IMPACTS OF ACADEMIC RESILIENCE, ACADEMIC PROCRASTINATION AND SELF-REGULATION ON STUDENT ENGAGEMENT AMONG UNDERGRADUATES IN UTAR, KAMPAR CAMPUS

NG HUAT LIN

LOW XIAO YING

NG SHI QIN

KOGHULAN A/L AGILANANANTH

BACHELOR OF BUSINESS ADMINISTRATION (HONS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE

DEPARTMENT OF BUSINESS AND PUBLIC ADMINISTRATION

JUNE 2023

IMPACTS OF ACADEMIC RESILIENCE, ACADEMIC PROCRASTINATION AND SELF-REGULATION ON STUDENT ENGAGEMENT AMONG UNDERGRADUATES IN UTAR, KAMPAR CAMPUS

NG HUAT LIN

LOW XIAO YING

NG SHI QIN

KOGHULAN A/L AGILANANANTH

A final year project submitted in partial fulfilment of the requirement for degree in

BACHELOR OF BUSINESS ADMINISTRATION (HONS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE

DEPARTMENT OF BUSINESS AND PUBLIC ADMINISTRATION

JUNE 2023

Copyright @ 2023 ALL RIGHTS RESERVED. No part of this paper may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, graphic, electronic, mechanical, photocopying, recording, scanning, or otherwise, without the prior consent of the authors.

DECLARATION

We hereby declare that:

1. This Final Year Project is the end result of our own effort and that due acknowledgement has been given in the references to ALL sources of information.

2. No portion of this FYP has been submitted in support of any application for any other degree or qualification of this or any other universities, or other institutions of education.

3. Equal contribution has been made by each group member in completing the FYP.

4. The word count of this research report is 12884 word counts.

Name of Student:	Student ID:	Signature:
1. Ng Huat Lin	21ABB03062	
2. Low Xiao Ying	20ABB02123	
3. Koghulan a/l Agilanananth	20ABB01070	
4. Ng Shi Qin	21ABB02622	

Date: 19 April 2024

ACKNOWLEDGEMENT

Throughout the research, we would like to express our greatest gratitude to Dr. Ng Lee Peng, our supervisor who guided us through the research journey. Her advice and knowledge have supported us with professional insight, theoretical understanding and technical advice. Dr. Ng has shown patience and encouragement to us when we faced difficulties and challenges by offering her best effort in providing explanation and guidance to us to complete the research.

Moreover, we would like to appreciate our second examiner, Ms Thanaletchumi a/p R.Letchumanan for her advise and comments during our Final Year Project presentation. Her valuable insight and advice are helpful to us in making better improvements and make our research more practical.

Last but not least, we would like to thank Universiti Tunku Abdul Rahman (UTAR) for providing such opportunity and conditions to conduct this research. As our sampling size and location focused in UTAR, we are really grateful to have responsive undergraduates in UTAR to contribute to our research. We would also like to express our greatest gratitude towards the assistance contributed to our research study.

DEDICATION

This dissertion is dedicated to:

Our supervisor,

Dr. Ng Lee Peng

For providing guidance and advise throughout this research study.

Highest Education Institution,

Universiti Tunku Abdul Rahman (UTAR)

For providing opportunity and location to conduct this research study.

Dear respondents,

For actively participating in surveys for data collection purposes.

TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

Page

LIST OF APPENDICES

Page

PREFACE

In the accomplishment of Degree in Bachelor of Business Administration (HONS) in Universiti Tunku Abdul Rahman (UTAR), we are submitting this research project on "IMPACTS OF ACADEMIC RESILIENCE, ACADEMIC PROCRASTINATION AND SELF-REGULATION ON STUDENT ENGAGEMENT AMONG UNDERGRADUATES IN UTAR, KAMPAR CAMPUS".

ABSTRACT

Student engagement is important for students at all levels. It is important for students to maintain a high level of engagement in their studies to reach their goals, have higher achievement and a sense of fulfilment.

The purpose of this research is to find out the influence of academic resilience, academic procrastination and self-regulation on student engagement among undergraduates in UTAR, Kampar campus. This research will help undergraduates and readers to have more understanding about the factors that influence student engagement.

Quantitative research was used for this research by using online questionnaires as the data collection method. Cross-sectional design was used as the research design for this research. A total of 367 undergraduates from Universiti Tunku Abdul Rahman, Kampar campus participated in the survey. The result has shown that academic resilience, academic procrastination, and self-regulation are significantly correlated to student engagement. Academic resilience and self-regulation are positively related to student engagement and academic procrastination is negatively related to student engagement.

Chapter 1: Research Overview

1.0 Introduction

This research investigates and discusses the impacts of academic resilience, academic procrastination, and self-regulation on student engagement among undergraduates in UTAR, Kampar campus. This chapter elaborates the research background and research problem, research question, research objectives, hypothesis and contribution of study and ends with a summary of the chapter.

1.1 Research Background

In recent years, there has been a growing emphasis in the higher education landscape on understanding factors that contribute to academic success and undergraduate student engagement. Student engagement refers to a student's willingness and desire to participate in the learning process (Silvola et al., 2021). Student engagement can be viewed as the level of interest shown by the students by looking at how active they are in the course and their motivation to learn. According to Jaggars and Xu (2016), the quality of students' interaction within the course in their learning process is correlated to the students' grade and achievement. Engaged students demonstrate higher levels of engagement, enthusiasm, and perseverance, leading to improved academic performance and overall well-being (Delfino, 2019; Everett, 2017). The more commitment the students show; the better study results are achieved. Shulman (2005) stated that learning begins with student engagement. Student engagement has become a focus in efforts to improve teaching and learning.

According to Larry Bernstein (2022), student engagement will have a significant impact on student's growth as it is necessary to fulfil an academic learning process. A poll participated by students has shown that 24% of students are disengaged and the further the students move forward in the education system, more and more students will become less engaged (Bernstein, 2022). Through more than 5 million surveys with students from different academic stages, the student engagement level shows an upsetting trend of declination (Hodges, 2018). It indicates that student engagement has become a critical issue to focus on since it has a huge impact on overall quality and future growth of the students. Although student engagement has become an

issue, most educators are still reluctant to pay too much attention to student engagement due to several reasons. Those reasons are there is no student engagement tracking done historically, student engagement is not included in most academic and learning management systems, and it will increase the burden on educators and students (Ravaglia, n.d.). This has shown that even though the education system has recognized the importance and issue of student engagement, relevant actions taken are still limited.

In Malaysia, higher education institutions (HEIs) can be categorised as private and public. Public universities are mainly managed by the government directly or indirectly, while different organisations often manage private universities for different purposes. Higher education institutions (HEIs) especially provide professional education tailored to meet the needs of various vocations and professions. This education category encompasses undergraduate, college, and postgraduate education levels. Pursuing higher education is widely recognized for its positive impact on an individual's overall well-being, as colleges persist in their mission to advance knowledge and foster deeper understanding (Al-Hosaini & Sofian, 2015). Based on the newly published Malaysian Education Blueprint 2015-2025, it is anticipated that the population of students enrolled in private higher learning institutions (HLIs) will see a significant rise from 455,000 in 2012 to an approximate figure of 867,000 by the year 2025. This projection indicates an annual growth rate of 5.1% (Ong, 2015). Due to the substantial growth experienced by the sector in the past two decades, higher education has emerged as a critical driver of a nation's economy. It plays a crucial role in promoting employment opportunities, improving infrastructure productivity, boosting export revenues, and making substantial contributions to the overall development of urban areas and regions (Al-Hosaini & Sofian, 2015).

According to Adi Badiozaman (2019), Malaysian students in higher education have different beliefs regarding the definition and importance of engagement. The primary and historical emphasis of student engagement has been enhancing academic performance, fostering good conduct, and cultivating a feeling of belonging among students. The concept of student involvement has evolved to include both a strategic approach to learning and a measure of responsibility (Taylor & Parsons, 2011). Research also shows that different factors such as faculty quality, lecturers' capability, management and so on will affect students' engagement (Naidu, Prashalini & Derani, Nor, 2016). Sutton (2021) states high behavioural, emotional, and cognitive engagement levels are linked to academic success, school connectedness, and social-

emotional well-being. However, negative student engagement is linked to delinquency, violence, drug addiction, and school dropout.

1.2 Research Problems

Recent Wiley's "State of the Student 2022" study showed a worrying downward trend in post-COVID-19 student engagement in colleges and universities. The study shows a rise in student experiences of demotivation, uneasiness, and uncertainty by drawing on a thorough survey of university students and instructors in the U.S (Hoboken, n.d.). Major selection, course interest, and even general retention rates are all impacted by this disengagement, which is mostly caused by financial and emotional stress. This concerning tendency highlights the need for further assistance to help students deal with these difficulties, guaranteeing their continuing enrolment, persistent engagement, and achievement of career and educational objectives (Hoboken, n.d.).

Several authors (Beer & Lawson, 2018; Boylan & Renzulli, 2017) showed increasing concern about rising student attrition and a lack of student engagement in education. Kahu and Nelson (2018) addressed that students in colleges and universities face numerous difficulties. Many are the first in their families to attend college, perform poorly in class, are more likely to develop stress and anxiety disorders, and they have either full-time or part-time in addition to attending school full-time (Kahu & Nelson, 2018). According to the World Health Organization, students must be healthy and emotionally safe in order to actively participate in education. Indeed, according to OECD questionnaires, anxiety about homework and tests can have a negative impact on students' academic performance (Pascoe et al., 2019). According to the questionnaire, top-performing females state that their fear of making mistakes frequently influences their performance on tests (Formal et al.,2020). those in the lower quartile of academic achievement stated that they felt more stressed than those in the top quartile. This shows that higher levels of perceived stress are linked to poor academic performance. The level of engagement among students is directly linked to the experience of pleasant and negative emotions (Reschly et al., 2008).

Students can manage higher levels of stress in college by juggling these life demands (Ryan et al., 2010). Student engagement with higher education is a key predictor of academic achievement and student happiness (Kahu, 2013). Denovan et al. (2020) discovered that

engaged students performed more well and enjoyed learning more. However, the amount to which students participate in all academic activities determines the level of engagement among pupils (Schoffstall et al., 2013). According to Kuh et al., 2008, several factors influence the level of SE, including the characteristics of students (e.g., age, gender, socioeconomic status), their behaviours, academic disciplines, the characteristics of the institution, perceived work-load and relationships with peers and the teachers.

Students may encounter particular difficulties in specific academic settings, such as private universities in Malaysia, where they may encounter demanding coursework, high standards, and competition (Permatasari et al., 2021). High academic demands not only create stress (Barker et al., 2018), but also result in a devastating effect on student engagement Gaydos, 2008). Consequently, it is crucial that the students possess a high level of academic resilience in order to cope with such challenging situations. Stress and anxiety symptoms can keep students from paying attention in class and make it harder for them to focus on their studies. According to Kahu et al. (2017), academic success is undoubtedly linked to student engagement, so it is critical that academics make an effort to foster an engaging learning environment.

Students who are resilient are more likely to persevere through challenges, keep their motivation, and actively participate in their academic endeavours (Permatasari et al., 2021). Academic resilience is defined as students' psychological ability to cope with stress and difficulties in the educational process (Radhamani & Kalaivani, 2021). It enables them to overcome obstacles and achieve positive academic outcomes despite adversity. Resilient people have the mental fortitude to deal with disruptive or stressful events and, as a result, develop additional protective and coping skills (Richardson et al.,1990). Students who have high resilience ability to successfully deal with obstacles, stress, and challenges in the classroom (Mallick & Kaur, 2016). Academic resilience enables students to succeed in a wide range of academic pursuits, even in the face of adversity or early life experiences. Furthermore, it has been demonstrated that resilient students perform better even in the face of trying circumstances that might affect their ability to concentrate in class or cause them to lose interest in learning (Radhamani & Kalaivani, 2021).

In essence, academic resilience enables students to face and overcome challenges without easily giving up (Radhamani & Kalaivani, 2021). It gives them the ability to rebuild their

academic paths and remain engaged in the face of adversity. Educators can create a supportive and empowering learning environment for students' growth and academic achievement by developing their resilience. Academic resilient students have a positive mentality as they view challenges as opportunities to grow and learn, rather than as insurmountable barriers, thus encouraging them to actively participate in the learning process. In addition, resilient students excel at establishing specific academic goals and devising strategies to achieve them (Jowkar et al., 2011). They are more likely to set achievable goals, break them down into achievable stages, and work steadily toward them. This goal-oriented behaviour encourages students' sense of purpose and engagement in their academic journey (Radhamani & Kalaivani, 2021).

Procrastination is a prevalent issue among students, and it can significantly affect their engagement levels. Procrastination can be described as an illogical delay in the beginning or completion of tasks, frequently leading to emotions of guilt and worry (Rozental et al., 2022). In the education context, many researchers used the term “academic procrastination” to specifically refer to the tendency of students to delay their academic tasks, they regularly put off things to the point where it stresses them out and affects their academic performance (Day et al., 2000). According to Kosnin and Khan (2016) who conducted at a public university in Malaysia, 67% of respondents procrastinate slightly, and 12% of respondents postpone severely. Students who procrastinate often struggle with time management, leading to rushed assignments, incomplete tasks, and reduced overall engagement in learning (MSEd, 2022). Overcoming procrastination is one of the difficulties that students frequently encounter when pursuing their academics (Blunt & Pychyl, 2005; Klingsieck, 2013). Students' academic procrastination can be made worse by a variety of contextual conditions, but some are more likely than others to experience long-term task delays, which are frequently linked to poorer academic performance (Kim & Seo, 2015) and higher levels of stress and anxiety (Beutel et al., 2016).

Numerous studies have demonstrated that procrastinators frequently exhibit specific personality qualities that can lower their motivation. According to Nábělková and Ratkovská (2015) demonstrated a correlation between procrastination and qualities like a fear of failure, maladaptive perfectionism, and sensitivity to penalties. These characteristics may make it difficult for procrastinators to feel motivated to take on difficult projects when they expect to fail in addition to having weak skills in emotion regulation (Nábělková & Ratkovská, 2015). Procrastinators have less motivation to embark on challenging projects where failure is more

likely to occur. The perception of potential failure can start difficult-to-get-rid-of unpleasant emotional processing (Özer et al., 2009). Because of such a situation, those who have a procrastination tendency often lack motivation to finish tasks and goals and instead opt for activities that give them the opportunity to manage their emotions in the short term but keep them from carrying out their actual duties (Sirois & Pychyl, 2013).

Students tend to put off studying and its inherent tasks and activities, while understanding that the delay may harm them (Steel & Klingsieck, 2016). According to Steel (2007), nearly all students postpone on occasion, and 75% considered themselves common procrastinators. Procrastination is a serious and ongoing problem for nearly half of habitually procrastinators (Steel, 2007) and it is one they want to address (Grunschel & Schopenhauer, 2015). According to Rozental et al. (2022) discovered that procrastinators struggle with self-regulation, such as goal setting, pursuit, and completion. They prioritise short-term emotional betterment over long-term self-management and achieving objectives. An attempt to avoid anxiety, stress, or other negative states related with studying is part of procrastination (Rozental et al., 2022). Procrastinators frequently cope with the anxiety, negative impacts, and threats of commencing and doing tasks by actively postponing them until there is a lack of time to perform effectively (Jackson et al.,2003). Chronic procrastinators spend a shorter period preparing for duties they are able to finish effectively, but they are also more likely to "crash under stress" when their cognitive workload is high, work slower, and make a greater number of errors compared with non-procrastinators (Ferrari, 2001).

The ability to manage one's behaviour, emotions, and thoughts in the pursuit of long-term goals is referred to as self-regulation (Cuncic, 2023). Self-regulation plays a crucial role in student engagement by enabling students to manage their thoughts, emotions, and behaviours in pursuit of academic goals (Cuncic, 2023). According to research, multitasking students require self-regulation in their learning (Schaie & Carstensen, 2006), and self-regulation is essential for participation in completing their learning activities (Wolters & Taylor, 2012).

Students that are self-regulated do not waste time on irrelevant activities, allowing them to devote more time to academic duties and study activities. In addition, self-regulated learning promotes student involvement (Mukaromah & Mulawarman,2018). Self-regulated learning is especially ideal for college students since they have a lot of control over how they learn (Mukhid, 2008). Furthermore, self-regulating students are better at identifying clear academic

goals and making strategic plans for accomplishing them. They successfully allocate time and break down difficult tasks into simple steps, enhancing focus and engagement in learning (Baumeister & Vohs, 2007). College students who are self-regulated in their learning are able to better meet their primary responsibility and show better student engagement which is a means of boosting academic achievement (Wolters & Taylor, 2012).

In view of the issues discussed above, this research intend to examine the effects of academic resilience, procrastination and self-regulation on student engagement among undergraduate students in UTAR, Kampar campus.

1.3 Research Objectives

This research's primary goal is to examine the determinants of student engagement in a private university in Malaysia. Specifically, the scope of study for the present research will be undergraduate students at Universiti Tunku Abdul Rahman (UTAR), Kampar campus.

1.3.1 General Objective

To determine the factors that influence the level of student engagement.

1.3.2 Specific Objectives

1. To identify the influence of academic resilience on student engagement.
2. To identify the influence of academic procrastination on student engagement.
3. To identify the influence of self-regulation on student engagement.

1.4 Research Question

1. Does academic resilience significantly influence student engagement?
2. Does academic procrastination significantly influence student engagement?
3. Does self-regulation significantly influence student engagement?

1.5 Hypothesis

H1: Academic resilience is positively related to student engagement.

H2: Academic procrastination is negatively related to student engagement.

H3: Self-regulation is positively related to student engagement.

1.6 Contribution of the Study

Theoretical Contribution

This research emphasises on variables including academic resilience, academic procrastination and self-regulation on student engagement among undergraduates in a private university in Malaysia. The first variable, which is academic resilience, is an evolving process for students to acquire knowledge, skills and abilities that will help them to face any uncertainty and challenges with a positive attitude and their optimism (Ayala & Manzano, 2018). According to research, academic resilience shows a positive relationship with student engagement (Sri Hardianti Sartika, & Betanika Nila Nirbita, 2023). Another research shows that procrastination and academic engagement are negatively related (Huaman & Huaman, 2021).

Furthermore, there is lack of research about student engagement among undergraduates especially in the education field in Malaysia, specifically with the variables including academic resilience, procrastination and self-regulation. More specific and detailed relative impacts of each variable will be examined in this research.

Practical Contribution

From the perspective of an organisation, this research will be useful to the management of the university, specifically private universities in Malaysia to understand the undergraduate students better. This research can potentially serve as an important reference for the management of university by providing detailed information that impacts students' engagement. The university could then design programmes that are more suitable for students or activities that can enhance students' engagement in university. For academic staff, they could design coursework that reduces academic procrastination and enhances academic resilience and self-regulation so that students could be more engaged in their study.

From students' perspective, this research allows students to understand themselves better. This research discusses in detail how academic resilience, academic procrastination and self-regulation affect students' engagement in academic studies. By going through this research, students will be able to relate to their study behaviour and habits and ultimately understand how and why their academic engagement is high or low.

1.7 Chapter Layout

This research consists of five chapters. Chapter 1 indicates the background of study, draws a specific problem statement, research questions, research hypothesis and the importance of the study. It helps researchers and readers to understand the main idea, goals, background, objectives and contribution of the study.

Chapter 2 discusses and reviews journal articles on variables affecting student engagement in private universities. This chapter includes literature review, underlying theories, proposed conceptual framework, and hypothesis development.

Chapter 3 focuses on data collection, processing and analysis. This chapter includes research design, data collection method, sampling design, research instruments, data processing and data analysis. It is important to have a specific sample frame, target population, main or secondary data collection method and questionnaire design.

Chapter 4 includes all research results from data collection. The data that are analysed in this chapter are descriptive analysis where the respondents' demographic data are collected, reliability analysis, pearson correlation analysis which measures the relation between variables, and multiple regression analysis which determines the significance of independent variables and dependent variable.

Chapter 5 concludes the major findings between academic resilience, academic procrastination and self-regulation and student engagement. Limitations of this research are also being discussed with recommendations for future research suggested.

1.8 Chapter Summary

In this chapter, the background and contribution of the research has been discussed and the research problem, research objectives, hypothesis have been specified. In the following chapter, the underlying theories, literature review, proposed conceptual framework and hypothesis development will be covered.

Chapter 2: Literature Review

2.0 Introduction

This chapter discusses underlying theories that support the proposed research framework of this research. Dependent and independent variables of this research will be explained theoretically and reviewed based on past research. The following sections discuss the conceptual framework and explains the relationship between variables based on the hypothesis of the research. The last section concludes the chapter.

2.1 Underlying Theories

2.1.1 Self-regulation theory

Self-regulation theory, often known as self-control theory, is a psychological model that focuses on a person's ability to govern and control their thoughts, emotions, behaviours, and impulses in order to attain desired results and objectives (Ommundsen, Haugen and Lund, 2005).

It focuses on the internal processes and techniques people use to manage themselves and adapt to different situations (Hall & Fong, 2007). The self-regulation theory focuses on the potential of individuals for goal setting, evaluating progress, aligning cognitive processes, exercising self-control, adapting according to feedback, handling emotions, and replenishing resources. Situational circumstances and self-efficacy beliefs both play a part. In order to achieve goals and preserve well-being, the idea highlights self-awareness, planning, resilience, and adaptation. (Chen and Lin, 2018).

It begins with identifying goals, ensuring alignment with changing conditions, and encouraging self-discipline. According to Tobin et al. (2000), self-monitoring and adaptive thinking are aided by cognitive processes. Emotional control practices improve resilience in the face of adversity. These characteristics work together to promote self-control, allowing individuals to traverse difficulties, tap into inner resources, and attain long-term goals. A review of the underlying foundation of self-regulation theory showed that it integrates different existing motivation theories, such as goal-setting theory in explaining one behaviour.

2.1.2 Goal-setting theory

As indicated earlier, goal setting is important in a self-regulatory process that promotes motivation, academic learning and student engagement (Schunk, 2001; Zimmerman, 1998). Thus, the relevant theory was discussed.

Goal-setting theory, developed by Locke and Latham (1990), proposes that the intentional process of creating specific, hard objectives acts as a strong motivator for both boosting motivation and enhancing performance. This idea emphasizes the transforming effect of well-stated aims since they provide undertakings with a strong desire for purpose and direction in addition to serving as guidance (Lunenburg, 2011).

Specific objectives foster a higher degree of attention by providing a concrete aim to work towards, allowing people to focus their energy with solid purpose and an improved commitment. These goals' intrinsic accuracy directs behaviours and resource allocation, improving the probability of committed involvement (Martin and Marsh, 2006). In addition, the goals' intrinsic difficulty serves as a motivating factor, pushing people to go beyond their perceived boundaries and expand their talents. In a setting where people are constantly evolving and outperforming their previous accomplishments, the marriage of desire and challenge accelerates growth and performance.

A variety of targets, helpful criticism, and strategic techniques have a transforming effect on a variety of areas, including education, career, and personal development are related to goal-setting theory (Locke &Latham, 2015). It motivates people to take intentional measures, integrate their efforts with organizational goals, and support ongoing personal growth. Goals, feedback, and success interact dynamically to promote motivation, performance, and meaningful achievement.

2.1.3 Temporal Motivation Theory

Temporal Motivation Theory (TMT) introduced by Steel and Konig (2006). The theory explains that procrastination occurs due to TMT highlights that whenever deadlines get closer, people's motivation levels change. It also suggests that students get more motivated to act as the deadline for an assignment or exam approaches (Siaputra, 2010). This phenomenon is consistent with TMT's guiding principles since the importance of the benefit from turning in a finished work or doing well on a test rises as time expires (Chen and Feng, 2022). As a result,

they could become more motivated to work on projects, which might result in frantic last-minute attempts to do homework or prepare for tests.

Student engagement is crucial to TMT's idea of "hyperbolic discounting," which examines decisions impacted by time-related reward value. Students who are actively engaged have an amazing skill to negotiate the trade-off between short-term satisfaction and the promise of longer-term, greater benefits that come through education. Long-term objectives are given priority because of their increased awareness of new knowledge, potential career opportunities, and personal development (Steel,2007). Following the principles of TMT, students' current issues regarding success may be reduced. Students who are actively involved in their learning show their ability to balance short-term fulfilments with goals for the future which also improves their learning process with adaptability and objectivity.

The complicated connections between procrastination, student engagement, and time-related motives may be understood using the useful framework provided by Temporal Motivation Theory. While motivated students prioritize delayed rewards and put in the effort to reach their objectives, procrastination results from the conflict between short-term comfort and long-term gains. Recognizing these dynamics will enable both educators and students to make use of TMT's insights to improve time management, motivation, and involvement in academic endeavors.

2.2 Literature Review

2.2.1 Student Engagement

According to Christenson et al. (2012), engagement is a psychological state of mind and mental connectedness that promotes vitality, absorption, and commitment. Nystrand and Gamoran (1992) broadly described student engagement as the willingness among students to be involved in activities in the school, inclusive of following instruction by teachers in the class, attending class and submitting assignments. Student engagement is typically correlated positively with desirable academic, social, and emotional learning results (Klem & Connell, 2004). In the realm of education, student engagement relates to the extent of focus, curiosity, enthusiasm, and positive outlook that students exhibit while absorbing knowledge or receiving instruction (Olson &Peterson, 2015).

Fredricks et al. (2004) explains three dimensions of student engagement, namely behavioral engagement, emotion or affective engagement, and cognitive engagement. The first dimension is behavioural engagement. Behavioural engagement relates to students' involvement and participation in academic activities that demonstrate on-task focus, effort, and perseverance (Fredricks et al., 2004). Furthermore, Trowler (2010) claimed that students that are behaviourally engaged often adhere to behavioural norms for example attendance and involvement and exhibit no disruptive or negative behaviour. According to Kang and Wu (2022), student behaviour in the classroom, participation in school-related activities, and enthusiasm in an academic task are all examples of behavioural engagement. The passive parts of behavioural engagement include students' classroom behaviour and involvement in school-related activities. Activities in these two contexts were allocated by teachers, and students were actually driven by teachers' expectations. While interest in academic work is an active feature of behavioural engagement since a student might raise questions or participate in classroom discussions.

The second dimension is emotional engagement, students who are emotionally engaged will have affective reactions that involve interest, pleasure, or a sense of belonging (Tworler, 2010). Emotional engagement is defined as a student's good attitude, feelings, and impression of the learning activities (Park & Yun, 2017). Moreover, emotional involvement encompasses feelings of connection within the educational environment, encompassing established bonds

with educators and classmates, as well as the emotional aspects associated with the process of learning and sentiments directed towards the educational institution as a whole (Ulmanen et.al, 2016). Emotional engagement has been linked to favourable future orientations and overall adolescent development. Engaging in teacher and peer relationships promotes students' empathy and negotiation skills, as well as increases their sense of self-worth and well-being (Ulmanen et.al, 2016). The emotional engagement of students is determined by how they feel about their teachers, peers, institutions of learning, and academics. Positive and negative outcomes may be revealed by emotional engagement. It is anticipated that emotional engagement will have a good impact on students' relationships with their schools and their understanding of the need to complete their assignments (Iskandar and Pahlevi, 2021). Student emotional engagement in teachers and peers with positive relationships may result in supportive responses from teacher and peer, influencing student learning outcomes (Hughes & Kwok, 2006).

The third dimension is cognitive engagement. Cognitive engagement can be described as students' active participation in learning along with a favourable psychological state (Nguyen et al., 2016; Yang et al., 2021). Cognitive engagement has also been explained as the degree to which one is thinking about the activity of learning, or how often one is attending to and focusing on the task (Ben-Eloyahu et. al, 2018). Cognitive engagement in the classroom can be defined as a psychological state in which students make significant efforts to genuinely learn a topic and continue to study for an extended period of time (Rotgans & Schmidt, 2011).

According to Tworler (2010), cognitively engaged students are invested in their learning, desire to go above and beyond the requirements, and thrive on challenges. Furthermore, cognitive engagement relates to the student's personal involvement in educational activities, such as dedication to mastery learning, and the application of study techniques (Pietarinen, Soini & Pyhalto, 2014). Cognitive engagement involves a deep and active psychological engagement in a task and learning process which entails focused thought, critical analysis, and the meaningful processing of information (Skuballa, Dammert & Renki, 2018). Individuals who are cognitively engaged are actively thinking, reflecting, and forming connections, which leads to a greater comprehension of the subject matter (Blumenfeld, Kempler & Krajcik, 2006). This form of connection fosters higher-order thinking abilities such as problem-solving, creative thinking, and knowledge application. Cognitive engagement is necessary for optimal learning since it improves retention, understanding, and skill development (Lao & Kuhn, 2002).

2.2.2 Academic Resilience

Resilience is a psychological condition that refers to a person's ability to deal with stress, difficulty, and adversity (Hobfoll et al., 2003). Hence, academic resilience pertains to a student's capacity to maintain motivation and concentration in spite of challenging and unfavourable situations encountered during their studies (Ahmed et al, 2018). According to Ye, Strietholt and Blomeke (2021), academic resilience is the ability of students to succeed during school despite having experienced a difficult background, or more specifically, the increased likelihood of success in school despite environmental adversities brought on by early characteristics, circumstances, and experiences. Academic resilience was described by Martin (2013) as "the ability to overcome acute and/or chronic adversity that is viewed as a significant threat to a student's academic development."

According to Everly et al. (2015), self-efficacy has an impact on a student's academic resilience and helps students overcome obstacles. Besides, Sarafino and Smith (2014) stated that social support had a significant role in an individual's resilience construction. Permatasari, Ashari and Ismail (2021) claimed that aside from internal characteristics, extrinsic elements that influence academic resilience include family members, qualified teachers, peer relationships, and the community or individual social environment. Someone who provides positive social support can improve an individual's ability to handle stressful situations, cope with them, and overcome them. Students require good social support to develop resilience while under pressure or stressed (Permatasari, Ashari & Ismail, 2021).

Novotny and Kremenkova (2016) claims that education can serve as a coping mechanism, giving students a sense of competence which the chance to succeed, enables the students to temporarily leave an unfavourable environment, make up for deficiencies caused by other disabilities, or serves as an incentive factor for further study. Education contributes to an individual's overall capacity to cope with life's adversities. Moreover, according to Sartika and Nirbita (2023), academic resilience enables students to handle four circumstances effectively: setbacks, challenges, adversity, and stress in an academic environment. When faced with adversity, students with strong resilience tend to maintain a positive outlook. Onnove et.al, (2021) indicated that students with academic resilience have more productive academic trajectories, report higher grades, are more satisfied with their academic life, and have lower dropout intentions because of increased involvement. As a result, the greater the academic resilience capacity, the greater the academic achievement. Furthermore, academic resilience is

also defined as both a motivator to achieve academic and individual goals, as well as a provider of suitable strategies to cope with stress and uneasiness that occur in the University context (Yang and Wang, 2022).

2.2.3 Independent Variable: Academic Procrastination

Procrastination is a habit, attitude, or behavioural attribute defined by Shah (2000) as a condition of indecision characterised by a lack of motivation and energy to do things. Procrastination among students in education settings has always been termed as academic procrastination, known as unnecessary delay in academic assignment or study-related tasks (Zarrin & Gracia, 2020).

Students who fail to complete the appropriate task at the proper time and leave it for later can fail and experience mental anguish. It can have an impact on a student's personality and learning. According to Hussain and Sultan (2010), procrastination can have an impact on students' self-efficacy and self-actualization, and they either hesitate to take initiative or are frightened to begin work or duties.

Procrastination appears to be linked to a variety of physical, emotional, and spiritual issues. It might cause students to feel embarrassed and have low self-esteem. According to Thompson et al. (1995) discovered a negative relationship between self-identity levels and procrastination. Moreover, procrastination decreases students' confidence and their expectations of completing tasks; it adds significant amounts of stress, worry, and fear, leading to a miserable life, affects achieving objectives, creating anxiety (Hussain & Sultan, 2010). Besides, procrastination leads to increased depression, low self-esteem, and a reduced ability to maintain appropriate self-care habits like exercise and diet (Hussain & Sultan, 2010).

Procrastination can be avoided with effective time management to pursue important goals even in the face of changing situational demands (Strunk et al.,2013). Misallocating time, engaging in pointless activities that take up time, spending a lot of time on social media, and cramming for exams at the last minute are all behaviours that have a significant negative impact on students' academic performance Olowookere et al., 2015). According to Aduke (2015), prevent

procrastination and prioritise critical tasks in order to promote student performance and engagement.

Individuals who perceive academic assignments to be difficult and stressful avoid them more frequently, which leads to a rise in anxiety (Hussain & Sultan, 2010). Fail to fulfil academic commitments on time raises the likelihood of negative consequences as well as avoiding of the activity (Klingsieck,2013). Academic procrastination, according to Akbay and Gizir (2010), may result in a short-term sense of calm, but in the long run, this feeling will turn into a type of anxiousness that adversely impacts academic performance. Anxiety, according to Scher and Osterman (2002), is a prevalent cause of procrastination. Onwuegbuzie (2004) found that academic procrastination had a significant connection with test and classroom anxiety among graduate students.

2.2.4 Independent Variable: Self-regulation

The capacity to alter behaviour on your own is known as self-regulation (Baumeister & Vohs, 2007). It considerably increases the adaptability and versatility of human behaviour, allowing people to adjust to a wide range of social and situational needs. It is a crucial foundation for society's common concepts of free will and good behaviour. It offers advantages for both the individual and society, and excellent self-control appears to aid in the achievement of many desirable outcomes, such as task performance, academic and career achievement, popularity, mentally health and adjustment, and beneficial social relationships (Baumeister & Vohs, 2007).

Self-regulation can be described as an essential trait that reflects individuals adapting their thoughts, feelings, and behaviors or motivation in response to the environment for goal attainment (Zimmerman, 1998). Self-regulation can relate to processes that occur before or during goal selection, as well as activities that occur after goal selection (Luszczynska et al., 2004). Maintaining a good emotional balance and focusing on the work at hand may aid in maintaining proactive behavior. After first failures, strong self-regulation may help continuing involvement in accomplishing tasks. People must focus on the work at hand at various stages of goal pursuit, whether self-inflicted or enforced by others. They must concentrate even when barriers or other jobs interfere. As a result, focusing on present goals and priorities while fighting distractions is frequently a tough self-regulation process. Self-regulation refers to an individual's ability to complete previously defined goals despite multiple demands and

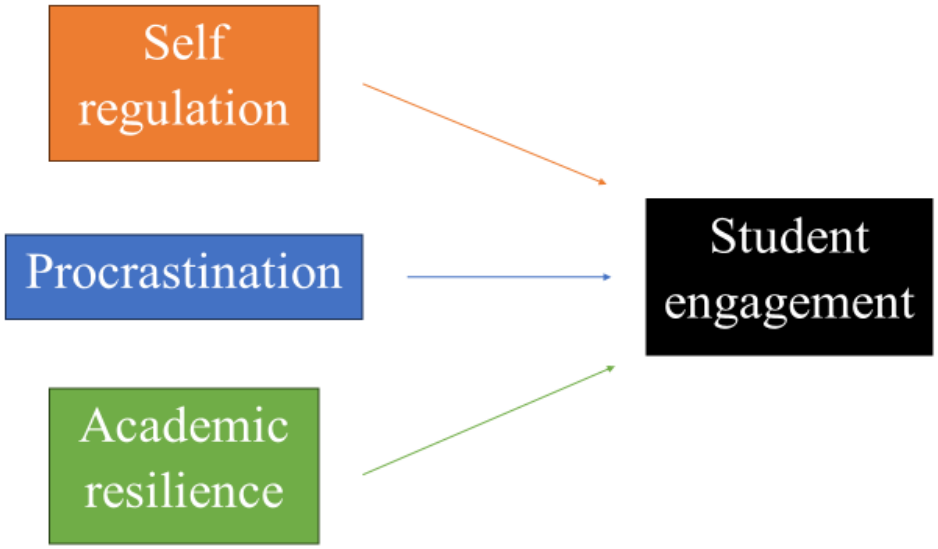
diversions (Kuhl & Fuhrmann, 1998). Self-regulation may refer to an action orientation that allows people to down-regulate invasive unpleasant emotions when they interfere with specific goals (Baumann & Kuhl, 2002).

Chen and Yin (2018) developed a short version of self-regulation questionnaire for Taiwanese college students consisting of five dimensions, namely goal setting, goal attainment, adjustments, mindfulness, and proactiveness. The measure showed good validity and reliability. Self-regulation encompasses goal setting, goal attainment and adjustments to achieve the goal (Chen & Yin, 2018). This can be linked to the three-phase self-regulation model by Zimmerman's (1998): (i) Forethought phase (formulate a goal and determine the course of actions); (ii) performance control (take actions toward the achievement of the goal and monitor the performance; (iii) self-reflection (evaluation of the progress and make necessary adjustments). Other important self-regulation component is mindfulness (i.e., present awareness to regulate one's thoughts and actions) and proactiveness (Chen & Yin, 2018). Self-regulation showed positive impacts on academic outcomes. Park and Kim (2022) in their study showed those with Korean university students who are high in self-regulation are more engage in the class and they demonstrated better academic performance.

2.3 Proposed Conceptual Framework

Conceptual framework

Diagram 2.0: Conceptual Framework Model



The proposed conceptual framework shown above in relation to the research questions and objectives. The diagram shows the relationship between the independent variables, academic resilience, procrastination as well as self regulation, and the dependent variable, which is the student engagement among students in UTAR, Kampar campus.

One of the factors that affects student engagement is academic resilience. In order to overcome difficulties, develop drive, and be dedicated to their studies, students need to have academic resilience. Students who are more resilient are more likely to persevere, change and partake fully in their educational pursuits, which improves their academic performance and general success. According to Permatasari et al (2021), they state how academic resilience involves learners overcoming obstacles and challenges to successfully complete academic loads. Therefore, academic resilience involves students' ability to survive, bounce back, overcome challenges, and adapt positively (Sartika & Nirbita, 2023). So, this explains the relationship between academic resilience and student engagement.

Furthermore, procrastination will also affect student engagement. Procrastination involves delaying or postponing academic obligations, leading to lower productivity, increased stress,

and poor learning outcomes. It involves deliberately diverting attention from essential tasks and engaging in low-priority pursuits. Based on the research done by Yee and Lai (2021), they have discovered that academic motivation and gender was linked with student engagement in Malaysian private universities while mindfulness and psychological well-being was linked with student engagement (Jayaraja, Tan and Ramasamy, 2017)Thus, it can be explained about the relationship between procrastination and student engagement.

Moreover, self regulation can also affect student engagement in Malaysian private universities. Self-regulation is essential for student engagement, as it helps control thoughts, feelings, and actions, promoting learning and academic achievement. Engaging in self-regulation exercises helps students create objectives, manage time effectively, avoid distractions, and maintain attention, boosting motivation, organisation, and involvement in studies. Based on Doo and Bonk's (2020) research, they discuss self-efficacy and self-regulation influencing social presence which affects student engagement. Wang et al. (2020) discovered how students consider teacher support, situational interest and self regulation influence student engagement in academic performance. There is a relationship between self regulation and student engagement.

2.4 Hypothesis Development

2.4.1 The relationship between academic resilience and student engagement

According to Adhawiyah, Rahayu & Suhesty (2021), there was a positive and significant influence of academic resilience toward students' engagement. Besides, the results of the study show that students who are academically resilient are better at increasing their engagement (Ahmed et. al, 2018). The study emphasises the significance of academic efficacy and academic resilience as, at the graduate level, students are frequently required to work on large amounts of assignments, projects, reports, and learning with tight deadlines, so they must have faith in their abilities and competency to deal with resistance and obstacles in order to give their all to their studies with enthusiasm, dedication, and immersion (student engagement).

According to Cheung et al. (2014), academic resilience positively influences adolescents' learning engagement. Moreover, the findings of Simoes et al. (2021) indicate that students with higher levels of academic resilience are more likely to achieve greater academic success despite facing challenges and difficulties. Students who are academically resilient are likely to

accomplish higher levels of accomplishment despite the presence of risks and problems. As a result, previous research has suggested that students who face risks or difficulties in their studies need to be more academically resilient in order to successfully cope with difficulties and achieve success (Ahmed et. al, 2018).

H1: There is a positive relationship between academic resilience and student engagement

2.4.2 The relationship between academic procrastination and student engagement

Kim and Seo (2015) found that procrastinating has a negative impact on student engagement and accomplishment, such as lower grades and course dropouts. Furthermore, a study conducted by Kasim (2015) indicated that academic engagement is negatively related to academic procrastination. Besides, according to Lakshminarayan et al. (2013), academic procrastination has a negative correlation with student performance. The findings showed that students with above average and average academic performance had lower procrastination scores, while students with high procrastination scores had lower academic performance.

According to Ram and Emsmaeili (2018), one of the most major causes of failure or lack of learning in access to academic achievement programmes is procrastination on assignments. Academic procrastination occurs on a daily basis among undergraduate students and is thought to be harmful because it affects productivity (Hui et.al., 2019). The following hypothesis is proposed based on the above review:

H2: There is a negative relationship between procrastination and student engagement

2.4.3 The relationship between self-regulation and student engagement

According to Doo and Bonk (2020), self-regulation positively affects learning engagement in a large section of university class. Self-regulated learning skills, such as the ability to organise, set objectives, monitor task completion, ask for help, evaluate tasks, and activate existing knowledge, have a positive effect on learner performance, the study complements the research by showing that self-regulation skill is related to the level of student engagement in university class (Doo & Bonk, 2020). Moreover, the results from Setiani and Wijaya's (2022) show that

there is a positive and significant relationship between self-regulated learning and student engagement.

Self-regulation had a positive relationship with both cognitive presence and learning engagement (Doo, Bonk & Heo, 2023). The study demonstrated the findings of Cho et al. (2017), who found that highly self-regulated learners had a stronger sense of CoI (i.e., cognitive, teaching, and social presence) than low self-regulated learners. According to Wolters and Taylor (2012), there is a favourable relationship between self-regulation and academic engagement. Furthermore, self-regulation and learning engagement have been found to have a positive link, with students with higher levels of self-regulation demonstrating better levels of engagement (Liao et.al, 2023). University students' self-regulation, transactional distance, perceptions of involvement, and outcomes for learning were all considerably positive (Miao and Ma, 2022). The following hypothesis is proposed based on the above review:

H3: There is a positive relationship between self-regulation and student engagement

2.5 Chapter Summary

This chapter has reviewed the dependent variable (student engagement) and independent variable (academic resilience, procrastination and self-regulation). Proposed conceptual framework and hypotheses development has also been included as research guidelines. In the next chapter, research methodology will be carried out.

Chapter 3: Methodology

3.0 Introduction

Chapter 3 involves methodology, which consists of research design and the method used to collect data. Furthermore, sampling design and research instruments will be examined to filter out suitable targets, tools and methods to collect data. Additionally, the construct measurement, data processing and data analysis will be included. In the end of this chapter will be the chapter summary.

3.1 Research Design

The term "research design" refers to the general framework and strategy for carrying out a research study, outlining the approaches, steps, and tactics to effectively address the research questions or objectives (Solanki, 2023). This study focuses on the use of a quantitative research strategy to assess grounded theory-based hypotheses. Variables and hypotheses are precisely stated before data collection in quantitative research designs, which tend to be more fixed and deductive (McCombes, 2023). To examine the theories and hypotheses at the foundation of this study, evidence must first be gathered.

Additionally, the design of the questionnaire will be based on fixed alternative items. The information for the entire study will be collected from the targeted participants through questionnaires, and the data will be analysed to evaluate hypotheses. This method of data collecting will be used since it is simple to use and may be distributed via phone, email, mail, or in-person (McCombes, 2023).

3.2 Method of Data Collection

Self-administered survey is a survey that was intended to be completed by an individual without any assistance of an interviewer. These surveys are commonly employed when acquiring any quantitative research data (Jenkins and Dillman, 1995). In the past, the surveys were often completed using paper and pen and sent out through mail or delivered in person to a large number of individuals. A lot of self-administered surveys are currently conducted online and on mobile devices. Researchers may collect data from practically any area rapidly and

affordably than with conventional approaches by using digital survey technologies (De Leeuw, 2008).

3.2.1 Primary data

Primary data frequently come in the form of interview transcripts, images, books, historical records and government data. A primary source can be anything that you directly examine or even make use of as first-hand evidence, including any qualitative or quantitative data that you have acquired through data collection (Hox and Boeije, 2005). Self-administered questionnaires with closed-ended questions will be used to collect data that can be used to objectively analyse preferences and trends.

3.3 Sampling Design

Universiti Tunku Abdul Rahman (UTAR) Kampar Campus was selected as the research location due to its convenient location, which enhances the manageability and cost-effectiveness of data collection for the research. Furthermore, the focus on undergraduate students at UTAR Kampar was driven by their relevance to the research objectives. Their experiences and perspectives have the potential to provide valuable insights into the research questions. Additionally, the accessibility of undergraduate students on campus makes it practical to conduct surveys and observations, thereby improving the feasibility of our data collection methods.

3.3.1 Target Population

The target population for this study consists of undergraduate students currently enrolled at Universiti Tunku Abdul Rahman(UTAR) Malaysia, a private not-for-profit entity wholly owned by the UTAR Education Foundation (Times Higher Education, 2022). UTAR has two campuses: UTAR Kampar and UTAR Sungai Long. The intention of this study is to gather data from undergraduate students at the Kampar campus. The population of undergraduate students at UTAR Kampar campus is approximately 7,700. The details of the population was obtained from the acting director, Mr. Wong Chee Wee of the Division of Admission and Credit Evaluation (DACE) at Univeristi Tunkul Adbdul Rahman (UTAR).

3.3.2 Sampling Frame and Location

The term " sampling frame" refers to a list of individuals from a targeted population from which a probability sample is drawn (Rukmana, 2014). The study was conducted at one of the UTAR campuses, specifically the Kampar District in Perak, which is UTAR Kampar. The sampling frame, which is the complete list of students in the campus was not available, therefore the present study will opt for non-probability sampling which was further explained in section 3.3.4.

3.3.3 Sampling Element

The sample elements for this study consist of local and international undergraduate students who studied at UTAR Kampar campuses. The students are enrolled in various faculties, the Faculty of Business and Finance (FBF), Faculty of Information and Communication Technology (FICT), Faculty of Science (FSC), Faculty of Engineering and Green Technology (FEGT), Faculty of Arts and Social Science (FAS), Institute of Chinese Studies (ICS Kampar).

3.3.4 Sampling Technique

As the research encompasses the undergraduate students from the chosen private university, UTAR Kampar, it is feasible to use a non-probability sampling approach. According to Etikan, Musa and Alkassim (2016), convenience sampling is a form of non-probability or non-random sampling, in which individuals from the intended population who satisfy specific practical conditions, such as convenient accessibility, close geographic proximity, immediate availability, or a voluntary inclination to take part, are chosen to be part of the study. Using convenience sampling can be a reasonable choice when there is an absence of a sampling frame, or comprehensive list or database available from which to draw a random or representative sample (Nikolopoulou, 2022). In such cases, convenience sampling becomes a practical option for gathering data from individuals who are accessible and willing to participate.

3.3.5 Sampling Size

The population of undergraduate students at UTAR's Kampar campus is approximately 7,700. For this research study, a desirable target sample size of 367 has been recommended. According to Krejcie and Morgan (1970), a population of 7,700 is best served by a target sample size of 367. Data collection for this research study took place from December 2023 to February 2024. Invitations to participate in the online survey, conducted through a Google Form, were sent to undergraduate students at UTAR's Kampar campus via WhatsApp, WeChat, Microsoft Teams, Facebook, and other relevant channels, including dissemination among friends, family, and acquaintances. At the end of the data collection period, a total of 372 questionnaires were collected. Of these, 367 questionnaires were returned, while 5 were discarded. Among the discarded questionnaires, 3 were from other universities, and 2 respondents did not consent to the recording of their personal data.

3.4 Research Instrument

Research instrument refers to the measurement tool used to acquire data for research purposes. The research instrument used in this research will be a questionnaire. Questionnaire is an effective tool to acquire data from a huge population in a short amount of time (Taherdoost, H, 2009).

3.4.1 Questionnaires Design

The questionnaires are designed in structured form and divided into five sections. Section A contains the demographic profile of the participants. Sections B, which serves as a dependent variable, student engagement. On the other hand, Section C, D, E encompass three independent variables, academic resilience, self-regulation, and procrastination. The questionnaire consists of fifty-three questions in total. Section A aims to collect personal and demographic data of the target participants. It includes five questions pertaining to age, gender, ethnicity, year of study and faculty. Section B , C, D and E are designed using a five-point Linkert scale to investigate responses ranging from "strongly disagree (1)," "disagree (2) ," "neutral (3) ," "agree (4)," and "strongly agree (5)." Section B has measurement purpose on student engagement, and it

consists of fifteen questions categorised into three dimensions which are behavioural engagement, emotional engagement and cognitive engagement. Section C has a measurement purpose on academic resilience, and it consists of six questions. Section D measures self-regulation with twenty-two questions. Section E is designed to measure procrastination and consists of five questions.

3.4.2 Pilot Testing

To determine the reliability of the questionnaire, pilot testing is being conducted with 30 samples from undergraduates in UTAR Kampar. The questionnaire will be distributed in google form.

Table 3.4 Pilot Study Reliability Test

No.	Variable	Cronbach's Alpha
1.	Student Engagement	.952
2.	Academic Resilience	.693
3.	Self-regulation	.749
4.	Procrastination	.898

3.5 Origin and Constructs Measurement

Table 3.5: Measurement of Independent Variables and Dependent Variable

Variable	Source	Scale	No. Question	Dimension	Sample Question
Student Engagement	Maroco et al. (2016)	5-point Linkert scale	5	Behavioral Engagement	I pay attention in class.

			5	Emotional Engagement	I don't feel very accomplished at this school.
			5	Cognitive Engagement	When I read a book, I question myself to make sure I understand the subject I'm reading about.
Academic Resilience	Martin, A. J., & Marsh, H. W. (2006)	5-point Linkert scale	6	Adaptive	I believe I'm mentally tough when it comes to exams.

Self-regulation	Chen, Y.-H., & Lin, Y.-J. (2018)	5-point Linkert scale	7	Goal Attainment	When I'm trying to change something, I pay attention to how I'm doing.
			7	Mindfulness	I get easily distracted from my plans.
			3	Adjustment	I don't seem to learn from my mistakes.
			3	Proactiveness	I can stick to a plan that is working well.
			2	Goal Setting	I have trouble making plans to help me reach my goals.

Procrastination	Yockey, R. D. (2016)	5-point Linkert scale	5	-	I put off projects until the last minute.

3.5.1 Scale Measurement

There are five sections included in the questionnaire. Section A collects demographic data, while the other sections collect data on the variables. Two measurement scales has been used in this research.

Nominal Scale

Five questions in Section A differentiate objects or individuals into different classes.

4. Year of study:

□ Year 1

□ Year 2

□ Year 3

□ Year 4

□ Others

Interval Scale

The questions in Section B to Section E measure variables with equal intervals between each value by using the 5-point Linkert scale.

No.	Questions	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)
Behavioral Engagement						
1.	I pay attention in class.	1	2	3	4	5
2.	I follow the university's rules.	1	2	3	4	5
3.	I usually do my homework on time.	1	2	3	4	5
4.	When I have doubts, I ask questions and participate in debates in the classroom.	1	2	3	4	5
5.	I usually participate actively in group assignments.	1	2	3	4	5

3.6 Data Processing

Data processing is carefully classifying, purifying, and converting gathered data into a format that can be used for analysis. This comprises operations like data input, error correction, variable coding and categorization, and data structure for quantitative or qualitative analysis. The objective is to guarantee data accuracy, improve its dependability, and accept relevant insights throughout the research project's analysis stage.

3.6.1 Data Checking

Data checking is carefully examining gathered data to spot and correct any errors, variations, or differences. To assure rightness and dependability, it entails carefully examining data entries, variables, and formats. This procedure is critical for ensuring data validity and quality since precise research findings and reliable conclusions depend on clean, error-free data.

3.6.2 Data Editing

Data editing is an organised assessment and adjustment of acquired data to eliminate conflicts, errors, and missing information. This procedure includes discovering flaws and disagreements in the data, checking it against the original sources if necessary, and making the necessary corrections to ensure data correctness and completeness. Data editing is an important stage in data preparation since it improves the dependability and quality of the information before analysis, reducing potential biases and mistakes in the study results.

3.6.3 Data Coding

Data coding can be defined as the process of applying labels or codes to a number of categories of information in order to analyse and evaluate the data more effectively. Therefore, it aids in making an understanding of complicated data by converting it into a structured format that can be utilised for statistical analysis and interpretation.

3.7 Data Analysis

In this research study, the collected data will be evaluated using the statistical analysis program SPSS (Statistical Package for the Social Sciences).

3.7.1 Descriptive Analysis

Descriptive analysis is the process of describing or summarising a set of data using statistical tools (Bush, 2020). This study will use a type of descriptive analysis known as frequency distribution to classify the demographic attributes of the respondents. This is especially true in descriptive analysis since descriptive analysis makes data easier to digest, making it easier for analysts to make decisions on (Bush, 2020).

Section A of the questionnaire contains five items that deal with the respondent's general information or demographic details. The study will use frequency distribution analysis in order to simplify and summarise the data, and the data will be represented as pie charts and bar graphs because they are clear and comprehensible.

3.7.2 Reliability Analysis

A reliability analysis is performed to analyse the components of the scales and the properties of measuring scales. The reliability analysis approach generates data that includes the association between specific scale items and numerous commonly used scale reliability indicators. Cronbach's Alpha will be applied in this study to assess the consistency and dependability of three independent variables (procrastination, self-regulation, and academic resilience) as well as the dependent variable (student engagement in UTAR, Kampar campus).

Table 3.6 Cronbach Coefficient Alpha Rule of Thumb

Coefficient Alpha (*α* value)	**Strength of Association (Reliability)**
<0.6	Poor
0.6 to 0.7	Fair
0.7 to 0.8	Good
0.8 to 0.95	Excellent

Source: Arof et al. (2018)

3.7.3 Inferential Analysis

The reliability of conclusions about a population that are based on data acquired from a sample of the population is evaluated using inferential analysis (Calvello, 2020).

3.7.3.1 Pearson's Correlation Analysis

The test statistic that assesses the statistical association, or relationship, between two continuous variables is called Pearson's correlation coefficient. Due to the fact that it is based on the method of covariance, it is regarded as the best way to measure the relationship between variables of interest. It provides details on the size of the association or correlation as well as the relationship's direction (Statistics Solutions, 2021).

Table 3.7: Pearson Correlation Coefficient Rule of Thumb

Pearson correlation coefficient (*r*) value	**Strength**
Greater than .5	Strong
Between .3 and .5	Moderate
Between 0 and .3	Weak
0	None

Source: Turney (2021)

3.7.3.2 Multiple Regression Analysis

The relationship between several independent or predictor variables and one dependent or criterion variable is typically explained using multiple regression. The constant term, along with a number of independent variables and their corresponding coefficients, are used to model a dependent variable (Statistics Solutions, 2021b). The multiple regression analysis appropriate for this study includes 3 independent variables which are procrastination, self-regulation, academic resilience and the dependent variable in this study (student engagement on undergraduates among UTAR, Kampar campus).

The linear equation is shown below. $\hat{Y} = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3$

Using the equation, $\hat{Y}$= dependent variable (student engagement on student among UTAR, Kampar campus)

α = Constant

β = Each independent variables' coefficients

X1 = Variable of independent 1 (Procrastination)

X2 = Variable of independent 2 (self-regulation)

X3 = Variable of independent 3 (academic resilience)

3.8 Chapter Summary

In this chapter, we included the research design, the method we used to collect data and how we process and analyse the data. Furthermore, we also included how we determined our sampling design, research instrument and constructs measurements.

Chapter 4: Research Results

4.0 Introduction

In chapter 4, SPSS application by IBM will be applied to analyze the descriptive, inferential and reliability data. A total of 372 questionnaire responses were collected and 367 sets of questionnaires were used for the analysis.

4.1 Descriptive Analysis

In this part, the respondents' demographic profile will be converted into descriptive information. By using SPSS and Excel, the demographic data is analyzed and shown in form of frequency, percentage distribution, and bar chart.

4.1.1 Respondents Demographic Profile

Table 4.1: Respondents' university

1. Which university are you from?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Universiti Tunku Abdul Rahman (UTAR)	367	100.0	100.0	100.0

In table 4.1, it shows the frequency and percentage of respondents collected in terms of university. As the research only aims at undergraduates in Universiti Tunku Abdul Rahman (UTAR), respondents which are not from the targeted universities are excluded from the data analysis. Therefore, a total of 367 responses were recorded and the results show that 100% of the respondents are from UTAR.

Table 4.2: Respondents' Age

2. Age:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	19 to 25 years old	366	99.7	99.7	99.7
	26 years old and above	1	.3	.3	100.0
	Total	367	100.0	100.0	

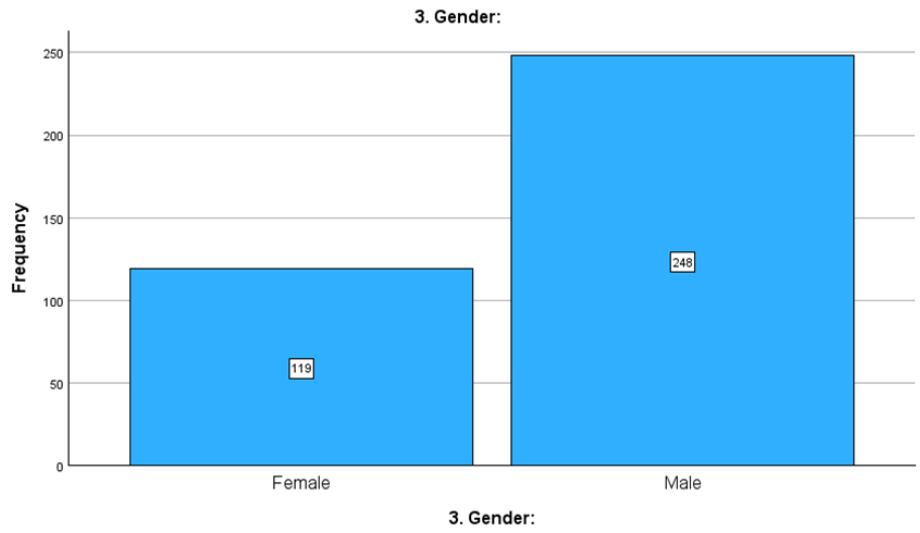
In Table 4.2, it shows the frequency and percentage of respondents in terms of age. The total responses analysed are 367 where 366 respondents are between 19 years old to 25 years old which accounts to 99.7% of the respondents. There are only 1 respondent who are 26 years old and above which accounts to 0.3% of the respondents.

Table 4.3: Respondents' Gender

3. Gender:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	119	32.4	32.4	32.4
	Male	248	67.6	67.6	100.0
	Total	367	100.0	100.0	

Figure 4.3: Statistics of respondents' gender.



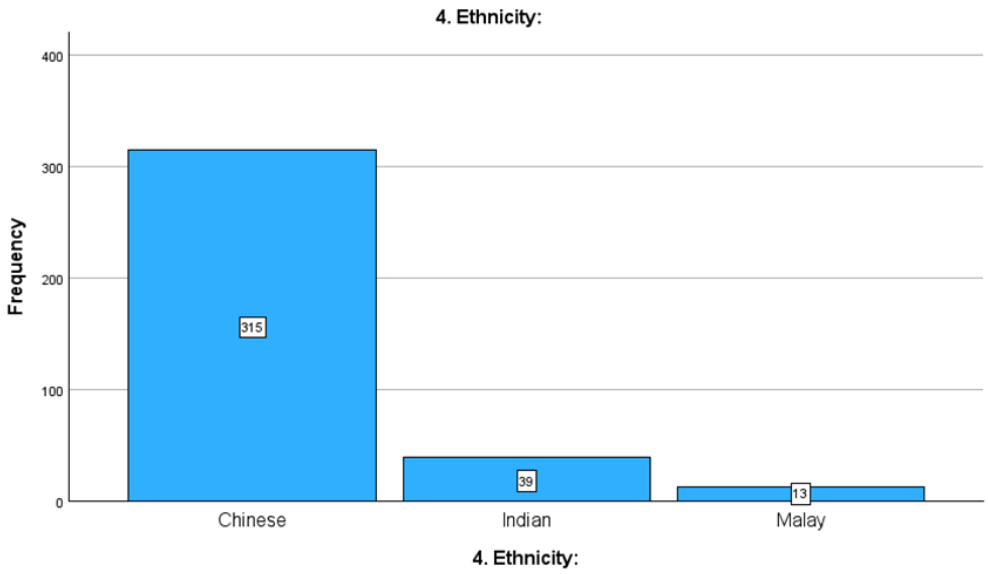
In Table 4.3, it shows the gender of respondents. Out of 367 respondents, 119 respondents are female which accounts to 32.4% of total respondents while 248 respondents are male which accounts to 67.6% of total respondents.

Table 4.4: Respondents' Ethnicity

4. Ethnicity:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Chinese	315	85.8	85.8	85.8
	Indian	39	10.6	10.6	96.5
	Malay	13	3.5	3.5	100.0
	Total	367	100.0	100.0	

Figure 4.4: Statistics on respondents' ethnicity.



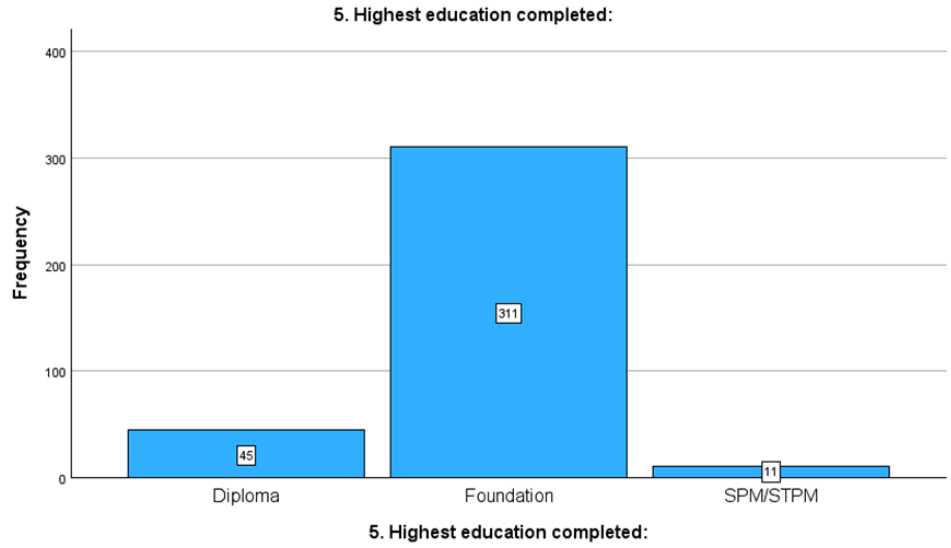
In Table 4.4, it shows the ethnicity of the respondents. Out of 367 respondents, most of the respondents are Chinese which accounts to 85.8% of total respondents with the amount of 315 respondents. There are 39 respondents that are Indian which contributed 10.6% of the total respondents. The least number of respondents is Malay which only accounts to 3.5 % of total respondents at the number of 13 respondents.

Table 4.5: Respondents' Highest Education Completed

5. Highest education completed:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	45	12.3	12.3	12.3
	Foundation	311	84.7	84.7	97.0
	SPM/STPM	11	3.0	3.0	100.0
	Total	367	100.0	100.0	

Figure 4.5: Statistics on respondents' highest education completed.



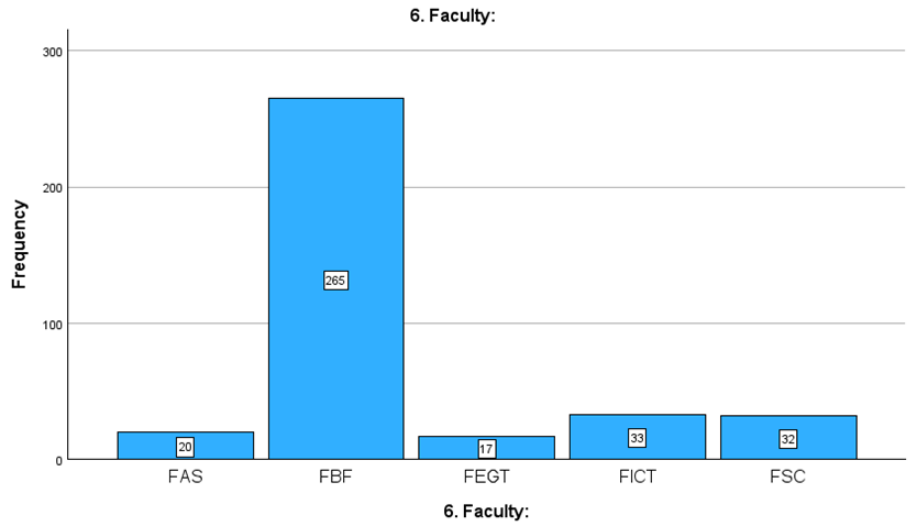
In Table 4.5, it shows the highest education completed by the respondents. 12.3% of respondents are Diploma holders with the number of 45 respondents. 84.7% of respondents are qualified for Foundation with the number of 311 respondents which is the greatest amount among all education qualifications. On the other hand, the lowest amount of respondents which is only 11 respondents are qualified for SPM or STPM and they are accounted for 3% of total respondents.

Table 4.6: Respondents' Faculty

6. Faculty:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	FAS	20	5.4	5.4	5.4
	FBF	265	72.2	72.2	77.7
	FEGT	17	4.6	4.6	82.3
	FICT	33	9.0	9.0	91.3
	FSC	32	8.7	8.7	100.0
	Total	367	100.0	100.0	

Figure 4.6: Statistics of respondents' faculty.



In Table 4.6, it shows the faculty of the respondents. 265 out of 367 total respondents are undergraduates from FBF which contributed 72.2% of total respondents. Out of 367 total respondents, 33 of them are undergraduates from FICT which is 9% of total respondents while 32 of them are undergraduates from FSC which is 8.7% of total respondents. Other than that, 20 respondents are undergraduates from FAS which contributed to 5.4% of total respondents. There are only 17 respondents from FEGT which is 4.6% of total respondents.

4.1.2 Central Tendencies Measurement of Construct

Table 4.8: Central Tendency Measurement

Variables	Mean	Standard Deviation
Student Engagement	**3.96**	**0.59**
Academic Resilience	**4.18**	**0.69**
Self-Regulation	**3.58**	**0.37**
Procrastination	**2.36**	**1.11**

In Table 4.8, the mean and standard deviation value of dependent variable and independent variables are shown. According to the analysis result, the highest mean value is academic resilience with the value of 4.18. Next, student engagement has the second highest value of mean which is 3.96. The third highest value of mean is self-regulation with the value of 3.58. The lowest mean value is procrastination with value of 2.36. In terms of standard deviation, procrastination has the highest value which is 1.11. The second highest value of standard deviation is academic resilience with the value of 0.69. Then, student engagement has the third highest value of standard deviation which is 0.59. Self-regulation has the lowest value of standard deviation which is 0.37.

4.2 Reliability Analysis

Table 4.9: Reliability Analysis Using Cronbach's Alpha Coefficient

Variables	Cronbach's Alpha Coefficient	No. of Items	Result of Reliability
Student Engagement	.910	15	Excellent
Academic Resilience	.919	6	Excellent
Self-Regulation	.804	22	Good
Academic Procrastination	.946	5	Excellent

In Table 4.9, the Cronbach's Alpha value of all variables. The reliability of student engagement is excellent as the Cronbach's Alpha value is 0.910. For academic resilience, the reliability is excellent as well since the Cronbach's Alpha value is 0.919. The reliability of self-regulation is good with the value of 0.804. Procrastination shows an excellent result of reliability with the value of 0.946 which is the highest among all the variables. Overall, the reliability of all the variables are excellent and highly reliable.

4.3 Inferential Analysis

In this research, Pearson Correlation Coefficient and Multiple Regression Analysis are being conducted for inferential analysis.

4.3.1 Pearson Correlation Coefficient

Table 4.10: Academic Resilience and Student Engagement

	Academic Resilience	Student Engagement
Academic Resilience	1.000	0.656
		<0.001
Student Engagement	0.656	1.000
	<0.001	

In Table 4.10, the correlation coefficient (r) value of academic resilience and student engagement are shown. From the table, academic resilience is significantly and positively correlated with student engagement where the r-value is 0.656 and p-value is <0.001. The correlation strength between academic resilience and student engagement is considered strongly correlated as the value is above 0.5.

Table 4.11: Self-regulation and Student Engagement

	Self-Regulation	Student Engagement
Self-Regulation	1.000	0.531
		<0.001
Student Engagement	0.531	1.000
	<0.001	

Table 4.11 shows the coefficient correlation value of self-regulation and student engagement. The result indicates that self-regulation is significantly and positively correlated with student engagement where its r-value is 0.531 and p-value is <0.001. As such, the correlation's strength is considered strong as the value is greater than 0.5 (Turney, 2021).

Table 4.12: Procrastination and Student Engagement

	Academic Procrastination	Student Engagement
Academic Procrastination	1.000	-0.361
		<0.001
Student Engagement	-0.361	1.000
	<0.001	

In Table 4.12, the coefficient correlation value of self-regulation and student engagement are shown. Based the table, procrastination is significantly correlated with student engagement where its r-value is -0.361 and p-value is <0.001. The strength of the correlation between procrastination and student engagement is moderate as its r-value lies between 0.3 to 0.5 (Turney, 2021), this shows that procrastination is negatively correlated to student engagement.

4.3.2 Multiple Regression Analysis

Multiple regression analysis helps to determine how the independent variables (Academic Resilience, Self-Regulation and Procrastination) affect the dependent variable (Student Engagement).

H1: Academic resilience is positively related to student engagement.
H2: Academic procrastination is negatively related to student engagement.
H3: Self-regulation is positively related to student engagement.

The multiple regression analysis are conducted as there are multiple independent variables (Academic Resilience, Procrastination and Self-Regulation) to test with the dependent variable (Student Engagement).

Table 4.13: Multiple Regression Analysis

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18894.288	3	6298.096	225.091	<.001[b]
	Residual	10156.807	363	27.980		
	Total	29051.095	366			

a. Dependent Variable: StudentEngagament

b. Predictors: (Constant), Procrastination, AcademicResilience, Selfregulation

Based on Table 4.13, the F-value is 225.091 with P-value of <0.001. As the P-value is lower than alpha value of 0.05, F-value is significant, and the independent variables (Academic resilience, Academic Procrastination and Self-Regulation) are reliable to predict against the dependent variable (Student Engagement).

Table 4.14: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.806[a]	.650	.647	5.28963

a. Predictors: (Constant), Procrastination, AcademicResilience, Selfregulation

Based on Table 4.14, the correlation coefficient, R-value of the independent variables are 0.806, indicating a strong positive linear relationship between independent variables (Academic Resilience, Academic Procrastination and Self-Regulation) and dependent variable (Student Engagement). The coefficient of determination, R Square-value is 0.650, indicating that 65% of the dependent variable (Student Engagement) can be explained or tested by the independent variables (Academic Resilience, Academic Procrastination and Self-Regulation). Overall, it shows a good fit of regression model and the data.

Table 4.15: Path Coefficient and Significant Values between Variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	6.235	2.712		2.299	.022	.902	11.569
	Academic Resilience	.662	.085	.305	7.814	<.001	.495	.828
	Self-regulation	.577	.044	.532	13.204	<.001	.491	.663
	Procrastination	-.748	.058	-.464	-12.813	<.001	-.863	-.633

a. Dependent Variable: StudentEngagament

Based on Table 4.15, all the independent variables (Academic Resilience, Academic Procrastination and Self-Regulation) are significant to measure the dependent variable (Student Engagement) as their P-value is <0.001. Based on the standardised coefficient beta value, academic resilience and self-regulation were positively related to student engagement. On the other hand, procrastination relates negatively with student engagement. As the P-values does not exceeds the alpha value of 0.05, all the Hypotheses (H1 to H3) are supported.

Multiple Regression equation:

$$Yi = a + b_1X_1 + b_2X_2 + b_3X_3$$

Note:

$\mathbf{Y_i}$	Student Engagement
a	Constant Value, equal to the value of Y when the value of $b_i = 0$
$\mathbf{b_i}$	Unstandardized beta coefficient, where I = 1,2,3…
$\mathbf{X_1}$	Academic Resilience
$\mathbf{X_2}$	Academic Procrastination
$\mathbf{X_3}$	Self-Regulation

Therefore:

Student Engagement = 6.235 + 0.662 (Academic Resilience) + 0.577 (Self-Regulation) – 0.748 (Academic Procrastination)

Based on the result above, academic procrastination has the highest beta coefficient of 0.748, the next is academic resilience with beta coefficient of 0.662 and followed by self-regulation with beta coefficient of 0.577. It shows that academic procrastination holds the most variance to student engagement.

4.4 Chapter Summary

In this chapter, reliability test, descriptive analysis and inferential analysis were conducted by utilising SPSS. A questionnaire is being distributed and responses were collected as the source of data. Demographic analysis was conducted based on the responses and a reliability test was conducted to ensure that the variables are reliable, which most of the variables turned out to be excellent in terms of reliability. For inferential analysis, Person's Correlation Coefficient Analysis has been conducted and results show that the independent variables are significantly correlated to the dependent variable. In the last part of this chapter, the Multiple Regression Analysis is conducted and the results show that the independent variables are significant to measure the dependent variable. In Chapter 5, discussion of findings, implications of study, study's limitations and recommendations will be included.

Chapter 5: Discussion, Conclusion and Implications

5.0 Introduction

Chapter 5 will summarise the statistical analysis and clarify the most significant outcomes. The study's implications, limitations, and recommendations for the study in future will be evaluated.

5.1 Discussion of Major Findings

Table 5.1: Summary of results based on multiple regression analysis

Hypothesis	Value	Result
H1: Academic resilience is positively related to student engagement	P Value = < 0.001 Beta Value = 0.305	Accepted
H2: Academic procrastination is negatively related to student engagement	P Value = < 0.001 Beta Value = -0.464	Accepted
H3: Self-regulation is positively related to student engagement	P Value = < 0.001 Beta Value = 0.532	Accepted

5.1.1 Academic resilience

H1: Academic resilience is positively related to student engagement.

According to the multiple regression results obtained through SPSS as presented in Chapter 4, it is shown that there is a positive relationship between academic resilience to student engagement, which is consistent with findings from the previous studies. Ahmed et al. (2018) found that academically resilient students showed higher levels of engagement, highlighting the importance of academic efficacy and resilience at graduate-level, which is characterized by demanding workloads and tight deadlines. Moreover, according to Simoes et al. (2021), students with higher levels of academic resilience are more likely to attain academic achievement while confronting challenges and difficulties. Therefore, the greater the academic resilience capacity, the greater the student engagement and academic achievement.

5.1.2 Academic Procrastination

H2: Academic procrastination is negatively related to student engagement.

Based on the multiple regression results that generated via SPSS as stated in Chapter 4, it was found that academic procrastination was significant and negatively related to student engagement. This result is consistent with past studies showing a negative relationship between academic procrastination and student engagement. According to Lakshminarayan et al. (2013), students' academic engagement is inversely related to academic procrastination, which connects negatively with student performance. The higher the procrastination scores resulting in the worse academic achievement. Furthermore, Ram and Emsmaeili (2018) stated that one of the most common causes of failure or lack of learning in access to academic achievement plans is procrastination on tasks. When students procrastinate, they experience increased stress, and decreased motivation which in turn leads to lower academic performance, all of which reduce overall student engagement.

5.1.3 Self-regulation

H3: Self-regulation is positively related to student engagement.

In accordance with the multiple regression result obtained through SPSS that shown above, it is evident that self-regulation has a significant positive relationship with student engagement, which is consistent with the finding from prior research. According to Liao et al. (2023), a positive relationship has been discovered between self-regulation and learning engagement, with students exhibiting higher levels of engagement. Moreover, self-regulated learning skills, encompassing organization, goal setting, task monitoring, seeking assistance, task evaluation, and knowledge activation, have a positively impact learner performance, as evidenced by Doo and Bonk (2020), who further demonstrates that these skills are correlated with student engagement levels in university classes. So that, students with higher levels of self-regulation exhibit a greater sense of autonomy and intrinsic motivation, which in turn leads to deeper levels of engagement with the learning process.

5.2 Implication of Study

Theoretical

The research on the effects of academic procrastination, academic resilience, and self-regulation on undergraduate student engagement at Universiti Tunku Abdul Rahman offers important new insights into the variables influencing student engagement. The findings of this study emphasize the importance of academic resilience, academic procrastination, and self-regulation in shaping undergraduate student engagement at a Malaysian private university. Academic resilience was found to have a positive impact on student engagement, which is consistent with previous research emphasizing its importance in overcoming obstacles and achieving academic success. Academic procrastination, on the other hand, had a negative relationship with engagement, which is consistent with previous research linking procrastination to lower motivation and performance. Furthermore, self-regulation was found to be positively associated with engagement, implying that students with stronger self-regulation skills are more engaged and achieve academic success. The present study further supports the arguments found in the self-regulation theory, highlighting the crucial role of students' ability to monitor, control, and adjust their learning behaviors in fostering higher levels of engagement.

Practical

This study's findings highlight the significance of prioritising the development of academic resilience and self-regulation skills among undergraduate students. To address this issue, universities ought to think about including specialised classes and actions in their educational programs. These programs may include workshops, courses, or support services aimed at increasing students' resilience in the face of academic challenges and improving their ability to regulate the learning process effectively. By implementing these initiatives, universities can help to build a stronger and more resilient student body, resulting in higher levels of student engagement.

From a stakeholder perspective, the findings highlight the importance of universities recognizing and appreciating students' academic contributions. To increase student engagement, university should think about creating personalised reward and recognition systems. These systems can be tailored to a student specific desires and requirements, recognizing accomplishments such as academic success, extracurricular participation, and community service. This personalized approach may improve students' morale and overall involvement in their learning process.

Based on the findings, it makes sense for students to take initiative in improving their own academic engagement. Universities can help students develop academic resilience and self-regulation skills through courses, resources, and awareness campaigns. Students should actively seek out and participate in chances for improving these skills so that they can better respond to academic challenges. Students can help to create a more positive and effective academic experience by prioritising their emotional well-being and learning process.

5.3 Study's Limitations

In the course of our research, one of the limitations that we faced was the **limitation in generalization**. This study primary focused on undergraduate students from the UTAR, Kampar campus without surrounding a more diverse range of universities may limit the generalization of the current results. This restricted scope inhibits our ability to accurately capture the full spectrum of variety and variability inherent in the broader population, thereby limiting the generalizability of our research beyond the confines of our specific study context. Recognizing this limitation, future research endeavours may benefit from larger and more diverse samples to enhance the external accuracy of their findings across different university settings.

Another limitation that we faced was the **limitation of a questionnaire**. Although questionnaires are useful instruments for gathering data in research, they also come with several drawbacks. A major limitation is the possibility of response bias, in which respondents could give responses that are neglected specifics or socially acceptable. The diversity of quantitative insights may be limited by the predefined response alternatives in the surveys, that unlikely to fully convey the variety of participants' viewpoints. Furthermore, examining the complex subjects that call for a deeper approach may be more difficult to do using the questionnaire design. Another issue is sampling bias, which can impact the generalizability of results since our participants may differ from those who do not. Furthermore, our absence as researchers throughout the questionnaire completion process lacks the possibility of further context which might result in miscommunication. Based on this statement, some respondents may neglect the questionnaire and leave it without completing the questionnaire.

Moreover, there is the potential for respondent bias in the present research. Among the respondent biases are social desirability bias and acquiescence bias. Social desirability bias refers to the individuals responding in a way they think will be favorable to others, leading to

potentially inaccurate self-reported data in research. It can skew results by causing over-reporting of socially desirable behaviors and under-reporting of undesirable ones (Grimm, 2010). On the other hand, acquiescence bias occurs when respondents tend to agree with a statement regardless of content and true preferences due to inclination of yield, perceived research authority and social norms. Acquiescence bias can introduce systematic errors and confound attitudes, leading to misguided inference (Costello & Roodenburg, 2015). These biases can compromise the accuracy and reliability of research findings.

5.4 Recommendations for Study in Future

Given the stated limitation of our study with the problem of generalizability, a key suggestion that has to be kept in mind for future research is that **increasing sample diversity** should be given top priority. Based on the result of our research, future researchers are being encouraged to specifically incorporate samples from a wider range of universities, beyond the existing concentration on the Kampar campus, to improve the external accuracy and diversify the potential application of the findings. This measured extension effectively overcomes the limitation of the current study by ensuring a thorough comprehension of the rich diversity and fundamental variability within the larger population. Through the use of a broader approach for sample selection, future research may seek out a more complex perspective, generating reliable and broadly applicable results in a variety of academic contexts.

For the recommendation of the limitation of questionnaires, it is wise to adopt **strategic improvements** for more thorough data collecting given the acknowledged constraints associated with the use of questionnaires. A balanced mix of predetermined response alternatives and open-ended questions might be used by researchers to mitigate the risk of response bias and promote participant expression and organized data. To gain a better knowledge of complex themes, add qualitative approaches to the questionnaire, such as focus groups or interviews. To make sure that the research population is more inclusive and representative, addressing sample bias requires proactive steps, such as a variety of participant outreach and recruiting strategies. Researchers may overcome the inherent constraints of questionnaires and improve the authenticity and depth of the data that have been collected by deftly using these tactics.

Future researchers should use neutral language and avoid provocative questions to avoid social desirability bias. To eliminate acquiescence bias, researchers can utilize balanced response sets that include an equal proportion of favorably and negatively phrased questions. Besides, researchers should strive for maximum response rates since greater response rates reduce the influence of biases. Additionally, crafting unbiased questions can foster a more authentic response from respondents, enhancing the reliability and validity of their study. By applying these measures, researchers can reduce the impacts of respondent bias and increase the accuracy and dependability of their study results.

5.5 Chapter Summary

In conclusion, this chapter explored the relationships between academic resilience, academic procrastination, and self-regulation on student engagement among undergraduates at Universiti Tunku Abdul Rahman. The findings highlighted the crucial roles of academic resilience and self-regulation in fostering student engagement while underscoring the negative impact of academic procrastination. Recognizing the limitations of generalization and questionnaire design, future research should prioritize larger, more diverse samples and incorporate qualitative approaches to gain a more comprehensive understanding. Overall, this study emphasizes the importance of addressing these factors to create a more supportive learning environment and improve student outcomes in higher education.

References

Adhawiyah, R., Rahayu, D., & Suhesty, A. (2021). The Effect of Academic Resilience and Social Support towards Student Involvement in Online Lecture. Gadjah Mada Journal of Psychology (GamaJoP), 7(2), 212-224.

Adi Badiozaman, I. F. binti, Leong, H., & Jikus, O. (2019). Investigating student engagement in Malaysian higher education: a self-determination theory approach. Journal of Further and Higher Education, 44(10), 1364–1378.https://doi.org/10.1080/0309877x.2019.168826

Aduke, A. F. (2015). Time Management and Students Academic Performance in Higher Institutions, Nigeria — A Case Study of Ekiti State. *International Research in Education*, *3*(2), 1. https://doi.org/10.5296/ire.v3i2.7126

Aeon, B., & Aguinis, H. (2017). It's About Time: New Perspectives and Insights on Time Management. *Academy of Management Perspectives*, *31*(4), 309–330. https://doi.org/10.5465/amp.2016.0166

Ahmed, U., Umrani, W. A., Qureshi, M. A., & Samad, A. (2018). Examining the links between teachers support, academic efficacy, academic resilience, and student engagement in Bahrain. International Journal of Advanced and Applied Sciences, 5(9), 39-46.

Al-Hosaini, F. F., & Sofian, S. (2015). A review of balanced scorecard framework in higher education institution (HEIs). International Review of Management and Marketing, 5(1), 26-35.

Arof, K. Z. M., Ismail, S., & Saleh, A. L. (2018). Contractor's performance appraisal system in the Malaysian construction industry: Current practice, perception and understanding. International Journal of Engineering & Technology, 7(3.9), 46. https://doi.org/10.14419/ijet.v7i3.9.15272

Ayala, J.C., & Manzano, G. (2018). Academic performance of first-year university students: the influence of resilience and engagement. Higher Education Research and Development, 37(7), 1321-1335. https://doi.org/10.1080/07294360.2018.1502258

Barker, E. T., Barbaree, H. E., Villemaire-Krajden, R., & Galambos, N. L. (2018). The rise and fall of depressive symptoms and academic stress in two samples of university students. *Journal of Youth and Adolescence*, *47*(6), 1252–1266. https://doi.org/10.1007/s10964-018-0822-9

Baumann, N., & Kuhl, J. (2002). Intuition, affect, and personality: unconscious coherence judgments and self-regulation of negative affect. *Journal of Personality and Social Psychology*, *83*(5), 1213.

Baumeister, R. F., & Vohs, K. D. (2007). Self-Regulation, ego depletion, and motivation. Social and Personality Psychology Compass, 1(1), 115–128. https://doi.org/10.1111/j.1751-9004.2007.00001.x

Ben-Eliyahu, A., Moore, D., Dorph, R., & Schunn, C. D. (2018). Investigating the multidimensionality of engagement: Affective, behavioral, and cognitive engagement across science activities and contexts. Contemporary Educational Psychology, 53, 87-105.

Bernstein, L. (2022). *What is Student Engagement and Why Does it Matter?* Xello. https://xello.world/en/blog/student-engagement/what-is-student-engagement/

Bilgin, O. and Tas, I. (2018) 'Effects of perceived social support and psychological resilience on social media addiction among university students', Universal Journal of Educational Research, Vol. 6, No. 4, pp.751–758.

Bush, T. (2020). Descriptive analysis: How-To, Types, Examples. PESTLE Analysis. https://pestleanalysis.com/descriptive-analysis/#google_vignette

Boylan, R. & Renzulli, L. (2017). Routes and Reasons Out, Paths Back: The Influence of Push and Pull Reasons for Students' School Re Engagement. *Youth & Society*. *49*(1), 46-71.

Buckley, A. (2013). Engagement for enhancement: Report of a UK survey pilot.

Calvello, M. (2020). *Come to the Right Conclusion with Inferential Analysis*. https://learn.g2.com/inferential-analysis

Chen, Y. H., & Lin, Y. J. (2018). Validation of the short self-regulation questionnaire for Taiwanese college students (TSSRQ). *Frontiers in Psychology*, *9*, 259.

Chen, Z., & Feng, T. (2022). Neural connectome features of procrastination: Current progress and future direction. *Brain and Cognition*, *161*, 105882.

Cheung, K. C., Sit, P. S., Soh, K. C., Ieong, M. K., & Mak, S. K. (2014). Predicting academic resilience with reading engagement and demographic variables: Comparing Shanghai, Hong Kong, Korea, and Singapore from the PISA perspective. The Asia-Pacific Education Researcher, 23, 895-909.

Cho, M. H., Kim, Y., & Choi, D. (2017). The effect of self-regulated learning on college students' perceptions of community of inquiry and affective outcomes in online learning. The Internet and Higher Education, 34, 10-17.

Christenson SL, Reschly AL, and Wylie C (2012). Handbook of research on student engagement. Springer Science and Business Media, Berlin, Germany.

Cuncic, A., MA. (2023). How to Develop and Practice Self-Regulation. Verywell Mind. https://www.verywellmind.com/how-you-can-practice-self-regulation-4163536

De Leeuw, E. (2008). Self-administered questionnaires and standardized interviews. Handbook of social research methods, 313-327.

Costello, S., & Roodenburg, J. (2015). Acquiescence response bias—Yeasaying and higher education. *The Educational and Developmental Psychologist*, *32*(2), 105-119.

Delfino, A. P. (2019). Student engagement and academic performance of students of Partido State University. *Asian Journal of University Education*, *15*(1).

Denovan, A., Dagnall, N., Macaskill, A., & Papageorgiou, K. (2020). Future time perspective, positive emotions and student engagement: a longitudinal study. *Studies in Higher Education*, *45*(7), 1533-1546.

Doo, M. Y., & Bonk, C. J. (2020). The effects of self-efficacy, self-regulation and social presence on learning engagement in a large university class using flipped Learning. Journal of Computer Assisted Learning, 36(6), 997-1010.

Doo, M. Y., Bonk, C.J., & Heo, H. (2020). A meta-analysis of scaffolding effects in online learning in higher education. International Review of Research in Open and Distributed Learning, 21(3), 60-80.

Doo, M. Y., Bonk, C. J., & Heo, H. (2023). Examinations of the relationships between self-efficacy, self-regulation, teaching, cognitive presences, and learning engagement during COVID-19. Educational technology research and development, 1-24.

D. R. T. Huamán, M. A. A. Rodriguez, R. C. Cordero and A. L. T. Huamán, "Procrastination, academic engagement and the most valued didactic competencies by the high school students in the digital learning context," 2021 IEEE Sciences and Humanities International Research Conference (SHIRCON), Lima, Peru, 2021, pp. 1-3, doi: 10.1109/SHIRCON53068.2021.9652228.

El-Shimi, A., Kalach, R., Kumar, A., Ottean, A., Li, J., & Sengupta, S. (2012). Primary data, scale study and system design. In 2012 USENIX Annual Technical Conference (USENIX ATC 12). 285-296.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. American journal of theoretical and applied statistics, 5(1), 1-4.

Everett, M. C. (2017). Fostering first-year students' engagement and well-being through visual narratives. *Studies in Higher Education*, *42*(4), 623-635.

Everly, G.S., Strouse, D.A. and McCormack, D.K. (2015) Develop The Resilience You Need to Succeed, American Management Association, New York.

Ferrari, J.R. (2001). Procrâstination as self-regulation failure of performance: Effects of cognitive load, self-awareness, and time limits on 'Working Best Under Pressure European.Journal of Personality, 15.391-406.

Fredricks, J. A., Blumenfeld, P. C., and Paris, A. H. (2004). School engagement: potential of the concept, state of the evidence. Rev. Educ. Res. 74, 59–109. Doi: 10.3102/00346543074001059

Formal, C. V., Blog, I., & Blog, S. R. (2020). PISA 2015 results (Volume III). Students' well-being. *Governance*, *19*(30), 40.

Gaydos, S. J. (2008). The mediation effect of student engagement on academic demands and school identification. University of Toronto.

Geertshuis SA (2019) Slaves to our emotions: Examining the predictive relationship between emotional well- being and academic outcomes. *Active Learning in Higher Education* 20(2): 153–66

Grunschel, C., & Schopenhauer, L. (2015). Why are Students (Not) motivated to Change academic procrastination?: An investigation based on the transtheoretical model of change. Journal of College Student Development, 56(2), 187–200. https://doi.org/10.1353/csd.2015.0012

Grimm, P. (2010). Social desirability bias. Wiley international encyclopedia of marketing. Retrieved April 17, 2024, from https://oj8k.gitee.io/knowledge_management/files/readings/sdb_intro.pdf

Hall, P. A., & Fong, G. T. (2007). Temporal self-regulation theory: A model for individual health behavior. *Health Psychology Review*, *1*(1), 6-52.

Hoboken, N. J. (n.d.). Student engagement a growing problem for colleges Post-COVID, according to New Wiley research. https://johnwiley2020news.q4web.com/press-releases/press-release-details/2023/Student-Engagement-a-Growing-Problem-for-Colleges-Post-COVID-According-to-New-Wiley-Research/default.aspx

Hodges, T. (2018). *School Engagement Is More Than Just Talk*. Gallup.com; Gallup. https://www.gallup.com/education/244022/school-engagement-talk.aspx

Hox, J. J., & Boeije, H. R. (2005). Data collection, primary versus secondary.

Hughes, J., & Kwok, O. (2007). Influence of student-teacher and parent-teacher relationships on lower achieving readers' engagement and achievement in the primary grades. Journal of Educational Psychology, 99, 39-51. doi: 10.1037/0022-0663.99.1.39

Hui, Y. L., Prihadi, K., Arif, N. I., Yap, S. X., Chua, M. J., Chen, J., ... & Yeow, J. L. (2019). In Everlasting Fight against Academic Procrastination: The Roles of Classroom Engagement and Internal Locus of Control. International Journal of Evaluation and Research in Education, 8(4), 647-653.

Hussain, I., & Sultan, S. (2010). Analysis of procrastination among university students. Procedia - Social and Behavioral Sciences, 5, 1897–1904. https://doi.org/10.1016/j.sbspro.2010.07.385

Iskandar, R. P. F., & Pahlevi, M. R. (2021). Students' emotional engagement in online collaborative writing through google document. ETERNAL (English Teaching Journal), 12(2), 58-67.

Jackson, T., Fritch, A., Nagasaka, T., & Pope, L. (2003). Procrastination and Perceptions of Past, Present, and Future. Individual Differences Research, 1(1).

Jaggars,S.S., & Xu, Di (2016). How do online course design features influence student performance? Computers and Education, 95, 270-284, doi: 10.1016/j.compedu.2016.01.014.

Jayaraja, A. R., Tan, S. A., & Ramasamy, P. N. (2017). Predicting role of mindfulness and procrastination on psychological well-being among university students in Malaysia. Jurnal Psikologi Malaysia, 31(2).

Jenkins, C. R., & Dillman, D. A. (1995). *Towards a theory of self-administered questionnaire design*. Bureau of the Census.

Kahu E, Nelson D and Picton C (2017) Student interest as a key driver of engagement for first year students. *Student Success* 8(2): 55–66.

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education*, *38*(5), 758–773. https://doi.org/10.1080/03075079.2011.598505

Kahu, E. R., & Nelson, K. (2018). Student engagement in the educational interface: Understanding the mechanisms of student success. *Higher education research & development*, *37*(1), 58-71.

Kang, X., & Wu, Y. (2022). Academic enjoyment, behavioral engagement, self-concept, organizational strategy and achievement in EFL setting: A multiple mediation analysis. PLoS One, 17(4), e0267405.

Kasim, L. S. M. (2015). The Impact Of Academic Procrastination Am) Academic Performance On Academic Achievement Amongst Undergraduate Students At A Local University (Doctoral dissertation, Universiti Utara Malaysia).

Kim, K. R., & Seo, E. H. (2015). The relationship between procrastination and academic performance: A meta-analysis. Personality and Individual Differences, 82, 26-33.

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. Journal of School Health, 74(7), 262–273.

Klingsieck, K. B. (2013). Procrastination. When good things don't come to those who wait." *European Psy- chologist, 18*(1), 24–34.

Koch, C. J., & Kleinmann, M. (2002). A stitch in time saves nine: Behavioural decision-making explanations for time management problems. *European Journal of Work and Organizational Psychology*, *11*(2), 199–217. https://doi.org/10.1080/13594320244000120

Kosnin, A. M., & Khan, M. U. (2016). PROCRASTINATION AMONG UNIVERSITY STUDENTS OF MALAYSIA AND PAKISTAN. In *1st International Education Postgraduate Seminar* (pp. 23-24).

Krejcie, R.V., & Morgan, D.W., (1970). Determining Sample Size for Research Activities. Educational and Psychological Measurement.

Kuhl, J., & Fuhrmann, A. (1998). Decomposing Self-Regulation and Self-Control: the Volitional Components inventory. In Cambridge University Press eBooks (pp. 15–49). https://doi.org/10.1017/cbo9780511527869.003

Lakshminarayan, N., Potdar, S., & Reddy, S. G. (2013). Relationship between procrastination and academic performance among a group of undergraduate dental students in India. Journal of dental education, 77(4), 524-528.

Liao, H., Zhang, Q., Yang, L., & Fei, Y. (2023). Investigating relationships among regulated learning, teaching presence and student engagement in blended learning: An experience sampling analysis. Education and Information Technologies, 1-29.

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Prentice-Hall, Inc.

Locke, E., & Latham, G. (2015). Goal-setting theory. In *Organizational Behavior 1* (pp. 159-183).

Lunenburg, F. C. (2011). Goal-setting theory of motivation. *International journal of management, business, and administration*, *15*(1), 1-6.

Luszczynska, A., Diehl, M., Gutiérrez-Doña, B., Kuusinen, P., & Schwarzer, R. (2004). Measuring one component of dispositional self-regulation: attention control in goal pursuit. *Personality and Individual Differences*, *37*(3), 555–566. https://doi.org/10.1016/j.paid.2003.09.026

Mallick, M. K., & Kaur, S. (2016). Academic resilience among senior secondary school students: Influence of learning environment. Rupkatha Journal on Interdisciplinary Studies in Humanities, 8(2), 20-27.

Martin, A. J. (2013). Academic buoyancy and academic resilience: exploring 'everyday' and 'classic' resilience in the face of academic adversity. Sch. Psychol. Int. 34, 488–500. Doi: 10.1177/0143034312472759

Martin, A. J., & Marsh, H. W. (2006). Academic resilience and its psychological and educational correlates: A construct validity approach. Psychology in the Schools, 43(3), 267-281.

McCombes, S. (2023). What is a research design | Types, Guide & examples. *Scribbr*. https://www.scribbr.com/methodology/research-design/

Miao, J., & Ma, L. (2022). Students' online interaction, self-regulation, and learning engagement in higher education: The importance of social presence to online learning. Frontiers in Psychology, 13, 815220.

Milgram, N. A., & Tenne, R. (2000). Personality correlates of decisional and task avoidant procrastination. *European Journal of Personality*, *14*(2), 141–156. https://doi.org/10.1002/(sici)1099-0984(200003/04)14:2

Miqdadi, F. Z., Almomani, A., Masharqa, M. S., & Elmousel, N. (2014). The relationship between time management and the academic performance of students from the petroleum institute in Abu Dhabi, the UAE. In *ASEE 2014 Zone I Conference* (pp. 1-5).

MSEd, K. C. (2022). What is procrastination? Verywell Mind. https://www.verywellmind.com/the-psychology-of-procrastination-2795944#toc-the-negative-impact-of-procrastination

Mukaromah, D., Sugiyo, S., & Mulawarman, M. (2018). Keterlibatan Siswa dalam Pembelajaran ditinjau dari Efikasi Diri dan Self Regulated Learning. Indonesian Journal of Guidance and Counseling: Theory and Application, 7(2), 14-19.

Mukhid, A. (2008). STRATEGI SELF-REGULATED LEARNING (Perspektif teoritik). Tadris: Jurnal Pendidikan Islam, 3(2). Nábělková, E., & Ratkovská, J. (2015). Academic procrastination and factors contributing to its overcoming. New Educational Review, 39(1), 107–118. https://doi.org/10.15804/tner.2015.39.1.09

Naidu, Prashalini & Derani, Nor. (2016). A Comparative Study on Quality of Education Received by Students of Private Universities versus Public Universities. Procedia Economics and Finance. 35. 659-666. 10.1016/S2212-5671(16)00081-2.

Nguyen, T. D., Cannata, M., and Miller, J. (2016). Understanding student behavioral engagement: importance of student interaction with peers and teachers. J. Educ. Res. 2016, 1–12. doi: 10.1080/00220671.2016.1220359

Nikolopoulou, K. (2023, June 22). What Is Convenience Sampling? | Definition & Examples.Scribbr. Retrieved August 28, 2023, from https://www.scribbr.com/methodology/convenience-sampling/

Novotný, J. S., & Kreménková, L. (2016). The relationship between resilience and academic performance at youth placed at risk. *Československá psychologie*, *60*(6), 553.

Olowookere, E. I., Alao, A. A., Odukoya, J. A., Adekeye, O. A., & Agbude, G. A. . (2015). Time Management Practices, Character Development and Academic Performance among University Undergraduates: Covenant University Experience. Creative Education, 06(01), 79–86. https://doi.org/10.4236/ce.2015.61007

Olson, A., & Peterson, R. L. (2015). Student engagement. *Lincoln: University of Nebraska-Lincoln*.

Ommundsen, Y., Haugen, R., & Lund, T. (2005). Academic self-concept, implicit theories of ability, and self-regulation strategies. *Scandinavian Journal of Educational Research*, *49*(5), 461-474.

Ong, K. M. (2015, May 26). Private higher education in Malaysia – avoiding a hidden crisis? Penang Institute.

Ononye, U., Ndudi, F., Bereprebofa, D., & Maduemezia, I. (2022). Academic resilience, emotional intelligence, and academic performance among undergraduate students. Knowledge and Performance Management, 6(1), 1.

Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. Assessment & Evaluation in Higher Education, 29(1), 3–19. https://doi.org/10.1080/0260293042000160384

Özer, B. U., Demir, A., & Ferrari, J. R. (2009). Exploring Academic procrastination among Turkish students: possible gender differences in prevalence and reasons. Journal of Social Psychology, 149(2), 241–257. https://doi.org/10.3200/socp.149.2.241-257

Park, S., and Yun, H. (2017). The influence of motivational regulation strategies on online students' behavioral, emotional, and cognitive engagement. Am. J. Dis. Educ. 2017, 1–14. doi: 10.1080/08923647.2018.1412738

Peng, T. Z., & Kamil, B. A. M. (2018). Time management, procrastination and prioritization: A framework for service based learning module. E-Academia Journal, 6(2).

Permatasari, N., Ashari, F. R., & Ismail, N. (2021). Contribution of perceived social support (peer, family, and teacher) to academic resilience during COVID-19. Golden Ratio of Social Science and Education, 1(1), 01-12.

Pietarinen, J., Soini, T., & Pyhältö, K. (2014). Students' emotional and cognitive engagement as the determinants of well-being and achievement in school. International Journal of Educational Research, 67, 40-51.

Pitt A, Oprescu F, Tapia G, et al. (2018) An exploratory study of students' weekly stress levels and sources of stress during the semester. Active Learning in Higher Education 19(1): 61–75.

Ram, N., & Esmaeili Shad, B. (2018). Comparison of Academic Procrastination and Academic Engagement of Rural and Urban Students in Bojnourd City. *Iranian journal of educational sociology*, *1*(10), 161-170.

Radhamani, K., & Kalaivani, D. (2021). Academic Resilience among Students: A Review of Literature. *International Journal of Research and Review*, *8*(6), 360–369.

Ravaglia, R. (n.d.). Student Engagement Matters More Than Attendance; Why Don't Schools Track It? Forbes. Retrieved August 2, 2023, from https://www.forbes.com/sites/rayravaglia/2023/03/25/student-engagement-matters-more-than-attendance-why-dont-schools-track-it/?sh=68680a1d7811

Reschly, A. L., Huebner, E. S., Appleton, J. J., & Antaramian, S. P. (2008). Engagement as flourishing: The contribution of positive emotions and coping to adolescents' engagement at school and with learning. *Psychology in the Schools*, *45*(5), 419–431. https://doi.org/10.1002/pits.20306

Richardson, G. E., Neiger, B. L., Jensen, S., & Kumpfer, K. L. (1990). The resiliency model. *Health education*, *21*(6), 33-39.

Rotgans, J. I., & Schmidt, H. G. (2011). Cognitive engagement in the problem-based learning classroom. *Advances in health sciences education*, *16*, 465-479.

Rozental, A., Forsström, D., Hussoon, A., & Klingsieck, K. B. (2022). Procrastination among university students: differentiating severe cases in need of support from less severe cases. Frontiers in Psychology, 13. https://doi.org/10.3389/fpsyg.2022.783570

Rukmana, D. (2014). Sample Frame. In: Michalos, A.C. (eds) Encyclopedia of Quality of Life and Well-Being Research. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-0753-5_2551

Sarafino, E. P., & Smith, T. W. (2014). Health psychology: Biopsychosocial interactions. John Wiley & Sons.

Sartika, S. H., & Nirbita, B. N. (2023). Academic Resilience and Students Engagement in Higher Education: Study on Post-Pandemic Behaviour. Edu Sciences Journal, 4(1), 29-34.

Schaie, K. W., & Carstensen, L. L. (2006). Social structures, aging, and self-regulation in the elderly. In Springer eBooks. http://ci.nii.ac.jp/ncid/BA79942971

Scher, S. J., & Osterman, N. M. (2002). Procrastination, conscientiousness, anxiety, and goals: Exploring the measurement and correlates of procrastination among school-aged children. *Psychology in the Schools*, *39*(4), 385–398. https://doi.org/10.1002/pits.10045

Schoffstall, D. G., Arendt, S. W., & Brown, E. A. (2013). Academic engagement of hospitality students. Journal of Hospitality Leisure Sport & Tourism Education, 13, 141–153. https://doi.org/10.1016/j.jhlste.2013.09.004

Setiani, S., & Wijaya, E. (2020, December). The Relationship Between Self-Regulated Learning With Student Engagement in College Students Who Have Many Roles. In The 2nd Tarumanagara International Conference on the Applications of Social Sciences and Humanities (TICASH 2020) (pp. 307-312). Atlantis Press.

Shah, A.S. (2000). *Exploring The World Of English: A Practical Course In Composition,*

Lahore: Markazi Kutub Khana.

Shao, Y., & Kang, S. (2022). The association between peer relationship and learning engagement among adolescents: The chain mediating roles of self-efficacy and academic resilience. Frontiers in Psychology, 13, 938756.

Shulman, Lee. (2005). "Making Differences: A Table of Learning." Change 34(6): 36–44.

Siaputra, I. B. (2010). Temporal motivation theory: Best theory (yet) to explain procrastination. *Anima Indonesian Psychological Journal*, *25*(3), 206-214.

Silvola, A., Näykki, P., Kaveri, A., & Muukkonen, H. (2021). Expectations for supporting student engagement with learning analytics: An academic path perspective. Computers & Education, 168, 104192.

Simões, Celeste, Anabela C. Santos, Paula Lebre, João R. Daniel, Cátia Branquinho, Tânia Gaspar, and Margarida G. de Matos. "Assessing the impact of the European resilience curriculum in preschool, early and late primary school children." School Psychology International 42, no. 5 (2021): 539-566.

Skuballa, I. T., Dammert, A., & Renkl, A. (2018). Two kinds of meaningful multimedia learning: Is cognitive activity alone as good as combined behavioral and cognitive activity?. Learning and Instruction, 54, 35-46.

Solanki, K. (2023). Research Design | Definition, features, Types, process, importance & Factors Affecting research design. Top4u. https://www.toppers4u.com/2022/01/research-design-definition-features.html

Sri Hardianti Sartika, & Betanika Nila Nirbita (2023). Academic resilience and students' engagement in higher education: Study on post-pandemic behavior, doi:10.30598/edusciencesvol4iss1pp29-24.

Stallman HM (2010) Psychological distress in university students: A comparison with general population data. *Australian Psychologist* 45(4): 249–57.

Statistics Solutions. (2021). Pearson's Correlation Coefficient - Statistics Solutions. https://www.statisticssolutions.com/free-resources/directory-of-statistical-analyses/pearsons-correlation-coefficient/

Statistics Solutions. (2021). Multiple Regression - Statistics solutions. https://www.statisticssolutions.com/free-resources/directory-of-statistical-analyses/multiple-regression/

Steel, P. (2007). The nature of procrastination: a meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological bulletin*, *133*(1), 65.

Steel, P., & Klingsieck, K. B. (2016). Academic Procrastination: Psychological Antecedents revisited. *Australian Psychologist*, *51*(1), 36–46. https://doi.org/10.1111/ap.12173

Steel, P., & König, C. J. (2006). Integrating theories of motivation. *Academy of management review*, *31*(4), 889-913.

Strunk, K. K., Cho, Y., Steele, M., & Bridges, S. L. (2013). Development and validation of a 2×2 model of time-related academic behavior: Procrastination and timely engagement. Learning and Individual Differences, 25, 35–44. https://doi.org/10.1016/j.lindif.2013.02.007

Sutton, E. (2021, March 3). *Student engagement: Why it's important and how to promote it.* Branching Minds.

Svartdal, F., Dahl, T. I., Gamst-Klaussen, T., Koppenborg, M., & Klingsieck, K. B. (2020). How study environments Foster Academic Procrastination: Overview and recommendations. Frontiers in Psychology, 11. https://doi.org/10.3389/fpsyg.2020.540910

Taherdoost, H. (2019, March 29). What Is the Best Response Scale for Survey and Questionnaire Design; Review of Different Lengths of Rating Scale / Attitude Scale / Likert Scale. Papers.ssrn.com. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3588604

Tai, J., Ajjawi, R., Bearman, M., & Wiseman, P. (2020). Conceptualizations and measures of student engagement: A worked example of systematic review. *Systematic Reviews in Educational Research: Methodology, Perspectives and Application*, 91-110.

Taylor, L., & Parsons, J. (2011). Improving student engagement. *Current Issues in Education, 14*(1).

Thompson, T., Davidson, J., & Barber, J. G. (1995). Self-worth protection in achievement motivation: Performance effects and attributional behavior. Journal of Educational Psychology, 87(4), 598–610. https://doi.org/10.1037/0022-0663.87.4.598

Tobin, R. M., Graziano, W. G., Vanman, E. J., & Tassinary, L. G. (2000). Personality, emotional experience, and efforts to control emotions. Journal of personality and social psychology, 79(4), 656.

Trowler, V. (2010). Student engagement literature review. The higher education academy, 11(1), 1-15.

Turney, S. (2021). Pearson Correlation Coefficient (r) | Guide & Examples. Scribbr. https://www.scribbr.com/statistics/pearson-correlation-coefficient/#:~:text=The%20Pearson%20correlation%20coefficient%20(r,the%20relationship%20between%20two%20variables.&text=When%20one%20variable%20changes%2C%20the,changes%20in%20the%20same%20direction.

Ulmanen, S., Soini, T., Pietarinen, J., & Pyhältö, K. (2016). Students' experiences of the development of emotional engagement. International Journal of Educational Research, 79, 86-96.

Wang, X., Wei, Y., Wang, J., Tian, J., & Zuo, C. (2020). Research on the influence of college students' engagement in blended learning: Teacher support, situational interest, and self-regulation. In 2020 International Symposium on Educational Technology (pp. 170-174).

Wolters, C. A., & Brady, A. C. (2020). College students' time management: A self-regulated learning perspective. *Educational Psychology Review*, 1-33.

Wolters, C. A., and Taylor, D. J. (2012). “A self-regulated learning perspective on student engagement,” in Handbook of Research on Student Engagement. eds. S. L. Christenson, A. L. Reschly, and C. Wylie (New York: Springer), 635–651.

Yang, Y., Yuan, Y., Tan, H., Wang, Y., and Li, G. (2021). The linkages between Chinese children’s both cognitive engagement and emotional engagement and behavioral engagement: mediating effect of perceptions of classroom interactions in math. Psychol. Schools 2021, 1–14. doi: 10.1002/pits.22571

Ye, W., Strietholt, R., & Blömeke, S. (2021). Academic resilience: Underlying norms and validity of definitions. Educational Assessment, Evaluation and Accountability, 33, 169-202.

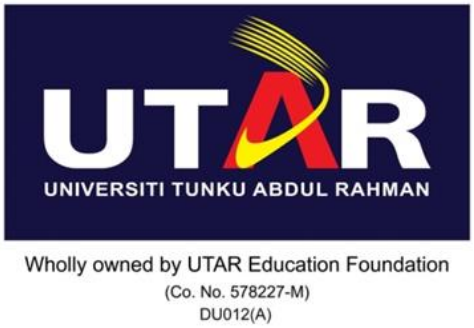
Yee, X. P., & Lai, C. S. (2021). Relationship Between Academic Motivation and Procrastination Among Students at a Private University College in Kuala Lumpur. *Unpublished. https://doi. org/10.13140/RG*, *2*(27913.9).

Zimmerman, B. J. (1998). Developing self-fulfilling cycles of academic regulation: an analysis of exemplary instructional models.

Zimmerman, B. J., & Risemberg, R. (1997). Becoming a self-regulated writer: a social cognitive perspective.Contemporary Educational Psychology, 22, 73–101.

Appendices

Appendix 1: Sample Questionnaires



UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE (FBF)

BACHELOR OF BUSINESS ADMINISTRATION (HONS)

Topic: Survey on "Impacts of academic resilience, academic procrastination and self-regulation on student engagement among undergraduates in UTAR, Kampar Campus."

Dear respondents,

We are students of Bachelor of Business Administration (Hons) from University Tunku Abdul Rahman (UTAR). The purpose of this study is to find out the impacts of academic resilience, procrastination, and self-regulation on student engagement among undergraduates in UTAR, Kampar campus.

We kindly request your participation in our survey, which should take approximately 10 minutes to complete. There are FIVE (5) sections in this questionnaire. Section A is on demographics. Section B, C, D and E cover all the variables in this study. Please read the

instructions carefully before answering the questions. Please answer all questions to the best of your knowledge. All responses are completely confidential and will be used solely for academic purposes. Should you feel uncomfortable about the questionnaire, you may refuse to answer the question and withdraw anytime without any penalty.

Yours sincerely,

Name	Student ID	Contact
Ng Huat Lin	21ABB03062	016-2050915
Low Xiao Ying	20ABB02123	012-6012097
Ng Shi Qin	21ABB02622	012-7706803
Koghulan a/l Agilanananth	20ABB01070	011-33036210

PERSONAL DATA PROTECTION NOTICE

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

1. Personal data refers to any information which may directly or indirectly identify a person which could include sensitive personal data and expression of opinion. Among others it includes:

a) Name
b) Identity card
c) Place of Birth
d) Address
e) Education History
f) Employment History
g) Medical History
h) Blood type
i) Race
j) Religion
k) Photo
l) Personal Information and Associated Research Data

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

a) For assessment of any application to UTAR
b) For processing any benefits and services
c) For communication purposes
d) For advertorial and news
e) For general administration and record purposes
f) For enhancing the value of education
g) For educational and related purposes consequential to UTAR
h) For replying any responds to complaints and enquiries
i) For the purpose of our corporate governance
j) For the purposes of conducting research/ collaboration

3. 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.

4. 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.

5. 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:

6. By submitting or providing your personal data to UTAR, you had consented and agreed for your personal data to be used in accordance to the terms and conditions in the Notice and our relevant policy.

7. 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.

8. You may access and update your personal data by writing to us at nghuatlin@1utar.my.

Acknowledgment of Notice

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

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

……

Name:

Date:

Section A: Demographic Profile

Please tick the option that best describe you.

1. Gender:

□ Male

□ Female

2. Age:

□ 18 years old and below

□ 19 to 21 years old

□ 22 to 24 years old

□ 25 years old and above

3. Ethnicity:

□ Chinese

□ Malay

□ Indian

□ Others, please specify: _____

4. Year of study:

□ Year 1

□ Year 2

□ Year 3

□ Year 4

□ Others

5. Faculty:

□ Faculty of Business and Finance (FBF)

□ Faculty of Information and Communication Technology (FICT)

□ Faculty of Science (FSC)

□ Faculty of Engineering and Green Technology (FEGT)

□ Faculty of Arts and Social Science (FAS)

□ Institute of Chinese Studies (ICS Kampar)

□ Others, please specify: _____

Section B: Student Engagement

Please select the most appropriate option that best indicates your agreement level about the following statements.

Level of agreement 1- Strongly disagree 2- Disagree 3- Neutral 4- Agree 5- Strongly Agree

No.	Questions	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)
Behavioral Engagement						
1.	I pay attention in class.	1	2	3	4	5
2.	I follow the university's rules.	1	2	3	4	5
3.	I usually do my homework on time.	1	2	3	4	5

4.	When I have doubts, I ask questions and participate in debates in the classroom.	1	2	3	4	5
5.	I usually participate actively in group assignments.	1	2	3	4	5
Emotional Engagement						
6.	I don't feel very accomplished at this school.	1	2	3	4	5
7.	I feel excited about the coursework.	1	2	3	4	5
8.	I like being at university.	1	2	3	4	5
9.	I am interested in the coursework.	1	2	3	4	5
10.	My classroom is an interesting place to be.	1	2	3	4	5
Cognitive Engagement						
11.	When I read a book, I question myself to make sure I understand the	1	2	3	4	5

	subject I'm reading about.					
12.	I talk to people outside the university on matters that I learned in class.	1	2	4	4	5
13.	If I do not understand the meaning of a word, I try to solve the problem, for example by consulting a dictionary or asking someone else.	1	2	3	4	5
14.	I try to integrate the acquired knowledge in solving new problems.	1	2	3	4	5
15.	I try to integrate subjects from different disciplines into my general knowledge.	1	2	3	4	5

Section C: Academic Resilience

Please select the most appropriate option that best indicates your agreement level about the following statements.

Level of agreement 1- Strongly disagree 2- Disagree 3- Neutral 4- Agree 5- Strongly Agree

No.	Questions	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)
1.	I believe I'm mentally tough when it comes to exams.	1	2	3	4	5
2.	I don't let study stress get on top of me.	1	2	3	4	5
3.	I'm good at bouncing back from a poor mark in my study.	1	2	3	4	5
4.	I think I'm good at dealing with pressures from my coursework.	1	2	3	4	5
5.	I don't let a bad mark affect my confidence.	1	2	3	4	5

6.	I’m good at dealing with setbacks at university.	1	2	3	4	5

Section D: Self-regulation

Please select the most appropriate option that best indicates your agreement level about the following statements.

Level of agreement 1- Strongly disagree 2- Disagree 3- Neutral 4- Agree 5- Strongly Agree

No.	Questions	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)
Goal Attainment						
1.	When I'm trying to change something, I pay attention to how I'm doing.	1	2	3	4	5
2.	I set goals for myself and keep track of my progress.	1	2	3	4	5
3.	Once I have a goal, I can usually plan how to reach it.	1	2	3	4	5
4.	I'm able to accomplish goals I set for myself.	1	2	3	4	5

5.	If I make a resolution to change something, I pay a lot of attention to how I'm doing.	1	2	3	4	5
6.	I usually keep track of my progress toward my goals.	1	2	3	4	5
7.	I have personal standards and try to live up to them.	1	2	3	4	5
Mindfulness						
8.	I get easily distracted from my plans.	1	2	3	4	5
9.	I have trouble following through with things once I've made up my mind to do something.	1	2	3	4	5
10	I put off making decisions.	1	2	3	4	5
11.	I give up quickly.	1	2	3	4	5
12.	I don't notice the effects of my actions until it's too late.	1	2	3	4	5

13.	Most of the time I don't pay attention to what I'm doing.	1	2	3	4	5
14.	I have trouble making up my mind about things.	1	2	3	4	5
Adjustment						
15.	When there is a problem, I will handle and resolve it quickly.	1	2	3	4	5
16.	I learn from my mistakes.	1	2	3	4	5
17.	As soon as I see a problem or a challenge, I start looking for possible solutions.	1	2	3	4	5
Proactiveness						
18.	I can stick to a plan that is working well.	1	2	3	4	5
19.	I usually only have to make a mistake one time in order to learn from it.	1	2	3	4	5
20.	I can usually find several different possibilities when I want to change something.	1	2	3	4	5

Goal Setting						
21.	I will make a proper plan to help me reach my goals.	1	2	3	4	5
22.	I have no problem in setting goals for myself.	1	2	3	4	5

Section E: Procrastination

Please select the most appropriate option that best indicates your agreement level about the following statements.

Level of agreement 1- Strongly disagree 2- Disagree 3- Neutral 4- Agree 5- Strongly Agree

No.	Questions	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)
1.	I put off projects until the last minute.	1	2	3	4	5
2.	I know I should work on schoolwork, but I just don't do it.	1	2	3	4	5
3.	I get distracted by other, more fun, things when I am supposed to work on coursework.	1	2	3	4	5
4.	When given an assignment, I usually put it away and forget about it until it is almost due.	1	2	3	4	5
5.	I frequently find myself putting important deadlines off.	1	2	3	4	5

Thank you for your participation.

Appendix 4.1 Descriptive Analysis

Respondents' University

1. Which university are you from?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Universiti Tunku Abdul Rahman (UTAR)	367	100.0	100.0	100.0

Respondents' Age

2. Age:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	19 to 25 years old	366	99.7	99.7	99.7
	26 years old and above	1	.3	.3	100.0
	Total	367	100.0	100.0	

Respondents' Gender

3. Gender:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	119	32.4	32.4	32.4
	Male	248	67.6	67.6	100.0
	Total	367	100.0	100.0	

Respondents' Ethnicity

4. Ethnicity:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Chinese	315	85.8	85.8	85.8
	Indian	39	10.6	10.6	96.5
	Malay	13	3.5	3.5	100.0
	Total	367	100.0	100.0	

Respondents' Highest Education Completed

5. Highest education completed:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	45	12.3	12.3	12.3
	Foundation	311	84.7	84.7	97.0
	SPM/STPM	11	3.0	3.0	100.0
	Total	367	100.0	100.0	

Respondents' Faculty

6. Faculty:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	FAS	20	5.4	5.4	5.4
	FBF	265	72.2	72.2	77.7
	FEGT	17	4.6	4.6	82.3
	FICT	33	9.0	9.0	91.3
	FSC	32	8.7	8.7	100.0
	Total	367	100.0	100.0	

Appendix 4.2 Central Tendencies Measurement of Construct

Statistics

		StudentEngagement	AcademicResilience	Selfregulation	Procrastination
N	Valid	367	367	367	367
	Missing	0	0	0	0
Mean		59.4578	25.0981	78.7929	11.8202
Std. Deviation		8.90924	4.11264	8.20939	5.52692

Appendix 4.3 Reliability Test

Dependent Variable: Student Engagement

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.910	.917	15

Independent Variable: Academic Resilience

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.919	.919	6

Independent Variable: Self-Regulation

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.804	.817	22

Independent Variable: Academic Procrastination

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.946	.947	5

Appendix 4.4 Pearson Correlation

Correlations

		AcademicResilience	StudentEngagament
AcademicResilience	Pearson Correlation	1	.656**
	Sig. (2-tailed)		<.001
	N	367	367
StudentEngagament	Pearson Correlation	.656**	1
	Sig. (2-tailed)	<.001	
	N	367	367

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

Correlations

		Selfregulation	StudentEngagament
Selfregulation	Pearson Correlation	1	.531**
	Sig. (2-tailed)		<.001
	N	367	367
StudentEngagament	Pearson Correlation	.531**	1
	Sig. (2-tailed)	<.001	
	N	367	367

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

Correlations

		Procrastination	StudentEngagament
Procrastination	Pearson Correlation	1	-.361**
	Sig. (2-tailed)		<.001
	N	367	367
StudentEngagament	Pearson Correlation	-.361**	1
	Sig. (2-tailed)	<.001	
	N	367	367

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

Appendix 4.5 Multiple Regression Analysis

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18894.288	3	6298.096	225.091	<.001[b]
	Residual	10156.807	363	27.980		
	Total	29051.095	366			

a. Dependent Variable: StudentEngagament

b. Predictors: (Constant), Procrastination, AcademicResilience, Selfregulation

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.806[a]	.650	.647	5.28963

a. Predictors: (Constant), Procrastination, AcademicResilience, Selfregulation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	6.235	2.712		2.299	.022	.902	11.569
	AcademicResilience	.662	.085	.305	7.814	<.001	.495	.828
	Selfregulation	.577	.044	.532	13.204	<.001	.491	.663
	Procrastination	-.748	.058	-.464	-12.813	<.001	-.863	-.633

a. Dependent Variable: StudentEngagament