A STUDY OF THE RELATIONSHIP BETWEEN NEGATIVE AND POSITIVE AUTOMATIC THOUGHTS AND STUDENT'S LIFE SATISFACTION AMONG MALAYSIAN UNDERGRADUATE STUDENTS

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A study of the relationship between negative and positive automatic thoughts and coping skills and students' life satisfaction among undergraduate students in Malaysia

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APPROVAL FORM

This research paper attached here to, entitled “A study of the relationship between negative and positive automatic thoughts and coping skills and students’ life satisfaction among undergraduate students in Malaysia” prepared and submitted by Joshua Mok Lun Hua in partial fulfilment of the requirements for the Bachelor of Social Science (Hons) Guidance and Counseling is hereby accepted.

_____ Date:_____

Supervisor

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Abstract

In recent years, life satisfaction among undergraduates has gained scholarly attention and students who experienced low levels of life satisfaction may lead to depression. This study aims to investigate the relationship between negative and positive automatic thoughts, coping skills and students' life satisfaction among undergraduate students in Malaysia. Using purposive sampling method, a cross-sectional study was conducted among 139 participants across Malaysia through online survey. There were less male (*n*=59, 42.2%) than female (*n*=80, 57.6%) The instruments used were ATQ-8 Automatic Thought Questionnaire (ATQ), Automatic Thought Questionnaire-Revised Positive (ATQ-RP), Brief COPE Inventory (BCI), and Satisfaction with Life Scale (SWLS). Findings reported that negative automatic thought was negatively correlated with life satisfaction where positive automatic thoughts was positively related to life satisfaction. On the other hand, adaptive coping was found to be correlated with life satisfaction. However, there was no correlation between maladaptive coping and life satisfaction. Only negative automatic thoughts (negatively), positive automatic thoughts (positively) and adaptive coping (positively) were found to predict life satisfaction. This research could be further explored with different variables to investigate the potential factors contributing to life satisfaction among undergraduate students in Malaysia context.

Keywords : Automatic thoughts, Coping skills, Life satisfaction, Undergraduate students.

DECLARATION

I 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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List of Abbreviations

Abbreviations

1.	MAC	Maladaptive Coping
2.	AC	Adaptive Coping
3.	NAT	Negative Automatic Thoughts
4.	PAT	Positive Automatic Thoughts
5.	LS	Life Satisfaction
6.	SWLS	Satisfaction with Life Scale

Chapter I

Introduction

Background of study

Automatic thoughts are the thoughts that come into one's mind without conscious control to it, which is proposed by Beck (1976). Past studies had found that lower frequency of negative automatic thoughts is significantly associated with better adaptability ($p < .001$) towards the pandemic concerns (Besser et al., 2020). Whereas more frequent positive automatic thoughts is significantly associated with better adaptability ($p < .0001$) towards the pandemic concerns (Besser et al., 2020). Coping skills are often understood as one's ability to use strategies to cope with negative events in life (Jauregui et al., 2017). According to (Cassoni et al., 2017), life satisfaction can be defined as a general indicator of the quality of life by each individual. However, during the COVID-19 pandemic, people are experiencing lockdown and restricted movement worldwide, this significantly decreases the amount of social activity and social participation (Ammar et al., 2020). Besides that, individuals get to experience online learning and working but also increase their concerns regarding academic concerns, time management skills, and unstable connections (Rasiah et al., 2020). Hence, an individual's ability to cope with the new learning environment and new norm is important. Meaning, people with higher levels of negative automatic thoughts are correlated to lower ability to cope with many concerns during COVID-19 pandemic and vice versa.

Automatic thoughts

Automatic thoughts is one of the concepts proposed by Beck (1976). According to Beck (1976), when a person holds negative automatic thoughts, they become depressed. Beck (1976) identified three cognition levels: core beliefs, dysfunctional assumptions, and negative automatic thoughts. Negative automatic thoughts often involve self-limiting or self-defeating beliefs that are faulty (Beck, 1976). Self-limiting are the negative assumptions about self and world. On top of that, these beliefs and assumptions are negative and unhelpful (Chevarie-Cossette, 2019). In regard to this issue, undergraduate students have to deal with many problems in their life, as they have to hold more responsibilities in various dimensions of their lives. As the responsibilities become more complex during university life, the level of depression and anxiety increases (Islam et al., 2018). The expansion of such issues can lead to more difficult situations for students. Findings show that there is a significant correlation between automatic thoughts and depression (Choon et al., 2014; Buschmann et al., 2018; Fulton, 2020; Liang et al., 2017; Park, 2016; Riley, 2017; Tang, 2018). It was reported that depression is significantly associated with lower levels of life satisfaction (Fergusson et al., 2015; Ghazwin et al., 2016). Findings showed that depression negatively correlates to life satisfaction of Malaysians (Foroughi et al., 2019). In short, negative automatic thoughts will ultimately decrease one's life satisfaction. This is because of COVID-19 related distress, such as difficulty in online learning and increased conflict with parents, and reduced social contacts (Magson et al., 2020).

Not only that, positive automatic thoughts are associated with increased life satisfaction (Arimitsu & Hofmann, 2015; Kwok et al., 2016). Moreover, positive automatic thoughts are significant predictors to subjective wellbeing among people with schizophrenia (Takeda et al., 2019). Similarly, the study also revealed that positive automatic thoughts predicted higher motivation and energy. In other words, higher frequency of positive automatic thoughts will motivate one to be more motivated to do things (Takeda et al., 2019). In contrast, lower levels of positive automatic thoughts will lack the will to do things (Takeda et al., 2019). Positive automatic thoughts predict positive affect among children (Tsumara et al., 2016). Meaning, children who have more frequent positive thought will result in more frequent positive emotion (Tsumara et al., 2016).

Coping Skills

According to (Jauregui et al., 2017), coping styles refers to one's ability to use strategies to cope with negative events in life. Generally, there are two types of coping strategies, maladaptive and adaptive. Maladaptive strategies are unhelpful and will negatively affect the mental wellbeing of an individual. On the flip side, adaptive coping uses healthy strategies to tackle problems and achieve better outcomes compared to maladaptive coping skills (Wang et al., 2020). Besides that, maladaptive coping styles are found to have an association with negative emotions such as anxiety and depression. Conversely, adaptive coping skills are related with position emotions such as happiness (Wang et al., 2020). In short, individuals who practice maladaptive coping strategies tend to have frequent negative emotions and vice versa.

Moreover, maladaptive coping skills are associated with lower levels of life satisfaction, whereas adaptive coping skills are significantly associated with higher levels of

life satisfaction among undergraduate students (Lardier et al., 2020). Other than that, the same study also revealed that undergraduate students who used maladaptive coping skills to cope with stress are more likely to result in more distress (Lardier et al., 2020). Studies found that the adaptive coping skills that undergraduate students adopt are to engage in personal activities, hobbies and learning new skills (George & Thomas, 2020). This helps them to boost their emotions, reduce stress and distract them from negative thoughts (George & Thomas, 2020). Besides that, adaptive coping skills are a significant mediator between COVID-19 related stress and acute stress disorder among undergraduate students (Ye et al., 2020). In short, past findings are consistent among young adult samples (Lardier et al., 2020; Wang et al., 2020), showing that individuals who use maladaptive coping are highly associated with lower life satisfaction and vice versa.

Life Satisfaction

In recent years, life satisfaction among undergraduates has gained scholarly attention. According to Cleafas (2019), social interactions such as participating in school societies was significantly associated with life satisfaction among undergraduates. Students who had lower levels of social interactions are correlated with lower levels of life satisfaction and depression (Cleafas, 2019). Besides that, academic motivation is found to have direct positive and significant correlation to life satisfaction among undergraduate students (Ozer & Schwartz, 2019). In addition, undergraduate students who have greater academic motivation are associated with greater self-regulation, better learning quality and academic performance (Ozer & Schwartz, 2019).

Moreover, Chui and Chan (2020) stated that positive thinking is associated with life satisfaction. In other words, Chui and Chan (2020) suggested that students should attend workshops to enhance positive thinking skills to better endure stress in university life.

However, the suggestion is lacking in the behavioral aspect after enhancing positive thoughts. Besides that, findings reported that family expectation negatively predicts life satisfaction among undergraduate students (Vautero et al., 2020). In contrast, family support positively predicts greater academic performance and higher life satisfaction. In short, family is an important factor that can contribute to a student's academic performance and life satisfaction (Vautero et al., 2020).

Hypothesis

1. There is a relationship between negative automatic thoughts and life satisfaction.

1a. There is the relationship between positive automatic thoughts and life satisfaction.

2. Automatic thoughts negatively predict life satisfaction.

2a. Negative automatic thoughts negatively predict life satisfaction.

2b. Positive automatic thoughts positively predict life satisfaction.

3. There is a relationship between maladaptive coping skills and life satisfaction.

3a. There is a relationship between adaptive coping skills and life satisfaction.

4. Coping skills predict life satisfaction.

4a. Maladaptive coping skills negatively predict life satisfaction.

4b. Adaptive coping skills positively predict life satisfaction.

5. There is a relationship between negative automatic thoughts and coping skills.

5a. There is a relationship between positive automatic thoughts and coping skills.

Research Objective

1. To examine the relationship between negative automatic thoughts and life satisfaction.

1a. To examine the relationship between positive automatic thoughts and life satisfaction.

2. To examine whether automatic thoughts predicts life satisfaction.

2a. To examine whether negative automatic thoughts negatively predict life satisfaction.

2b. To examine whether positive automatic thoughts positively predict life satisfaction.

3. To examine the relationship between maladaptive coping skills and life satisfaction.

3a. To examine the relationship between adaptive coping skills and life satisfaction.

4. To examine whether coping skills predict life satisfaction.

4a. To examine whether maladaptive coping skills negatively predict life satisfaction.

4b. To examine whether adaptive coping skills positive predict life satisfaction

5. To examine the relationship between negative automatic thoughts and coping skills.

5a. To examine the relationship between positive automatic thoughts and coping skills.

Research Question

1. Is there a relationship between negative automatic thoughts and life satisfaction?

1a. Is there a relationship between positive automatic thoughts and life satisfaction?

2. Do automatic thoughts predict life satisfaction?

2a. Do negative automatic thoughts negatively predict life satisfaction?

2b. Do positive automatic thoughts positively predict life satisfaction?

3. Is there a relationship between maladaptive coping skills and life satisfaction?

3a. Is there a relationship between adaptive coping skills and life satisfaction?

4. Do coping skills predict life satisfaction?

4a. Do maladaptive coping skills negatively predict life satisfaction?

4b. Do adaptive coping skills positively predict life satisfaction?

5. Is there a relationship between negative automatic thoughts and coping skills?

5a. Is there a relationship between positive automatic thoughts and coping skills?

Significance of Study

Theoretical Significance

Current study can provide theoretical significance by affirming the relationship between automatic thoughts, coping skills and life satisfaction among undergraduate students in Malaysia. Furthermore, it could provide insight and understanding for future research in automatic thoughts, coping skills and life satisfaction. In recent years, there is a lack of research regarding automatic thoughts, coping skills and life satisfaction among undergraduate students in Malaysia. Hence, this research study will help to fill in the research gap in Malaysia context. Besides that, undergraduates in Malaysia experienced controlled movement and online learning during the COVID-19 pandemic. Students faced uncertainty as the way of living had shifted and reduced social contacts (Ammar et al., 2020). Therefore, the levels of automatic thoughts, the coping skills and life satisfaction may differ because of the COVID-19 pandemic. With that said, this research helps to reaffirm the theory by comparing it with the context before and during the COVID-19 pandemic.

Practical Significance

Counsellors, educators, social workers can benefit from this research. Counsellors may come out with interventions programs that are related with automatic thoughts and coping skills to improve life satisfaction for undergraduates. Counsellors may also teach how to utilize adaptive coping skills to their clients. Social workers may help to spread the awareness regarding thoughts and coping skills with the goal of benefiting students. Social workers may utilize social media platforms to spread awareness as well. Educators may help and guide students to leverage their coping skills and tackle negative automatic thoughts. In addition, students can benefit from this study by obtaining an awareness of the factors that affect their life satisfaction. When they experience setbacks and challenges in life, they will know their negative thoughts can be a barrier to what they are facing and maladaptive coping skills would not be helpful. Thus, search for effective ways to tackle their thoughts and get a

clear mindset and use adaptive coping skills to tackle the problems. People able to identify automatic thoughts will result in better mental toughness (Parkes & Mallett, 2011). Undergraduate students who use adaptive coping skills are more likely to result in higher life satisfaction (Lardier et al., 2020; Wang et al., 2020). Students can endure challenges and eventually will accomplish better results. With that said, students might get better grades with the knowledge from this study. On top of that, students gain information that can be applied in many aspects of life. For example, being able to shift negative automatic thoughts can help them to view their circumstances in a more positive perspective. Beck and Beck (1995) stated that it is not sufficient to shift one's automatic thoughts instantly, one should use this technique in daily life. Thus, it is a kind of personal growth whereby students can be mindful of their thoughts and learn it as a skill for them to challenge their irrational beliefs.

Problem statement

According to United Nations Educational, Scientific and Cultural Organization [UNESCO] (2020), the average value of Malaysians enrolled for tertiary education was 37 percent in 2010 and increased to a maximum of 46.8 percent in 2016. As for the latest data, 43.1 percent of Malaysian young adults in 2019 enrolled in university.

In the U.S., one in five adults have mental health illness (National Alliance on Mental Illness [NAMI], 2019). In Malaysia, it was reported that almost 29.2% of Malaysian who are above 16-years-old have mental health issues (National Health and Morbidity Survey, 2015). According to Statista (2019), regarding mental health issues in Malaysia, 11% are young adults who aged 18-25 and only two percent adults who aged above 55 have mental health issues. Apart from that, university life can be challenging as the level of anxiety and stress spikes and experiencing more frequent negative thoughts and emotion (Bewick et al., 2010;

Regehr et al., 2013). Findings reported that negative automatic thoughts are correlated to anxiety (Wong, 2012). An adaptive coping strategy should be able to help students to endure the stress but maladaptive coping strategies are found to have an association with negative emotions as well (Wang et al., 2020). If a student uses maladaptive coping strategies will lead to more distress (Wang et al., 2020). With that said, students who could not cope with high levels of stress are more likely to result in decreased life satisfaction (Bayram & Bilgel, 2008; Samaha & Hawi, 2016). In other words, university life had brought more stress and higher levels of negative automatic thoughts. Ultimately, if coping skills are maladaptive, students tend to result in lower levels of life satisfaction. On the flip side, adaptive coping skills are significantly associated with higher levels of life satisfaction among undergraduate students (Lardier et al., 2020). Such situations can even lead to dropout or withdrawal of study (Bennett et al., 2018).

In the midst of COVID-19 pandemic, undergraduate students experienced the shift from physical classroom to online learning. This resulted in a completely different experience and a study reported that traditional physical classrooms were more effective than the online classroom (Adnan & Anwar, 2020). Online learning requires a great level of self-regulation and self-motivation (Adnan & Anwar, 2020; Chang & Fang 2020; Khalil et al., 2020; Means & Neisler, 2020). Students failed to stay motivated as there are too many distractions and a lack of physical interactions with peers (Means & Neisler, 2020). Chang and Fang (2020) stated that one of the main challenges is that students do not have great levels of self-regulation and failed to form online learning habits. Dealing with uncertainty during Covid-19 increases student's worries, such as infection, vaccines, changing policy by ministry, mode of study and lacking social life. As the concern is raised, undergraduate students might experience episodes of automatic thoughts. Whether the students can cope adaptively during

this COVID-19 pandemic is unclear. If students experience frequent negative automatic thoughts and exercise maladaptive coping strategies, they might have lower life satisfaction. Therefore, students' ability to cope with such concerns is a vital determinant for them to tackle these concerns and achieve a better wellbeing. If students are able to cope adaptively, they will have less worry and be in a better state to learn. Ultimately, achieve better academic results and life satisfaction (Lodi et al., 2017).

According to Shah (2018), Befrienders KL, a Suicide helpline, had a huge increase of calls and emails for the past 4 years in Malaysia. Majority of the callers are between the age of 21 to 30 and the second highest percentage are below 20. Reported that, majority of the callers are most likely to be university students as the reasons for suicidal ideation or attempt are relationship concerns, academic issues, financial concerns and mental health issues (Shah, 2018). On top of that, suicidal ideation and attempt is found to be a significant predictor for lower life satisfaction (Fergusson et al., 2015). Such situation can be explained with Beck's cognitive model. Negative automatic thoughts is a significant predictor of maladaptive coping skills (Batmaz et al., 2015). If undergraduate students who face various issues have more frequent negative automatic thoughts and using maladaptive coping skills will eventually lead to more distress (Lardier et al., 2020). Ultimately, they result in suicidal ideation and lower life satisfaction.

Research on automatic thoughts, coping skills and life satisfaction in Malaysia

There is a lack of research findings in the Malaysian context, Choon et al., (2014) reported that depressed adolescents hold negative automatic thoughts which will result in lower levels of life satisfaction and suicidal behavior.

Another study found that stress coping skills are significantly associated with quality of life among Malaysian nurses (Makabe et al., 2018). Besides that, a qualitative study conducted among mothers of chronic ill children (Nur Saadah et al., 2014). The researchers claim that as they observed, coping strategy is a major determinant for mothers to control their thoughts, emotions and behavior when enduring stress and ultimately caused decreased life satisfaction (Nur Saadah et al., 2014). Other than that, a study on coping strategies and life satisfaction was conducted among middle-aged malay women (Siti Marziah et al., 2013). Reported that positive coping strategy is positively and significantly correlated with life satisfaction (Siti Marziah et al., 2013). Lastly, coping strategy is found to be a significant mediator between personality traits and life satisfaction among adolescents who aged 18 to 21 years old (Sulaiman et al., 2013).

In order to understand and to increase life satisfaction among undergraduate students, it is important to identify the issues that contribute to life satisfaction. Also, this research aims to identify literature gaps by investigating the relationship between automatic thoughts and coping skills and life satisfaction. Among the past research in Malaysia context, it is clear that there is a lack of research findings regarding automatic thoughts, coping skills and life satisfaction among undergraduate students in Malaysia. Therefore, the aim of this study is to investigate the relationship between negative and positive automatic thoughts and coping skills and student's life satisfaction among undergraduate students in Malaysia.

Conceptual definition

Automatic thoughts. Automatic thoughts is a concept from cognitive behavioral therapy (CBT) and can be conceptually defined as the outcomes of existing schemas and it appears in peoples' daily lives (Beck & Dozois, 2011). It is named as automatic thought

because it automatically appears in the mind without a conscious thought process. Automatic thoughts can be impactful to a person as it appears in the form of mental images, phrases and words. Hence, it will affect a person's emotions and behavior. Moreover, automatic thoughts can be divided into negative and positive automatic thoughts (Beck & Dozois, 2011).

Negative automatic thought. Negative automatic thoughts are biased and often come from maladaptive cognitive schemas (Beck & Dozois, 2011). These automatic thoughts can be manifested in the form of self-referent speech, whereby people talk to themselves (Beck & Dozois, 2011; Kendal et al,. 1989). Negative automatic thoughts may cause depression (Choon et al., 2014; Buschmann et al., 2018; Fulton, 2020; Liang et al., 2017; Park, 2016; Riley, 2017; Tang, 2018), anxiety (Buschman et al., 2018; Mahmoud et al., 2015; Serin & Aydınoğlu, 2011). On top of that, negative automatic thoughts are considered as cognitive distortions (Beck, 1976).

Positive automatic thoughts. Positive automatic thoughts can help to balance the effects of negative automatic thoughts and stress (Boyraz & Lightsey, 2012). According to Boyraz and Lightsey (2012), people who constantly experience positive automatic thoughts, are more likely to react to stress by feeling lives are meaningful and people who have less positive automatic thoughts reported less meaningful. People with high levels of positive thoughts are found to be correlated with greater levels of happiness (Lightsey, 1994).

Coping Skills. According to (Jauregui et al., 2017), coping styles refers to one's ability to use strategies to cope with negative events in life. Generally, there are two types of coping strategies, maladaptive and adaptive. Maladaptive strategies are unhelpful and will negatively affect the mental wellbeing of an individual. On the flip side, adaptive coping uses

healthy strategies to tackle problems and achieve better outcomes compared to maladaptive coping skills (Wang et al., 2020).

Life satisfaction. According to (Cassoni et al., 2017), life satisfaction can be defined as a general indicator of the quality of life by each individual. Research on life satisfaction was mainly focusing on adult samples in early years. Then, researchers explored adolescents and children samples in the 1970s and 1980s (Cassoni et al., 2017). According to Diener et al., (1999), life satisfaction can be explained as one of the major components of subjective well-being (SWB). Diener et al., (1999) suggested that SWB focused on affective and cognitive components, which can be further explained with positive and negative affect. Other than that, life satisfaction has been found to have an association with the school environment, work, social relationships, and family (Cassoni et al., 2017). As previous researchers contributed such valuable findings, the multidimensional aspect of life satisfaction is developed by Hueber (1994).

Operational Definition

Negative Automatic thoughts. Negative automatic thoughts can be operationally defined with Automatic Thoughts Questionnaire-8 items (ATQ-8). It is a self-report scale that consists of 8 items. The scale uses a five-point Likert scale where 1 = not at all, 2 = sometimes, 3 = moderately often, 4 = often, and . It is found to have high internal consistency as the Cronbach alpha is .92 (Netemeyer et al., 2002). This means that the scales are statistically reliable. It is the shortened version of the ATQ 30-item questionnaire (Hollond & Kendall, 1980).

Positive Automatic thoughts. Positive automatic thoughts can be operationally defined with Automatic Thoughts Questionnaire-Revised Positive (ATQ-RP). It is a self-report scale that contains 10 positive items with a five-point Likert scale whereby 1 = not at all, 2 = sometimes, 3 = moderately often, 4 = often, and 5 = all the time. The higher the score indicates a greater frequency of positive thoughts. The researcher will measure the frequency of positive automatic thoughts for the past week. The Cronbach alpha was .91 which means it is very reliable (Burgess & Haaga, 1994). The correlation between ATQ-RP and Positive Automatic Thoughts Questionnaire (PATQ) was high, .74 (Burgess & Haaga, 1994).

Coping Skills. Coping skills can be operationally defined with Brief COPE Inventory (BCI) (Carver, 1997). This is a shorter version of the COPE inventory proposed by Carver (1997) as it consists of 28 items instead of 60 items (Carver, 1989). It measures the items with a four-point Likert scale such as 1 = I haven't been doing this at all 2 = a little bit 3 = A medium amount 4 = I've been doing this a lot. There are no reverse items. The Cronbach alpha was .81 which means it is very reliable (Mahmoud et al., 2015). This inventory was validated on 168 participants who had been impacted by a hurricane (Carver, 1997).

Life satisfaction Scale. Life Satisfaction can be operationally defined with Satisfaction with Life Scale by Pavot and Diener (1993). It consists of five items such as ‘In most ways my life is close to my ideal’, ‘I am satisfied with my life’ (Pavot & Diener, 1993). This is a seven-point Likert scale from 1 = Strongly disagree to 7 = Strongly agree. The scale has a Coefficient alpha of 0.87 for the scale and a 2-month test-retest stability coefficient of 0.82 (Pavot & Diener, 1993). The scale demonstrates great validity across scales with life circumstances and changes in those circumstances that should influence life evaluations (Diener et al., 2012).

Chapter 2

Literature Review

Life Satisfaction

Life satisfaction can be defined as a general indicator of the quality of life by each individual (Cassoni et al., 2017). Moreover, life satisfaction is positively associated with better overall physical health among undergraduate students (Antaramian & Lee, 2017). Past findings had shown that personality plays an important role in their undergraduates' life satisfaction. It was reported that undergraduate students with higher levels of authoritarian personality is significantly associated with higher levels of life satisfaction (Liu et al., 2019). Besides that, Lau and colleagues (2020) stated that both self-esteem and behavioral activation predicted life satisfaction among undergraduate students. Students who have higher self-esteem predicted higher levels of life satisfaction, same goes to behavioral activation (Lau et al., 2020).

Other than that, automatic thoughts are found to have association with life satisfaction. It was reported that a high level of negative automatic thoughts is associated with lower life satisfaction (Yárnoz-Yaben, 2014). Also, Lardier and colleagues (2020) highlighted that maladaptive coping skills are associated with lower levels of life satisfaction, whereas adaptive coping skills are significantly associated with higher levels of life satisfaction among undergraduate students.

In addition, undergraduate students who have higher life satisfaction are more likely to have fewer long-term health conditions (Antaramian & Lee, 2017). On top of that, findings show that life satisfaction is a predictor of self-rated health, physical health, and fewer long-term health conditions (Antaramian & Lee, 2017). Besides, improving undergraduate student's life satisfaction should help reduce the risks of mental health (Zhang et al., 2014). Besides that, students who have high life satisfaction significantly predict students to excel in

studies and achieve higher grades, better academic performance (Rand et al., 2020). Hence, it is important to examine automatic thoughts (thoughts) and coping skills (behavior) towards life satisfaction (feeling) as the Hot-Cross Bun model suggested.

Automatic Thoughts

There are various factors that accounted for automatic thoughts. A considerable number of findings had reported that rejective parenting style is highly correlated with children's negative automatic thoughts and self-esteem (Park et al., 2016). Another findings reported that a caring parenting style is mediated through positive automatic thoughts and overprotection predicted an increase of automatic thoughts (Fulton, 2020). Also, harsh parenting styles are correlated with increased negative automatic thoughts (Tang et al., 2018). These research highlighted that parenting styles play an important role in influencing individual's automatic thoughts. Moreover, scholarly articles investigated automatic thoughts and life satisfaction.

In recent years, a study conducted on negative automatic thoughts and life satisfaction between older and younger adults (Corlett & MacLeod, 2020). The study revealed that positive automatic thoughts had no correlation to life satisfaction on both old and young adults (Corlett & MacLeod, 2020). On the other hand, negative automatic thoughts had no association to life satisfaction on young adults. However, negative automatic thoughts were significantly associated with life satisfaction with older adults. As adults age, their negative automatic thoughts become more related to lower levels of life satisfaction (Corlett & MacLeod, 2020).

However, adults who have average levels of negative automatic thoughts are found to be associated with lower levels of life satisfaction (Yárnoz-Yaben, 2014). This highlights the inconsistency among literatures as Yárnoz-Yaben (2014) stressed that an average level of

negative automatic thoughts is able to explain the possibility of lower levels of life satisfaction among adults. However, some argued that, high level of negative automatic thoughts is associated with lower life satisfaction but only for older adults. There was no relationship between automatic thoughts and life satisfaction among young adults (Corlett & MacLeod, 2020). This inconsistency probably is because of the different context and the impact of COVID-19 pandemic.

Furthermore, the Hot Cross Bun model stated that thoughts can affect behavior (Greenberger & Padesky, 1995). With that said, negative automatic thoughts may have association with how a person copes with their circumstances. Negative automatic thoughts are weakly associated with lower frequency of adaptive coping skills among children and adults (Magson, 2019). Meaning, negative automatic thoughts do not have a strong relationship to lower use of adaptive coping skills. The study does not examine positive automatic thoughts, only highlights negative automatic thoughts and coping skills (Magson, 2019). However, Sheerin and colleges (2018) argued that negative automatic thoughts are significantly associated with adaptive coping strategies among adults. This could due to the effects of culture as certain types of coping strategies are used more frequently (Sheerin et al., 2018).

In short, there are contradictory findings from different researchers in automatic thoughts (negative and positive) and life satisfaction and coping skills.

Coping Skills

Coping skills refers to one's ability to use strategies to cope with negative events in life. Individuals may behave in two types of coping strategies, maladaptive and adaptive. Maladaptive coping consists of behavioral disengagement, denial, substance abuse and etc (Carver, 1997). Whereas adaptive coping strategies consist of actively coping with the issue,

planning, seeking for support and resources etc (Carver, 1997). Maladaptive strategies are unhelpful and will negatively affect the mental wellbeing of an individual. On the flip side, adaptive coping uses healthy strategies to tackle problems and achieve better outcomes compared to maladaptive coping skills (Wang et al., 2020). During the COVID-19 pandemic, Volk and colleagues (2021) conducted a study that revealed the relationship between personality traits and coping skills. It was reported that multiple personality traits are directly linked to coping skills among young adults (Volk et al., 2021). Also, demographic factors (income, age, gender) can have association with coping skills (Volk et al., 2021). Furthermore, coping skills may have association with life satisfaction. A study among adults found that coping skills moderates between work-family spillover and life satisfaction (Sirgy et al., 2019). It was reported that less frequent use of adaptive coping strategy significantly moderates between work-family spillover and life satisfaction (Sirgy et al., 2019). Meaning, individuals who use more adaptive coping skills are more likely to cope with the transition of moods, stress and emotions from work to family. Ultimately result in higher life satisfaction (Sirgy et al., 2019). In short, adaptive coping skills can be a crucial indicator for a better life satisfaction when individuals face circumstances.

Other than that, adults who use maladaptive coping skills may have a higher chance of decreased life satisfaction, happiness and significantly increase levels of anxiety and rate of depression (Stapleton et al., 2020). According to Wang and Yip (2020), adolescents who engage in adaptive coping skills are able to cope better with stress and are more likely to have greater life satisfaction. This is consistent with another study conducted by Abu-Raiya and colleagues (2020). Maladaptive coping skills were associated with lower life satisfaction among adult samples (Abu-Raiya et al., 2020). Abu-Raiya and colleagues (2020) added that individuals who cannot solve their difficult situations for a long time are more likely to have lower life satisfaction. These findings are consistent with adolescent samples. However,

Samios and colleagues argued that adaptive coping skills have no association with life satisfaction (Sheerin et al., 2018). This could due to the levels of self-efficacy of the individuals. The self-efficacy in carrying out the coping strategies might play an important role to determine whether individuals are confident to carry out their coping skills (Sheerin et al., 2018). In a nutshell, maladaptive and adaptive coping skills may have a relationship on an individual's life satisfaction. However, whether it applies to Malaysia context will be investigated in this research study.

Automatic Thoughts and Coping Skills

According to Beck (1976), negative automatic thoughts may affect people's way of interpreting their circumstances and result in maladaptive coping styles. Undergraduate students who experience higher levels of negative automatic thoughts could be due to higher levels of stress (Chaló et al., 2017). Past findings among undergraduate students reported that the ability to challenge one's negative automatic thoughts is significantly related to the ability to use adaptive coping skills (Gabrys et al., 2018). As CBT suggested that everyone has negative automatic thoughts and it happens unconsciously. Hence, this study stressed that students who have better control of their negative automatic thoughts, by challenging and replacing them, will reduce it and significantly associated with adaptive coping skills (Gabrys et al., 2018). Ultimately, they will cope better in stressful situations. In contrast, students who have lower control are stuck in the repetitive negative automatic thoughts and more likely to use maladaptive coping skills (Gabrys et al., 2018). Moreover, negative automatic thoughts are found to be associated and a significant predictor of maladaptive coping skills (Mahmoud et al., 2015). On the other hand, positive automatic thoughts are also a significant predictor for adaptive coping skills (Mahmoud et al., 2015). This reflects the cognitive and behavioral component from the Hot-Cross Bun model by (Greenberger & Padesky, 1995). However,

there were some findings which showed no impact between these two variables. With that said, negative or positive automatic thoughts may have association with maladaptive or adaptive coping skills among undergraduate students.

Coping Skills and Life Satisfaction

Undergraduate students who are able to cope adaptively in their stressor, circumstances and concerns are associated with higher levels of life satisfaction (Maier & Surzykiewicz, 2020). This finding is consistent with Limonero and colleagues (2012), reported that adaptive coping skills are associated with higher levels of life satisfaction among undergraduates. In contrast, students who are unable to practice adaptive coping skills, are more likely to have lower life satisfaction (Limonero et al., 2012). Moreover, maladaptive coping skills are associated with lower levels of life satisfaction, whereas adaptive coping skills are significantly associated with higher levels of life satisfaction among undergraduate students (Lardier et al., 2020). Also, undergraduate students who used maladaptive coping skills to cope with stress are more likely to result in more distress (Lardier et al., 2020). Meaning, students who used maladaptive coping skills lead to more distress as this coping strategy is not effective and do not help to solve problems. Ultimately, students may find themselves in a more stressful situation which explains a lower level of life satisfaction. Surprisingly, these findings were inconsistent with Mahmoud and colleagues' (2015) study. It was reported that both adaptive coping and maladaptive coping but was not associated with life satisfaction (Mahmoud et al., 2015). In general, the findings between coping skills and life satisfaction were somewhat inconsistent thus this study aims to clarify the relationship between coping skills and life satisfaction among undergraduate samples.

Automatic Thoughts and Life Satisfaction

In recent years, there are a considerate amount of empirical findings of automatic thoughts and life satisfaction. A study conducted among young adults reported that higher levels of positive automatic thoughts and lower levels of negative automatic thoughts are associated with higher levels of life satisfaction (Proctor et al., 2016). Thus, individuals who have acquired such characteristics are the ones who become fully functioning people (Proctor et al., 2016). This finding is consistent with Ruiz and colleagues (2019). Negative automatic thoughts are found to be significantly associated with negative automatic thoughts among undergraduate students (Ruiz et al., 2019). Students who hold more frequent negative automatic thoughts tend to perceive their circumstances, academic stress and relationship issues negatively. Hence, they cannot match with what they want and what they have because they are trapped in their negative vicious cycle. As QOL theory suggested that the gap between the 'have,' and the 'wants' will determine an individual's level of satisfaction (Frisch, 2006). However, another study revealed that positive automatic thoughts had no correlation to life satisfaction on young adults (Corlett & MacLeod, 2020). On the other hand, negative automatic thoughts had no association to life satisfaction among young adults (Corlett & MacLeod, 2020). Hence, there is certain inconsistency among the past findings.

On the other hand, positive automatic thoughts are found to be the mediator between self-compassion and life satisfaction (Arimitsu & Hofmann, 2015). On top of that, increased self-compassion and self-esteem would result in more positive automatic thoughts and fewer negative automatic thoughts (Arimitsu & Hofmann, 2015). Hence, a higher degree of self-compassion and self-esteem will result in higher levels of positive thoughts and more likely to have higher levels of life satisfaction (Arimitsu & Hofmann, 2015). This can be supported

by the QOL theory as one of the major domains of life satisfaction is self-esteem (Frisch, 2004). Moreover, positive cognition and life satisfaction are found to be consistent with Hungarian culture. People with positive cognition had higher levels of well-being and optimism (Patakiné Bősze et al., 2020). However, the positive automatic thoughts do not have correlation to life satisfaction (Patakiné Bősze et al., 2020). This findings is inconsistent with Seo and colleagues (2018), positive cognition was found to be associated with life satisfaction among undergraduate students in Korea. Whereas in Chinese undergraduate students, Chui and Chan (2020) stated that positive thinking moderates stress and life satisfaction. Meaning, students with higher degrees of positive cognition are more likely to have higher life satisfaction under stressful situations (Chui & Chan, 2020). This is because when students are to react positively under distress, the gap between have and wants are lesser, thus higher life satisfaction. Among previous findings, some reported that automatic thoughts predict life satisfaction, but some stated positive automatic thoughts have no correlation, therefore, there is an inconsistency among literature.

Prediction of Automatic Thoughts, Coping Skills and Life Satisfaction

A cross-sectional online survey is conducted among undergraduate students, 18-24 (Mahmoud et al., 2015). The instrument used to measure life satisfaction is the Multidimensional Student Life Satisfaction Scale (MSLSS), measuring across the five domains of life satisfaction. Mahmoud et al., (2015) stated that negative automatic thoughts is found to be a significant predictor of life satisfaction ($p < .0001$) (Mahmoud et al., 2015). Also, lower levels of negative automatic thoughts can reduce maladaptive coping styles (Mahmoud et al., 2015). Furthermore, negative automatic thoughts were found to be a significant predictor of life satisfaction among young adults (Yavuzer & Karata, 2017). Young adults who have higher life satisfaction would perceive their circumstances positively

(Yavuzer & Karata, 2017). As positive thoughts can result in positive emotions and behavior (Beck, 1976), thus, individuals are more likely to cope better in life events. This also shows that the effects of automatic thoughts are similar among different age ranges. However, another study revealed that positive automatic thoughts had no prediction of life satisfaction in young adults (Corlett & MacLeod, 2020). On the other hand, negative automatic thoughts also had no prediction of life satisfaction among young adults (Corlett & MacLeod, 2020). Hence, there is certain inconsistency among the past findings.

Cabras and Mondo's (2018) study reported that coping skills significantly predict undergraduate's life satisfaction. Adaptive coping skills predicted higher levels of life satisfaction. In contrast, maladaptive coping skills predicted lower levels of life satisfaction ($p < .001$) (Cabras & Mondo's, 2018). Students may experience academic distress and using adaptive coping skills, may engage in relaxing activities. This provides them a detachment from stressful situations and recharge. Ultimately, increasing undergraduate's life satisfaction as they are able to refresh themselves and continue to cope with their situations (Cabras & Mondo's, 2018). Furthermore, Dwivedi and Rastogi (2017) highlighted that adaptive coping strategy predicts life satisfaction among undergraduate students ($p < .05$). Adaptive coping will affect young adults' evaluation about their life. Also, they will be able to understand their capacity when dealing with future stressful events (Dwivedi & Rastogi, 2017). However, it was reported that both adaptive coping and maladaptive coping did not predicted with life satisfaction (Mahmoud et al., 2015). There were some findings which showed inconsistency between these two variables so it is necessary to investigate the relationship between automatic thoughts, coping skill and life satisfaction among undergraduates in Malaysia.

Theoretical Framework

Theory for Life Satisfaction

The theory used to support life satisfaction is Quality of Life theory (QOL) proposed by Michael B. Frisch (1994). According to Frisch (2006), quality of life equals life satisfaction and could also be understood with an individual's subjective evaluation of the level of the goals, needs, and wishes being met. It can be questioned as "Are you satisfied or happy with your life?". Also, the gap between the 'have,' and the 'wants' will determine an individual's level of satisfaction (Frisch, 2006). Furthermore, QOL theory highlights the quality of positive inner experience (thoughts and feelings). Therefore, an individual's thoughts are very important determinants because automatic thoughts affect the quality of an individual's inner experience. In QOL theory, emotions can reflect an individual's progress towards personal achievements, needs, and wants. As positive emotions can tell whether the goals have been or almost achieved, whereas negative emotions reflect the disappointment and challenges are faced when accomplishing valued areas of life (Frisch, 2006). The QOL model of satisfaction assumes that individuals' overall life satisfaction can be accessed through different valued domains in life or general life satisfaction (Frisch, 2006). Other than that, some past studies conducted were using The Satisfaction with Life Scale (SWLS) (Cabras & Mondo, 2018). The study reported that coping skills significantly predict undergraduate's life satisfaction. Adaptive coping skills predicted higher levels of life satisfaction. In contrast, maladaptive coping skills predicted lower levels of life satisfaction (Cabras & Mondo's, 2018).

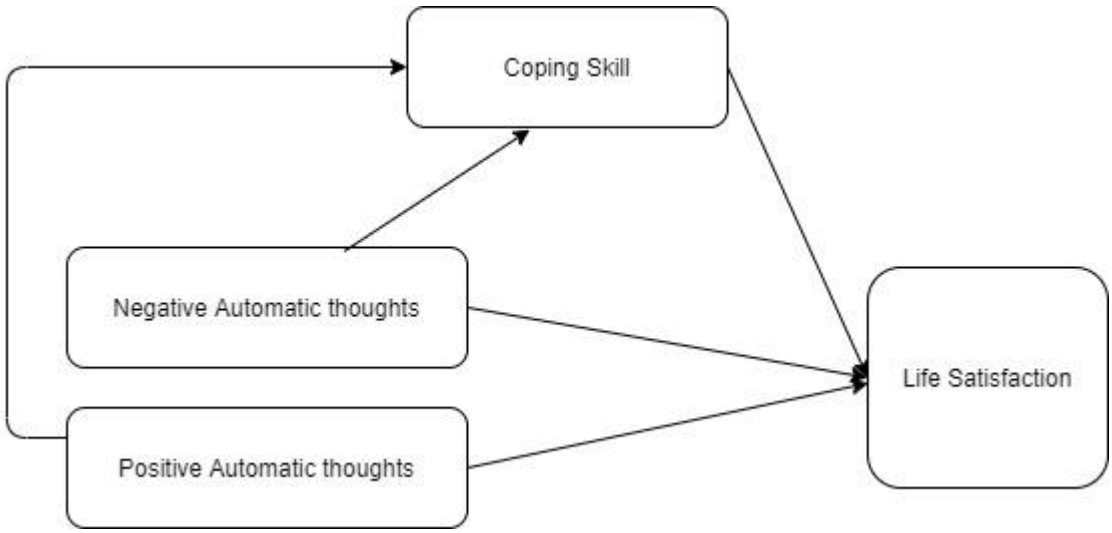
Theory for Automatic thoughts and Coping Skills

The theory applied to support automatic thoughts is Cognitive Behavioral Theory (CBT) developed by Beck (1964). In the CBT model, Beck (1964) assumes that an individual's behavior and emotions are influenced by their thoughts or perception of the world. Beck stressed that it is the person's cognition to be responsible for what they feel instead of the situation or circumstances. The way a person interprets the situations will determine their feelings. The concept of automatic thoughts is called cognitive distortion, which results in a person having irrational beliefs. Thus, Beck (1976) proposed three levels of cognition, (1) core beliefs, (2) dysfunctional assumptions, (3) Negative automatic thoughts.

Core beliefs are the beliefs about self, others, and the world which an individual deeply holds. Early experience can be the main contributor to one's core beliefs (Fenn & Byrne, 2013). Besides, dysfunctional assumptions could be rigid and impactful towards a person's life, and it is assumed to be maladaptive if it is unrealistic (Fenn & Byrne, 2013). Negative automatic thoughts are the thoughts that come into a person's mind unconsciously (Fenn & Byrne, 2013). Negative automatic thoughts enlarge the themes of the negative side in a situation. Take, for example, low self-esteem and thoughts regarding uselessness are commonly found in depression patients. Later on, Greenberger and Padesky (1995) proposed the hot-cross bun model based on CBT, suggesting that the formulation of CBT can be cross-sectional. As thoughts affect feelings, feelings affect behavior, and behavior affects physical symptoms, and the highlight is that all the variables can directly affect each other. In current study, automatic thoughts fits the cognitive component and coping skills fit the behavioral component, whereas life satisfaction fits the feeling component of the hot-cross bun model. Also, many past findings adapted this CBT in their studies (Corlett & MacLeod, 2020; Proctor et al., 2016; Ruiz et al., 2019) Yárnoz-Yaben, 2014). These studies investigated automatic thoughts and life satisfaction. Concluding the results from these studies, higher

levels of positive automatic thoughts and lower levels of negative automatic thoughts are associated with higher levels of life satisfaction.

2.5 Conceptual Framework



In this study, independent variables are negative and positive automatic thoughts, and coping skills, whereas life satisfaction is the dependent variable. Automatic thoughts are one of the components under CBT. In CBT, thoughts can affect feelings and behavior. Automatic thoughts are one of the main components that can directly affect the thoughts as a response to a trigger (Beck, 1976). In addition, coping skills are the behavioral component that suits the Hot-Cross Bun model. Life satisfaction can be referred to as the feeling component of the model. Hence, negative automatic thoughts can trigger irrational thoughts, which cause an individual to cope maladaptively, then leads to lower life satisfaction and vice versa. This will eventually become a vicious cycle, and one might be trapped in it. A negative vicious cycle can result in one's way of dealing with and perceiving various aspects of life and affecting one's life satisfaction. Other than that, the Hot-Cross Bun model also suggested that all the components affect each other directly. Meaning, automatic thoughts or coping skills can directly affect life satisfaction.

Chapter III

Methodology

Correlational Research design

In this study, the cross-sectional design was implemented as the data is collected in a specific time to understand the relationship between the variables, negative and positive automatic thoughts, coping skills, and life satisfaction among undergraduate students in Malaysia (Kumar, 2014). This design was suitable because the aim of this research is to determine the relationship between automatic thoughts and coping skills and life satisfaction among undergraduates in Malaysia. This study used a quantitative research strategy, which means numeric data will be collected. A quantitative approach is suitable for this research because this study aimed to understand the relationship between the variables, negative and positive automatic thoughts, coping skills, and life satisfaction among undergraduate students in Malaysia. Thus, primary data was collected from participants. To achieve the aim of the study, questionnaires were used to collect the data from participants. It is fast and reliable to collect a great amount of data from participants using a questionnaire (Martínez-Mesa et al., 2016). To spread the questionnaire, an online survey method was optimized for data collection. Survey is a research method that enables the researcher to collect data from targeted groups (Kumar, 2014). Besides that, it is a self-administered survey as the respondents were required to fill up the answers by themselves without the administration of a researcher (Kumar, 2014). This is because the COVID-19 pandemic restricted the interaction between people, so a self-administered survey is suitable in the current situation.

Sampling Method

In order to obtain data effectively, the researcher used purposive sampling in this research study. Purposive sampling was used to collect data. Purposive sampling is a type of non-probability sampling method whereby the researcher collected the data from the targeted participants who fulfil the criteria for the research (Martínez-Mesa et al., 2016). The data collection will stop until it reaches the targeted amount of data or it reaches the time for data collection (Martínez-Mesa et al., 2016). Furthermore, the targeted age of the participants is 18 to 25 and the criteria for the participants are undergraduate students.

Research Location

The research location was across Malaysia by using Google form. As the questionnaires were distributed through an online survey. Hence, social media platforms were utilized to publicize the questionnaire. Social media platforms such as Facebook, Instagram, WeChat, and WhatsApp were the platforms that shared the questionnaires for this research.

Ethical Clearance Approval

The university ethical clearance protocol was followed in this study by gaining approval (U/SERC/217/2020) from the research supervisor (Puan Anisah Zainab Musa), Head of Department of Psychology and Counselling (Dr Chie Qui Ting) and Dean of Faculty of Art and Social Science (Dr Lee Lai Meng). In addition, UTAR Scientific and Ethical Review Committee make sure that there will be no contravention of any ethical concern before the commencement of data collection. In order to obtain the approval for proceeding to the process of data collection, the application of ethical clearance was conducted after the completion of the current research proposal.

Sample Size, Power and Precision

G*Power 3.1.9.4 version was used to calculate the sample size for Pearson's Product-Moment Correlation (PPMC). According to G*Power 3.1.9.4, in order to calculate Hypothesis 1, 3, and 5. It suggested that a sample of 134 will be sufficient. The effect size is 0.3 which indicates a medium effect size. The power analysis is 0.95 which means there is a 95% chance of the result being significant. Lastly, the margin of error is 0.05.

According to G*Power, in order to calculate Hypothesis 2 and 4, to calculate the prediction using multiple linear regression. The sample size needed is 107. The effect size is 0.15 which is a medium effect size. Subsequently, power is 0.95, which means there is a 95% chance of the result being significant. The margin of error is 0.05.

The highest number of samples required is 134, and the sample size will be increased by 50% due to the potential missing data, outliers and non-responsive data (Salim & Abdullah, 2017). By doing so, it can increase the accuracy of the result.

Research Data Collection Procedure

Inclusion and Exclusion Criteria

The first inclusion criteria are that the respondents must pursue their study at any university in Malaysia. Secondly, the participants must be 18 to 25-year-old. As for the exclusion criteria are below 18, above 25, currently inactive students, dropped from university, and currently studying abroad. This is because the researcher wanted to examine the relationship between automatic thoughts, coping skills and life satisfaction in the Malaysian context.

Procedures of Obtaining Consent

The informed consent form was attached before the questionnaires. The participants must declare whether agree or not agree to participate in the study. If they agree, then they were directed to the survey questionnaire. If they do not agree with the consent, they are not able to participate in answering the survey questionnaire. Participants were required to fill up the informed consent form before they answer the questionnaire. The consent form included: the purpose of the study, confidentiality, voluntary participation, contact information of the researcher. Also, to answer participants' doubts, the researcher's contact will be listed on the information page.

Data Collection Procedures

After the ethical clearance was approved, the researcher distributed the questionnaire using Google Form via online platforms (Facebook, WhatsApp, Instagram, and WeChat). The objective of this study and informed consent was on the first page of the questionnaire. Moving on, participants were able to answer the variables questionnaire. The data was collected and was transformed into excel format for data arrangement. Jeffreys's Amazing Statistics Program (JASP) version 14.0 will be used to calculate the data. The researcher will run an outlier test to filter out uncompleted responses. After clearing the outliers, data analysis was conducted to obtain descriptive and inferential data. This data reveals the result and helps to determine whether or not to reject the hypothesis.

Instrument

Instrument for Negative Automatic Thought

To access negative automatic thoughts, the ATQ-8 Automatic Thought Questionnaire (ATQ) will be used in this study. ATQ was developed by Hollon and Kendall (1980) and was widely used in various areas. Initially, it was used in measuring depressed samples, but researchers also validated it on non-depressed samples (Kendall et al., 1989). A study by Netemeyer et al. (2002) had shown the convergent validity of ATQ and its negative correlation with life satisfaction. On top of that, Netemeyer and colleagues (2002) had developed ATQ-8 items and compared them with ATQ-30 items. Cronbach's alpha estimates were .92 and .97, respectively. This means that both scales are very high internal consistency and reliable. Besides, the correlation between ATQ-8 and ATQ-30 is very high (.97- .99). Therefore, with a shorter version of ATQ, ATQ-8 will be used in this research study. This instrument is based on a self-report method. The frequency of negative automatic thoughts for the past week will be measured. It is a 5-point Likert scale as 1 = not at all, 2 = sometimes, 3 = moderately often, 4 = often, and 5 = all the time. Sample items are “I’m no good”, “My future is bleak” and “I’m worthless”. The scores range from 8 to 40. It is interpreted as a higher score indicates a greater frequency of negative thoughts. ATQ has a very firm validity as it has a strong correlation with the Beck Depression Inventory BDI, the State Trait Anxiety Inventory and ATQ-30 and ATQ-15 (Netemeyer et al., 2002).

Instrument for Positive Automatic Thought

Positive automatic thoughts are accessed using the Automatic Thought Questionnaire-Revised Positive (ATQ-RP). It is a self-report scale that contains 10 positive items with a 5-point Likert scale whereby 1 = not at all, 2 = sometimes, 3 = moderately often, 4 = often, and 5 = all the time. The higher the score indicates the greater frequency of positive thoughts.

The frequency of positive automatic thoughts for the past week will be measured. The Cronbach alpha was .91, which means it is very reliable (Burgess & Haaga, 1994). The correlation between ATQ-RP and Positive Automatic Thoughts Questionnaire (PATQ) was high, .74 (Burgess & Haaga, 1994). ATQ-RP has a strong validity as it has a strong correlation with the BDI, the State Trait Anxiety Inventory and States-of-Mind Model (SOM) (Burgess & Haaga, 1994). The sample items are "I'm proud of myself", "No matter what happens, I know I'll make it" (Burgess & Haaga, 1994).

Instrument for coping skills

Brief COPE Inventory (BCI) (Carver, 1997). This is a shorter version of the COPE inventory proposed by Carver (1997) as it consists of 28 items instead of 60 items (Carver, 1989). It measures the items with a four-point Likert scale such as 1 = I haven't been doing this at all 2 = I've been doing this a little bit 3 = I've been doing this a medium amount 4 = I've been doing this a lot. There are no reverse items. The Cronbach alpha was .81 which means it is very reliable (Mahmoud et al., 2015). This inventory was validated on 168 participants who had been impacted by a hurricane (Carver, 1997). The sample items are "I've been turning to work or other activities to take my mind off things" and "I've been criticizing myself". The scoring is presented in two coping styles: maladaptive and adaptive. Items for maladaptive coping skills are 1,3, 4, 6, 8, 9, 11, 13, 16, 19, 21, 26. On the other hand, items for adaptive coping skills are 2, 5, 7, 10, 12, 14, 15, 17, 20, 23, 24, 25. Item 18, 28 (humor) and 22, 27 (religion) are not considered as maladaptive nor adaptive coping skills. The total score of each coping skill is summed up then compared with coping skills scoring is higher indicates the preference of the coping skills used.

Instrument for Life Satisfaction

Satisfaction with Life Scale (SWLS). It consists of five items such as “In most ways, my life is close to my ideal”, “I am satisfied with my life” (Pavot & Diener, 1993). This is a seven-point Likert scale from 1 = Strongly disagree to 7 = Strongly agree. The scale has a Coefficient alpha of 0.87 for the scale and a 2-month test-retest stability coefficient of 0.82 (Pavot & Diener, 1993). The scale demonstrates great validity across scales with life circumstances and changes in those circumstances that should influence life evaluations (Diener et al., 2012). The interpretation of the score is to sum up scores on each item. The cut off points are as follows 31 - 35 (extremely satisfied), 26 - 30 (satisfied), 21 - 25 (slightly satisfied), 20 (neutral), 15 - 19 (slightly dissatisfied), 10 - 14 (dissatisfied), 5 - 9 (extremely dissatisfied).

Pilot study

Before conducting the actual study, a pilot study was conducted to make sure the study is workable. The researcher collected data from 40 participants through an online survey using Google Form via Facebook, Instagram, WhatsApp, and WeChat. After the data was collected, the researcher analysed the data and observed the reliability of the instruments. Referring to Table 3.1, the result revealed that the instruments had excellent reliability.

Actual study

As for the actual study, the researcher had recruit approximately 191 participants, 139 were used. The data collected will be filtered according to the target demographic data required for the study. Reliability test was observed, and all of the instruments showed great

reliability. Maladaptive coping showed lower Cronbach alpha compared to the pilot study but was acceptable.

Table 3.1

Reliability of Instruments in Pilot Study (n=40) and Actual Study (n=139)

Variable	Number of Items	Cronbach's alpha Pilot Study	Cronbach's alpha Actual Study
NAT	8	.93	.77
PAT	10	.94	.90
MAC	12	.81	.64
AC	12	.89	.80
LS	5	.82	.76

Note. NAT=Negative Automatic Thought, PAT=Positive Automatic Thoughts, MAC=Maladaptive Coping, AC=Adaptive Coping, LS=Life Satisfaction

Data Analysis

The researcher used Jeffreys's Amazing Statistics Program (JASP), version 14.0, and Microsoft Excel to analyse the result of the study. Raw data were exported from Google Form to Excel. The sum of the instruments was calculated on Excel using the formula "=sum". Descriptive statistics of demographic data were calculated with the formula "=countify" to sort the numbers of male, female and year of study. Besides that, Descriptive statistics were obtained on Excel whereby N value, mean, skewness, standard deviation,

Shapiro-Wilk and Kurtosis. Descriptive data helps to summarize and describe the data of this study. From there, the result of Skewness, Kurtosis, and Shapiro-Wilk were obtained. Then, the assumptions of normality were tested.

Other than that, JASP were used to analyse the assumptions of multiple linear regression. The multicollinearity was examined by Variance Inflation Factors (VIF) and tolerance. As for the value of VIF should be less than 10 and for tolerance should be more than .10. This indicates that presence of multicollinearity which is desirable (Keith, 2006). The independence of error was examined with Durbin Watson. The independence of error must be more than 1 and less than 3 (Reddy & Sama, 2015). Cook distance (Cook & Weisberg, 1982) were observed to examine the multivariate outliers. Also, a scatterplot was analysed to observe the linearity Reddy et al., 2015), normality of residuals and homoscedasticity (Muzaffar, 2016).

In addition, Pearson Product Moment Correlation (PPMC) was conducted to examine the relationship for hypothesis 1, 1a, 3, 3a, 5 and 5a. Multiple Linear Regression (MLR) were conducted to measure hypothesis 2, 2a, 2b, 4, 4a and 4b. the prediction of negative and positive automatic thoughts and coping skills on life satisfaction.

Chapter IV

Results

Descriptive Statistics

Demographic Characteristics

As referred to Table 4.2, the present study had collected a total number of 139 responses. All the participants are undergraduate students who aged between 18 – 25 (M = 20.7; SD = 1.37). There are 42.4% of them are male (n=59) while 57.6% of them are female (n=80). There are 13.7% of Year 1 Semester 1 (n=19), 11.5% of Year 1 Semester 2 (n=16), 8.6% of Year 1 Semester 3 (n=12), 5.8% of Year 2 Semester 1 (n=8), 12.2% of Year 2 Semester 2 (n=17), 18% of Year 2 Semester 3 (n=25), 18% of Year 3 Semester 1 (n=25), 3.6% of Year 3 Semester 2 (n=5), 7.9% of Year 3 Semester 3 (n=11) and 0.7% of Year 4 Semester 1 (n=1).

Table 4.1

Descriptive Statistics for Demographic Variables

	n	%	M	SD
Age			20.7	1.37
Gender				
Male	59	42.4		
Female	80	57.6		
Year of study				
Year 1 Semester 1	19	13.7		
Year 1 Semester 2	16	11.5		
Year 1 Semester 3	12	8.6		
Year 2 Semester 1	8	5.8		
Year 2 Semester 2	17	12.2		
Year 2 Semester 3	25	18		
Year 3 Semester 1	25	18		
Year 3 Semester 2	5	3.6		
Year 3 Semester 3	11	7.9		
Year 4 Semester 1	1	0.7		

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

Descriptive Statistics of Topic-Specific Variables

According to Kendall and colleagues (1989), The ATQ-8 Automatic thoughts Questionnaire is used to test the frequency of negative automatic thoughts. The higher score from the mean indicates the higher frequency of negative automatic thoughts. 51.1% of the participants (*n*=71) are having low frequency of negative automatic thoughts, 16.5% of the participants (*n*=23) are having moderate frequency of negative automatic thoughts, 32.4% of the participants (*n*=45) are having high frequency of negative automatic thoughts. Besides that, 42.4% of the participants (*n*=59) are having low frequency of positive automatic thoughts and 57.6% of the participants (*n*=80) are having high frequency of positive automatic thoughts. In addition, 89.9% of the participants (*n*=125) are using adaptive coping more than maladaptive coping, whereas 10.1% of the participants (*n*=14) are using maladaptive coping more than adaptive coping. According to Pavot and Diener (1993), the cut off points of scoring SWLS are as follows 31 - 35 (extremely satisfied), 26 - 30 (satisfied), 21 - 25 (slightly satisfied), 20 (neutral), 15 - 19 (slightly dissatisfied), 10 - 14 (dissatisfied), 5 - 9 (extremely dissatisfied). 0.72% of the participants (*n*=1) are extremely satisfied, 21.6% of the participants (*n*=30) are satisfied, 51.8% of the participants (*n*=72) are satisfied, 10.8% of the participants (*n*=15) are neutral, 12.2% of the participants (*n*=17) are slightly dissatisfied, 2.9% of the participants (*n*=4) are dissatisfied. Lastly, no participants are extremely dissatisfied.

Table 4.2

Descriptive Statistics for Main Variables

	n	%	M	SD
Main Variables				
Negative Automatic thoughts			16	3.52
Low (<16)	71	51.1%		
Medium (=16)	23	16.5%		
High (>16)	45	32.4%		
Positive Automatic thoughts			31.7	6.30
Low (<31.7)	59	42.4%		
High (>31.7)	80	57.6%		
Brief Cope				
Adaptive Coping	125	89.9%		
Maladaptive Coping	14	10.1%		
SWLS				
Extremely satisfied	1	0.72%		
Satisfied	30	21.6%		
Slightly Satisfied	72	51.8%		
Neutral	15	10.8%		
slightly dissatisfied	17	12.2%		
Dissatisfied	4	2.9%		
Extremely dissatisfied	0	0%		

Note. n = number of cases; % = percentage; M = mean; SD = standard deviation, SWLS= Satisfaction with life scale.

Data Diagnostic

Exclusion Criteria of Participants for Post Data-Collection

Respondents who were above 25 years old were excluded by withdrawing the responses. 4 males and 2 females were excluded due to inactivity of the status. Besides that, respondents who are currently inactive are excluded as well. One male was excluded because

exceeded the age of 25 which is required for current research. Therefore, a total of 7 respondents were excluded from this research.

Normality Assumptions

Before conducting the data analysis, the researcher checked the normality assumptions. Table 4.3 showed that the Skewness and Kurtosis values of each distribution are within the acceptable range which is -2 to +2 (George & Mallery, 2010). This indicates that the normality assumptions are met.

Table 4.3

Skewness and Kurtosis Table

	Skewness	**Kurtosis**
NAT	.679	.614
PAT	-.525	-.426
MAC	-.171	.136
AC	.300	.482
LS	-.433	.100

Note. Significant at p < .05. NAT=Negative Automatic Thought, PAT=Positive Automatic Thoughts, MAC=Maladaptive Coping, AC=Adaptive Coping, LS=Life Satisfaction

Boxplot and Outliers

The boxplots identify several outliers across negative automatic thoughts, coping skills and life satisfaction scale (Refer to Appendix X). Outlier is the data values that differ from all the respondents who had responded in current study (Barnett & Lewis, 1994)). Outliers can influence the result and the result may be biased. Therefore, all the outliers were removed.

Multiple Linear Regression Assumptions

Independence. The presupposition of independence (Berry, 1993) is fulfilled as the respondents responded to the survey independently and had not affected each other's behavior.

Multicollinearity. There should be no multicollinearity between variables. The Variance Inflation Factor (VIF) and tolerance value presented in Table 4.4 indicates that the Variance Inflation Factor (VIF) were less than 10 and tolerance level were larger than .10. so were not violated.

Table 4.4

Collinearity Table of Tolerance and VIF

Model		Tolerance	VIF
1	MAC	0.997	1.003
	AC	0.997	1.003
	NAT	0.759	1.317
	PAT	0.759	1.317

Note. Low multicollinearity if tolerance >.10 and VIF <10. NAT=Negative Automatic Thought, PAT=Positive Automatic Thoughts, MAC=Maladaptive Coping, AC=Adaptive Coping, LS=Life Satisfaction

Independent errors. The independence of error was observed through Durbin Watson. The independence of error must be more than 1 and less than 3. Referring to Table 4.5, the assumptions were met.

Table 4.5

Independent Error Test

	Durbin-Watson
1	1.904

Multivariate outliers. Cook's distance was used to check multivariate outliers by using the standard deviation of 1. According to Cook and Weisberg (1982), cases with more than 1 cook's istance are potential outliers. The result shown that there are no data that violates the rule. Hence, there are no outliers.

Linearity, residual normality and homoscedasticity. The presupposition of linearity of residual, residual normality and homoscedasticity are presented. The scatterplot revealed that all the presuppositions were met (Appendix C).

Data Analysis

Pearson Product-Moment Correlation (PPMC)

Research Question 1: Is there a relationship between negative automatic thoughts and life satisfaction?

Table 4.6

Correlations between negative automatic thoughts and life satisfaction

Variable		NAT
SWLS	Pearson's r	-0.519***
	p-value	< .001

Note: * p < .05, ** p < .01, *** p < .001

H1: There is a significant relationship between negative automatic thoughts and life satisfaction.

To investigate the relationship between negative automatic thoughts and life satisfaction, Pearson Product-Moment Correlation (PPMC) was applied. The results showed that there was a strong, negative correlation between negative automatic thoughts and life satisfaction, which was statistically significant ($r = -.519$, $p < .001$).

Research Question 1a: Is there a relationship between positive automatic thoughts and life satisfaction?

Table 4.7

Correlation between positive automatic thoughts and life satisfaction

Variable		PAT
Life satisfaction	Pearson's r	0.608***
	p-value	< .001

Note: * p < .05, ** p < .01, *** p < .001

H1a: There is a significant relationship between positive automatic thoughts and life satisfaction.

To investigate the relationship between positive automatic thoughts and life satisfaction, Pearson Product-Moment Correlation (PPMC) was conducted. The results showed that there was a strong, positive correlation between positive automatic thoughts and life satisfaction, which was statistically significant (r = .608, p < .001).

Research Question 3: Is there a relationship between maladaptive coping skills and life satisfaction?

Table 4.8

Correlation between maladaptive coping skills and life satisfaction

Variable		LS SUM
MAC	Pearson's r	-0.127
	p-value	0.136

* p < .05, ** p < .01, *** p < .001

H3: There is no significant relationship between maladaptive coping skills and life satisfaction.

To investigate the relationship between maladaptive coping skills and life satisfaction, Pearson Product-Moment Correlation (PPMC) was conducted. The results showed that there no correlation between maladaptive coping skills and life satisfaction ($r = -.127$, $p = .136$). On the other hand, there was a strong, positive correlation between adaptive coping skills and life satisfaction, which was statistically significant ($r = .294$, $p < .001$).

Research Question 3a: Is there a relationship between adaptive coping and life satisfaction?

Table 4.9

Correlation between adaptive coping skills and life satisfaction

Variable		**LS SUM**
AC	Pearson's r	0.294***
	p-value	<.001

* p < .05, ** p < .01, *** p < .001

H3a: There is a significant relationship between adaptive coping skills and life satisfaction.

To investigate the relationship between adaptive coping skills and life satisfaction, Pearson Product-Moment Correlation (PPMC) was conducted. The results show that there was a strong, positive correlation between adaptive coping skills and life satisfaction, which was statistically significant ($r = .294$, $p < .001$).

Research Question 5: Is there a relationship between negative automatic thoughts and maladaptive coping skills?

Table 4.10

Negative automatic thoughts and maladaptive coping skills

Variable		NAT sum
MAC	Pearson's r	0.410 ***
	p-value	< .001

* p < .05, ** p < .01, *** p < .001

H5: There is a relationship between negative automatic thoughts and maladaptive coping skills.

To investigate the relationship between negative automatic thoughts and maladaptive coping skills, Pearson Product-Moment Correlation (PPMC) was conducted. The results showed that there was a correlation between negative automatic thoughts and maladaptive coping skills (r = .410, p < .001).

Research Question 5a: Is there a relationship between positive automatic thoughts and adaptive coping skills?

Table 4.11

Pearson's Correlations

Variable		PAT SUM
AC	Pearson's r	0.481 ***
	p-value	< .001

* p < .05, ** p < .01, *** p < .001

H5a: There is a relationship between positive automatic thoughts and adaptive coping skills.

To investigate the relationship between negative automatic thoughts and maladaptive coping skills, Pearson Product-Moment Correlation (PPMC) was conducted. The results showed that there was a correlation between positive automatic thoughts and adaptive coping skills ($r = .481$, $p < .001$).

Multiple Linear Regression

Research Question 2: Do negative automatic thoughts and positive automatic thoughts predict life satisfaction?

Table 4.12

Multiple Regression of NAT and PAT on Life Satisfaction

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
H_1	0.659	0.434	0.426	2.901	0.434	52.165	2	136	< .001

Table 4.13

Model		Sum of Squares	df	Mean Square	F	p
H_1	Regression	877.779	2	438.890	52.165	< .001
	Residual	1144.235	136	8.413		
	Total	2022.014	138			

Note. Dependent Variable = Life satisfaction. Predictors = Negative automatic thoughts and positive automatic thoughts

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Table 4.14

Model		Unstandardized	Standard Error	Standardized	t	p
H_1	(Intercept)	18.719	2.361		7.929	< .001
	NAT sum	-0.316	0.081	-0.290	-3.924	< .001
	PAT SUM	0.283	0.045	0.466	6.293	< .001

Note. Dependent Variable = Life satisfaction. Predictors = Negative automatic thoughts and positive automatic thoughts

H2: Negative automatic thoughts negatively predict life satisfaction.

H2a. Positive automatic thoughts positively predict life satisfaction.

Multiple regression analysis was utilized to observe the prediction of the negative automatic thoughts and positive automatic thoughts on life satisfaction. The model was statistically significant, F (2, 136) = 52.165, p< .001.

The adjusted R squared value was 0.426. This indicates that 42.6% of the variance in life satisfaction was explained by negative automatic thoughts and positive automatic thoughts.

The identified equation to understand this relationship was life satisfaction = -0.316 + 0.283 – 18.716.

It was found that negative automatic thoughts and positive automatic thoughts significantly predicted life satisfaction while negative automatic thoughts (β= - .290, p< .001) and positive automatic thoughts (β= .466, p< .001).

Research Question 4: Do coping skills predict life satisfaction?

Table 4.15

Multiple Regression of MAC and AC on Life Satisfaction

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
H_1	0.326	0.107	0.093	3.645	0.107	8.108	2	136	< .001

Table 4.16

Model		Sum of Squares	df	Mean Square	F	p
H_1	Regression	215.409	2	107.705	8.108	< .001
	Residual	1806.605	136	13.284		
	Total	2022.014	138			

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

Table 4.17

Model		Unstandardized	Standard Error	Standardized	t	p
H_1	(Intercept)	18.700	3.036		6.160	< .001
	MAC	-0.159	0.091	-0.143	-1.759	0.081
	AC	0.250	0.067	0.301	3.709	< .001

Note: MAC= maladaptive coping, AC= Adaptive Coping

Multiple regression analysis was utilized to observe the prediction of maladaptive coping and adaptive coping on life satisfaction. The model was statistically significant, F (2, 136) = 8.108, p< .001.

The adjusted R squared value was 0.093. This indicates that 9.3% of the variance in life satisfaction was explained by maladaptive coping and adaptive coping.

The identified equation to understand this relationship was life satisfaction = -0.159 + 0.250 – 18.700.

It was found that adaptive coping significantly predicted life satisfaction ($\beta = .301$, $p < .001$). However, maladaptive coping did not predict life satisfaction ($\beta = -.159$, $p = .081$).

Chapter V

Discussion

Automatic Thoughts and Life Satisfaction

The Pearson Product-Moment Correlation (PPMC) revealed that there was a strong, negative correlation between negative automatic thoughts and life satisfaction, which is statistically significant ($r = -.519$, $p < .001$). Therefore, the result supports the Hypothesis 1 as there is a significant correlation between negative automatic thoughts and life satisfaction. Meaning, the more frequent the negative automatic thoughts, the lower the satisfaction of life. On the other hand, the results showed that there is a strong, positive correlation between positive automatic thoughts and life satisfaction, which was statistically significant ($r = .608$, $p < .001$). Therefore, the result supports the Hypothesis 1a as there is a significant correlation between positive automatic thoughts and life satisfaction. Meaning, the more frequent the positive automatic thoughts, the higher the satisfaction of life.

This result showed consistency with the study from past researchers (Proctor et al., 2016; Ruiz et al., 2019). Students who tend to perceive their circumstances, academic stress and relationship issues negatively, holds more frequent negative automatic thoughts (Ruiz et al., 2019). The frequency of the negative or positive automatic thoughts may be due to student's peer support in academic concerns (Cassidy, 2015; Mahmoud et al., 2015). Students who had higher levels of self-compassion and self-esteem have a higher requency of positive automatic thoughts and lower negative automatic thoughts (Arimitsu & Hofmann, 2015). Besides that, the current study was consistent with Korea's population. Korean undergraduate students who had greater positive automatic thoughts were found to be associated with greater life satisfaction (Seo & colleagues, 2018). According to Feldman and colleagues (2015), positive thoughts contribute to student's cognition and behavior such as motivation,

self-regulation, choice, learning, and goal pursuit as well. Hence, these elements may help students to achieve better academic results and ultimately result in greater life satisfaction. According to Yavuzer and Karata (2017), individuals are more likely to cope better in life events when they are able to perceive their situations positively.

Coping Skills and Life Satisfaction

According to the results of the present research, the results revealed that there no correlation between maladaptive coping skills and life satisfaction ($r = -.127$, $p = .136$). Hence, Hypothesis 3 was rejected as there is no relationship between maladaptive coping skills and life satisfaction. On the other hand, there was a strong, positive correlation between adaptive coping skills and life satisfaction, which was statistically significant ($r = .294$, $p < .001$). Therefore, Hypothesis 3a was supported by the result of current study.

The result of hypothesis 3 was inconsistent with Lardier and colleagues (2020). According to Lardier and colleagues (2020), undergraduate students who have preference on maladaptive coping strategies are more likely to result in lower levels of life satisfaction. However, the result from current study is supported by Mahmoud and colleagues' (2015) study. It was reported that maladaptive coping was not associated with life satisfaction. According to Mahmoud (2015), environmental level resources such as social support and religious involvement may be the contributing factor to better life satisfaction. Besides that, the interpretation of this result may be due to the gap between maladaptive coping and adaptive coping. Students who hold maladaptive coping strategies as well have adaptive coping. The gap between the use of adaptive coping and maladaptive coping may not be significant, as if the scoring of maladaptive coping is slightly higher than adaptive coping. Therefore, individuals might still be able to use adaptive coping even though the slightly higher scoring of maladaptive coping scores. One of the reasonable explanations is that adaptive coping holds a stronger influence on life satisfaction despite of the presence of

maladaptive coping. Another explanation could be that there are other factors affecting life satisfaction despite of the use of maladaptive coping.

On the other hand, the result on adaptive coping and life satisfaction was consistent with the past findings (Lardier et al., 2020; Limonero et al., 2012; Maier & Surzykiewicz, 2020). Undergraduate students who are able to cope adaptively in their stressor, circumstances and concerns are associated with higher levels of life satisfaction (Maier & Surzykiewicz, 2020). Meaning, students who used adaptive coping skills may find themselves in better handling their stressful situation which explains a higher level of life satisfaction. However, the level of self-efficacy in carrying out the coping skills may be a potential moderator (Sheerin et al., 2018). One may have the tendency to use adaptive coping but the self-efficacy to execute the behavior may play a role (Sheerin et al., 2018). In short, there is no association between maladaptive coping and life satisfaction, whereas there is a significant association between adaptive coping and life satisfaction.

Automatic Thoughts and Coping Skills

To examine the relationship between automatic thoughts and coping skills, the results showed that there was a significant correlation between negative automatic thoughts and maladaptive coping skills ($r = .410$, $p < .001$). Therefore, Hypothesis 5 is supported as there is a correlation between negative automatic thoughts and maladaptive coping skills. Besides that, there was a significant correlation between positive automatic thoughts and adaptive coping skills ($r = .481$, $p < .001$). Thus, Hypothesis 5a is supported as there is a relationship between positive automatic thoughts and adaptive coping skills. The current result is consistent with the past findings (Gabrys et al., 2018; Sheerin et al., 2018). Students who are

stuck in the repetitive negative automatic thoughts and more likely to use maladaptive coping skills. According to the Hot Cross Bun model, the variables (thoughts, feelings, behavior, and physical symptoms) can directly affect each other. In current study, automatic thoughts fit the cognitive component and coping skills fit the behavioral component. For example, students who hold more frequent positive automatic thoughts tend to perceive their situations positively and engage in adaptive coping behavior (E.g., positive reframing, planning, acceptance) and vice versa. Thus, this model explains the relationship between automatic thoughts and coping behavior.

Automatic thoughts predict Life satisfaction

Multiple regression analysis was utilized to observe the prediction of the negative automatic thoughts and positive automatic thoughts on life satisfaction. According to the result from current research, the Hypothesis 2a and 2b were supported where negative automatic thoughts significantly predict lower life satisfaction and positive automatic thoughts significantly predict higher life satisfaction. Current findings are consistent with the past research (Mahmoud et al., 2015; Yavuzer & Karata, 2017). It was reported that individuals who have more frequent negative automatic thoughts will perceive their situations negatively (Mahmoud et al., 2015; Yavuzer & Karata, 2017). According to Bewick et al., (2010) and Regehr et al., (2013), undergraduate students experience increasing levels of stress, especially in academics. Hence, the thought patterns of students are crucial as if students perceive their situation negatively might lead to more distress (Lardier et al., 2020). The distress may be due to the cognitive distortions that caused impaired thinking patterns. Ultimately predicts lower life satisfaction and vice versa.

Coping Skills Predicts Life Satisfaction

Besides that, multiple regression analysis was utilized to observe the prediction of maladaptive coping and adaptive coping on life satisfaction. The findings from present study

showed that H4a was not supported but Hb was supported by current study. Maladaptive coping did not predict life satisfaction, while adaptive coping predicts life satisfaction. The results for adaptive coping skills predict life satisfaction was consistent with past findings (Cabras & Mondo's, 2018; Dwivedi & Rastogi, 2017). When students utilized adaptive coping when experiencing academic distress such as involving in relaxation activities, they are able to detach from stressful situation and rebound (Cabras & Mondo's, 2018). They will be able to understand their capacity when dealing with stressful event (Dwivedi & Rastogi, 2017). Hence, resulting in greater life satisfaction.

On the flip side, the findings on maladaptive coping are inconsistent with Cabras and Mondo's (2018); Dwivedi and Rastogi (2017). One of the possible explanations for such result is that when students are facing academic distress, they might cope with their situation with avoiding the situation such as doing something else (watch movies, shopping, sleeping and etc.) to think about the situation less. Although such coping behavior is categorized under maladaptive coping it provides a sense of relief and temporarily reduces distress that the students were experiencing. Therefore, their stress levels might as well decreased. The other possible explanation is that the gap between maladaptive coping and adaptive coping is not huge. Meaning, students may use maladaptive coping at first and also uses adaptive coping when things went out of control if they understand their capacity when dealing with stressful situation. For example, students facing academic distress and mostly choose to avoid the situation, they had their stress reduced as they avoid the issue. When assignment deadline is around the corner, they may seek for informational support (adaptive coping) which helps to cope with their distress.

In short, maladaptive coping did not predict life satisfaction while adaptive coping predicts life satisfaction. More studies should be conducted to obtain a clearer picture regarding coping skills and life satisfaction.

Implications

Theoretical Implications

The result of present study helps to bring awareness to the society about automatic thoughts, coping skills and life satisfaction. In addition, current study provides further understanding on automatic thoughts, coping skills and life satisfaction. Besides that, current study utilized the Hot Cross Bun model from Cognitive behavioral theory (CBT) (Beck, 1976) and Quality of Life theory (QOL) (Frisch, 2006,). Thus, according to the findings, negative and positive automatic thoughts, adaptive coping skills and life satisfaction were found to have significant relationships, which was consistent with past findings (Cabras & Mondo's, 2018; Dwivedi & Rastogi, 2017; Gabrys et al., 2018; Mahmoud et al., 2015; Sheerin et al., 2018; Yavuzer & Karata, 2017). The result suited with the Hot Cross Bun Model which confirms the model being influential in Malaysian context.

Furthermore, the result of maladaptive coping and life satisfaction showed inconsistency from most of the past research. Take for example, maladaptive coping has no relationship with life satisfaction and revealed that there was maladaptive coping did not predicts life satisfaction. However, past findings reported that there was a relationship between maladaptive coping and life satisfaction, as well as prediction (Cabras and Mondo's, 2018; Dwivedi and Rastogi**,** 2017). This shown that individuals who use maladaptive coping might not contribute to lower levels of satisfaction in life, according to current findings. Hence, current research serves as a new insight for future researchers to investigate maladaptive coping behavior in Malaysia.

Practical Implications

The present study can benefit undergraduate students to have greater awareness and understanding of automatic thoughts, coping skills and life satisfaction. Undergraduate students are provided with a framework to understand the underlying factors that might

contribute to their life satisfaction. Besides that, students can seek for help from counsellors when they have concerns regarding their negative thoughts and coping strategies. They can be aware that these are the concerns that counsellors are able to help with. Hence, counsellors play an important role.

Other than that, counsellors and educators could have a better understanding about automatic thoughts, coping skills and life satisfaction. Counsellors can help students who are struggling with low life satisfaction by examining their automatic thoughts and coping behavior. Counsellors can develop suitable treatment plan and strategies for clients to increase life satisfaction. Also, educators can educate students to be mindful about their thoughts and coping behavior and encourage students to examine it. Moreover, department of counselling services in universities can provide free webinars with collectable skill points for students to participate. These webinars can aim to increase awareness regarding automatic thoughts and coping skills as well as providing effective resources for self-help purposes.

Limitation of Study

One of the limitations of this study is that the data was collected from participants once only. This is because current study adopted a cross-sectional study. Thus, current study is unable to provide longitudinal results.

Other than that, the method utilized was a self-reported questionnaire which potential have social desirability bias. Meaning, the respondent may have a chance to provide choices that are likely to fit the socially desirable answers but not their genuine situations (Grimm, 2010). Therefore, without survey honesty, the results generated may reduce the accuracy. Online survey may have a potential limitation where respondents may fake their demographic information before they proceed to the questionnaires. There is no surveillance on the respondents who participated in the research, therefore there is a possibility that the respondents can fake their information.

Recommendation for Future Study

Recommendations to address the shortcomings of current study is to use the longitudinal study as it is able to provide the differences over a long period of time (Kumar, 2014). It can provide a more in-depth understanding of automatic thoughts, coping skills and life satisfaction. This is because longitudinal study provides insight regarding the causal and effect among the variables (Kumar, 2014).

In addition, to obtain better reliability and validity of the results, the sample size is recommended to increase. According to the present study, 139 samples are valid to be used for data analysis. Considering the presence of social desirability bias, the increase of sample size may provide a more genuine result. Therefore, it is recommended to increase the sample size.

According to the result of this study, the variance of regression coping skills was only 9.3%, which means there are other factors that potentially have a greater impact on life satisfaction. In addition, future research could take into consideration of social support, because Mahmoud et al., (2015) emphasized that social support may be a crucial factor. Self-capacity could be considered as well because Dwivedi and Rastogi **(**2017) stated that if a person has a great self-capacity, they are likely to achieve greater life satisfaction. Future researchers may compare several different variables and investigate which factor better predict life satisfaction.

Conclusion

In conclusion, the current study has achieved all the objectives, to examine the relationship and prediction of automatic thoughts, coping skills and life satisfaction. The findings reported that negative automatic thoughts had a significant negative relationship

with life satisfaction, while positive automatic thoughts had a significant positive relationship with life satisfaction. Also, adaptive coping had a significant relationship with life satisfaction, but maladaptive coping had no relationship with life satisfaction. In addition, negative automatic thoughts had a relationship with maladaptive coping while positive automatic thoughts had a relationship with adaptive coping. Lastly, negative automatic thoughts, positive automatic thoughts, adaptive coping predicts life satisfaction and positive automatic thoughts was the strongest predictor for life satisfaction, only maladaptive coping did not predict life satisfaction. This research could be further explored with different variable to investigate potential factors of life satisfaction among undergraduate students in the Malaysia context.

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Appendix A

Descriptive Statistics

	NAT	PAT
Valid	139	139
Missing	0	0
Mean	16.007	31.734
Std. Deviation	3.515	6.298
Skewness	0.679	-0.525
Kurtosis	0.614	-0.426
Shapiro-Wilk	0.946	0.951
P-value of Shapiro-Wilk	< .001	< .001

Note. NAT= negative automatic thoughts, PAT= positive automatic thoughts

Descriptive Statistics

	MAC	AC
Valid	139	139
Missing	0	0
Mean	24.878	31.583
Std. Deviation	3.429	4.605
Skewness	-0.171	0.300
Kurtosis	0.136	0.482
Shapiro-Wilk	0.980	0.977
P-value of Shapiro-Wilk	0.041	0.018

Note. MAC= maladaptive coping, AC= adaptive Coping

Descriptive Statistics

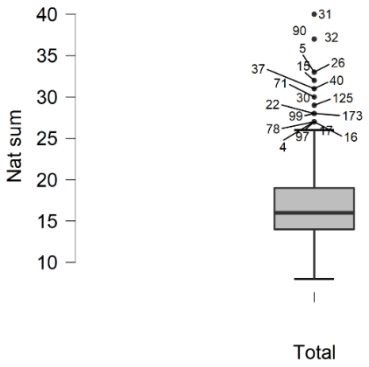
	SWLS
Valid	139
Missing	54
Mean	22.640
Std. Deviation	3.828
Skewness	-0.433
Kurtosis	0.100
Shapiro-Wilk	0.972
P-value of Shapiro-Wilk	0.006

Note. SWLS= satisfaction with life scale

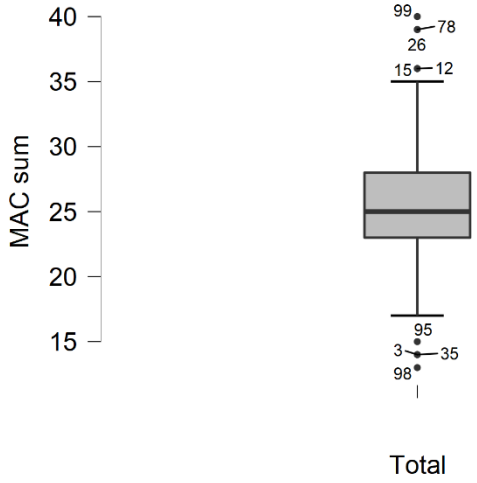
Appendix B

Boxplots for Each Distributions with Outliers

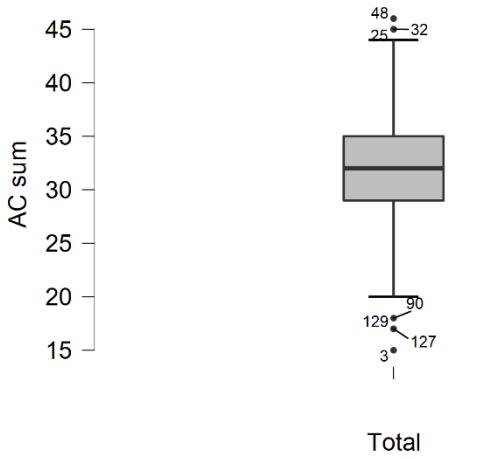
Negative automatic thoughts



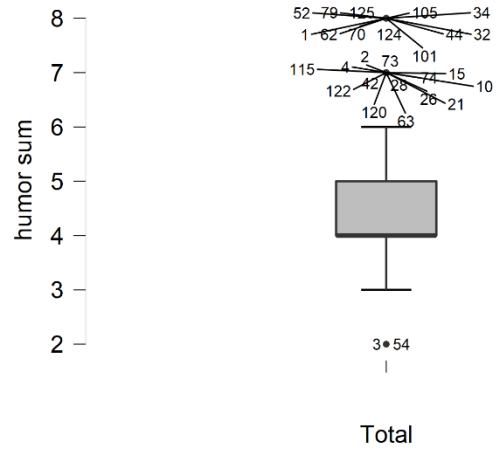
Maladaptive coping



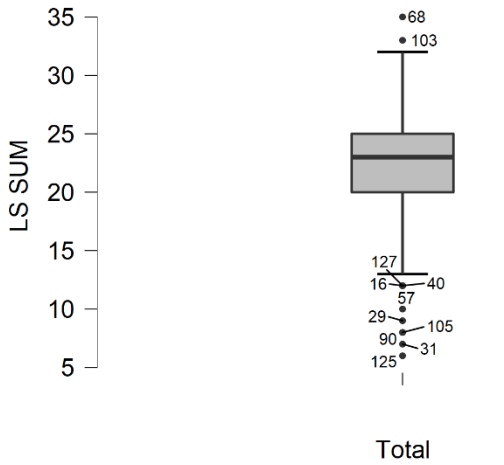
Adaptive Coping



Humor



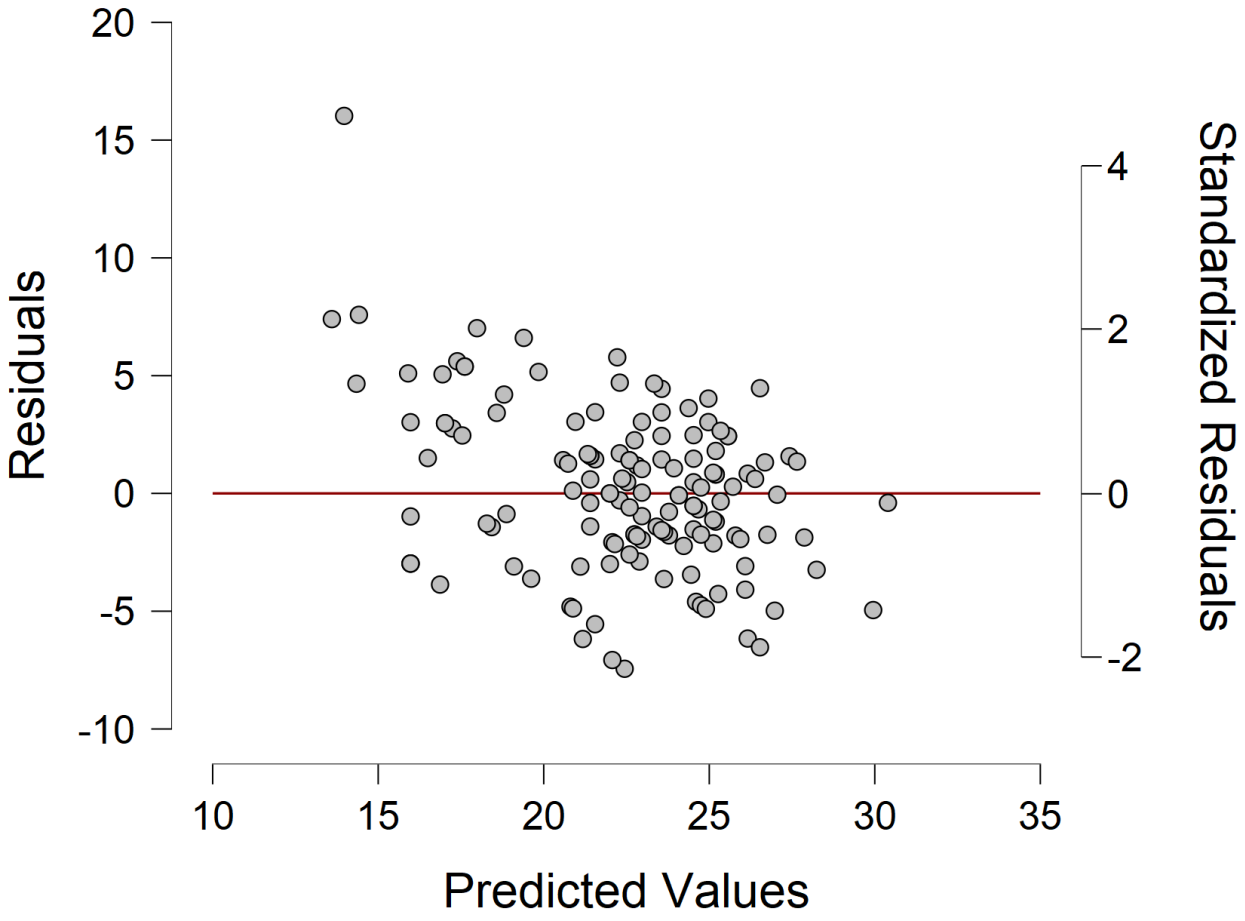
Life satisfaction



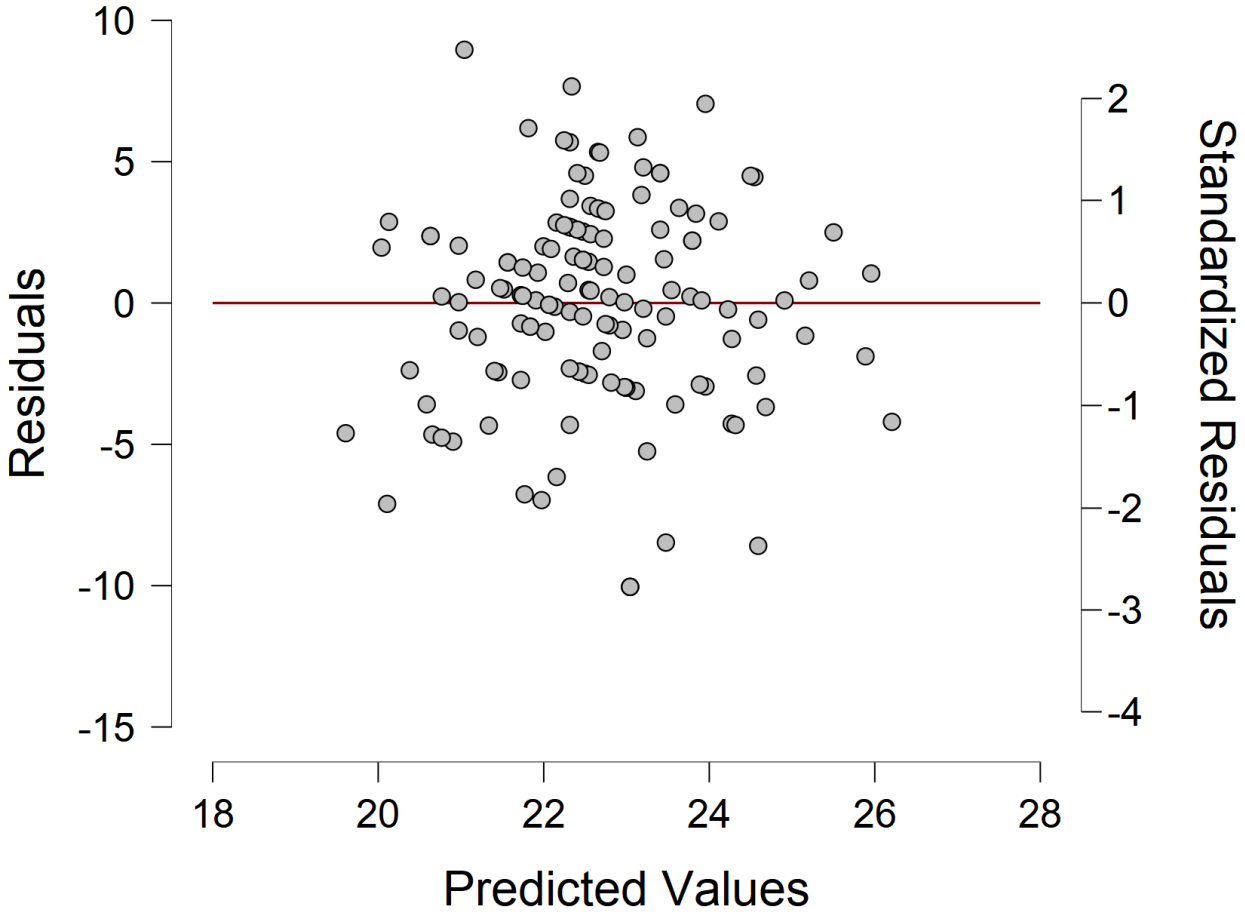
Appendix C

Scatter plot

Automatic thoughts and Life satisfaction

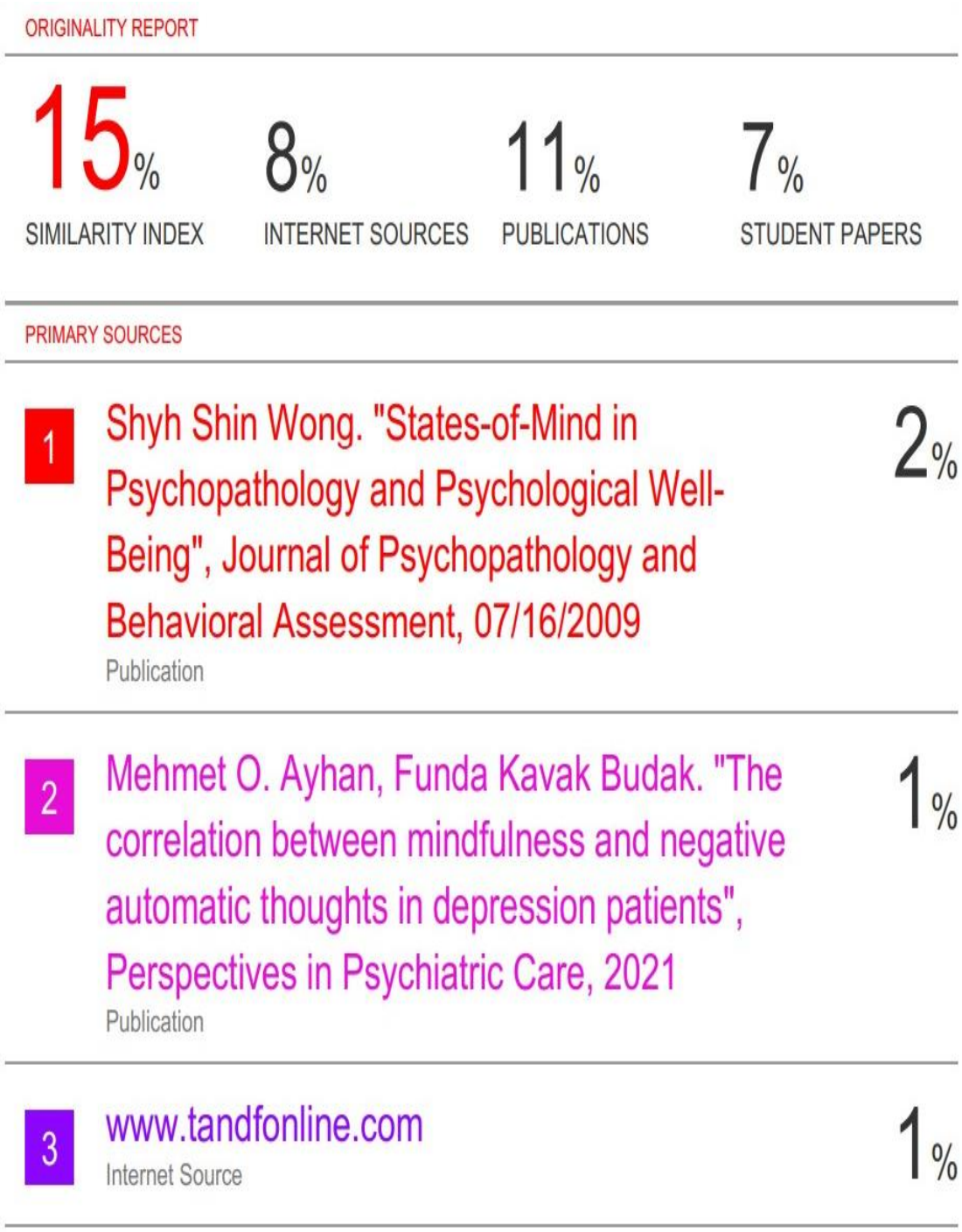


Coping Skills and Life Satisfaction



Appendix D

Turnitin Report



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FACULTY OF Arts and Social Science

Full Name(s) of Candidate(s)	Joshua Mok Lun Hua
ID Number(s)	1807150
Programme / Course	Guidance and Counselling
Title of Final Year Project	A study of the relationship between negative and positive automatic thoughts and coping skills and students' life satisfaction among undergraduate students in Malaysia

Similarity	**Supervisor's Comments (Compulsory if parameters of originality exceeds the limits approved by UTAR)**
Overall similarity index: 15 % **Similarity by source** Internet Sources: 8 % Publications: 11 % Student Papers: 7 %	
Number of individual sources listed of more than 3% similarity: 0	

Parameters of originality required and limits approved by UTAR are as follows:

(i) Overall similarity index is 20% and below, and

(ii) Matching of individual sources listed must be less than 3% each, and

(iii) Matching texts in continuous block must not exceed 8 words

Note: Parameters (i) – (ii) shall exclude quotes, bibliography and text matches which are less than 8 words.

Note Supervisor/Candidate(s) is/are required to provide softcopy of full set of the originality report toFaculty/Institute

Based on the above results, I hereby declare that I am satisfied with the originality of the FinalYear Project Report submitted by my student(s) as named above.

Signature of Supervisor
Name: Anisah Zainab Musa
Date:18 April 2021

Appendix F

UNIVERSITI TUNKU ABDUL RAHMAN
Wholly Owned by UTAR Education Foundation (Company No. 578227-M)

Re: U/SERC/217/2020

24 December 2020

Dr Chie Qiu Ting
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 Chie,

Ethical Approval For Research Project/Protocol

We refer to the application for ethical approval for your students' research projects from Bachelor of Social Science (Hons) Guidance and Counselling programme enrolled in course UAPC3083. 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.	A Study of The Relationship Between Negative, Positive Automatic Thoughts, Coping Skills and Student's Life Satisfaction Among Malaysian Undergraduate Students	Joshua Mok Lun Hua	Pn Anisah Zainab Binti Musa	24 December 2020 – 23 December 2021
2.	A Study of Online Learning, Attention Span and Academic Stress Among University Students in Malaysia.	Elisaa a/p B. Kumar		

The conduct of this research is subject to the following:

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

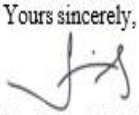
(2) Confidentiality of participants' personal data must be maintained; and

(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.

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

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.

Notice:

1. The purposes for which your personal data may be used are inclusive but not limited to:-
   - For assessment of any application to UTAR
   - For processing any benefits and services
   - For communication purposes
   - For advertorial and news
   - For general administration and record purposes
   - For enhancing the value of education
   - For educational and related purposes consequential to UTAR
   - For the purpose of our corporate governance
   - For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/ study loan

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 _____.

Acknowledgment of 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.

.....
Name:
Date:

Appendix G Action Plan

Action Plan of UAPC3093 Project Paper II

Supervisee Joshua Mok Lun Hua

Supervisor Puan Anisah Zainab Musa

Task Description	Date	Supervisee's Signature	Supervisor's Signature	Supervisor's Remarks	Next Appointment Date/Time
Methodology Submit Chapter 3: Methodology Amend Chapter 3: Methodology	5/4/21		Anisah	Check Chapter 3 progress and amendments	8/4/21
Results & Findings Submit Chapter 4: Results Amend Chapter 4: Results	8/4/21		Anisah	Check Chapter 4 progress and amendments	14/4/21
Discussion & Conclusion Submit Chapter 5: Discussion Amend Chapter 5: Discussion	14/4/21		Anisah	Check Chapter 5 progress and amendments	N/A
Abstract	14/4/21		Anisah		
Turnitin Submission	12/4/21		Anisah	Generate similarity rate from Turnitin.com	
Amendment	14/4/21		Anisah		
Submission of final draft	19/4/21		Anisah	Submission of hardcopy and documents	
Oral Presentation	20/4/21		Anisah		

Notes:
1. **Deadline for submission cannot be changed, mark deduction is as per faculty standard.**
2. **Supervisees are to take the active role to make appointments with their supervisors.**
3. **Both supervisors and supervisees should keep a copy of this action plan.**
4. **This Action Plan should be attached as an appendix in Project Paper 2.**

Appendix H

Universiti Tunku Abdul Rahman			
Form Title : **Sample of Submission Sheet for FYP/Dissertation/Thesis**			
Form Number : **FM-IAD-004**	Rev No: **0**	Effective Date: **21 June 2011**	Page No: **1 of 1**

FACULTY/INSTITUTE* OF ART AND SOCIAL SCIENCE
UNIVERSITI TUNKU ABDUL RAHMAN

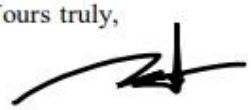
Date: 13/4/2021

SUBMISSION OF FINAL YEAR PROJECT /DISSERTATION/THESIS

It is hereby certified that Joshua Mok Lun Hua (ID No: 1807150) has completed this final year project/ dissertation/ thesis* entitled " A study of the relationship between negative and positive automatic thoughts and coping skills and students' life satisfaction among undergraduate students in Malaysia " under the supervision of Puan Anisah Zainab Musa (Supervisor) from the Department of Psychology and Counselling, Faculty/Institute* of Art and Social Science, and _____ (Co-Supervisor)* from the Department of _____, Faculty/Institute* of _____.

I understand that University will upload softcopy of my final year project / dissertation/ thesis* in pdf format into UTAR Institutional Repository, which may be made accessible to UTAR community and public.

Yours truly,



Name:
Joshua Mok Luna Hua

**Delete whichever not applicable*

Appendix I

UNIVERSITI TUNKU ABDUL RAHMAN
FACULTY OF ARTS AND SOCIAL SCIENCE
DEPARTMENT OF PSYCHOLOGY AND COUNSELLING

UAPC3093 PROJECT PAPER II

Quantitative Research Project Evaluation Form

TURNITIN: ***'In assessing this work you are agreeing that it has been submitted to the University-recognised originality checking service which is Turnitin. The report generated by Turnitin is used as evidence to show that the students' final report contains the similarity level below 20%.'***

Project Title: A study of the relationship between negative and positive automatic thoughts and coping skills and students' life satisfaction among undergraduate students in Malaysia	
Supervisor: Puan Anisah Zainab Musa	
Student's Name: Joshua Mok Lun Hua	Student's ID: 18AAB07150

INSTRUCTIONS:
Please score each descriptor based on the scale provided below:

1. Please award 0 mark for no attempt.
2. Please mark only **3(A)** or **3(B)** for **Proposed Methodology**.
3. For criteria **7**:
   Please retrieve the marks from "**Oral Presentation Evaluation Form**".

1. ABSTRACT (5%)	**Max Score**	**Score**
a. State the main hypotheses/research objectives.	5%	
b. Describe the methodology: • Research design • Sampling method and sample size • Location of study • Instruments/apparatus/outcome measures (if applicable) • Data gathering procedures	5%	
c. Describe the characteristics of participants.	5%	
d. Highlight the outcomes of the study or intervention, target behaviour and outcomes.	5%	
e. Conclusions, implications, and applications.	5%	
Sum	25%	/25%
Subtotal (Sum/5)	5%	/5%
Remark:		

2. (A) METHODOLOGY (25%)	**Max Score**	**Score**
a. Research design/framework: • For experiment, report experimental manipulation, participant flow, treatment fidelity, baseline data, adverse events and side effects, assignment method and implementation, masking (if applicable). • For non-experiment, describe the design of the study and data used.	5%	
b. Sampling procedures: • Justification of sampling method/technique used. • Description of location of study. • Procedures of ethical clearance approval.	5%	
c. Sample size, power, and precision: • Justification of sample size. • Achieved actual sample size and response rate. • Power analysis or other methods (if applicable).	5%	
d. Data collection procedures: • Inclusion and exclusion criteria. • Procedures of obtaining consent. • Description of data collection procedures. • Provide dates defining the periods of recruitment or repeated measures and follow-up. • Agreement and payment (if any).	5%	
e. Instruments/questionnaire used: • Description of instruments • Scoring system • Meaning of scores • Reliability and validity	5%	
Subtotal	25%	/25%
Remark:		

2. (B) METHODOLOGY – SINGLE-CASE EXPERIMENT (25%)	**Max Score**	**Score**
a. Research design/framework: • Identify the design, phase and phase sequence, and/or phase change criteria. • Describe procedural changes that occurred during the investigation after the start of the study (if applicable). • Describe the method of randomization and elements of study that were randomized (if applicable). • Describe binding or masking was used (if appliable).	5%	
b. Participants AND Context AND Approval: • Describe the method of recruitment. • State the inclusion and exclusion criteria. • Describe the characteristics of setting and location of study. • Procedures of ethical clearance approval. • Procedures of obtaining consent.	5%	
c. Measures and materials used: • Operationally define all target behaviours and outcome measures. • Reliability and validity. • Justify the selection of measures and materials. • Describe the materials.	5%	
d. Interventions: • Describe the intervention and control condition in each phase. • Describe the method of delivering the intervention. • Describe evaluation of procedural fidelity in each phase.	5%	
e. Data analysis plan: • Describe and justify all methods used to analyze data.	5%	
Subtotal	25%	/25%
Remark:		
3. RESULTS (20%)	**Max Score**	**Score**
a. Descriptive statistics/Sequence completed: • Demographic characteristics • Topic-specific characteristics • For single-case study, report the sequence completed by each participant, trial for each session for each case, dropout and reason if applicable, adverse events if applicable	5%	
b. Data diagnostic and missing data (if applicable): • Frequency and percentages of missing data (compulsory).	5%	

• Methods employed for addressing missing data. • Criteria for post data-collection exclusion of participants. • Criteria for imputation of missing data. • Defining and processing of statistical outliers. • Data transformation. • Analyses of data distributions.		
c. Appropriate data analysis for each hypothesis or research objective.	5%	
d. Accurate interpretation of statistical analyses: • Accurate report and interpretation of confidence intervals or statistical significance. • Accurate report of *p* values and minimally sufficient sets of statistics (e.g., *dfs*, *MS*, *MS error*). • Accurate report and interpretation of effect sizes. • Report any problems with statistical assumptions.	5%	
Subtotal	20%	/20%
Remark:		
4. DISCUSSION AND CONCLUSION (20%)	**Max Score**	**Score**
a. Discussion of findings: • Provide statement of support or nonsupport for all hypotheses. • Analyze similar and/or dissimilar results. • Justifications for statistical results in the context of study.	5%	
b. Implication of the study: • Theoretical implication for future research. • Practical implication for programs and policies.	5%	
c. Relevant limitations of the study.	5%	
d. Recommendations for future research.	5%	
Subtotal	20%	/20%
Remark:		
5. LANGUAGE AND ORGANIZATION (5%)	**Max Score**	**Score**
a. Language proficiency	3%	
b. Content organization	1%	
c. Complete documentation (e.g., action plan, originality report)	1%	
Subtotal	5%	/5%
Remark:		
6. APA STYLE AND REFERENCING (5%)	**Max Score**	**Score**
a. 7th Edition APA Style	5%	/5%
Remark:		
***ORAL PRESENTATION (20%)**	**Score**	

	Student 1	Student 2	Student 3
Subtotal	/20%	/20%	/20%
Remark:			

PENALTY	**Max Score**	**Score**
Maximum of 10 marks for LATE SUBMISSION, or POOR CONSULTATION ATTENDANCE with supervisor.	10%	

	Student 1	Student 2	Student 3
****FINAL MARK/TOTAL**	/100%	/100%	/100%

*****Overall Comments:**

Signature: _____ **Date:** _____

Notes:

1. **Subtotal**: The sum of scores for each assessment criterion
2. **FINAL MARK/TOTAL**: The summation of all subtotal score
3. Plagiarism is **NOT ACCEPTABLE**. Parameters of originality required and limits approved by UTAR are as follows:
   (i) **Overall similarity index is 20% or below**, and
   (ii) **Matching of individual sources listed must be less than 3%** each, and
   (iii) Matching texts in continuous block must **not exceed 8 words**

   Note: Parameters (i) – (ii) shall exclude quotes, references and text matches which are less than 8 words.

   Any works violate the above originality requirements will NOT be accepted. Students have to redo the report and meet the requirements in **SEVEN (7)** days.

*The marks of "Oral Presentation" are to be retrieved from **"Oral Presentation Evaluation Form".**
**It is compulsory for the supervisor/examiner to give the overall comments for the research projects with A- and above or F grading.