMillin et al. (2020) highlighted that lower intimate relationship uncertainty can predict higher relationship satisfaction and well-being among undergraduate students.

Emerging adulthood is a period where young adults explore their identities across academic, romantic, career, and affective domains, often surrounded by instability and numerous possibilities (Rosen, 2016). This stage is marked by heightened feelings of excitement, anxiety, uncertainty, and ambiguity (Arnett et al., 2014; Brito & Soares, 2023). Without social support, the instability and ambiguity of this phase can increase the risk of anxiety and depression. An optimistic outlook helps young adults navigate the confusion and fear brought by challenges, while a pessimistic perspective and lack of confidence can make them more vulnerable to future uncertainties, leading to negative evaluations of life events and reduced life satisfaction (Arnett et al., 2014).

Academic Self-Efficacy and Life Satisfaction

Academic self-efficacy is one of the key factors contributing to life satisfaction. Kim and Park (2020) showed that academic self-efficacy significantly predicts life satisfaction. Similarly, Castelli and Marcionetti (2024) demonstrated that academic self-efficacy has a significant positive effect on life satisfaction. According to Bandura (1999), academic self-efficacy as a personal factor, enhances student's perception of challenges, initiative and resilience, motivating them to pursue their goals with sustained effort. Students with high academic self-efficacy are more confident in completing academic tasks and actively engage in learning. This motivation and confidence improve individuals' overall achievement, and in turn increase their life satisfaction (Feldman & Kubota, 2015). Moreover, strong self-efficacy beliefs help buffer negative emotions, such as the feelings of depression and anger, which can otherwise diminish life satisfaction (Freire et al., 2019). By mitigating these negative emotions, academic self-efficacy contributes to improved well-being and life satisfaction. Furthermore, academic self-efficacy enhances students' overall school experiences, further supporting their well-being and satisfaction with life. Döş (2023) and Zeng et al. (2022)

showed that high academic self-efficacy is associated with greater life satisfaction because it enables students to perform better academically, which in turn boosts their life satisfaction.

Academic self-efficacy is especially important for life satisfaction among undergraduate students. Research has consistently shown that academic self-efficacy predicts life satisfaction among students. For example, Robinson et al. (2020) found that academic self-efficacy is a significant predictor of life satisfaction among American college students, while Vautero et al. (2020) demonstrated that academic self-efficacy positively predicts life satisfaction among youth. Similarly, Zhao (2024) found that undergraduate students with high academic self-efficacy tend to exhibit greater overall satisfaction because they are able to manage academic stress effectively. They also take the initiative to apply effective coping strategies, even under high stress, and thus experience higher satisfaction. In contrast, undergraduate students with low academic self-efficacy feel a lack of control over stressors, applied less effective coping strategies, and consequently experience low satisfaction levels (Zhao, 2024). According to past studies, undergraduate students with high levels of academic self-efficacy have also been reported to have better decision making, higher motivation, greater involvement and better academic performance (Doo & Bonk, 2020; Tossavainen et al., 2021; Van Zyl et al., 2021). Additionally, academic self-efficacy predicts overall task performance because individual with high academic self-efficacy tend to make better choices and complete core tasks on time (Campbell & Hackett, 1986; Lim & Bang, 2018; Tossavainen et al., 2021). These characteristics of academic self-efficacy guide students in the right direction, ultimately enhancing their life satisfaction. However, some studies suggest that academic self-efficacy does not always significantly predict life satisfaction (Wilcox & Nordstokke, 2019).

Moreover, Carranza-Esteban et al. (2022) demonstrated that academic self-efficacy positively predicts study satisfaction and influences academic performance. While Aydin and Aydin (2024) identified a significant positive relationship between academic self-efficacy and quality of life, it suggested that academic success, fostered by academic self-efficacy, positively influences students' overall life satisfaction. Shehadeh et al. (2020) also revealed that academic self-efficacy positively predicted academic satisfaction among nursing students in Malaysia, because it helps them develop and apply effective methods to achieve their goals. According to social cognitive career theory, self-efficacy is a key cognitive factor influencing satisfaction. Individuals with high self-efficacy are better at utilizing external resources to solve problems and complete tasks, and they are motivated to engage in goal-directed behaviour, which helps them achieve their goals and enhances satisfaction (Lee et al., 2021; Lent & Brown, 2008; Liu et al., 2020). Additionally, central life domain plays a significant role in life satisfaction (Lent & Brown, 2008). For students, academics represent a central domain which will influence their overall life satisfaction.

Perceived Social Support and Life Satisfaction

Extensive research has shown that social support is significantly correlated to life satisfaction (Khatiwada et al., 2021; Khodabakhsh, 2021; Su et al., 2022; Yıldırım & Tanrıverdi, 2021). This is supported by Bi et al. (2021), which found that people with high perceived social support from families, teachers, classmates, and friends report greater life satisfaction across 42 countries, although inconsistencies were found regarding the relative importance of each source of support. Furthermore, according to Kurudirek et al. (2022) social support serves as a protective factor for individuals by buffering against adversities in life, helping individuals to cope better in challenging situations. It is because knowing that there are people to rely on in times of need boosts individuals' confidence to handle the

difficult situations in life (Kurudirek et al., 2022). This is supported by Fan et al. (2024), which highlighted that social support from family and friends can facilitate better adaptation to environmental changes, reduce negative emotions, as well as mitigate the unpleasant effects of stressful events. With a reduced level of negative affect, and an increased ability to cope with situations in life, individuals are likely to feel satisfied with their lives. Overall, these studies indicate that perceived social support plays a crucial role in determining one's life satisfaction.

However, there were controversies regarding the direct predictive role of perceived social support on life satisfaction. While Holliman et al. (2021) and Norfaezah (2021) reported that perceived social support is a significant positive predictor of life satisfaction due to its protective effect against stress, Huang and Zhang (2022) claimed that perceived social support is not directly associated with life satisfaction. According to Huang and Zhang (2022), perceived social support indirectly contributes to life satisfaction through stimulating individuals' psychological capital including hope, resilience, optimism, and efficacy, which act as the individuals' positive psychological resources. In other words, the external social support has to be internalised to become their own personal resources in order to facilitate coping and contribute to life satisfaction (Huang & Zhang, 2022).

When it comes to the context of undergraduates, studies have highlighted that perceived social support positively correlates with life satisfaction among college students (Kalaitzaki et al., 2020; Norfaezah, 2021). This is because individuals with high social support view their social relationships as meaningful and trustworthy, and they can gain a sense of belonging from their social relationships in which they obtain support from (Kalaitzaki et al., 2020; Norfaezah, 2021). Given that social relationship is a key life aspect during young adulthood (Erikson, 1968; Orenstein & Lewis, 2022), when undergraduates are

satisfied with their social relationships, they tend to evaluate their overall life more positively. Furthermore, Holliman et al. (2021) found that social support has a predictive role on university students' life satisfaction, as it serves as a crucial resource to help university students effectively cope with stressful situations in their lives, therefore contributing to greater satisfaction with life. On top of that, the link between perceived social support and life satisfaction has been supported by a local study which showed that greater perceived social support predicts higher life satisfaction among young adults in Malaysia (Gan et al., 2020). It is because individuals who feel adequately supported by their family, friends, and significant others are likely to evaluate their social life positively, and hence feel more satisfied with life in overall. To date, there was only one study examining the predictive role of social support on life satisfaction focusing on Malaysian college students, which found that strong social support, especially support from family, significantly enhances Malaysian college students' life satisfaction (Norfaezah, 2021).

Theoretical Framework

Self-Determination Theory (SDT)

Self-determination theory (SDT) is a psychological theory proposing that the satisfaction of human innate psychological needs contribute to individuals' optimal functioning and well-being (Ryan & Deci, 2017; Ryan & Deci, 2020). SDT suggests that the need for autonomy, competence, and relatedness, are the three basic psychological needs that are essential for all individuals. The need for autonomy refers to the need of feeling in control of one's choices and behaviours. The need for competence refers to the need of mastering tasks and feeling capable. The need for relatedness refers to the need to feel belonged and to connect with others. When the three basic needs are fulfilled, individuals will be motivated to

engage in activities and are more likely to achieve well-being (Ryan & Deci, 2017; Ryan & Deci, 2020; Wang et al., 2022). The theory suggested that individuals are motivated to fulfil these basic needs (Dunn & Zimmer, 2020). Satisfaction of these needs results in greater satisfaction of overall life, while unmet needs diminishes life satisfaction (Yazıcı, 2023). Satisfaction of the three needs is also vital for positive emotions (Ryan & Deci, 2000).

Supportive social environments that support the fulfilment of autonomy, competence and relatedness are important to promote intrinsic motivational resources and foster well-being. Conversely, environments that undermine or disregard the basic needs can lead to maladaptive outcomes such as passivity and ill-being (Deci & Ryan, 1985; Vansteenkiste et al., 2020).

Autonomy is one of the basic psychological needs for an individual to engage in a particular behavior with a full sense of will, ownership and alignment with personal values (Niemiec et al., 2014; Deci & Ryan, 1985; Deci & Ryan, 2000). Moreover, autonomy reflects self-directedness (Manninen et al., 2022). Whereas fear of uncertainty arises when individuals feel unsure about future events and perceive a low sense of control over the unpredictable future. High fear of uncertainty reflects a state in which individuals feel a diminished sense of autonomy. This lack of autonomy emerges as the individuals perceive low volitional control over their own future. As noted by Deci and Ryan (2008), individuals feel free to pursue their interests only when their autonomy is supported. Supportive environments play a crucial role in mitigating fear of uncertainty by fostering autonomy and competence (Deci & Ryan, 2008). For instance, access to sufficient information about future events and career guidance can help individuals perceive themselves as capable and prepared to handle uncertain future events, fostering intrinsic motivation in handling life challenges. When autonomy is supported, individuals are likely to worry less about uncertainty in their

life. To illustrate, when students' basic psychological needs for autonomy, competence, and relatedness are attained, they are prone to internalize their motivation to learn and to engage more autonomously in their studies (Niemiec & Ryan, 2009).

Furthermore, this state of low autonomy may lead to negative coping mechanisms, further diminishing competence and undermining well-being. Declination in intrinsic motivation happens due to the sense of helplessness in people with low autonomy. This situation also known as amotivation, a state in which individuals neither value a behaviour nor perceive it as instrumental to achieving desired outcomes (Deci & Ryan, 2008). For example, people may become unmotivated to engage in any activities. Hence, the fulfilment of autonomy is important for people to feel self-directed and capable in the face of uncertainty which in turns promote greater life satisfaction.

The concept of competence is closely associated with self-efficacy, which is the perception of one's ability to achieve goals. The need for competence reflects an individuals' sense of effectiveness and efficiency in handling the task and achieving goals (Meng, 2020). This overlaps with self-efficacy, which refers to the belief in one's ability to manage tasks successfully. Wang et al. (2022) indicates that fulfilling the need for competence directly correlates with increased self-efficacy. Therefore, it is also considered as a need to feel capable. According to SDT, satisfying the need for competence enables individuals to master tasks more easily, boosts their confidence, and enhances their ability to cope with challenges (Racero et al., 2020). Ghbari et al. (2024) showed that fulfilling this need fosters a sense of efficacy in navigating demands, increasing motivation, and promoting engagement in university life. When students feel competent, their motivational state improves, fostering intrinsic aspirations and psychological engagement. Ryan and Deci (2000) mentioned that SDT links perceived control to motivation. Students with high academic self-efficacy tend to

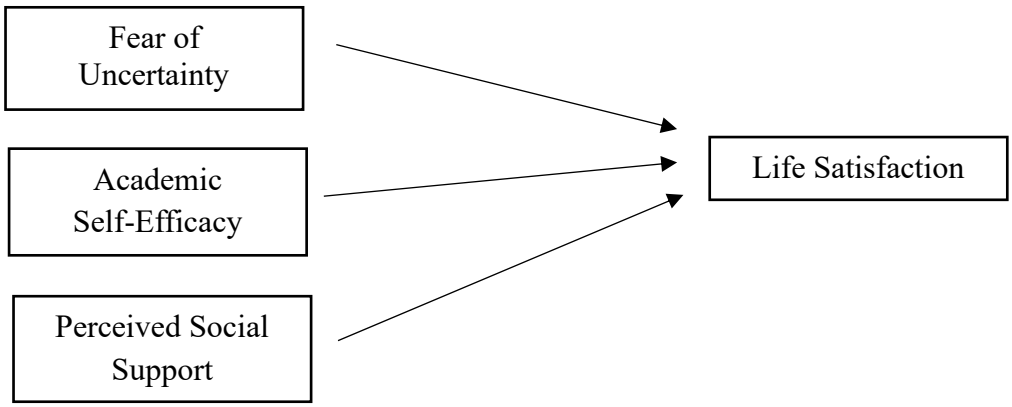
experience greater intrinsic motivation, helping them engage in academic activities with enjoyment. This engagement enhances their well-being and satisfaction with university life. Morelli et al. (2023) also showed that undergraduate students with high intrinsic motivation and academic self-efficacy are more satisfied with their lives as well as their experience in university. They perceived themselves as capable of handling tasks, which reduces anxiety and enhances their overall satisfaction (Bandura, 1997).

According to Niemiec et al. (2014), the need for relatedness can be fulfilled in conditions where individuals experience positive interactions with others, such as caring and supportive friendships and family relationships. While supportive relationships with others can satisfy need for relatedness, unsupportive relationships thwart this need satisfaction. According to SDT, if the interpersonal interaction does not meet the individual's need for relatedness, the individual is likely to not achieve their full potential (Deci & Ryan, 2008). Social support received from parents and peers serves as a means to satisfy individuals' need for relatedness as they feel the genuine care from others, and it also predicts greater satisfaction with interpersonal relationships (Inguglia et al., 2015; Niemiec et al., 2014). As social life is an important domain in young adults' life (Vosylis et al., 2017), when undergraduates view their life as fulfilling, they are likely to have high life satisfaction.

Conceptual Framework

Figure 2.1

The conceptual framework of "Fear of uncertainty, academic self-efficacy, and perceived social support as predictors of life satisfaction among Malaysian undergraduate students".



The diagram above shows the conceptual framework of the current study, examining the predicting effect of fear of uncertainty, academic self-efficacy and perceived social support on life satisfaction among Malaysian undergraduate students. The predictors in this research are fear of uncertainty, academic self-efficacy, and perceived social support, while the outcome variable is life satisfaction.

Chapter III

Methodology

Research Design

This study utilized quantitative and cross-sectional method to assess the predictive effects of fear of uncertainty, academic self-efficacy, and perceived social support on life satisfaction among Malaysian undergraduate students. The current research employed a cross-sectional design because it allows the researchers to save costs and time by collecting data from respondents at one point in time (Cummings, 2017). Quantitative data are required for analysis and interpretation in quantitative research (Watson, 2015). Data were collected through self-administered questionnaires, which were filled independently by participants without the researchers' assistance, as it is cost-effective in collecting data from a large sample (Healy et al., 2018; Rowley, 2014). The survey was conducted online to allow convenient access by participants across the states in Malaysia without the need to travel physically. Additionally, online self-administered questionnaires have the advantage of achieving a higher rate of responses (Rada & Domínguez-Álvarez, 2014).

Sampling Procedures

Sampling Method

The non-probability sampling approach used in the study was purposive sampling. In non-probability sampling, samples are chosen at the researcher's discretion or according to availability (Naderifar et al., 2017). It is typically used when it is not feasible to ensure that every target participant is randomly included in the research (Goodwin & Goodwin, 2016). In

this study, random selection is challenging due to the specific criteria required. Therefore, purposive sampling was applied. Purposive sampling refers to a technique where participants are chosen according to inclusion and exclusion criteria (Ahmed, 2024). It is particularly useful when participants with specific characteristics are required, as it enables researchers to examine the problems and populations associated with the research objective in detail and ensures the data focuses on individuals within the final sample. Four inclusion criteria were included in the participant recruitment process: 1) is a Malaysian, 2) is currently enrolled in a bachelor's degree program in Malaysia either from private or public university or college during the period of data collection, 3) age between 18 to 24, regardless of gender, as this age group is frequently used in prior research involving undergraduate students sample (Mueller, 2021; Yin et al., 2021), and 4) has not been diagnosed with any mental disorders that could influence their comprehension or ability to respond to the questionnaire. Data from respondents that failed to meet the inclusion criteria (and incomplete) were omitted from the study. Moreover, the purposive sampling method saves costs and time while yielding meaningful results by targeting participants who meet the inclusion criteria (Etikan et al., 2016).

Research Location

The survey was conducted online, in which self-administered online questionnaire was distributed through Quick Response (QR) code and web links and shared on social networking website including Facebook, XiaoHongShu, WeChat, Microsoft Teams, Instagram, and WhatsApp, to reach a broader pool of target participants across Malaysia. The study included Malaysian undergraduate students nationwide, from both public and private university.

Ethical Clearance Approval

To ensure the research adheres to ethical standards, the researchers obtained approval following the university's ethical clearance protocol. This involved obtaining approval from relevant authorities before starting data collection. With the reference number U/SERC/78-441/2025, the UTAR Scientific and Ethical Review Committee (SERC) was consulted to obtain ethical clearance approval (refer to Appendix B). The data collection process commenced after obtaining the ethical clearance approval.

Sample Size

In this study, a requirement of 385 respondents were needed, calculated based on the population of 1,049,396 Malaysian undergraduate students. The Malaysian undergraduate population is estimated to include 1,049,396 students, comprising 589,879 public university students and 517,580 private university students, while excluding 58,063 international students as of 2021 (Cynthia & Chong, 2023; Ministry of Higher Education Malaysia, 2022).

Initially, 882 responses were gathered from Malaysian undergraduate students for this study. Based on the total number of responses initially gathered, 397 responses (45%) were retained for the following data analysis after data cleaning.

To calculate the necessary size of the sample, the SurveyMonkey Sample Size Calculator was utilised. The SurveyMonkey Sample Size Calculator is an online calculator for estimating the require sample size for a study (SurveyMonkey, n.d.). The calculation considered the total Malaysian undergraduate student population enrolment of approximately 1,049,396, applying a confidence interval of 95% and a 5% margin of error, resulting in the determination that at least 385 respondents were needed (refer to Appendix C). The following

sample size formula was utilized by SurveyMonkey Sample Size Calculator (Serdar et al., 2021).

$$\text{Sample size} = \frac{\frac{z^2 \times p\,(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p\,(1-p)}{e^2 N}\right)}$$

Moreover, several multiple linear regression studies have applied SurveyMonkey Sample Size Calculator to estimate sample size (Martinovic et al., 2021; Vilovic et al., 2021; Žuljević et al., 2024).

Data Collection Procedures

Consent of participating in the survey research was requested from participants before they begin answering the questionnaire. Before participants respond to the questionnaire, a consent form outlining the study's objectives, procedures, and confidentiality assurances, was presented on the initial survey page. Respondents were notified that involvement was voluntary and that there are no penalty if they chose not to complete the survey. Meanwhile, their anonymity and confidentiality will be assured.

The online questionnaire was generated using Qualtrics website, and both a QR code and a link to the survey were generated. The distribution of survey was through social networking websites including Facebook, XiaoHongShu, WeChat, Microsoft Teams, Instagram, and WhatsApp. Furthermore, the QR code has also been shared in physical locations at Universiti Tunku Abdul Rahman (UTAR), including corridors, cafeterias, and library. Ethical approval was obtained prior to the start of data collection. After approval was

obtained, a pilot study involving 34 respondents was conducted with Malaysian undergraduate students to confirm the instruments' reliability.

The questionnaire was divided into seven sections as follows: Section A (filter questions for inclusion criteria), Section B (fear of uncertainty), Section C (academic self-efficacy), Section D (perceived social support), Section E (life satisfaction), Section F (demographic information), and Section G (token of appreciation via lucky draw invitation). In Section A, participants were asked personal details to ascertain if they were qualified in accordance with the inclusion criteria, the survey ended immediately for those who were excluded. In Section B until Section E, participants were required to rate the items based on their perception. In section F, participants were requested to fill their personal information including gender, ethnicity, status of family, name of educational institution, current year and semester, and Cumulative Grade Point Average (CGPA). Lastly, in section G, participants were presented with a lucky draw invitation as a token of appreciation. Participants who voluntarily chose to join the lucky draw provided their full name and phone number. If they chose not to join, the questionnaire ended. The questionnaire required around 10 to 15 minutes for completion.

After conducting the pilot study, an actual study involving a target sample size of 385 respondents was carried out. The questionnaire was closed once targeted responses were received. The data were downloaded from Qualtrics and saved in SPSS format.

Pilot Study

A pilot test involving a small number of respondents was conducted before the actual test to ensure the reliability of instruments. The questionnaire took approximately 10 minutes to complete. To ensure relevance to the target population, the pilot study was narrowed down

to Year 3 Semester 3 Malaysian undergraduate students from UTAR. A QR code and survey link were generated for participants to access the questionnaire. A total of 30 respondents was targeted, and the pilot study was conducted from 27 Jan 2025 to 18th March 2025. Purposive sampling was applied in data collection, resulting in 34 valid responses out of 63 respondents after data cleaning. In addition, all the Year 3 Semester 3 UTAR students were screened out of the actual study with a filtered question.

Data obtained from valid respondents were included in the analysis of each instrument's reliability. According to the results, all of the instruments including DFS, ASES MSPSS and SWLS reported acceptable Cronbach's Alpha values, showing acceptable to good level of reliability.

Actual Study

Data collection for the actual test took place from 12 April 2025 to 22 May 2025. The questionnaire was shared through social media platforms via link and QR code. A poster was also created to promote the survey and provide details about the availability of a token of appreciation via a lucky draw (refer to Appendix D). To encourage participation, a lucky draw was conducted in which 50 winners were randomly selected to receive RM10 each. The winners were randomly selected from those who chose to join the lucky draw, fulfilled the inclusion criteria, and completed the questionnaire. Winners were notified via WhatsApp using the phone numbers provided in the questionnaire to confirm their TNG e-Wallet account names. After confirming their details, RM10 was transferred to each winner through TNG using their phone numbers.

The approach used for gathering respondents was purposive sampling. The survey was shared in social media groups specifically created for undergraduate students to enhance participation from the target sample. Moreover, to further increase participation, the

researchers visited Universiti Malaya on 28 April 2025 and Universiti Tunku Abdul Rahman (Sungai Long campus) on 29 April 2025, where posters with QR codes were shown to allow students to scan and complete the survey online.

Instruments

Satisfaction with Life Scale (SWLS)

SWLS is a 5-item questionnaire created by Diener et al. (1985). The instrument is intended to evaluate a person's cognitive evaluations of their life satisfaction. It uses a 7-point Likert scale, from 1 *(strongly disagree)* to 7 *(strongly agree).* The item, "I am satisfied with my life" is an example. The sum of the score ranges from 5 to 35, and higher scores reflect higher life satisfaction. The scale's Cronbach's alpha of .84 indicates that it has good internal consistency reliability (Useche & Serge, 2016). The scale has demonstrated strong validity among Malaysian undergraduate students as it has been adopted by several studies in this context (Mohammad Dahlan et al., 2023; Norfaezah, 2021; Ratna Roshida et al., 2021).

Dark Future Scale (DFS)

The 5-item DFS is a self-report questionnaire created by Zaleski et al. (2017), it is a short version of the 29-items Future Anxiety Scale developed by Zaleski in 1996 while adopting the original conception of future anxiety. The DFS aimed to measure the individual's attitude toward the future (Zaleski et al., 2017). The items were measured using a 7-point Likert scale (*0= "Decidedly false", 1= "False", 2= "Somewhat false", 3 = "Hard to say", 4= "Somewhat true", 5 = "True", 6 = "Decidedly true"*) with total scores ranging from 0 to 30. One sample item is: "I am afraid that the problems which trouble me now will continue for a long time." A higher score reflects stronger feelings of fear toward uncertainty

(Jannini et al., 2022). The DFS demonstrated a Cronbach's alpha value ranged from .85 to .90, indicating a good reliability (Jannini et al., 2022, Szota et al., 2024). Additionally, the scale is valid for undergraduate students as it has been adopted for college students aged 18 to 25 (Pan et al., 2024).

Academic Self-Efficacy Scale (ASES)

ASES is a self-report questionnaire developed by Chemers et al. (2001). It is designed to assess students' level of confidence in their academic abilities by evaluating various academic skills. These skills include task scheduling, note taking, test taking, researching and general academic competencies. 8 items compose the scale, which uses a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An example item is: "I find my university academic work interesting." A total score is obtained by adding together the item scores, yielding total scores between 8 and 56. Higher scores indicate stronger academic self-efficacy. The scale has a Cronbach's alpha of .81 (Chemers et al., 2001). Moreover, the scale is valid for undergraduate students as the scale has been used for college students (Khan, 2023; Wang & Tambi, 2024).

Multidimensional Scale of Perceived Social Support (MSPSS)

MSPSS was created by Zimet et al. (1988) to evaluate perceived social support across three domains: family, friends and a significant other. This scale consists of 12 items using a 7-point Likert scale ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). The MSPSS consists of three subscales: family, friends, and significant other, with four items per subscale. A higher total score indicates a higher perceived social support level (Dambi et al., 2018). One sample item is: "I can talk about my problems with my friends." This scale has exhibited good reliability, with Cronbach's alpha's values ranged from .88 to .92 in the

context of undergraduate students, indicating good internal consistency (Nearchou et al., 2019; Prashant & Mohd Fadzil, 2013; Zimet et al., 1988). Furthermore, this scale demonstrated adequate construct validity, factorial validity, and good convergent validity (Nearchou et al., 2019; Zimet et al., 1988). Additionally, this scale has shown good validity in the context of our target population as it has been adopted for Malaysian undergraduate students (Nurul Azizah et al., 2023).

Reliability Test of Instruments

Table 3.1

Reliability Test of Instruments for Pilot Test (N = 34) and Actual Test (N = 397)

Scale	Items	Pilot Test ($N = 34$)	Actual Test ($N = 397$)
Dark Future Scale (DFS)	5	.88	.89
Academic Self-Efficacy Scale (ASES)	8	.88	.91
Multidimensional Scale of Perceived Social Support (MSPSS)	12	.90	.92
Satisfaction with Life Scale (SWLS)	5	.77	.88

As shown in Table 3.1, DFS obtained a reliability value of .88 in the pilot test and .89 in the actual test. ASES obtained a value of .88 in the pilot test and .91 in the actual test. MSPSS obtained a value of .90 in the pilot test and .92 in the actual test. SWLS obtained a value of .77 in the pilot test and .88 in the actual test. According to Nurhafizah et al. (2024), a Cronbach's alpha value of .70 and above is considered acceptable and satisfactory. Hence, the DFS, ASES, MSPSS, and SWLS scales demonstrated good and satisfactory reliability in both the pilot and actual tests.

Data Analysis

Data analysis was conducted using IBM SPSS Statistics 23 software to filter out incomplete responses and those that failed to meet the inclusion criteria before further analysis. After data cleaning, descriptive statistics were computed to give a summary of the demographic information and research variables, including the standard deviation and mean. Furthermore, the instruments' internal consistency was evaluated by a reliability analysis using Cronbach's alpha. Subsequently, tests for normality were performed. These included the evaluation of skewness and kurtosis, Q-Q plots, histogram and the Kolmogorov-Smirnov Test to examine the normality assumption. For inferential analysis, in order to assess the predicting effects of fear of uncertainty, academic self-efficacy and perceived social support on life satisfaction among Malaysian undergraduate students, linear regression analysis was conducted. Prior to conducting the linear regression analysis, the underlying assumptions was evaluated. These assumptions include measurement on a continuous scale, linearity, independence of observations, homoscedasticity, normality, and the identification of multivariate outliers. Upon confirming that these assumptions have not been violated, the simple linear regression analysis was implemented to ascertain the predictive effects of the predictor variables on the outcome variable.

Chapter IV

Results

Data Cleaning and Missing Data

Data cleaning was performed to ensure the integrity and precision of the results before analysing the valid data using IBM SPSS Statistics Version 23. Initially, a total of 882 responses were collected through various platforms as previously mentioned in Chapter III. However, 485 responses (55%) were removed for several reasons including failure to meet the inclusion criteria (as stated in Chapter III), disagreement to provide consent, and incomplete questionnaire responses. Besides, all Year 3 Semester 3 UTAR students were excluded from the actual study. Out of 882 respondents, 844 provided consent to participate in the study, while 38 declined and were subsequently excluded. Among those who consented, 575 met the inclusion criteria and proceeded to the subsequent sections of the survey. However, 178 of them did not complete the survey and were therefore excluded from the analysis. As a result, data from 397 respondents (45%) were retained for the final analysis. All 485 cases were manually excluded from the dataset to maintain data quality and completeness of the data for analysis. Moreover, no imputation was performed for missing data. Respondents with incomplete data (n = 178) were removed, and only entirely completed questionnaires were involved in the final dataset.

Descriptive Statistics

Demographic Characteristics

Table 4.1

Descriptive Statistics of Respondents' Demographic Information (N = 397)

	n	Percentage (%)	*M*	*SD*	Min	Max
Age	397	100	21.8	1.3	18	24
Gender						
Male	113	28.5				
Female	284	71.5				
Ethnicity						
Malay	15	3.8				
Indian	8	2.0				
Chinese	371	93.5				
Others	3	.8				
Family Status						
Intact Family	324	81.6				
Single-Parent Family	52	13.1				
Blended Family	9	2.3				
Separated Family	8	2.0				
Others	4	1.0				
Year of Study						
Year 1	77	19.4				
Year 2	101	25.4				
Year 3	195	49.1				
Year 4	23	5.8				
Year 5	1	.3				
CGPA			3.4	.4	2.0	4.0
Below 2.00	0	0				
2.00 – 2.49	11	2.8				
2.50 – 2.99	32	8.1				
3.00 – 3.49	136	34.3				
3.50 – 4.00	196	49.4				
missing	22	5.5				

Note. *n* = number of cases; *M* = Mean; *SD* = Standard Deviation; *Min* = Minimum; *Max* = Maximum.

Table 4.1 presents the descriptive statistic for demographic data of participants in this study. A total of 882 respondents participated in this study. After excluding responses that did not meet the inclusion criteria, a final total of 397 responses has been recorded for analysis. All the 397 participants were Malaysian undergraduate students, in which 28.5% of them were males (*n* = 113) and 71.5% were females (*n* = 284). The age range of respondents were between 18 to 24 years old (*M* = 21.8, *SD* = 1.3).

In terms of ethnicity, 93.5% of the respondents were Chinese (*n* = 371), 3.8% of the respondents were Malay (*n* = 15), and 2.0% of respondents were Indian (*n* = 8). The

remaining 0.8% of the respondents (*n* = 3) were from other ethnic groups, including one biracial Chinese-Indian respondent, one Siamese, and one prefer not to say.

Regarding the family status of respondents, 81.6% of the respondents reported coming from an intact family (*n* = 324), while 13.1% from single-parent family (*n* = 52), 2.3% from blended family (*n* = 9), 2.0% from separated family (*n* = 8), as well as 1.0% from other family status (*n* = 4), which included divorced parents who had deceased, and divorced parents who were living apart.

In terms of the current year of study, 19.4% of the respondents were in their first year (*n* = 77), 25.4% of them in the second year (*n* = 101), 49.1% in the third year (*n* = 195), 5.8% in the fourth year (*n* = 23), and 0.3% of the participants in the fifth year (*n* = 1) during the time of data collection.

Regarding the CGPA of respondents, 2.8% of them (*n* = 11) reported a CGPA between 2.00 to 2.49, 8.1% of them (*n* = 32) reported a CGPA between 2.50 and 2.99, 34.3% respondents (*n* = 136) reported a CGPA between 3.00 and 3.49, and 49.4% respondents (*n* = 196) reported CGPA between 3.50 to 4.00. The remaining 5.5% of respondents (*n* = 22) did not report their CGPA. The CGPA of respondents ranged from 2.0 to 4.0 (*M* = 3.4, *SD* = 0.4).

Respondents were from 36 different public and private universities across Malaysia (refer to Appendix E). Among all 397 respondents, majority of them (*n* = 152) were from Universiti Tunku Abdul Rahman, which accounted for 38.3%. Additionally, 3.3% of the respondents did not report their university name.

Topic-Specific Characteristics

Table 4.2

Descriptive Statistics for Variables (N=397)

	N	Min.	Max.	*M*	*SD*
Fear of Uncertainty	397	5	35	22.1	7.4
Academic Self-Efficacy	397	9	56	40.9	8.9
Perceived Social Support	397	18	84	63.7	12.4
Life Satisfaction	397	5	35	24.6	6.1

Note. Min = Minimum; Max = Maximum; M = Mean; *SD* = Standard Deviation

Table 4.2 presents the descriptive statistics for all four variables, consisting of three independent variables which are fear of uncertainty ($M = 22.1$, $SD = 7.4$), academic self-efficacy ($M = 40.9$, $SD = 8.9$), perceived social support ($M = 63.7$, $SD = 12.4$), and one dependent variable which is life satisfaction ($M = 24.6$, $SD = 6.1$).

Assumptions of Normality

Skewness and Kurtosis

Based on Table F1 in Appendix F, the skewness and kurtosis values for all four variables, which are fear of uncertainty, academic self-efficacy, perceived social support and life satisfaction are within the range of ± 2 (George & Mallery, 2018). Hence, there is no violation in the assumption of normality.

Kolmogorov-Smirnov Test

Table F2 in Appendix F presents the results of Kolmogorov-Smirnov test for all variables. Based on the findings, fear of uncertainty, $D\ (397) = .08$, $p < .001$; academic self-efficacy, $D\ (397) = .11$, $p < .001$; perceived social support, $D\ (397) = .10$, $p < .001$; and life satisfaction, $D\ (397) = .09$, $p < .001$, were all significantly deviated from a normal distribution. Since *p*-values of Kolmogorov-Smirnov test must exceed .05 to assume normal distribution, these findings indicated that all four variables violated the normality assumption. However, the violation of this normality assumption with a large sample size should not cause major issues since Kolmogorov-Smirnov test is sensitive to large sample size by detecting minor deviations from normality (Ghasemi & Zahediasl, 2012).

Histogram

Figure F1-F4 in Appendix F present the histograms for all variables in this study. Each variable's histogram showed a symmetrical distribution with a bell-shaped curve, indicating that there were no violations of normality for all the four variables.

Quantile-Quantile (Q-Q) Plot

Figure F5-F8 in Appendix F present the Q-Q plots for all variables. Normality is not violated for all four variables, as most of the scores are clustered along the diagonal line in each Q-Q plot.

Summary

There were violations of normality found in the Kolmogorov-Smirnov test for each variable. However, the remaining assumptions including skewness and kurtosis, histogram, and Q-Q plot detected no violations, indicating that each variable met at least three out of the five assumptions. Hence, it can be concluded that normality assumption for all variables in this study was met, and that the data follow a normal distribution.

Assumptions of Linear Regression (LR)

Assumption of Measurement on a Continuous Scale

The first assumption, which stated that both the independent variable and dependent variable are measured using a continuous scale, was fulfilled (Fein et al., 2022). All four scales used in this study including the DFS, ASES, MSPSS, and SWLS are measured using a continuous scale.

Assumption of Linearity

The second assumption stated that there must be a linear relationship between the independent and dependent variables (Fein et al., 2022; Koirala, 2025). The scatterplots shown in Figure G1-G3 in Appendix G were visually inspected to assess the linearity between each of the independent variable and the dependent variable. The scatterplots showed that each independent variable had a linear relationship with the dependent variable. Therefore, this assumption was met.

Assumption of Homoscedasticity

The third assumption is homoscedasticity (Koirala, 2025). Scatterplot was used to assess the distribution of residual's variance (refer to Figure G4-G6 in Appendix G). Based on the scatterplots, the residuals appeared to be evenly and randomly distributed along the horizontal zero line for each of the three independent variables in relation to the dependent variable. Specifically, this pattern was observed for fear of uncertainty and life satisfaction, academic self-efficacy and life satisfaction, and perceived social support and life satisfaction. Therefore, this indicated that the assumption of homoscedasticity was not violated.

Assumption of Independence of Observation

The fourth assumption is the independence of observation (Koirala, 2025). Durbin-Watson statistic was conducted to test this assumption. A value between 1.5 and 2.5 indicates that the assumption has been met (Durbin & Watson, 1950; Durbin & Watson, 1951). The Durbin-Watson values for the relationships between each independent variable and the dependent variable, life satisfaction, were as follows: fear of uncertainty and life satisfaction (1.78) (refer to table G1 in Appendix G), academic self-efficacy and life satisfaction (1.77) (refer to table G2 in Appendix G), and perceived social support and life satisfaction (1.76)

(refer to table G3 in Appendix G). All values fell within the acceptable range, indicating that the assumption of independence of observation was met.

Multivariate Outliers

The final assumption is that there are no spurious outliers in the dataset (Fein et al., 2022; Koirala, 2025). Casewise diagnostics was applied to identify potential outliers among the 397 respondents in the study that may influence the results.

Fear of Uncertainty and Life Satisfaction. Based on Table G4 in Appendix G, case 5, 37, 52, 57, 165, 178, 179, 216, 221, 248, 274, 294, 310, 317, 354, 374 and 382 fell outside the range of two standard deviations which represented that these 17 cases might be potential outliers. To further assess whether these cases were influential, three diagnostic tests were conducted which included Mahalanobis Distance, Cook's Distance, and Leverage test. Based on Cook and Weisberg (1982), the cases with a value greater than 1.0 for Cook's Distance are considered as potential outliers. According to Table G5 in Appendix G, all the 17 cases did not exceed this threshold, indicating no violations in this test. According to Hoaglin and Welsch (1978), the leverage value is calculated using formula $[\frac{(p+1)}{n} \times 2]$, where p is the number of predictor and n is the number of respondents. After the calculation, leverage value in this study was 0.01. All 17 cases had leverage values below this threshold, suggesting no influential outliers based on leverage values (Hoaglin & Welsch, 1978). Regarding the Mahalanobis Distance, according to Barnett and Lewis (1978), cases with Mahalonobis Distance value greater than 15 are considered potential outliers. In this study, all 17 cases had Mahalanobis Distance values below this cutoff. Therefore, no violations were found in this test.

Academic Self-Efficacy and Life Satisfaction. According to Table G6 in Appendix G, case 5, 14, 30, 149, 175, 176, 178, 212, 221, 248, 283, 310, 317, 319, and 382 were

identified as potential outliers. For Cook's Distance, all these 15 cases had values below 1.0, indicating no violation of this test. For Mahalanobis Distance, all cases had values less than 15, suggesting no violation based on this test. However, for the Leverage test, cases 149 and 319 exceeded the cutoff value of 0.01 and were considered as the violation cases (refer to Table G7 in Appendix G). Since these two cases only violated the Leverage test and not the other two tests, they were not considered as influential cases, and no cases were removed from the dataset.

Perceived Social Support and Life Satisfaction. According to Table G8 in Appendix G, case 5, 14, 49, 53, 84, 96, 113, 146, 147, 150, 165, 178, 180, 221, 248, 294, 314, 354, and 382 were identified as potential outliers. For Cook's Distance, all these 19 cases had values less than 1.0, indicating no violation of this assumption. For Mahalanobis Distance, all cases had values below 15, suggesting no violation in this test. However, for the Leverage test, cases 49, 53 and 150 exceeded the cutoff value of 0.01 and were considered as the influential cases (refer to Table G9 in Appendix G). Since these cases only violated the Leverage value and not the other two tests, they were not considered as influential cases, and no cases were removed from the dataset.

In conclusion, there were no spurious outliers in the dataset, and no cases were needed to be removed.

Linear Regression Analysis

Table 4.3

Model Summary of Fear of Uncertainty on Life Satisfaction

Model	*R*	*R* Square	Adjusted *R* Square	Std. Error of the Estimate
1	0.08	.007	.004	6.04

Note. Dependent variable = life satisfaction; independent variable = fear of uncertainty; *R* = correlation coefficient; *R* square = coefficient of determination

Table 4.4

Anova Table of Fear of Uncertainty on Life Satisfaction

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	95.09	1	95.09	2.60	.107
	Residual	14429.99	395	36.53		
	Total	14525.08	396			

Note. Dependent variable = life satisfaction; independent variable = fear of uncertainty; *df* = degrees of freedom; *F* = F-statistic

Table 4.5

Regression Coefficient Table of Fear of Uncertainty on Life Satisfaction

Variables	*B*	*SE*	*β*	Sig.
Constant	26.10	0.96		< .001
Fear of Uncertainty	-.07	.04	-.08	.107

Note. B = Unstandardized beta coefficients; *SE* = standard error; *β* = standardized beta coefficients

H_1 : Fear of uncertainty negatively predicts life satisfaction among Malaysian undergraduate students.

As shown in Table 4.3 and Table 4.4, the linear regression analysis revealed that the model was not statistically significant, F (1, 395) = 2.60, p = .107, accounting for 7% of the variance in life satisfaction. As shown in Table 4.5, results indicated that fear of uncertainty did not significantly predict life satisfaction among Malaysian undergraduate students (β = -.08, p = .107). Therefore, this hypothesis was not supported in the present study.

Table 4.6

Model Summary of Academic Self-Efficacy on Life Satisfaction

Model	*R*	*R* Square	Adjusted *R* Square	Std. Error of the Estimate
1	0.58	.335	.333	4.95

Note. Dependent variable = life satisfaction; independent variable = academic self-efficacy; *R* = correlation coefficient; *R* square = coefficient of determination

Table 4.7

Anova Table of Academic Self-Efficacy on Life Satisfaction

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	4859.83	1	4859.83	198.61	< .001
	Residual	9665.25	395	24.47		
	Total	14525.08	396			

Note. Dependent variable = life satisfaction; independent variable = academic self-efficacy; *df* = degrees of freedom; *F* = F-statistic

Table 4.8

Regression Coefficient Table of Academic Self-Efficacy on Life Satisfaction

Variables	*B*	*SE*	*β*	Sig.
Constant	8.49	1.17		< .001
Academic Self-Efficacy	.40	.03	.58	< .001

Note. B = Unstandardized beta coefficients; *SE* = standard error; *β* = standardized beta coefficients

H_2: Academic self-efficacy positively predicts life satisfaction among Malaysian undergraduate students.

Based on Table 4.6 and Table 4.7, the linear regression analysis presented that the model was statistically significant, F (1, 395) = 198.61, p < .001, explaining 33.5% of

variance in life satisfaction. As shown in Table 4.8, results indicated that academic self-efficacy significantly predicted life satisfaction among Malaysian undergraduate students (β = .40, p < .001). Therefore, this hypothesis was supported in the current study.

Table 4.9

Model Summary of Perceived Social Support on Life Satisfaction

Model	*R*	*R* Square	Adjusted *R* Square	Std. Error of the Estimate
1	0.62	.385	.383	4.76

Note. Dependent variable = life satisfaction; independent variable = perceived social support; *R* = correlation coefficient; *R* square = coefficient of determination

Table 4.10

Anova Table of Perceived Social Support on Life Satisfaction

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	5590.47	1	5590.47	247.16	< .001
	Residual	8934.61	395	22.62		
	Total	14525.08	396			

Note. Dependent variable = life satisfaction; independent variable = perceived social support; *df* = degrees of freedom; *F* = F-statistic

Table 4.11

Regression Coefficient Table of Perceived Social Support on Life Satisfaction

Variables	*B*	*SE*	β	Sig.
Constant	5.40	1.25		< .001
Perceived Social Support	.30	.02	.62	< .001

Note. B = Unstandardized beta coefficients; *SE* = standard error; β = standardized beta coefficients

H_3: Perceived social support positively predicts life satisfaction among Malaysian undergraduate students.

As shown in Table 4.9 and Table 4.10, the linear regression analysis showed that the model was statistically significant, F (1, 395) = 247.16, $p < .001$, accounting for 38.5% of the variance in life satisfaction. As shown in Table 4.11, results indicated that perceived social support significantly predicted life satisfaction among Malaysian undergraduate students ($\beta = .62$, $p < .001$). Therefore, this hypothesis was supported in the present study.

Chapter V

Discussion

H_1 : Fear of uncertainty negatively predicts life satisfaction among Malaysian undergraduate students.

The relationship between fear of uncertainty and life satisfaction among Malaysian undergraduates was examined in the present study. The hypothesis posited that fear of uncertainty would negatively predict life satisfaction. Nevertheless, the result of this study is different from past studies (Buyruk Genç, 2024; Charbonnier et al., 2023; Li & Song, 2024; Odacı et al., 2022) and did not support the first hypothesis. In this regard, the results showed that fear of uncertainty did not serve as a significant predictor of life satisfaction among Malaysian undergraduate students. This indicates that students' life satisfaction is not influenced by their level of fear of uncertainty.

The finding of this non-significant relationship stands in contrast to previous research which reported a significant negative relationship between fear of uncertainty and life satisfaction, where higher levels of fear of uncertainty predicted lower levels of life satisfaction (Al-Khaz'Aly et al., 2023). However, some studies have also reported inconsistent results. According to Akkoç et al. (2025), fear of uncertainty may not have a direct effect on students' life satisfaction but may influence it indirectly through students' psychological and emotional well-being. Similarly, another study on adults by Uzun (2024) suggested that fear of uncertainty was a weaker predictor of life satisfaction compared to other psychological resources (hope).

The first potential explanation for fear of uncertainty has no significant effect on university students' life satisfaction may be because they are typically in a developmental

stage that is full of transitions and unknowns. This aligns with the findings by Koprowicz and Gumowska (2022), which stated that fear of uncertainty is common among all young people transitioning into independence. In this regard, uncertainty about grades, future careers, relationships, and personal life is widely experienced and expected as a normal part of student's life in the contemporary society, especially for those in emerging adulthood, uncertainty about the future is an inevitable development (Kong & Zeng, 2023). By knowing this, students may prioritise immediate sources of satisfaction and the present well-being over worrying about the future. This aligns with van Halem et al. (2024) which found that university students tend to pursue hedonic pleasure to regulate mood positively. According to Zaleski et al. (2017), fear of uncertainty is positively correlated with Carpe Diem, meaning that individuals focus on enjoying the present moments before things worsen (Bird, 2022), as well as positively evaluate the current life although experiencing high levels of fear towards the future. In this context, university students may emphasize more on the present time through the mindsets of "control what you can control" and "live-for-today", which reflects taking proactive steps to regain a sense of control over what is within their influence while accepting their limitations, even if the future remains uncertain (Kienzler et al, 2025).

The next possible explanation for the non-significant findings can be related to measures on the general aspect. Dark Future Scale (DFS), which is the instrument used to measure fear of uncertainty in this study, primarily assesses respondents' overall outlook on the future (Zaleski et al., 2017). This may lead respondents to evaluate the future in a vague way and may be unable to relate with specific life domains such as academic, career or relationships. This is because university students may experience different levels of fear of uncertainty under a variety of domains (Dalmış et al. 2025). For example, a university student may feel worried about future career opportunities while feeling less distressed about uncertainties in other domains, such as relationships or academics. Therefore, the items

involving specific life domains may be better to capture student's uncertainty. In particular, three out of five items in DFS may seem too abstract and general for some respondents. Abstract words are harder to process, compared to concrete words (Löhr, 2023). This may cause the DFS to be less sensitive in capturing students' fear of uncertainty, even if the scale is highly reliable.

***H_2*: Academic self-efficacy positively predicts life satisfaction among Malaysian undergraduate students.**

The current result supported the hypothesis that academic self-efficacy positively predicts life satisfaction among Malaysian undergraduate students. This aligns with past studies which suggested that academic self-efficacy could contribute to life satisfaction among undergraduate students (Boonyarit, 2021; Mao et al., 2022; Robinson et al., 2020).

This might be explained by the fact that students with a high level of academic self-efficacy possess greater confidence in managing and engaging in academic tasks, which helps them perform effectively in a university setting and, in turn, contributes to overall life satisfaction. As undergraduate students, the majority of their daily activities revolve around academic responsibilities, highlighting the significant role that academics play in their daily life (Mao et al., 2022). Bandura (1999) also stated that when students view themselves as competent, they tend to increase their engagement in academic tasks, which can improve academic performance and promote a stronger sense of personal achievement, both of which contribute to life satisfaction. This finding is aligned with previous study showing that students with high academic self-efficacy are inclined to engage more deeply in tasks due to their confidence in completing them successfully (Meng & Zhang, 2023). Tan et al. (2023) also found that academic self-efficacy contributes significantly to student engagement among Malaysian university students. Therefore, students with a high level of academic self-efficacy tend to engage more actively in academic tasks, which leads to improved academic outcomes and supports progress toward their personal goals, and may ultimately promote life satisfaction.

Moreover, another possible explanation is that students with a high level of academic self-efficacy, who have confidence in their abilities, are more likely to take the initiative

when facing obstacles, as they believe that they possess the necessary skills to overcome challenges. Consequently, this contributes to greater life satisfaction. Prior research has found that students with high academic self-efficacy tend to adopt different approaches to deal with challenges and stay motivated when facing challenges (Maharani & Purnama, 2023; Luo et al., 2023). Robinson et al. (2020) also highlighted that such individuals are more persistent and less likely to give up when confronted with challenges. Their perceived availability of internal resources enhances their ability to navigate academic difficulties, thereby contributing to greater life satisfaction.

Another explanation could be that a high level of academic self-efficacy helps reduce negative emotion by enabling students to manage tasks confidently and effectively, ultimately contributing to greater life satisfaction. Students who are confident in their academic skills are better able to manage tasks effectively, which in turn reduces academic stress and the associated negative emotions. The reduction of negative emotional experiences in the academic domain contributes to a more positive evaluation of life, ultimately enhancing overall life satisfaction. Academic demands have been identified as one of the primary factors influencing mental health among undergraduate students in Malaysia (Nurul Nabila et al., 2024). This finding is in line with prior studies suggesting that students with strong self-efficacy beliefs help buffer negative emotions (Freire et al., 2019). Tan et al. (2023) also identified academic self-efficacy as a crucial factor in reducing academic stress among Malaysian university students. Consequently, effective task management and reduced negative emotions ultimately contribute to enhanced life satisfaction.

H_3: Perceived social support positively predicts life satisfaction among Malaysian undergraduate students.

The findings of this study supported the hypothesis that perceived social support positively predicts life satisfaction among Malaysian undergraduate students. This finding is aligned with past studies claiming that perceived social support predicts life satisfaction in the context of undergraduate students (Holliman et al., 2021; Norfaezah, 2021; Yıldırım & Tanrıverdi, 2021).

One possible explanation is that social support acts as a resource that helps undergraduate students develop effective coping methods to solve their problems in life. To illustrate, undergraduate students who have someone to talk about their problems and discuss the possible solutions are likely to generate effective solutions to overcome stressful situations in their life. This is supported by Barwal and Cherian (2024), which found that perceived social support promotes problem-solving among undergraduate students, which enables them to resolve the challenging situations in life. Problem-solving is a kind of coping strategy aimed at resolving the source of stress (Carroll, 2020). Hence, undergraduate students with high perceived social support tend to adopt this adaptive coping strategy to effectively overcome stressful situations in their life, thus are likely to evaluate their life as close to their ideal conditions.

Another possible explanation is that undergraduate students who perceive a high level of social support are less likely to suppress their emotions as they obtain emotional support from people around them when faced with difficult situations (Lopez et al., 2024). This is because when they have someone who cares about their feelings and provide comfort, they would be more willing to share their emotions and problems with their family, friends, and

significant others. When they are less likely to suppress their emotions, they tend to have higher satisfaction with life (Cameron & Overall, 2018).

Additionally, perceived social support enhances life satisfaction among undergraduate students as it helps them to adapt better when encountering challenges in university. This is supported by Restrepo et al. (2023) which suggested that undergraduate students who feel sufficiently supported by people around them tend to experience less negative impacts from stress, thus adapting better in their university life. For instance, friends provide intellectual support in ways such as academic study groups, facilitating their adaptation in university. Other than that, emotional support from family and friends, such as receiving comfort and encouragement during challenging times, buffers the negative impact of stress on undergraduate students (Green et al., 2022). Thus, undergraduate students with high perceived social support are inclined to feel satisfied with their life as they have better adaptation ability and are less impacted by the negative effect of stress.

Furthermore, given that perceived social support fosters high-quality relationships (Wider et al., 2019), and that friendships and intimate relationships are the key developmental tasks in young adulthood (Bühler et al., 2021), thus the predictive effect of perceived social support may be explained by satisfaction of social relationships contributing to an overall positive evaluation of life among undergraduate students who are in young adulthood. Moreover, in line with the results of this study, Maluenda-Albornoz et al. (2023) found that perceived social support is strongly correlated with undergraduate students' feeling of belonging, which has been linked to satisfaction with university life, and ultimately associated with higher life satisfaction (Fan et al., 2020). Additionally, it is also possible that undergraduate students who perceive sufficient social support tend to view their social relationship and overall life as meaningful, thus contributing to higher life satisfaction. This is in line with past research showing that perceived social support predicts undergraduate

students' perceived meaning of life (Li et al., 2023), which is further strengthened by Napier et al. (2024) which suggested that caring and supportive social relationships satisfy relatedness needs and in turn enhancing meaningfulness of life. This suggests that the sense of belonging and satisfaction of social relationship explain the predictive role of perceived social support in life satisfaction among Malaysian undergraduate students.

Implication

Theoretical Implication

The current finding supports Self-Determination Theory (SDT), which posits that the fulfillment of the basic psychological need for competence contributes to optimal functioning and well-being (Ryan & Deci, 2017; Ryan & Deci, 2020). In this study, academic self-efficacy was found significantly predicts life satisfaction among Malaysian undergraduate students. Since high academic self-efficacy enhances students' perceptions of their abilities to manage academic demands, this heightened confidence encourages task engagement, reduces negative emotion, and equips students with the belief that they can overcome challenges using effective coping strategies. As a result, it improves students' academic performance and a greater willingness to confront difficulties, promotes positive emotions, ultimately enhancing life satisfaction. This is aligned with SDT's assertion that satisfying the need for competence enables individuals to feel effective in managing tasks and achieving goals, which enhances both confidence and well-being (Racero et al., 2020). Furthermore, SDT suggests that fulfilling the need for competence increases motivation and fosters engagement in university life, which further supports well-being (Ghbari et al., 2024). Therefore, this study contributed to the SDT framework by revealing that students who are confident in their academic abilities are more likely to engage actively with academic tasks, regulate emotion,

and apply effective coping strategies when faced with challenges, which ultimately lead to greater life satisfaction through fulfillment of their competence needs.

Moreover, this study contributes to Self-Determination Theory by highlighting academic self-efficacy as an important life domain that serves as a measurable indicator of perceived competence among undergraduate students. This study also helps to contextualize the construct of competence within academic settings and demonstrates its influence on well-being and life satisfaction among undergraduate students. High academic self-efficacy appears to reduce avoidance tendencies, foster engagement, and promote a cycle of positive academic performance and emotional benefits, culminating in higher life satisfaction. Additionally, by applying SDT within the context of Malaysian undergraduate students, this study broadens the cultural scope of the theory, addressing the gap in the existing literature, which has been predominantly based on Western populations (Ghbari et al., 2024; Ryan & Deci, 2017). This supports the cross-cultural validity of SDT and underscores the universal relevance of competence in promoting well-being. Future research may test whether the predictive strength of academic self-efficacy on life satisfaction increases with academic maturity, helping refine how SDT applies at different educational stages.

Furthermore, in line with SDT, the findings of this study revealed that perceived social support promotes a sense of belonging and enhances relationship satisfaction, thus fulfilling the need for relatedness, and in turn brings life satisfaction among undergraduate students. Additionally, while SDT does not explicitly involve meaningfulness of life in explaining life satisfaction, this study suggests the possibility that as perceived social support satisfies the need for relatedness, this fulfilment of need results in an increased perceived meaningfulness of life, leading to life satisfaction (Li et al., 2023; Napier et al., 2024). This is beyond SDT's original focus on solely basic psychological needs. These findings contribute to SDT by demonstrating that while SDT explains the relationship between perceived social

support and life satisfaction through relatedness, meaningfulness in life might also play a key role in this relationship.

According to SDT, individuals with low autonomy tend to feel a loss of control over their choices and behaviour, which in turn negatively affects their life satisfaction. However, the current findings found that students with fear of uncertainty will not influence their current life satisfaction. Students who fear uncertainty may perceive the future events to be hard to control, which reflects the lack of perceived autonomy in SDT (Manninen et al., 2022). However, their fear of uncertainty, that reflects perceived low autonomy in future, may not reflect the current state of autonomy, and thus it may not significantly predict the university students' evaluation of their current life. Life satisfaction reflects an evaluation of one's current and past experiences across life domains (López-Guerra et al., 2025). In contrast, fear of uncertainty represents a negative anticipation of events that have not yet occurred. This difference in timing may suggests that future-oriented fears, which reflect autonomy over the future, may not affect students' experience of autonomy in the present, therefore not contributing to their overall evaluation of current life satisfaction.

Furthermore, fear of uncertainty involves anticipating hypothetical outcomes, making these imagined scenarios psychologically distant and abstract. The further away an event is feared to occur, the greater its psychological distance (Schuitema & Lacchia, 2025). In contrast, mastery experiences that foster academic self-efficacy are psychologically close because they are grounded in concrete contextual details and are evaluated during or after completing a specific task (Gebauer et al., 2019; Schuitema & Lacchia, 2025). Similarly, perceived social support reflects students' perceptions of the adequacy of support available in their present context (Zimet et al., 2010). Thus, while students may experience fear about the future, their life satisfaction in the current moment will not be affected if they continue to feel competent in academics and supported in relationships. This is because only current and

ongoing experiences of competence and relatedness meaningfully influence how satisfied they feel with their lives. This study may contribute to the SDT framework by highlighting the importance of timing in how psychological needs influence life satisfaction. Specifically, autonomy over the future and autonomy over the present may contribute differently in shaping life satisfaction. Future research may further investigate whether psychological needs grounded in present experiences and future anticipations have different effects on life satisfaction, thereby refining the application of SDT in understanding life satisfaction.

Practical Implication

The findings suggested that enhancing students' academic self-efficacy may be a valuable approach to improving their overall life satisfaction. Educational institutions should support this by designing academic tasks that are broken down into manageable steps, allowing students to build confidence gradually. When positive reinforcement for accomplishments such as consistent progress is given, it may enhance student's belief in their abilities and thus help to increase academic self-efficacy (Norhisyam et al., 2022). Moreover, policymakers can play a role by fostering a supportive learning environment that emphasize mastery experiences. This may include curricula and assignments that allow students to experience success, such as through active learning strategies and project-based learning. These mastery experiences strengthen students' confidence in their abilities, thereby enhancing academic self-efficacy. Furthermore, they can also provide opportunities for skill development, such as workshops, mentoring programs, and co-curricular events to further strengthen students' academic self-efficacy and engagement. Enhancing students' confidence in their academic skills is essential, as it directly contributes to their academic self-efficacy and, ultimately, their overall well-being.

Given the finding that perceived social support significantly predicts life satisfaction among Malaysian undergraduate students, universities could implement programs that

strengthen students' social connections, such as building peer support networks and academic support group in each faculty to foster supportive network for students. Furthermore, family members are encouraged to provide adequate support to undergraduate students, such as listening to their problems without judging, and offering encouragement and guidance when appropriate. Apart from that, policymakers could promote campaigns in Malaysia that build public awareness on the importance of seeking support and building supportive relationships, as perceived social support directly enhance life satisfaction among Malaysian undergraduate students.

Limitations

A number of limitations were found that future studies should take into consideration. Firstly, the use of self-reported measures may have introduced response bias. For example, participants might have selected the same answer throughout the survey. This may have occurred because no reverse-scored items were included to detect such tendencies.

Secondly, the use of cross-sectional research design restricted the ability examine causal relationships between variables (Levin, 2006; Mann, 2003). This is because data were collected at a single point of time, making it difficult to determine the directionality of effects between the independent and dependent variables (Maier et al., 2023).

This study was also limited by the unequal representation of ethnicity among the sample. The respondents in this study mainly consisted of Chinese, accounting for 93.5% among all respondents. There is also an unequal representation of gender, with 71.5% of female respondents, and only 28.5% of male respondents. Furthermore, subgroup analysis was not conducted to test the potential difference among gender groups and ethnicity groups. Given that different ethnic groups have distinct cultural values and norms, the results of this

study could be potentially influenced by gender and ethnicity as confounding variables, limiting the generalizability to the whole population of Malaysian undergraduate students.

Moreover, the use of simple linear regression in the present study limits the ability to assess which predictor has the strongest effect on the dependent variable. This limitation restricts a deeper understanding of the relative contributions of each predictor to life satisfaction.

Apart from that, this study examined only the direct influence of the predictor variables on life satisfaction, without considering the potential mediating role of other variables. This may have led to an oversight of indirect effects of fear of uncertainty that could have significantly influenced the outcome variable.

Recommendations

This issue of response bias may be reduced in future studies by including reversed items in the questionnaire to detect response patterns such as consistently selecting the same response throughout the survey. Reversed items force respondents to read the question more carefully and help identify biases when inconsistent responses are chosen in the reversed items. Moreover, future studies could include attention-check items by instructing participants to select a specific response such as "strongly agree". If respondents fail to follow such instructions, it suggests inattention, allowing researchers to filter out careless or biased responses.

Next, future studies are suggested to adopt a longitudinal study design to establish causality more accurately, as it allows researchers to track changes and determine directionality of relationships over time between independent variable and dependent variable. For instance, a longitudinal approach would provide insight into how fear of uncertainty, academic self-efficacy and perceived social support influence life satisfaction

across different time points, such as during the first year and final year of undergraduate study. This design helps clarify the direction of the relationships between predictors and the outcome by collecting data at multiple time points and observing whether changes in the predictors occur before changes in life satisfaction. Moreover, it would also allow researchers to examine whether improvements or declines in these predictors over time correspond to changes in life satisfaction as students progress through their study.

Regarding sampling representation, future research may examine whether gender and ethnicity act as confounding factors in the predictive effect of fear of uncertainty, academic self-efficacy, and perceived social support on life satisfaction. This is crucial in the Malaysian context due to cultural values and gender roles may shape individuals' tolerance for uncertainty, academic confidence, and reliance on social support. This information may provide more accurate and culturally sensitive insights into how these variables impact life satisfaction among diverse student groups. Moreover, future studies may adopt quota sampling to improve the representativeness of the major ethnic groups in Malaysia. Although quota sampling does not involve random selection, it helps researchers achieve a more representative sample that reflects key demographic features of the target population, thereby improving the validity of the findings (Inas et al., 2022). For instance, in quota sampling, the target population is defined as Malaysian undergraduate student nationwide and quota are determined based on Malysia's ethnicity distribution, 58.1 % of Malays, 22.4% of Chinese, 6.5% of Indians and 12.3% of Bumiputera (Department of Statistics Malaysia, 2025). The researcher could divide the target population into four groups based on ethnicity and recruit participants from both public and private universities across Malaysia until the assigned quotas for each ethnic group are met. The number of participants recruited from each ethnic group would be proportionally determined based on the overall sample size, ensuring adequate inclusion of Malaysia's primary ethnic populations.

Moreover, future studies may consider using multiple linear regression to examine the relative contribution of each predictor toward life satisfaction. This method offers a comprehensive understanding because it evaluates all predictors simultaneously, controls for overlapping effects, and determines the unique impact of each factor. By identifying which predictor has the strongest influence, researchers can develop more targeted interventions to improve life satisfaction among Malaysian undergraduate students.

Furthermore, the limitation above also highlights the need for future research to identify potential mediating variables that may explain the relationship between the fear of uncertainty and life satisfaction. For example, future research could include the role of religiosity in coping with uncertainty. In Malaysia, a multicultural and religiously diverse society, religious beliefs may potentially provide emotional support and meaning during uncertain times, thereby influencing students' tolerance of uncertainty. Therefore, including religiosity as a mediator might provide a deeper understanding of how cultural and spiritual resources influence their tolerance of uncertainty, ultimately contributing to life satisfaction.

Conclusion

In conclusion, this study has achieved the objectives to investigate the predictive effects of fear of uncertainty, academic self-efficacy, and perceived social support on life satisfaction among Malaysian undergraduate students. Results showed that academic self-efficacy and perceived social support positively predicted life satisfaction while no significant effect was found for fear of uncertainty.

The non-predictive effect of fear of uncertainty on life satisfaction may be explained by developmental factors, in which uncertainty is seen as a normal part of students' lives, which may in turn emphasize a present-focused and pleasure-oriented mindset. It may also be due to DFS scale's low sensitivity in measuring students' fears. The predictive effect of

academic self-efficacy on life satisfaction can be attributed to students' confidence in managing in academic tasks, their initiative in dealing with challenges and its role as a buffer against negative emotion within the university setting. Furthermore, the predictive role of perceived social support in life satisfaction may be explained by enhanced coping and adaptability in life, reduced emotional suppression, as well as fulfilled belongingness and meaningfulness of social relationships.

Academic self-efficacy could be improved by providing structured, manageable tasks, fostering a learning environment that emphasize mastery experiences, and providing skill development such as workshops to build confidence in students' abilities, thereby directly enhancing their academic self-efficacy. Furthermore, perceived social support may be strengthened through initiatives such as the establishment of peer support groups in universities, provision of consistent emotional support by family members, as well as implementation of awareness campaigns aimed at promoting the value of social support.

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Appendix A

Questionnaire (Partial)

Informed Consent

Research Topic: Fear of Uncertainty, Academic Self-Efficacy, and Perceived Social Support as Predictors of Life Satisfaction among Malaysian Undergraduate Students

Introduction

We are year three Psychology undergraduate students from the Faculty of Art and Social Science of Universiti Tunku Abdul Rahman. You are invited to participate in the study entitled "Fear of Uncertainty, Academic Self-Efficacy, and Perceived Social Support as Predictors of Life Satisfaction among Malaysian Undergraduate Students".

Procedures and Confidentiality

The following questionnaire consists of five sections, and it will require approximately 15 minutes to complete. All information provided will remain as **private and confidential**. The information given will only be reported as group data with no identifying information and only use for academic purpose.

Participation

All the information gathered will remain anonymous and confidential. Your information will not be disclosed to any unauthorized person and would be accessible only by group members. Participant in this study is voluntary, you are free to withdraw and discontinue participation at any time without any penalty. Your responses will be coded numerically in the research assignment for the research interpretation. Your cooperation would be greatly appreciated.

If you choose to participate in this project, please answer all the questions as honestly as possible and return the completed questionnaire promptly.

Personal Data Protection Statement

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

1. The purposes for which your personal data may be used are inclusive but not limited to:

a) For assessment of any application to UTAR

b) For processing any benefits and services

c) For communication purposes

d) For advertorial and news

e) For general administration and record purposes

f) For enhancing the value of education

g) For educational and related purposes consequential to UTAR

h) For replying any responds to complaints and enquiries

i) For the purpose of our corporate governance

j) For the purposes of conducting research/ collaboration

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services,

maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

1. By submitting this form, you hereby authorise and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

3. You may access and update your personal data by writing to us at:

Gan Kah Hee (gkahhee03@1utar.my)

Kor Fong Ming (ming121@1utar.my)

Tai Yi Ying (tyiying85@1utar.my)

Acknowledgement of Personal Data Protection Notice

[ ] I have been notified by you and that I hereby understood, consented and agreed per UTAR above notice.

[ ] I disagree, my personal data will not be processed.

Section A: Filter Questions

Instruction: Please fill in your personal details or choose an answer based on the questions given.

1. Are you a Malaysian student?

[ ] Yes

[ ] No

2. Are you currently enrolled in:

[ ] Undergraduate program

[ ] Pre-university program (E.g. Foundation / STPM / Matriculation / A- level / Diploma)

[ ] Others

3. Age

[ ] 18

[ ] 19

[ ] 20

[ ] 21

[ ] 22

[ ] 23

[ ] 24

[ ] Others

4. Are you a Year 3 Semester 3 student in the January 2025 semester?

   [ ] Yes

   [ ] No

Display this question if 'Yes' is selected for Question 4

Are you a Year 3 Semester 3 student in the January 2025 semester?

   [ ] Yes

   [ ] No

5. Have you been **officially** diagnosed with any mental disorders in the past one year?

   [ ] I have **NOT** been officially diagnosed with any mental disorders in the past one year.

   [ ] I have been officially diagnosed with mental disorder(s) in the past one year.

Section F: Demographic Information

1. Gender:

[ ] Male

[ ] Female

2. Ethnicity:

[ ] Malay

[ ] Indian

[ ] Chinese

[ ] Others, please specify: _____

3. Family Status:

[ ] Intact Family (Both biological parents are present and living together)

[ ] Single-Parent Family (One parent is responsible for raising the child)

[ ] Blended Family (One or both parents have remarried, with step-siblings or half-siblings)

[ ] Separated Family (Parents are living apart but not legally divorced)

[ ] Others: _____

4. Name of Educational Institution: _____

5. Course Name: (E.g. Bachelor of Social Science Psychology): _____

6. Current Year and Semester (E.g. Year 1, Semester 3, Y1S3):

[ ] Year 1 Semester 1

[ ] Year 1 Semester 2

[ ] Year 1 Semester 3

[ ] Year 2 Semester 1

[ ] Year 2 Semester 2

[ ] Year 2 Semester 3

[ ] Year 3 Semester 1

[ ] Year 3 Semester 2

[ ] Year 3 Semester 3

[ ] Others: _____

7. CGPA: _____

Section G: Token of Appreciation via Lucky Draw Invitation

1. Would you like to join the lucky draw for a chance to win RM10?

   [ ] Yes

   [ ] No

2. Name (exactly same with TNG): _____

3. Phone Number (e.g 012-3456789): _____

Appendix B

Ethical Clearance Approval

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

Re: U/SERC/78-441/2025

14 January 2025

Dr Lee Wan Ying
Head, Department of Psychology and Counselling
Faculty of Arts and Social Science
Universiti Tunku Abdul Rahman
Jalan Universiti, Bandar Baru Barat
31900 Kampar, Perak.

Dear Dr Lee,

Ethical Approval For Research Project/Protocol

We refer to the application for ethical approval for your students' research project from Bachelor of Social Science (Honours) Psychology programme enrolled in course UAPZ3023. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	Fear of Uncertainty, Academic Self-Efficacy, and Perceived Social Support as Predictors of Life Satisfaction Among Malaysian Undergraduate Students	1. Gan Kah Hee 2. Kor For Ming 3. Tai Yi Ying	Dr Gan Su Wan	14 January 2025 – 13 January 2026

The conduct of this research is subject to the following:

(1) The participants' informed consent be obtained prior to the commencement of the research;

(2) Confidentiality of participants' personal data must be maintained; and

(3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.

(4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

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

Thank you.

Yours sincerely,

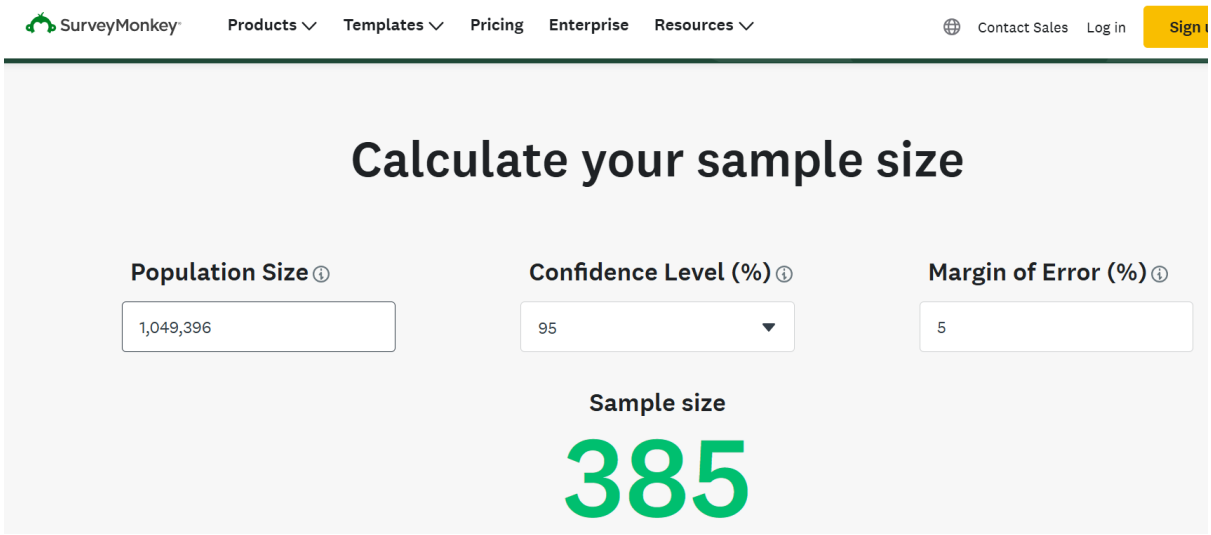
Professor Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

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

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 Fax: (605) 466 1313
Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 Fax: (603) 9019 8868
Website: www.utar.edu.my

Appendix C

Sample Size Calculation



Appendix D

Poster

Appendix E

SPSS Output: Educational Institution

Name of Educational Institution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-	13	3.3	3.3	3.3
	Asia Pacific University	4	1.0	1.0	4.3
	FAME International College	1	.3	.3	4.5
	Han Chiang University College of Communication	5	1.3	1.3	5.8
	HELP University	9	2.3	2.3	8.1
	IACT College	1	.3	.3	8.3
	International Medical University Malaysia	2	.5	.5	8.8
	INTI International University	3	.8	.8	9.6
	KPJ Healthcare University	1	.3	.3	9.8
	Limkokwing University of Creative Technology	1	.3	.3	10.1
	Monash University Malaysia	4	1.0	1.0	11.1
	Multimedia University	32	8.1	8.1	19.1
	New Era University College	2	.5	.5	19.6
	Peninsula College	1	.3	.3	19.9
	Quest International University	1	.3	.3	20.2
	Raffles University	1	.3	.3	20.4
	SEGi University	2	.5	.5	20.9
	Shanghai University	2	.5	.5	21.4
	Sunway University	18	4.5	4.5	25.9
	Taylor's University	3	.8	.8	26.7
	Tunku Abdul Rahman University of Management and Technology	24	6.0	6.0	32.7
	UCSI University	3	.8	.8	33.5
	Universiti Kebangsaan Malaysia	6	1.5	1.5	35.0
	Universiti Malaya	43	10.8	10.8	45.8
	Universiti Malaysia Pahang Al-Sultan Abdullah	1	.3	.3	46.1
	Universiti Malaysia Perlis	4	1.0	1.0	47.1
	Universiti Malaysia Sabah	1	.3	.3	47.4

Name of Educational Institution

	Frequency	Percent	Valid Percent	Cumulative Percent
Universiti Malaysia Sarawak	3	.8	.8	48.1
Universiti Malaysia Terengganu	1	.3	.3	48.4
Universiti Pendidikan Sultan Idris	1	.3	.3	48.6
Universiti Putra Malaysia	2	.5	.5	49.1
Universiti Sains Malaysia	3	.8	.8	49.9
Universiti Teknologi Malaysia	2	.5	.5	50.4
Universiti Tunku Abdul Rahman	152	38.3	38.3	88.7
University of Technology Sarawak	14	3.5	3.5	92.2
UOW Malaysia	4	1.0	1.0	93.2
Xiamen University Malaysia	27	6.8	6.8	100.0
Total	397	100.0	100.0	

Appendix F

Assumption of Normality

Table F1

Skewness and Kurtosis of Main Variables

	N	M	SD	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Dark Future Scale (DFS)	397	22.0605	7.35372	-.451	.122	-.601	.244
Academic Self-Efficacy Scale (ASES)	397	40.8589	8.87143	-.892	.122	.780	.244
Multidimensional Scale of Perceived Social Support (MSPSS)	397	63.6725	12.44660	-.721	.122	.299	.244
Satisfaction with Life Scale (SWLS)	397	24.6247	6.05636	-.607	.122	.010	.244

Table F2

The Values of Kolmogorov-Shapiro-Wilk

Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Dark Future Scale (DFS)	.084	397	.000	.964	397	.000
Academic Self-Efficacy Scale (ASES)	.112	397	.000	.949	397	.000
Multidimensional Scale of Perceived Social Support (MSPSS)	.097	397	.000	.962	397	.000
Satisfaction with Life Scale (SWLS)	.092	397	.000	.966	397	.000

Note. a. Lilliefors Significance Correction

Figure F1

Histogram for Variable of Fear of Uncertainty

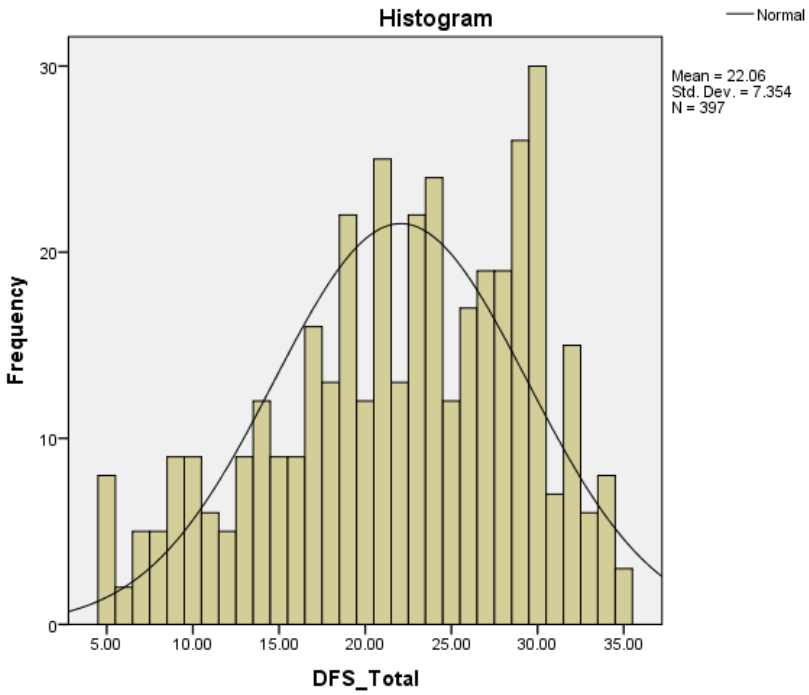


Figure F2

Histogram for Variable of Academic Self-Efficacy

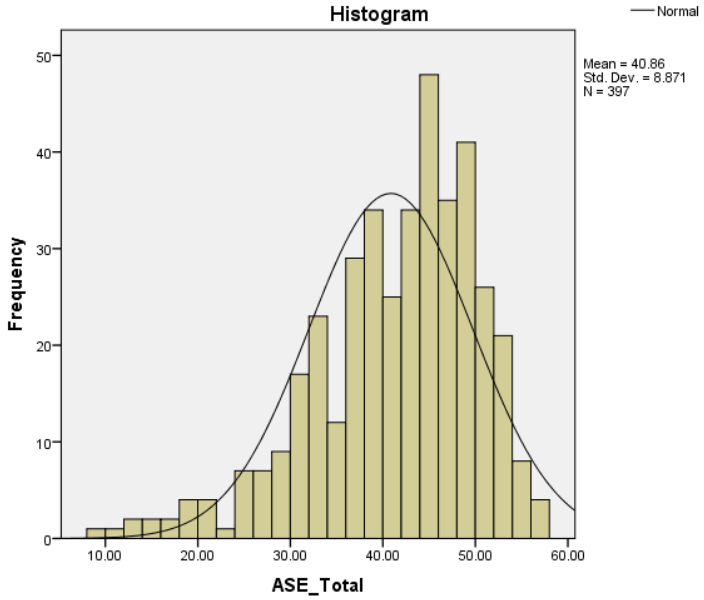


Figure F3

Histogram for Variable of Perceived Social Support

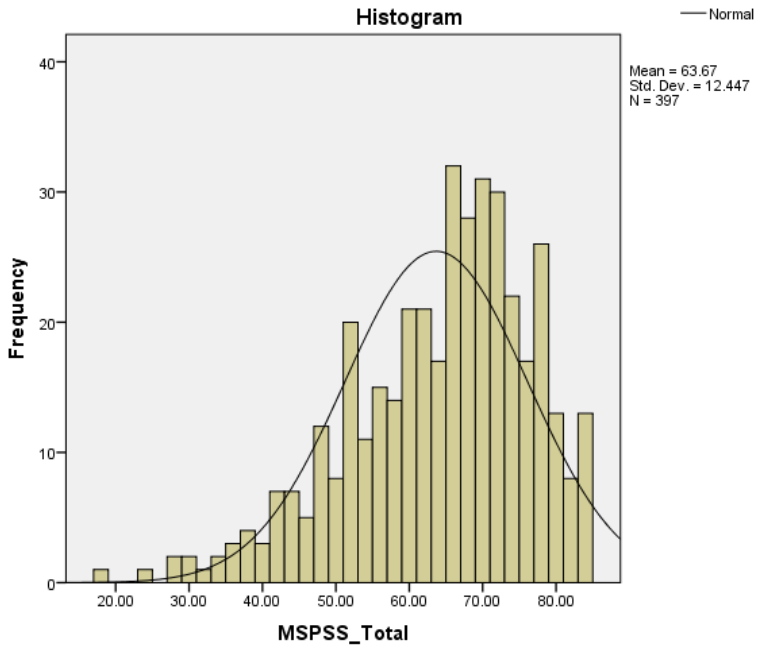


Figure F4

Histogram for Variable of Life Satisfaction

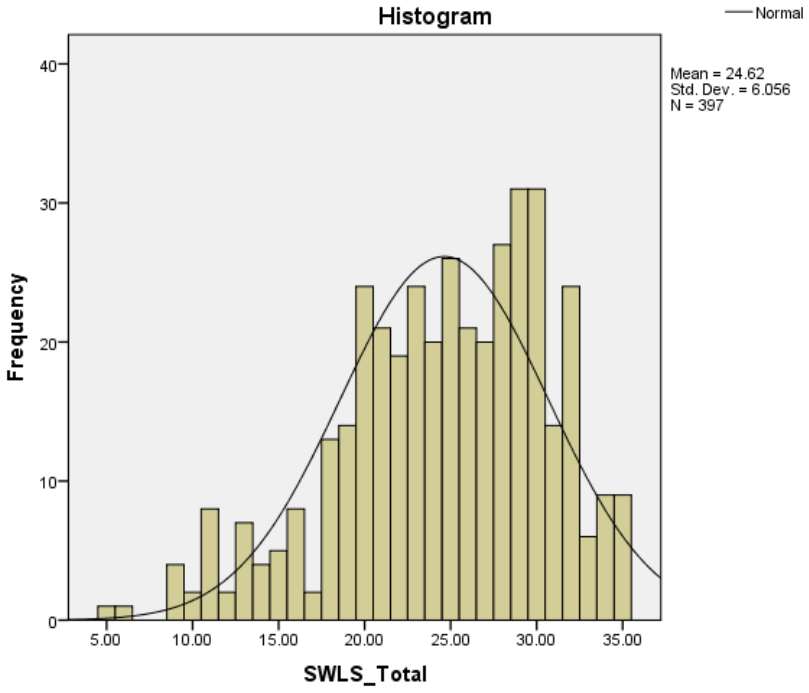


Figure F5

Q-Q Plot for Variable of Fear of Uncertainty

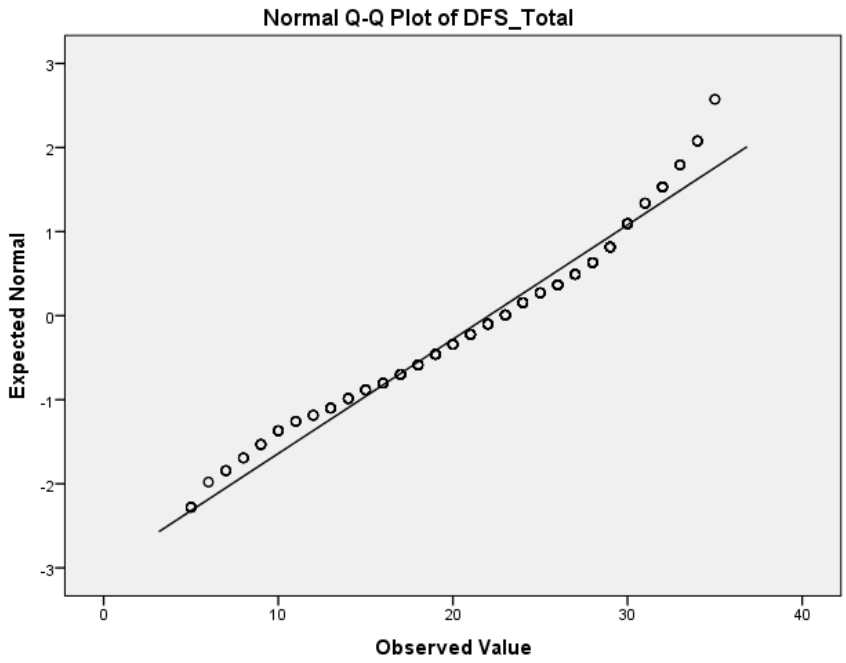


Figure F6

Q-Q Plot for Variable of Academic Self-Efficacy

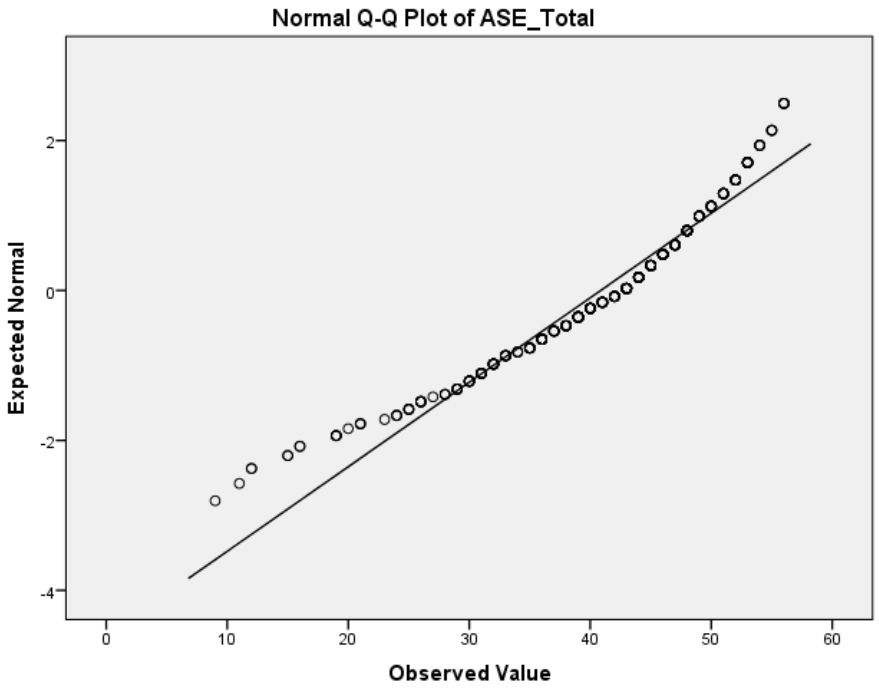


Figure F7

Q-Q Plot for Variable of Perceived Social Support

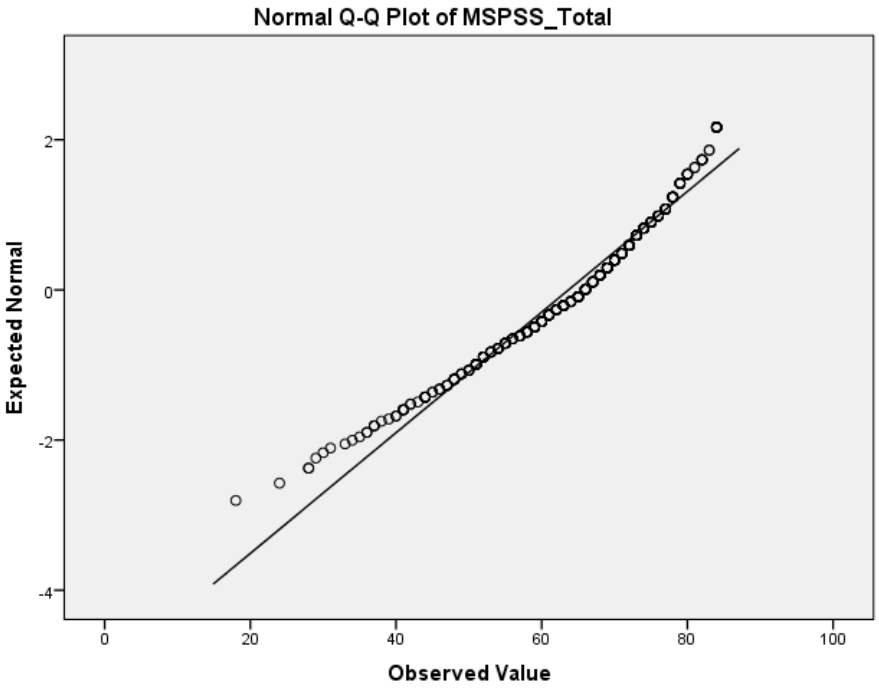
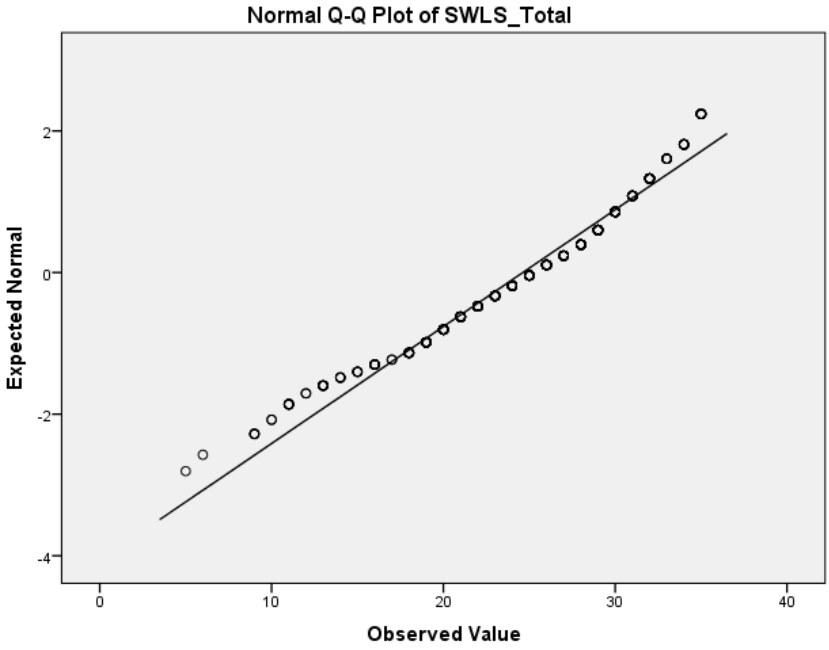


Figure F8

Q-Q Plot for Variable of Life Satisfaction



Appendix G

Assumption of Linear Regression

Figure G1

Scatterplot Showing Linearity Between Fear of Uncertainty and Life Satisfaction

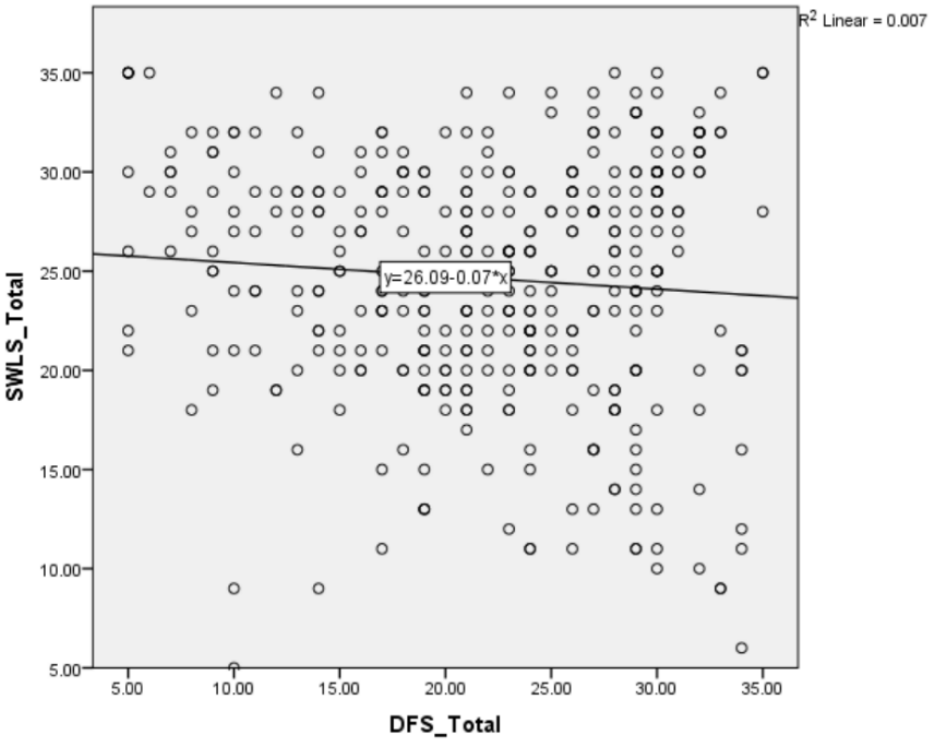


Figure G2

Scatterplot Showing Linearity Between Academic Self-Efficacy and Life Satisfaction

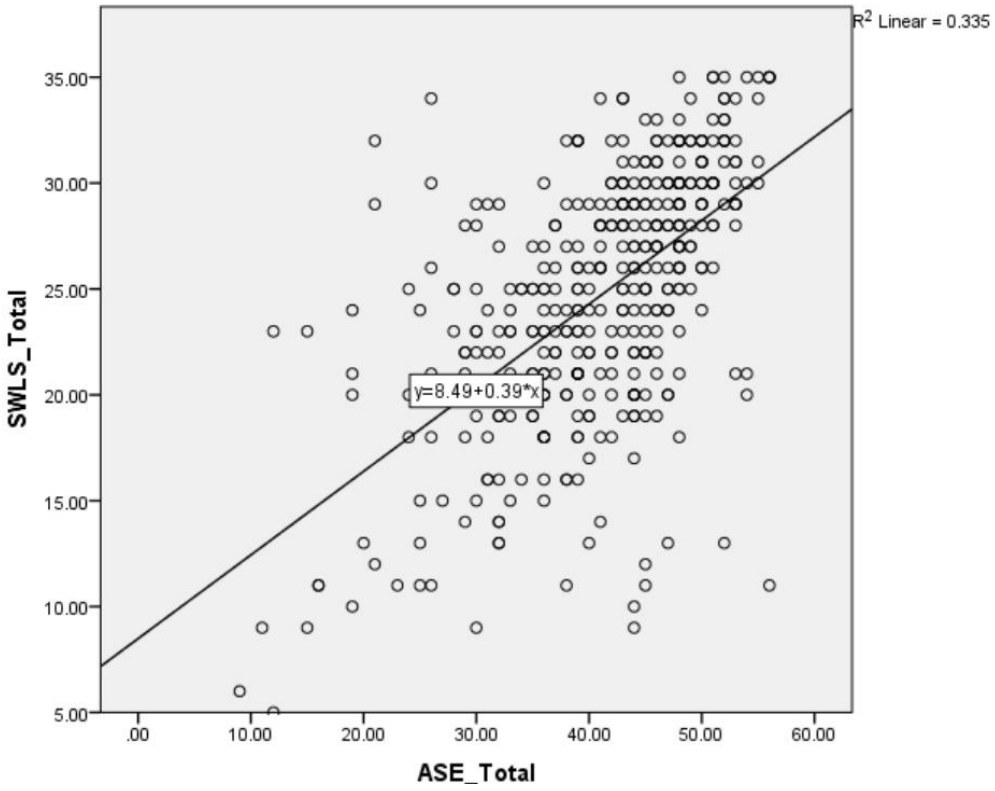


Figure G3

Scatterplot Showing Linearity Between Perceived Social Support and Life Satisfaction

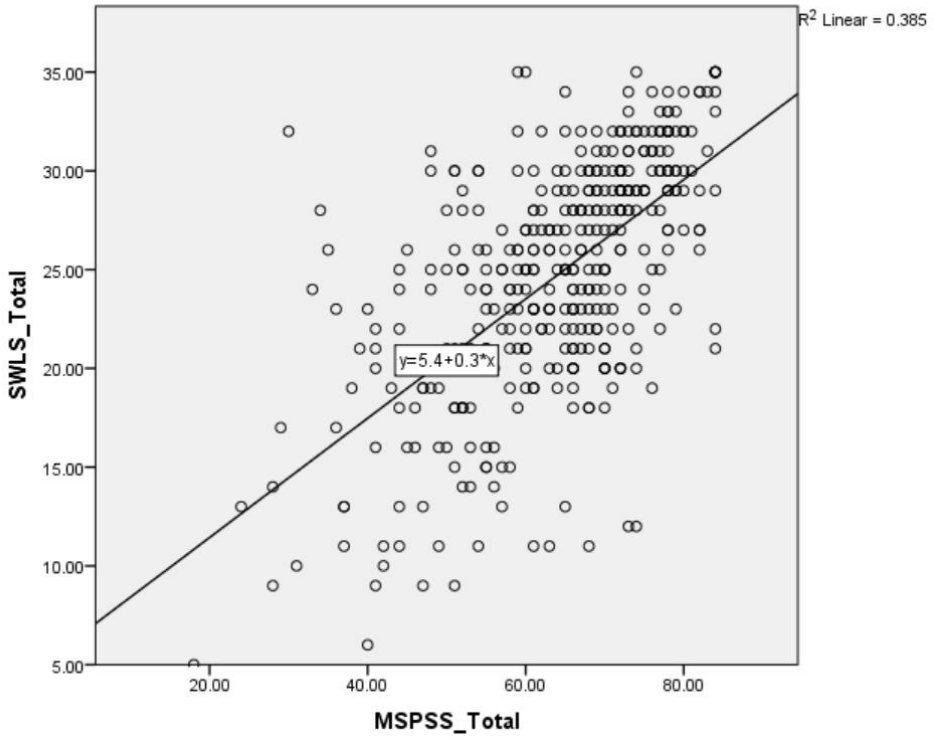


Figure G4

Scatterplot of Residuals Versus Predicted Values for Fear of Uncertainty and Life Satisfaction

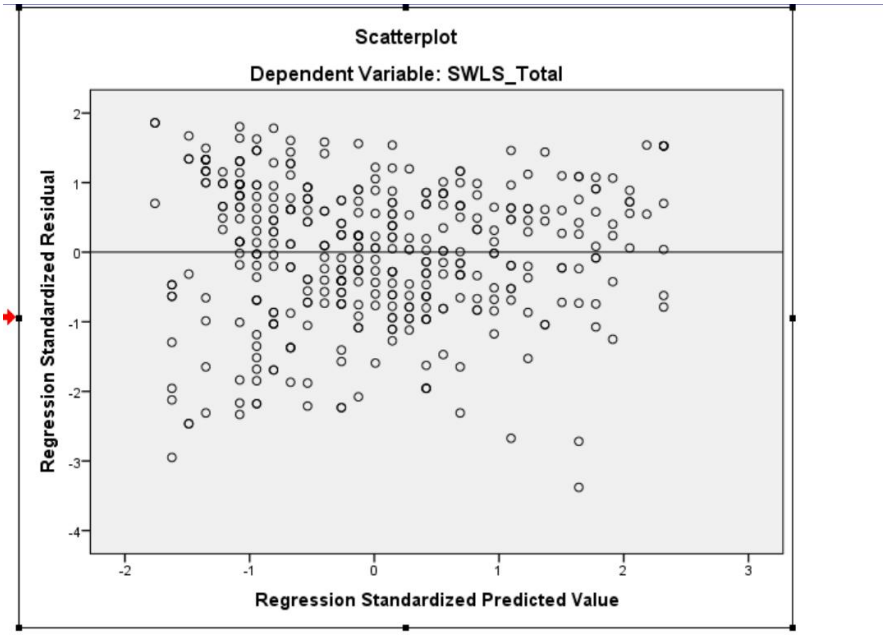


Figure G5

Scatterplot of Residuals Versus Predicted Values for Academic Self-Efficacy and Life Satisfaction

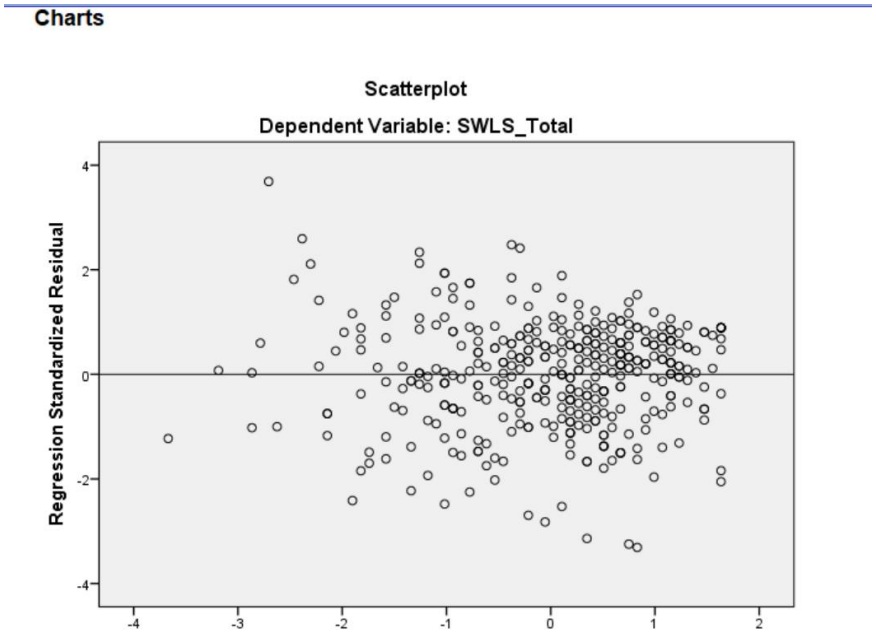


Figure G6

Scatterplot of Residuals Versus Predicted Values for Perceived Social Support and Life Satisfaction

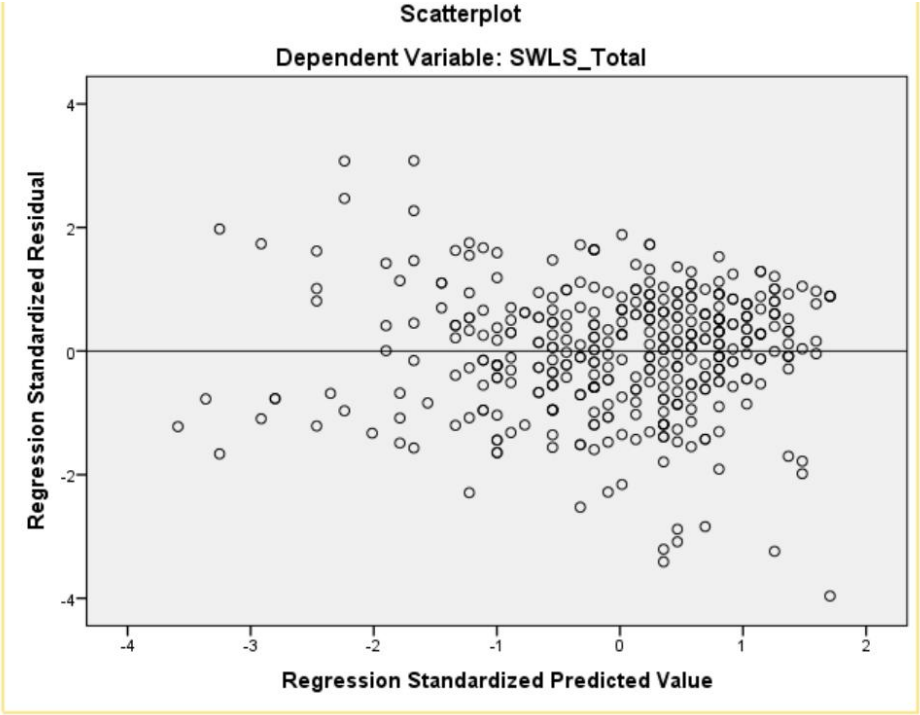


Table G1

Durbin-Watson Test between Fear of Uncertainty and Life Satisfaction

Model	Durbin-Watson
1	1.78

Note. Dependent variable= life satisfaction; independent variable= fear of uncertainty

Table G2

Durbin-Watson Test between Academic Self-Efficacy and Life Satisfaction

Model	Durbin-Watson
1	1.77

Note. Dependent variable= life satisfaction; independent variable= academic self-efficacy

Table G3

Durbin-Watson Test between Perceived Social Support and Life Satisfaction

Model	Durbin-Watson
1	1.76

Note. Dependent variable= life satisfaction; independent variable= perceived social support

Table G4

Casewise Diagnostics between Fear of Uncertainty and Life Satisfaction

Casewise Diagnostics[a]

Case Number	Std. Residual	SWLS_Total	Predicted Value	Residual
5	-2.464	9.00	23.8957	-14.89571
37	-2.718	9.00	25.4284	-16.42835
52	-3.380	5.00	25.4284	-20.42835
57	-2.464	9.00	23.8957	-14.89571
165	-2.233	11.00	24.4954	-13.49544
178	-2.078	12.00	24.5621	-12.56208
179	-2.332	10.00	24.0956	-14.09562
216	-2.233	11.00	24.4954	-13.49544
221	-2.674	9.00	25.1618	-16.16181
248	-2.123	11.00	23.8291	-12.82907
274	-2.310	11.00	24.9619	-13.96190
294	-2.950	6.00	23.8291	-17.82907
310	-2.211	11.00	24.3622	-13.36217
317	-2.310	10.00	23.9623	-13.96235
354	-2.178	11.00	24.1623	-13.16226
374	-2.167	11.00	24.0956	-13.09562
382	-2.178	11.00	24.1623	-13.16226

a. Dependent Variable: SWLS_Total

Table G5

Case Summaries between Fear of Uncertainty and Life Satisfaction

Case Summaries[a]

			Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value
DFS_outliers	0	1	5	2.21302	.02502	.00559
		2	37	2.68976	.03504	.00679
		3	52	2.68976	.05419	.00679
		4	57	2.21302	.02502	.00559
		5	165	.06956	.00675	.00018
		6	178	.01632	.00556	.00004
		7	179	1.16568	.01502	.00294
		8	216	.06956	.00675	.00018
		9	221	1.20145	.02007	.00303
		10	248	2.63610	.02105	.00666
		11	274	.47355	.00999	.00120
		12	294	2.63610	.04066	.00666
		13	310	.28700	.00798	.00072
		14	317	1.82692	.01930	.00461
		15	354	.89053	.01141	.00225
		16	374	1.16568	.01296	.00294
		17	382	.89053	.01141	.00225
		Total N		17	17	17
	1	1	1	.06956	.00023	.00018

Table G6

Casewise Diagnostics between Academic Self-Efficacy and Life Satisfaction

Casewise Diagnostics[a]

Case Number	Std. Residual	SWLS_Total	Predicted Value	Residual
5	-2.292	9.00	20.3367	-11.33667
14	-2.281	13.00	24.2855	-11.28550
30	3.081	34.00	18.7571	15.24287
149	2.470	29.00	16.7827	12.21729
175	-2.159	14.00	24.6804	-10.68039
176	-2.840	13.00	27.0497	-14.04969
178	-2.883	12.00	26.2599	-14.25992
212	-3.239	13.00	29.0241	-16.02411
221	-3.409	9.00	25.8650	-16.86504
248	-3.963	11.00	30.6036	-19.60364
283	2.273	30.00	18.7571	11.24287
310	-2.526	11.00	23.4957	-12.49574
317	-3.207	10.00	25.8650	-15.86504
319	3.076	32.00	16.7827	15.21729
382	-3.085	11.00	26.2599	-15.25992

a. Dependent Variable: SWLS_Total

Table G7

Case Summaries between Academic Self-Efficacy and Life Satisfaction

Case Summaries[a]

			Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value
ASE_outliers	.00	1	5	1.49826	.01676	.00378
		2	14	.00937	.00665	.00002
		3	30	2.80536	.04648	.00708
		4	149	5.01101	.04771	.01265
		5	175	.00025	.00590	.00000
		6	176	.47918	.01515	.00121
		7	178	.21789	.01283	.00055
		8	212	1.57712	.03456	.00398
		9	221	.12536	.01657	.00032
		10	248	2.91290	.07910	.00736
		11	283	2.80536	.02529	.00708
		12	310	.10385	.00892	.00026
		13	317	.12536	.01467	.00032
		14	319	5.01101	.07402	.01265
		15	382	.21789	.01469	.00055
		Total N		15	15	15
	1.00	1	1	.33583	.00150	.00085

Table G8

Casewise Diagnostics between Perceived Social Support and Life Satisfaction

Casewise Diagnostics[a]

Case Number	Std. Residual	SWLS_Total	Predicted Value	Residual
5	-2.227	9.00	19.5917	-10.59167
14	-2.021	13.00	22.6104	-9.61042
49	2.109	26.00	15.9692	10.03082
53	2.593	28.00	15.6673	12.33269
84	2.335	31.00	19.8935	11.10645
96	-2.052	21.00	30.7610	-9.76102
113	2.125	30.00	19.8935	10.10645
146	-3.310	12.00	27.7423	-15.74228
147	-2.528	13.00	25.0254	-12.02541
150	3.688	32.00	14.4598	17.54019
165	-2.251	11.00	21.7048	-10.70479
178	-3.247	12.00	27.4404	-15.44040
180	2.478	35.00	23.2142	11.78584
221	-2.481	9.00	20.7992	-11.79917
248	-3.139	11.00	25.9310	-14.93103
294	-2.414	6.00	17.4786	-11.47855
314	2.415	35.00	23.5160	11.48396
354	-2.822	11.00	24.4217	-13.42166
382	-2.695	11.00	23.8179	-12.81791

a. Dependent Variable: SWLS_Total

Table G9

Case Summaries between Perceived Social Support and Life Satisfaction

Case Summaries[a]

			Case Number	Mahalanobis Distance	Cook's Distance	Centered Leverage Value
MSPSS_outliers	0	1	5	1.79433	.01773	.00453
		2	14	.28740	.00667	.00073
		3	49	5.30678	.03656	.01340
		4	53	5.68340	.05868	.01435
		5	84	1.58554	.01802	.00400
		6	96	2.66726	.01986	.00674
		7	113	1.58554	.01492	.00400
		8	146	.68847	.02352	.00174
		9	147	.01137	.00819	.00003
		10	150	7.31898	.14902	.01848
		11	165	.60392	.01033	.00153
		12	178	.56160	.02091	.00142
		13	180	.14093	.00888	.00036
		14	221	1.03664	.01597	.00262
		15	248	.12088	.01400	.00031
		16	294	3.61733	.03475	.00913
		17	314	.08706	.00803	.00022
		18	354	.00292	.01011	.00001
		19	382	.04611	.00962	.00012
		Total N		19	19	19