



FUTURE SELF-CONTINUITY AND LYING FLAT TENDENCY AMONG
UNDERGRADUATE STUDENTS IN MALAYSIA:
THE MEDIATING ROLE OF GRIT

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FSC AND LF TENDENCY AMONG UNDERGRADUATE STUDENTS IN
MALAYSIA: GRIT AS MEDIATOR

Future Self-Continuity and Lying Flat Tendency

among Undergraduate Students in Malaysia:

The Mediating Role of Grit

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MALAYSIA: GRIT AS MEDIATOR

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CHAN LEE YI

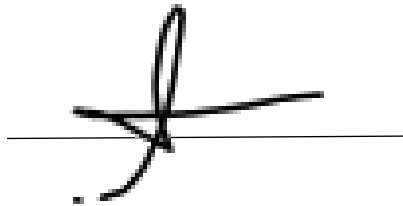
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FSC AND LF TENDENCY AMONG UNDERGRADUATE STUDENTS IN
MALAYSIA: GRIT AS MEDIATOR

APPROVAL FORM

This research paper attached hereto, entitled “Future Self-Continuity and Lying Flat
Tendency among Malaysian Undergraduate Students: The Mediating Role of Grit” prepared
and submitted by Chan Lee Yi, Ho Si Qing, Tan Qian Yine in partial fulfilment of the
requirements for the Bachelor of Social Science (Hons) Psychology is hereby accepted.



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Abstract

The present study examines psychological factors associated with the “lying flat” tendency among undergraduate students in Malaysia, a disengagement-oriented response characterized by reduced striving and withdrawal from competitive demands. Given the rising levels of psychological distress among undergraduates, understanding this phenomenon has become increasingly important. This study focuses on future self-continuity (FSC) and grit as key predictors of lying flat tendency. Although both constructs are theoretically linked to motivation and engagement, their combined role in explaining lying flat tendency remains underexplored. Thus, the research paper is intended to explore the connections among FSC, grit, and lying flat tendency and to determine the mediating effect of grit. A cross-sectional survey design with unrestricted self-selected sampling was employed to collect 129 responses. The Future Self-Continuity Questionnaire (FSCQ), Short-Grit Scale (Grit-S), and Lying Flat Tendency Scale (LFTS) were utilised to measure the variables. Pearson product-moment correlation (PPMC) and Hayes PROCESS macro (Model 4) were used to analyse the final data. The findings showed a significant positive correlation between FSC and grit, and a significant negative correlation between grit and lying flat tendency. FSC was also negatively correlated with lying flat tendency. The mediation analysis showed an indirect mediation, where the direct effect of FSC on lying flat tendency was non-significant, while the indirect and total effects were significant. These results emphasize the significance of grit as a psychological process that combines future thinking with reduced disengagement, and they can be applied in practice to enhance student motivation and well-being.

Keywords: Lying Flat Tendency, Future Self-Continuity (FSC), Grit, Undergraduate Students in Malaysia

Subject Area: HQ2042-2044 Life style

DECLARATION

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

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List of Abbreviations

Abbreviations

1. APA - American Psychological Association
2. BPNT - Basic Psychological Needs Theory
3. CI - Confidence Interval
4. FSC - Future Self-Continuity
5. FSCQ - Future Self-Continuity Questionnaire
6. Grit-S - Short-Grit Scale
7. K-S test - Kolmogorov–Smirnov Test
8. LFTS - Lying Flat Tendency Scale
9. MLR - Multiple Linear Regression
10. OIT - Organismic Integration Theory
11. Q-Q Plot - Quantile-Quantile Plot
12. SDT - Self-Determination Theory
13. SERC - The Scientific and Ethical Review Committee
14. SPSS - Statistical Package for Social Sciences
15. UTAR - Universiti Tunku Abdul Rahman
16. VIF - Variance Inflation Factor

Chapter I

Introduction

Background of the Study

The present study investigates the psychological factors associated with the “lying flat” tendency among undergraduate students in Malaysia. The phenomenon of “lying flat” (Tang Ping) is a contemporary socio-psychological phenomenon where individuals consciously reduce their striving and disengage from competitive societal expectations (Sun, 2025). This tendency is particularly relevant in Malaysia context, where students navigate rising academic pressures, and employment uncertainty exemplified by a youth unemployment rate of 10.1% (Department of Statistics Malaysia, 2025), and concerning levels of psychological distress, with notable rates of anxiety (60.5%), depression (45.6%), and stress (40%) reported among undergraduates (Azlan et al., 2024). The convergence of these demands fosters an environment conducive to the emergence of disengagement methods, such as lying flat. To understand this dynamic, the research examines how the lying flat tendency relates to future self-continuity and grit. These two key motivational constructs focus on an individual’s connection to their future self and their capacity for sustained perseverance. Thus, this study examines the roles of future self-continuity and grit, as well as their relationship with the lying flat tendency.

Lying flat tendency refers to an individual’s enduring inclination to withdraw from high-effort striving and competitive goal pursuit, adopting a low-desire, “just get by” orientation marked by reduced ambition, maintaining the status quo, and avoidance of efforts and problems, often as psychological response to perceived high pressure or low returns from striving (Hsu, 2022; Lu et al., 2023). Recent studies suggest that lying flat is not simply a matter of laziness, but a meaningful pattern characterized by reduced goal pursuit and effort,

including a lack of clear life goals, maintaining the status quo rather than seeking progress, avoiding striving, and sometimes withdrawing from problems (Lu et al., 2023; Qi, 2021).

Research also suggests that lying flat carries strong normative meanings, as lying flat is often evaluated negatively when compared with effort-making, yet it can be viewed as relatively more acceptable when people receive effort as yielding low returns, implying that lying flat may function as a psychologically understandable response to perceived inequality or low-payoff environments (Hsu, 2022; Sun, 2025). Additionally, studies report that a higher lying flat tendency is empirically associated with poorer well-being indicators, characterized by lower basic psychological need satisfaction and happiness, and higher negative emotions (Lu et al., 2023). In addition, values-based work indicates that lying flat varies systematically by motivational orientation, with lower work values corresponding to higher lying flat tendencies, reinforcing lying flat as an indicator of motivational disengagement rather than mere inactivity (Zeng et al., 2025). Taken together, lying flat represents a concrete manifestation of reduced striving under pressure, making it a critical variable in explaining contemporary youth adaptation to stress, competition, and perceived low returns.

Future self-continuity (FSC) refers to the subjective sense that one's future self is the same person as one's present self, experienced as psychological similarity, closeness, and concern for the future self, supported by vivid and generally positive mental representation of who one will become (Hendusinabad & Sepehrianazar, 2024; Hong et al., 2024; Sokol & Serper, 2019). FSC is conceptualized as a core identity process that links the present to the future and helps organize long-term motivation, as when people see a substantial overlap between their current and future selves, they are more willing to forgo immediate gratification and act in ways that benefit their future self (Bartels & Rips, 2010; Hershfield et al., 2009; Hershfield, 2011). Existing research findings indicate that higher FSC is associated

with less discounting of future rewards and greater real-world saving (Hershfield et al., 2009; Hershfield et al., 2025), as well as better self-regulation in academic contexts. Students who feel closer to their future selves report lower academic procrastination, greater consideration of future consequences, higher self-control, and achieve higher semester GPAs (Adelman et al., 2016; Blouin-Hudon & Pychyl, 2015). Beyond performance, FSC predicts indicators of psychological well-being, such as authenticity, self-concept clarity, and meaning in life. Experimental studies suggest that increasing FSC can causally enhance meaning through authenticity (Chu & Lowery, 2023; Hong et al., 2024).

Recent studies in diverse student samples have further shown that FSC is positively related to academic grit, among university and secondary students. Those who perceive stronger continuity with their future selves tend to show greater perseverance for long-term academic goals, with this link partly explained by future-oriented cognitions (future time perspective) and self-regulatory capacities (intentional self-regulation), and in some models FSC emerges as the strongest predictor of grit even after accounting for procrastination among savouring beliefs (Hendusinabad & Sepehrianazar, 2024; Wei et al., 2025; Wu & Lopez, 2025). Collectively, these findings support viewing FSC as a foundational identity-based resource that aligns present behaviour with long-term goals, providing a theoretically grounded basis for expecting robust associations between FSC and students' grit.

Grit is a psychological construct characterized by sustained passion and perseverance toward long-term goals, involving consistent effort and interest despite obstacles or setbacks (Duckworth et al., 2007; Schimschal et al., 2020). In educational contexts, research indicates that grit is associated with academic engagement, long-term achievement, and perseverance in pursuing challenging goals, serving as a motivational factor that enables students to sustain effort even in the absence of immediate benefits (Obeng et al., 2025; Toyama, 2024).

Hendusinabad and Sepehriannazar (2024) further indicate that grit is positively linked to future self-continuity, while showing a negative association with academic procrastination. Therefore, these gritty traits directly counteract withdrawal-oriented attitudes such as learning disengagement and lying flat tendency. Given its role in maintaining effort for future outcomes, grit may serve as a crucial psychological resource that connects one's future-oriented perspective (FSC) to their present actions, thereby mitigating the likelihood of disengagement.

In summary, contemporary research establishes future self-continuity as a motivator for long-term behavior, grit as the engine of sustained effort, and lying flat as a manifestation of disengagement. While each construct has been studied independently, their relationship, particularly how future self-continuity and grit may jointly influence lying flat tendency, remains unexplored, especially within the Malaysian undergraduate context.

Problem Statement

Currently, undergraduate students in Malaysia are experiencing significant psychological strain, with evidence showing that among 810 Malaysian undergraduate students, 68.9% reported moderate to high psychological distress, 72.7% reported anxiety, and 60.6% reported depression (Arifin et al., 2023). Similarly, another study with 534 undergraduate students found that 45.6% of students exhibit depressive symptoms, 60.5% reported anxiety symptoms, and 40% displayed stress symptoms, with the majority displaying moderate-to-extremely severe anxiety levels (Azlan et al., 2024). These findings indicate that undergraduate students in Malaysia are increasingly vulnerable to pressure and exhaustion. Elevated distress may increase reliance on disengagement-oriented coping strategies, making lying flat a potentially salient response in the Malaysian higher education context. However, despite growing public and academic interest in lying flat, existing

research remains heavily concentrated in the Chinese context (Lu et al., 2025; Qi, 2021; Xiao & Chen, 2025), resulting in a limited understanding of how this phenomenon may manifest in Southeast Asian settings such as Malaysia. Given the pressures faced by Malaysia students, examining lying flat in this population is critical to understanding its psychological relevance and potential consequences.

At the theoretical level, the current literature has not examined whether psychological factors such as future self-continuity or grit may influence lying flat tendency, despite both constructs being conceptually relevant. Prior research shows that lower future self-continuity is linked to weaker motivational pull, reduced planning, and decreased engagement (Hamilton & Cole, 2017; Keane & McDonnell, 2023; Nurra & Oyserman, 2018; Urminsky, 2017), while grit is consistently associated with sustained effort and perseverance (Calleja-Núñez et al., 2023; Yau & Shu, 2023). Given that lying flat reflects low engagement, withdrawal, and the opposite of sustained effort, it suggests that both constructs are theoretically relevant to explaining tendencies to lie flat. However, the link between future self-continuity, grit, and lying flat tendency has not been empirically tested.

Methodologically, although prior studies have commonly employed cross-sectional designs to examine lying flat tendency (Lu et al., 2025; Yang et al., 2025), there remains a lack of research that includes key psychological variables such as future self-continuity and grit within a single framework, particularly in the Malaysian context. Existing research on lying flat has primarily focused on descriptive findings, such as prevalence rates and attitudinal responses, or has examined associations with single variables (Heng et al., 2023; Lu et al., 2025). However, limited attention has been given to the interaction between motivational and self-related psychological constructs within an integrated framework. Thus, a cross-sectional investigation can provide an important initial understanding of how these

variables are associated and whether grit may function as a potential mediating factor in the relationship between future self-continuity and lying flat tendency.

Taken together, these cultural and theoretical gaps highlight the need for research examining the relationship between future self-continuity, grit, and lying flat tendency among undergraduate students in Malaysia. Investigating these associations within a cross-sectional framework will provide a clearer understanding of the psychological mechanisms underlying lying flat and establish stronger empirical foundations for future research and practice.

Research Questions

1. What is the relationship between future self-continuity, grit, and lying flat tendency among undergraduate students in Malaysia?
2. Does grit mediate the relationship between future self-continuity and lying flat tendency among undergraduate students in Malaysia?

Research Objectives

1. To examine the relationship between future self-continuity, grit, and lying flat tendency among undergraduate students in Malaysia.
2. To examine the mediating role of grit in the relationship between future self-continuity and lying flat tendency among undergraduate students in Malaysia.

Hypotheses

H_1 : There is a significant positive relationship between future self-continuity and grit among undergraduate students in Malaysia.

H_2 : There is a significant negative relationship between grit and lying flat tendency among undergraduate students in Malaysia.

H₃: There is a significant negative relationship between future self-continuity and lying flat tendency among undergraduate students in Malaysia.

H₄: Grit significantly mediates the relationship between future self-continuity and lying flat tendency among undergraduate students in Malaysia.

Significance of the Study

Theoretical Contribution

The present study contributes to the growing body of literature on lying flat by addressing several conceptual and empirical gaps. Although lying flat has gained widespread attention as a socio-psychosocial response to pressure, exhaustion, and social expectations, existing research remains largely descriptive and has paid limited attention to the psychological mechanisms underlying this phenomenon (Lu et al., 2025; Yang et al., 2025). In addition, much of the literature is concentrated in the Chinese context, resulting in a limited understanding of how lying flat manifests among undergraduate students in other cultural settings, such as Malaysia (Lu et al., 2025; Qi, 2021; Xiao & Chen, 2025).

At the theoretical level, prior studies have rarely examined whether future self-continuity and grit are associated with lying flat, despite both constructs being conceptually relevant to disengagement, perseverance, and long-term goal pursuit (Calleja-Nuñez et al., 2023; Hamilton & Cole, 2017; Urmitsky, 2017; Yau & Shu, 2023). By incorporating Self-Determination Theory, specifically Organismic Integration Theory, as the guiding framework, the present study extends the motivational understanding of lying flat by examining whether future self-continuity is associated with lower lying flat tendency through grit as a mediating mechanism (Deci & Ryan, 1985; Ryan & Deci, 2000).

In doing so, the present study demonstrates how future self-continuity and grit may function as psychologically protective resources that align with the motivational processes described in Organismic Integration Theory. Specifically, when students perceive a stronger connection with their future selves, they may be more likely to internalize long-term goals in a self-endorsing manner, reflected in greater grit and a lower tendency to adopt disengaged responses such as lying flat (Ryan & Deci, 2000; Ernst et al., 2018).

In this way, the study extends the application of Self-Determination Theory to a contemporary cultural phenomenon within the Malaysia undergraduate context, while highlighting the role of internalized motivation in understanding students' coping behaviours under pressure. Furthermore, by examining future self-continuity, grit, and lying flat tendency within a single mediation model, the study contributes to a more focused theoretical explanation of how future-oriented self-perceptions may be associated with persistence and disengagement. Collectively, these contributions enrich the theoretical understanding of lying flat through a more specific motivational lens and highlight the value of integrating emerging constructs such as future self-continuity and grit with Organismic Integration Theory.

Practical Contribution

From a practical perspective, this study may have important implications for educators, counsellors, and policymakers in the Malaysian higher education context. By identifying the associations among future self-continuity, grit, and lying flat tendency, the study provides useful direction for interventions aimed at promoting adaptive coping, persistence, and positive academic engagement among undergraduate students. Specifically, programmes that enhance students' sense of connection to their future selves may help them perceive their present efforts as more meaningful and personally relevant, which, in turn, may support stronger long-term goal commitment. Likewise, initiatives that cultivate grit may

help students maintain effort and perseverance when facing academic stress and other life challenges, thereby reducing disengagement and passive coping responses. The findings may also help higher education institutions design student support and mental health initiatives that encourage future-oriented thinking, resilience, and more self-endorsed goal pursuit. Overall, the study offers practical insights that may assist universities in fostering proactive academic engagement and mitigating the negative psychological and behavioural consequences associated with lying flat tendency.

Conceptual Definition

Future Self-Continuity

Future self-continuity, also referred to as present-future self-continuity, refers to the perceived psychological link between one's present and future selves (Sedikides et al., 2022). It reflects the extent to which individuals view their future self as connected to their present self, maintaining a sense of persistence across time (Sokol & Serper, 2019). According to Hershfield (2011), this continuity is described through three dimensions: *similarity*, or the degree to which people feel their future self shares their current characteristics and values; *vividness*, meaning how clearly and easily the future self can be imagined; and *positivity*, which reflects the evaluative attitude one holds toward their future self.

The construct is grounded in the multiple selves theory, which proposes that the self is not a single fixed entity, but a set of temporally distinct identities connected through overlapping traits, intentions, and memories (Grekin et al., 2025). As temporal distance increases, the sense of connection between these identities tends to weaken. Consequently, when people perceive their future self as distant or dissimilar, they may show reduced motivation to act in ways that benefit their long-term outcomes (Urminsky, 2017).

Grit

Grit is a psychological construct characterized by sustained passion and perseverance toward long-term goals, involving consistent effort and interest despite obstacles or setbacks (Duckworth & Quinn, 2009; Schimschal et al., 2020). Unlike traditional measures of conscientiousness, grit emphasizes stamina and the capacity to maintain effort and passion in projects that require extended commitment over months or even years. Moreover, while grit shares similarities with the need for achievement, it is a distinct construct. Individuals high in grit persist in pursuing their objectives even in the absence of immediate rewards or positive feedback (Duckworth & Quinn, 2009). Additionally, grit encompasses an epistemic dimension, in which individuals continue striving toward goals with resilience and confidence, even when success is uncertain or progress is slow (Morton & Paul, 2019).

Lying Flat Tendency

Lying flat, or “Tang Ping”, refers to a mindset among Chinese youth characterised by an intentional withdrawal from intense social pressures and conventional expectations for achievement (Zhang & Zhang, 2025). Although the term literally means “to lie down and not move,” it symbolises a conscious rejection of the drive for constant achievement in a context where effort is often perceived as yielding diminishing or unfair returns (Zhang & Zhang, 2025; Zhu et al., 2025). Rather than mere passivity, lying flat represents a strategic refusal of dominant cultural narratives that celebrate constant striving and productivity (Gullotta & Lin, 2022).

Lying flat can manifest in several forms, including “spuriously lying flat” among individuals who have already achieved stability, “positively lying flat” among individuals who deliberately step back to reclaim a sense of self, and “negatively lying flat,” the most widespread form, among individuals who resist meritocratic pressures and perceived

structural unfairness (Gullotta & Lin, 2022). Overall, lying flat reflects a broader pattern of youth disengagement or stagnation, characterized by the withdrawal from competitive systems perceived as unlikely to reward their efforts equitably (Zhu et al., 2025).

Operational Definition

Future Self-Continuity

The Future Self-Continuity Questionnaire (FSCQ), developed by Sokol and Serper (2019), was used to assess individuals' perceived connection with their future selves. The total FSCQ score was calculated by averaging all item responses, with higher scores indicating greater future self-continuity.

Grit

The 8-item Short Grit Scale (Grit-S) developed by Duckworth and Quinn (2009) was used to assess individuals' level of grit. The total grit score was obtained by summing all item responses and dividing by eight. Scores range from 1 to 5, with higher scores indicating greater grit.

Lying Flat Tendency

The Lying Flat Tendency Scale (LFTS), developed by Lu et al. (2023), was used to assess individuals' tendency for "lying flat". Total scores were calculated by averaging all items, with higher scores indicating a stronger lying flat tendency.

Chapter II

Literature Review

Future Self-Continuity and Grit

Recent research has increasingly emphasized the importance of future self-continuity (FSC) as a psychological mechanism that shapes individuals' long-term goal pursuit, effort investment, and self-regulation. FSC refers to the perceived sense of connectedness between one's present and future selves. This temporal self-connection has been shown to influence the degree to which individuals prioritize long-term gains over short-term comfort (Hershfield, 2011; Sokol & Serper, 2019). Between 2021 and 2025, a growing body of evidence has begun to clarify the role of FSC in predicting perseverance-related constructs such as grit.

A key advancement in recent literature is the empirical connection between FSC and grit. In a 2025 study involving 389 college students, Wei et al. (2025) found that FSC significantly and positively predicted grit, indicating that students who perceived their future self as more similar, vivid, and emotionally connected were more likely to persist in their long-term goals. Significantly, future time perspective (FTP), particularly behavioural commitment and future purpose consciousness, mediated this relationship, suggesting that individuals high in FSC may develop stronger long-term orientation, which in turn increases perseverance and sustained effort. This provides direct evidence for a theoretically meaningful link between FSC and grit among emerging adults.

Further support for this association is provided by another recent study among Chinese junior high school students, which found that future self-continuity was positively correlated with both intentional self-regulation (ISR) and academic grit (Wu & Lopez, 2025).

Students who reported stronger FSC showed greater ability to regulate their actions toward future outcomes and exhibited higher academic grit, reinforcing the view that FSC contributes to perseverance through improved self-regulation. This suggests that the FSC and grit relationship may emerge early in adolescence and continue to strengthen into young adulthood.

Additional recent evidence indicates that FSC contributes to broader psychological resources that support gritty behaviour. A three-wave longitudinal study by Xue et al. (2024) demonstrated that FSC meaningfully predicted the presence of meaning in life, with self-concept clarity acting as a mediator. Because meaning in life and clarity of self-concept are closely linked with goal stability, commitment, and resilience, these findings highlight a potential psychological foundation through which FSC fosters grit. Similarly, Chen et al. (2024) demonstrated that future time perspective, self-concept clarity, and grit collectively predict adolescents' life satisfaction, suggesting that perseverance and future-oriented cognition interact to influence well-being, thereby further strengthening the conceptual connection between FSC and grit.

Recent studies on self-regulation and intertemporal decision-making further explain the cognitive mechanisms underlying this relationship. Yang et al. (2024) found that individuals with higher FSC discounted future rewards less steeply, meaning they were more willing to delay gratification in favour of long-term benefits. This behavioral tendency, characterized by a greater delay of gratification, is consistent with the perseverance and long-term focus central to grit. These patterns suggest that FSC enhances grit by strengthening future-oriented decision-making, increasing the willingness to work toward outcomes that are not immediately rewarding, and promoting greater alignment between current behavior and future goals.

Taken together, recent findings from 2021 to 2025 converge to show that future self-continuity is an important antecedent of grit. Individuals with higher FSC appear more capable of sustaining effort, regulating their behaviour, and maintaining commitment to distant goals; these psychological characteristics are fundamental to grit. Despite these advancements, research examining the relationship between the FSC and grit remains limited across cultural contexts, with most studies conducted in China. To date, no research has examined these constructs within Malaysian undergraduate populations or linked them to disengagement tendencies, such as lying flat. This underscores the relevance and originality of the present study, which seeks to clarify whether FSC predicts grit and, indirectly, lying flat tendency within a Southeast Asian context.

Future Self-Continuity and Lying Flat Tendency

Lying flat, or tang ping, has emerged as a prominent youth coping style in contemporary China, characterised by deliberate withdrawal from intense social competition, a reduction of aspirations, and a tendency to “do the minimum” in work, study, and social life. Recent quantitative work conceptualizes lying flat as a psychological tendency marked by the loss of goals, passivity, low desire for advancement, and emotional disengagement. Lu et al. (2023) developed the 6-item Lying Flat Tendency Scale (LFTS). They showed that a higher tendency to lie flat is associated with reduced satisfaction of basic psychological needs (autonomy, competence, relatedness), lower happiness and positive affect, and higher negative affect, as well as a greater likelihood of choosing lying flat behavior in simulated scenarios. Likewise, a large-scale survey of 1,034 Chinese college students found that lying flat behavior is characterized by low goal commitment, weakened social and marital needs, and diminished self-transcendence, suggesting a broader erosion of meaning, responsibility, and future orientation (Liu, 2025).

Growing empirical evidence links lying flat tendency to poorer mental health and maladaptive coping. A longitudinal study by Lu et al. (2024) demonstrated that a lying flat tendency negatively predicts youth mental health one month later. Moreover, an eight-day inspirational video intervention that reduced the tendency to lie flat led to improved mental health, with lying flat functioning serving as a mediator between the intervention and later well-being. Similarly, a Chinese multi-university study reported that academic, life, and social lying flat behaviours were all positively associated with depressive symptoms, with students showing multiple forms of lying flat displaying substantially higher odds of moderate-to-severe depression (Ma et al., 2024). At the behavioral level, lying flat has also been associated with problematic smartphone use. According to Zhu et al. (2025), lying flat is associated with excessive smartphone use, likely due to lower self-esteem, suggesting that disengagement from real-life goals may lead young people toward digital escapism. Together, these findings suggest that lying flat reflects not only an attitudinal resistance to pressure but also a pattern of psychological withdrawal, reduced future striving, and compromised mental health.

In contrast, recent research on FSC highlights its role as a protective, future-oriented resource. FSC refers to the perceived sense of connection, similarity, and continuity between one's present and future self. Hong et al. (2024) demonstrated across three studies that FSC is a precursor of well-being, and higher FSC was associated with greater meaning in life. Experimental manipulations that enhance FSC also increase meaning through heightened authenticity, also known as a sense of being true to oneself. Xue et al. (2024) demonstrated, in a three-wave longitudinal design with Chinese college students, that FSC positively predicts the presence of meaning in life, partly through increased self-concept clarity. These findings indicate that individuals who feel more connected to their future selves tend to

experience clearer self-understanding and a stronger sense of purpose, and psychological qualities that are likely incompatible with chronic withdrawal and “giving up” on long-term goals.

FSC has also been linked to self-control and proactive engagement with long-term outcomes. Yang et al. (2024) found that FSC significantly and negatively predicts time discounting in intertemporal decision-making, indicating that individuals with higher FSC are more willing to forgo immediate rewards in favor of larger future gains. This effect operates partly through increased consideration of future outcomes and is stronger when self-concept clarity is high. Complementing this, a neurocognitive study reported that FSC is negatively associated with procrastination, and the anticipation of positive outcomes mediates this relationship. Specifically, youth with higher FSC showed reduced procrastination supported by specific functional connectivity between the ventromedial prefrontal cortex and the inferior parietal lobe (Zhao et al., 2024). Such evidence suggests that FSC promotes active investment in future benefits, reduces avoidance, and supports sustained engagement in goal-directed tasks.

When these lines of evidence are considered together, a clear conceptual link between FSC and lying flat emerges. The lying flat tendency is consistently associated with the loss of goals, low motivation, depressive mood, and avoidance-based coping including escape into digital media (Lu et al., 2023; Ma et al., 2024; Zhu et al., 2025). In contrast, higher FSC is associated with greater meaning in life, authenticity, self-concept clarity, willingness to delay gratification, and lower procrastination (Hong et al., 2024; Xue et al., 2024; Yang et al., 2024; Zhao et al., 2024). It is therefore plausible that students who perceive their future selves as distant, vague, or disconnected may be more inclined to adopt a lying flat lifestyle; disengaging from achievement goals and minimizing effort may appear rational when the

future self feels like “a stranger” who will not benefit from current sacrifices. Conversely, students with strong FSC are more likely to perceive their future well-being as closely tied to present choices, thereby maintaining goal commitment and resisting withdrawal into low-ambition, passive patterns. On this basis, future self-continuity is expected to show a negative association with lying flat tendency.

However, despite the conceptual compatibility between these constructs, no known empirical study to date has directly examined the relationship between FSC and lying flat. Existing lying flat research has focused mainly on structural factors (involution, work values, relative deprivation) and psychological correlates such as self-esteem, depression, and smartphone addiction, without measuring FSC (Zeng et al., 2025; Zheng et al., 2025; Zhu et al., 2025). Similarly, research on FSC has focused on outcomes such as well-being, intertemporal choice, procrastination, and grit, rather than disengagement-oriented lifestyles (Hong et al., 2024; Yang et al., 2024; Zhao et al., 2024). Moreover, almost all lying flat and FSC studies have been conducted in Chinese or other non-Southeast Asian contexts, leaving open the question of how these relationships generalize to undergraduate students in Malaysia. Addressing this gap, the present study proposes and tests a model in which future self-continuity is negatively associated with lying flat tendency among undergraduate students in Malaysia and further investigates whether grit mediates this relationship.

Grit and Lying Flat Tendency

Grit, conceptualized by Duckworth and Quinn (2009), refers to maintaining consistent effort and interest in long-term objectives despite challenges or setbacks. It consists of two components: perseverance of effort, which reflects individuals’ tendency to maintain and sustain effort when confronted with trials or disappointments in life, and consistency of interest, which reflects the tendency to stay focused and ardent in upholding a comparable set

of interests over a lengthy period of time (Salisu et al., 2020). A substantial body of research has demonstrated the adaptive value of grit across various domains. For instance, grit has been shown to predict higher academic achievement, engagement, and performance (Abubakar et al., 2021; Alhadabi & Karpinski, 2019). Grit also contributes to positive work-related outcomes such as work engagement (Rusdi et al., 2023; Wardani et al., 2023) and entrepreneurial success (Al Issa, 2020). Individuals high in grit are more capable of resisting the tendency to give up during adversity, whereas those lower in grit are more inclined to disengage (Whitfield & Wilby, 2021). Furthermore, individuals with higher grit demonstrate stronger problem-solving abilities under pressure and experience lower stress levels by coping effectively with difficult situations (Kim & Jang, 2022), suggesting a reduced likelihood of using avoidance-oriented coping styles. Collectively, these findings position grit as a protective factor that promotes persistence, adaptive functioning, and sustained motivation in the face of stress or adversity, thereby supporting individuals in achieving long-term success.

Lying flat represents a passive lifestyle and coping orientation characterized by maintaining the lowest standards of living, concentrating primarily on one's emotions, and living only in the present moment (Heng et al., 2023). Recent empirical studies indicate that lying flat is associated with several adverse psychological and behavioural outcomes. For example, lying flat tendency has been linked to poorer mental health among youth and mediates the relationship between the inspirational video intervention and mental health (Lu et al., 2024). Lying flat has also contributed to sedentary lifestyles and poor nutrition (Zheng et al., 2024), which may lead to reduced BDNF levels and elevated cortisol, impairing neural function and exacerbating depressive symptoms (Hu et al., 2025). Additionally, Zhu et al. (2025) found that lying flat was positively associated with problematic smartphone use, with

self-esteem acting as a mediator. The authors noted that a lying flat mentality diminishes rather than recovers or compensates for self-esteem, indicating that individuals are more likely to engage in problematic smartphone use if they adopt a lying flat mentality and have low self-esteem. Moreover, individuals who adopt a lying flat attitude typically lack desires in life, are not focused on anything, and are unwilling to move forward (Heng et al., 2023), indicating that a lying flat attitude could lead to reduced motivation and a more focused approach on present-moment living over striving for success. As such, they are unlikely to persevere and remain motivated when faced with setbacks on the path to achieving success. Together, the current literature portrays lying flat as a withdrawal-oriented response that reflects low motivation, diminished goal pursuit, and a tendency to disengage from demanding or high-pressure environments.

Conceptually, grit and lying flat tendency represent opposing motivational tendencies. Grit reflects sustained effort, long-term goal commitment, and the willingness to persist in the face of difficulties. In contrast, lying flat tendency reflects disengagement from goals, avoidance of effort, and a retreat from long-term striving. This aligns with Fan and Yang (2023), who noted that a lying flat attitude reflects individuals' resistance and scorn to the standard of success; they will give up because they believe their efforts are in vain. In contrast, research on grit indicates that individuals with grit are more likely to remain engaged and persist in challenging environments (Whitfield & Wilby, 2021). Supporting this, Calleja-Nuñez et al. (2023) found that grit fosters involvement rather than withdrawal, as grit contributes to behavioral and emotional engagement while reducing behavioral and emotional disaffection. This comparison suggests that individuals high in grit may be less likely to adopt lying flat attitudes because they possess stronger resilience, stress-coping abilities, and a greater commitment to long-term goals. Despite these theoretically meaningful connections,

no empirical study to date has directly examined the relationship between grit and lying flat. Existing research on grit rarely includes withdrawal-oriented constructs, while lying flat studies have primarily focused on mental health and maladaptive lifestyle. Therefore, the present study fills an important gap by investigating whether grit is negatively associated with lying flat tendency among undergraduate students in Malaysia.

Future Self-Continuity, Grit, and Lying Flat Tendency

Although future self-continuity (FSC) and lying flat tendency are conceptually linked through their shared focus on attitudes toward the future, the psychological processes that connect with them are not yet well understood. FSC describes the degree to which individuals perceive their future self as similar, vivid, and emotionally connected to their present self. When this sense of continuity is strong, people are more willing to invest effort in their long-term welfare and to delay immediate gratification. Grit, defined as sustained passion and perseverance for long-term goals, represents a key self-regulatory resource that enables this future-oriented perspective to translate into concrete, persistent behavior. Thus, grit is a plausible mediator that explains how higher FSC might reduce the likelihood of adopting a disengaged, low-ambition lifestyle, such as lying flat.

Recent empirical work supports the idea that FSC functions as an antecedent of grit and other perseverance-related constructs. Wei et al. (2025), which included 389 Chinese college students in the study, found that FSC positively predicted grit, and that this relationship was mediated by future time perspective (FTP), particularly in terms of the dimensions of behavioral commitment and future purpose consciousness. Similarly, a 2025 study among Iranian university students reported that FSC had the strongest predictive power for academic grit, even when savoring beliefs and academic procrastination were included in the model (Hendusinabad & Sepehrianazar, 2024). Other longitudinal and experimental

research indicates that FSC promotes meaning in life through authenticity and self-concept clarity (Hong et al., 2024) and that it predicts more future-oriented decision making by encouraging greater consideration of future outcomes (Yang et al., 2024). Collectively, these findings suggest that FSC enhances core motivational processes, such as future time perspective, meaning, and self-concept clarity, which are known to foster perseverance and long-term goal pursuit, providing a theoretical basis for viewing grit as a downstream product of high FSC.

Grit itself has increasingly been conceptualized as a mediating mechanism in models of academic and career development, rather than only as a direct predictor of outcomes. For example, a recent study using Korean university students found that grit and future time perspective jointly mediated the relationship between career anxiety and career preparation behavior, suggesting that higher career anxiety was associated with lower FTP and grit, which in turn predicted reduced career preparation (Kim et al., 2023). Likewise, another study demonstrated a serial mediation pattern in which growth mindset predicted academic engagement through FTP and grit, indicating that grit functions as a pathway through which future-oriented cognitions are translated into sustained academic involvement (Li & Hashim, 2025). Chen et al. (2024) also reported that both FTP and grit mediated the relationship between adolescents' self-concept clarity and life satisfaction, suggesting a "self-goal setting → planning and perseverance → life satisfaction" pathway. These studies collectively show that grit commonly occupies a central, mediating role linking more basic motivational or cognitive factors (e.g., self-concept clarity, growth mindset, career anxiety, future orientation) to downstream behavioral and well-being outcomes.

When this evidence is considered alongside research on lying flat, a coherent mediational framework emerges. Lying flat tendency, as operationalized by the Lying Flat

Tendency Scale (LFTS), reflects a lifestyle orientation characterized by low desire, absence of clear goals, minimal effort, and active withdrawal from high-pressure competition (Lu et al., 2023). Empirical work indicates that lying flat is associated with poorer well-being. Lu et al. (2025) combined cross-sectional and one-month longitudinal data, showing that lying flat was negatively correlated with life satisfaction. Cross-lagged analyses revealed that a tendency to lie flat significantly predicted lower life satisfaction one month later. However, life satisfaction did not predict later lying flat. Zhu et al. (2025) link lying flat to problematic smartphone use via reduced self-esteem, suggesting that individuals who lie flat may cope through digital escapism rather than active problem-solving. These findings portray lying flat as a disengagement-oriented response pattern, characterized by weak long-term striving and avoidance of effortful goal pursuit.

Integrating these literatures, it is theoretically plausible that grit mediates the relationship between FSC and lying flat tendency. Students who experience strong FSC are more likely to perceive their future outcomes as personally relevant, maintain a vivid and meaningful image of their future self, and organize their present behavior around long-term goals (Chen et al., 2024; Hong et al., 2024; Yang et al., 2024). These processes foster grit by encouraging sustained commitment and perseverance in the face of difficulties. In turn, higher grit is associated with greater engagement, adaptive coping, and persistence, making it less likely that individuals will respond to pressure by “opting out” through lying flat. Conversely, when FSC is low, students may struggle to see how present sacrifices benefit their future self, undermining both future time perspective and meaning in life. This weakened future orientation is likely to erode grit, leaving individuals more vulnerable to adopting lying flat as a passive coping strategy in response to stress and perceived futility.

From this perspective, the negative association between FSC and lying flat tendency is expected to be partly indirect, operating through variations in grit.

Despite the strong conceptual rationale and supportive evidence from related domains, no existing study has directly examined grit as a mediator between FSC and lying flat, nor tested this pathway within a Southeast Asian university context. Prior FSC research has focused mainly on outcomes such as meaning in life, intertemporal decision making, and life satisfaction (Chen et al., 2024; Hong et al., 2024; Yang et al., 2024), whereas lying flat studies have primarily examined mental health, autonomy need satisfaction, and life satisfaction without including grit or FSC (Lu et al., 2023; Lu et al., 2025; Lu et al., 2025b; Zhu et al., 2025). The present study, therefore, addresses a key gap by testing a mediational model in which future self-continuity is associated with lying flat tendency indirectly through grit among undergraduate students in Malaysia.

In addition to the focal relationships among future self-continuity, grit, and lying flat tendency, demographic factors such as age and gender may also be relevant when examining lying flat among undergraduate students. Existing research suggests that lying flat is not distributed uniformly across student groups. For example, a large-scale study of Chinese college students found that gender and academic grade differed significantly between students who exhibited lying flat behavior and those who did not, and gender remained a significant predictor in logistic regression analysis (Lu et al., 2025). Similarly, Yang et al. (2025) controlled for age and gender in their mediation models involving college students and found that age positively predicted lying flat, while gender was also significant in one of the models. Additionally, Zhu et al. (2025) included age and gender as covariates when examining the psychological mechanisms associated with lying flat. Taken together, these findings suggest that age and gender may influence lying flat tendency independently of the

main psychological variables under investigation. Therefore, in the present study, age and gender were treated as control variables to ensure that the associations among future self-continuity, grit, and lying flat tendency could be interpreted more clearly within the undergraduate context.

Theoretical Framework

The present study is guided by Self-Determination Theory (SDT), with particular emphasis on Organismic Integration Theory (OIT) as the most relevant mini theory for explaining the proposed mediation model (Deci & Ryan, 1985; Ryan & Deci, 2000). OIT explains how individuals internalize goals and regulate their behaviour with different degrees of autonomy, ranging from externally controlled regulation to more fully self-endorsed and autonomous regulation (Ryan & Deci, 2000; Ryan & Deci, 2017). This sub-theory is especially suitable for the present study because it helps explain how future self-continuity may promote more self-endorsed goal pursuit, which is then reflected in greater grit and a lower tendency to adopt lying flat behaviours.

Future self-continuity (FSC) refers to the perceived psychological connectedness between one's present self and future self. Individuals with stronger FSC are more likely to view their present actions as meaningful for their future outcomes and to perceive their long-term goals as personally relevant (Sokol & Serper, 2019; Hershfield, 2011; Pi et al., 2024). From the perspective of OIT, when future goals are experienced as self-relevant and congruent with one's identity, individuals are more likely to internalize these goals and regulate their behaviour more autonomously rather than acting only because of pressure or obligation (Ernst et al., 2018; Ryan & Deci, 2000). In this way, FSC may serve as an important psychological resource that supports the internalization of long-term goals. This process of internalization is relevant to grit, which reflects sustained passion and perseverance

toward long-term goals (Duckworth & Quinn, 2009). When students perceive a clear connection with their future selves, their academic and personal goals may feel more meaningful, and they may be more willing to persist despite setbacks because their efforts are understood as investments in a valued future self (Hendusinabad & Sepehrianazar, 2024; Wu & Lopez, 2025; Wei et al., 2025). Thus, grit can be understood as a behavioural expression of more autonomous, internalized goal pursuit. Students who are more autonomously motivated are expected to show greater consistency in effort and stronger perseverance when facing challenges (Ryan & Deci, 2000; Ernst et al., 2018).

In contrast, lying flat tendency reflects disengagement from striving, reduced goal pursuit, avoidance of effort, and withdrawal from demanding social or academic expectations (Hsu, 2022; Lu et al., 2023; Zhu et al., 2025). From an OIT perspective, a lying flat tendency may emerge when goals are not sufficiently internalized or when individuals no longer experience their efforts as personally meaningful or worthwhile (Ryan & Deci, 2000). Under such conditions, students may become less willing to invest effort in long-term goals and more likely to respond to pressure through passivity, resignation, or low-effort coping. Therefore, lying flat tendency can be understood as an outcome associated with weaker self-endorsed regulation and reduced persistence.

Based on this reasoning, the present study proposed that grit mediates the relationship between future self-continuity and lying flat tendency. Students with stronger FSC are expected to experience their future-oriented goals as more personally meaningful and internalized, which promotes greater grit. In turn, higher grit should reduce the likelihood of adopting lying flat because gritty individuals are more likely to persist through difficulties and remain engaged with long-term goals rather than disengage from them (Calleja-Núñez et al., 2023; Hendusinabad & Sepehrianazar, 2024; Wei et al., 2025). Conversely, students with

weaker FSC may feel less connected to the future consequences of their present actions, making it harder to internalize long-term goals, sustain perseverance, and resist withdrawal-oriented responses such as lying flat (Hershfield, 2011; Lu et al., 2023; Urminsky, 2017).

Although the present study primarily draws on OIT to explain the mediation process, the interpretation is also broadly consistent with Basic Psychological Needs Theory (BPNT), another mini theory within SDT (Ryan & Deci, 2017). BPNT proposes that psychological well-being and adaptive functioning are supported when the needs for autonomy, competence, and relatedness are satisfied (Ryan & Deci, 2017). In the context of this study, students who feel disconnected from their future selves and lack persistence may also be more vulnerable to disengagement when they experience low autonomy or competence in coping with academic and life demands. However, for the present mediation model, OIT remains the central sub-theory, because the main explanatory mechanism concerns the internalization of long-term goals and the degree to which behaviour is self-endorsed.

Therefore, the present study applied SDT more specifically through the lens of Organismic Integration Theory to explain why future self-continuity may enhance grit and, in turn, reduce lying flat tendency among undergraduate students in Malaysia (Deci & Ryan, 1985; Ryan & Deci, 2000).

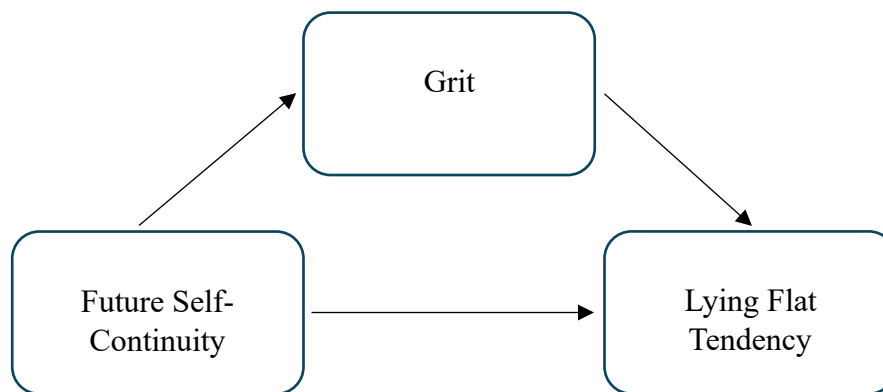
Conceptual Framework

The present study aims to examine the relationships among Future self-continuity (FSC), grit, and lying flat tendency among undergraduate students in Malaysia, guided by Self-Determination Theory (SDT), particularly Organismic Integration Theory (OIT). The framework in Figure 1 proposes that FSC, which refers to the perceived psychological connectedness between an individual's present self and future self, is associated with greater grit, defined as sustained passion and perseverance toward long-term goals. From the

perspective of OIT, students who perceive a stronger connection with their future selves are more likely to view long-term goals as personally meaningful and self-relevant, which supports more internalized and self-endorsed regulation of behavior. As a result, they may be more willing to sustain effort and remain committed to long-term goals despite challenges, which is reflected in higher grit. In turn, grit is proposed to mediate the relationship between FSC and lying flat tendency. Lying flat tendency, which reflects disengagement, reduced striving, and passive withdrawal from demanding expectations, is expected to be negatively associated with grit. Specifically, students with stronger FSC are expected to report higher grit, which may reduce their likelihood of adopting lying flat. Conversely, students with weaker FSC may feel less connected to the future consequences of their present actions, making it more difficult to internalize long-term goals, sustain perseverance, and resist disengagement-oriented responses such as lying flat. Therefore, the study proposes that grit mediates the relationship between FSC and lying flat tendency, providing a more focused motivational explanation of how future-oriented self-perceptions may relate to persistence and disengagement among undergraduate students in Malaysia.

Figure 1

Conceptual Framework of the Mediating Role of Grit between Future Self-Continuity and Lying Flat Tendency



Chapter III

Methodology

Research Design

This study utilized a quantitative, cross-sectional research design to investigate the association among future self-continuity (FSC), grit, and lying flat tendency among undergraduate students in Malaysia at a single point in time and to examine the mediating role of grit in the relationship between FSC and lying flat tendency. The use of quantitative method also enabled the collection of standardised self-report data and allowed for statistical analysis of the relationships among the variables.

The choice of a cross-sectional design is further supported by its efficiency and suitability for relatively new areas of research. It is often considered a practical starting point, as it allows researchers to generate initial evidence and determine whether a research question is worth further investigation (Spector, 2019). Given that the current topic is still underexplored, this approach is therefore appropriate. In addition, cross-sectional studies are economical and time-efficient, and are useful for identifying patterns and relationships within a population (Allen, 2017; Spector, 2019), making them well-suited to the present study's aim of examining the associations among FSC, grit, and lying flat tendency.

Although cross-sectional designs do not allow for causal conclusions or clear temporal ordering (Allen, 2017), they remain suitable for the current study, as the primary objective is to examine relationships and test a mediation model rather than establish causality. Overall, the cross-sectional design provides an efficient, theoretically justified, and practical approach for investigating the proposed relationships and mediation effect.

Sampling Procedures

Sampling Method

This study adopted a non-probability sampling method, specifically unrestricted self-selected sampling. Unrestricted self-selected sampling is a type of non-probability online survey sampling technique in which individuals voluntarily choose to participate in a study, typically through open invitations such as online postings, web links, or public advertisements (Fricker, 2008). This approach is highly efficient and cost-effective, enabling researchers to reach a diverse, geographically dispersed population. To ensure the sample was aligned with the research objectives, the survey included screening questions to restrict participation to current full-time undergraduate students in Malaysia. By doing so, the sample was more homogeneous in terms of key characteristics, which helped to reduce between-subject variability and thereby enhanced the likelihood of detecting significant statistical effects (Andrade, 2021).

Sample Size

The sample size for this study was derived from the Monte Carlo Power Analysis for indirect effects with one mediator, following the procedure outlined by Schoemann et al. (n.d.). Based on previous empirical findings, the standardized coefficient for the a -path (Future Self-Continuity to Grit) was set at $\beta = .304$ (Hendusinabad & Sepehrianazar, 2024). For the b -path, as no prior study has directly examined the association between grit and lying flat tendency, behavioral disaffection, a conceptually related construct reflecting disengagement and withdrawal, was used as a proxy, with a standardized coefficient of $\beta = -.27$ (Calleja-Nuñez et al., 2023). For the c' -path, lying flat tendency was substituted with procrastination, as both reflect behavioural disengagement, and the standardized coefficient for future self-continuity predicting procrastination was $\beta = .03$ (Komlao, 2016). To further

strengthen the estimation, three conceptually related constructs to lying flat tendency were examined, and the largest estimated sample size across these models was adopted to ensure adequate statistical power.

All Monte Carlo settings, including the number of replications, draws per replication, random seed, and confidence level, were kept at their default values (5,000 replications, 20,000 draws per replication, seed = 1234, and 95% confidence level). However, the standard deviations for the variables in each path were based on values reported in relevant prior studies (Calleja-Nuñez et al., 2023; Hendusinabad & Sepehrianazar, 2024; Komlao, 2016), rather than assuming a default value of 1.00.

The initial search range for sample size was set to $N = 50-1000$, with increments of 20, to obtain an approximate estimate. After obtaining the preliminary result, the range was narrowed to $N = 50$ to 150 with increments of 1 to refine the estimate. The analysis produced an optimal sample size of $N = 129$ to achieve the target power of .80. Details of the Monte Carlo simulation are provided in Appendix A.

Population

This study included undergraduate students enrolled in universities and colleges across Malaysia, with specific inclusion and exclusion criteria applied to ensure alignment with the study objectives. Eligible participants were full-time undergraduate students in Malaysia with access to a digital device who could complete an online survey via Microsoft Forms. Individuals were excluded if they were not undergraduate students, such as postgraduate students, diploma or foundation students, or those not enrolled in any tertiary institution. Part-time students were also excluded from the study. In addition, individuals who reported a prior diagnosis of mental health disorders were excluded to reduce potential

confounding influences on the study variables and to ensure greater consistency within the target sample.

A Monte Carlo power analysis indicated that at least 129 participants were required to achieve sufficient statistical power to test the proposed mediation model. For the actual study, participants were recruited through unrestricted self-selection via online and offline advertisements distributed across Malaysia. After data screening and removal of invalid cases, 234 valid responses were retained for the final analysis.

Location of Study

The study was conducted nationwide across Malaysia using a single, standardised online data-collection method. All participants completed the survey exclusively through the Microsoft Forms platform, and the survey link was distributed through popular social networking platforms such as Facebook, Instagram, and WhatsApp. This approach enabled the questionnaire to reach participants from across the country.

Research Instruments

Demographic Information

The demographic variables collected included age, race, gender, nationality, and parents' marital status. Academic-related information was also collected, including the current educational level, year and trimester of study, and programme of study, to better understand participants' academic background, as the target sample comprised undergraduate students in Malaysia. In addition, participants were asked to report their employment status to identify and exclude part-time students, ensuring that only full-time undergraduates were included in the final sample. Collectively, these demographic details facilitated a more

straightforward interpretation of the study's findings and provided a comprehensive descriptive profile of the sample.

Future Self-Continuity Questionnaire (FSCQ)

The Future Self-Continuity Questionnaire (FSCQ; Sokol & Serper, 2019) was used to measure individuals' perceived connection between their present and future selves. The scale consisted of three subcomponents: similarity, vividness, and positive affect toward the future self. The questionnaire consisted of 10 items rated on a 6-point Likert scale ranging from 1 (completely different) to 6 (exactly the same). Scores were calculated by averaging all items for a total FSC score, with higher scores indicating stronger future self-continuity. Subscale scores were obtained by averaging the items within each respective subscale. Example items included "How similar are you now to what you will be like in 10 years from now?", "How vividly can you imagine what you will be like in 10 years from now?", and "Do you like what you will be like in 10 years from now?". The FSCQ demonstrated strong psychometric properties, with the scale showing high internal consistency in the final validation sample (Cronbach's $\alpha = .90$), while the three subscales showed good reliability across samples (similarity $\alpha = .85$; vividness $\alpha = .80$; positive affect $\alpha = .89$). These findings supported the FSCQ as a reliable and valid measure of future self-continuity.

Short Grit Scale

The Short Grit Scale (Grit-S) introduced by Duckworth & Quinn (2009) was used to evaluate individuals' grit, characterized as sustained passion and perseverance toward long-term goals. The scale comprised 8 items, including four reverse-scored items, and was rated on a 5-point Likert scale ranging from 1 (not like me at all) to 5 (very much like me). Total scores were obtained by summing all items and dividing by eight, producing a score between 1 and 5 where higher values reflect higher grit. Example items included "Setbacks do not

discourage me,” “I finish whatever I begin,” and “I am a hard worker.” In contrast, reverse-scored items included “New ideas and projects sometimes distract me from previous ones,” “I have been obsessed with a certain idea or project for a short time but later lost interest,” and “I often set a goal but later choose to pursue a different one.” The Grit–S showed good psychometric properties, with acceptable internal consistency for the overall scale ($\alpha = .82$) and the subscales, Perseverance of Effort ($\alpha = .70$) and Consistency of Interest ($\alpha = .77$), supporting its reliability as a measure of grit. Notably, a study conducted in Malaysia by Siah et al. (2020) further supported the scale's validity and reliability, reporting a reliability value of .82 and a heterotrait-monotrait ratio of .43, indicating that the Grit-S was a valid and reliable instrument.

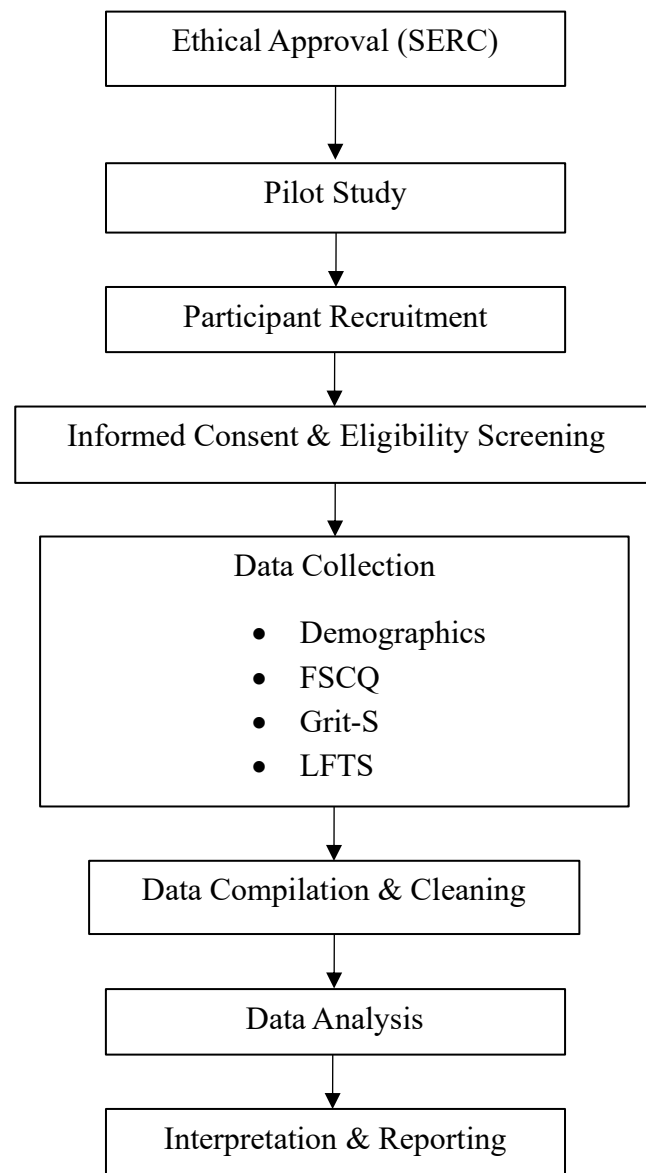
Lying Flat Tendency Scale (LFTS)

The Lying Flat Tendency Scale (LFTS; Lu et al., 2023) was used to assess individuals' inclination toward the “lying flat” tendency. The scale consisted of six items assessed on a 4-point Likert scale from 1 (very inconsistent) to 4 (very consistent). The total LFTS score was calculated by summing all items, with higher scores indicating a stronger lying flat tendency. Example items included “I do not have any goals and pursuits for life and study,” “I don't work hard at anything,” “I feel that it is hard to change anything with my personal efforts, so I choose to give up the struggle,” and “I am always reluctant to do those things that require effort to accomplish.” The scale demonstrated good psychometric properties and strong internal consistency (Cronbach's $\alpha = .819$), supporting its reliability as a measure of lying flat tendency for use in empirical studies (Lu et al., 2023).

Research Procedure

Figure 2

Research Procedure of the Present Study



Ethical Clearance

Ethical clearance was granted by the Scientific and Ethical Review Committee (SERC) of Universiti Tunku Abdul Rahman (UTAR) before the commencement of data collection (U/SERC/78-685/2026). This approval was necessary because the study involved

human participants and, therefore, required formal ethical review to ensure that the research was conducted in adherence to established ethical standards. The ethical clearance process served to safeguard the rights, welfare, and confidentiality of the participants, while also ensuring that the study complied with relevant institutional regulations, minimized potential risks, and was carried out in a responsible and ethically acceptable manner.

Pilot Study

A pilot study was carried out before the main data collection to examine the feasibility, clarity, and reliability of the research procedures and instruments. As noted by Lowe (2019), a pilot study is a small-scale trial to evaluate essential elements of the methodology before proceeding to a full investigation. This helps ensure that the proposed procedures function as intended, while reducing the risk of costly errors or major design flaws that could compromise the main study.

For the present study, the pilot study was administered through Microsoft Forms and disseminated via social media platforms to recruit a small pool of participants. The survey included an informed consent page, a brief explanation of the research objectives, demographic questions, and all measurement items representing the study variables. A total of 42 responses were collected; however, only 30 cases were retained for final analysis after excluding responses that did not meet the study criteria or failed the attention-check question. All pilot data were excluded from the main study and were used solely for refinement purposes.

In the pilot study, reliability assessments were conducted for each instrument using Cronbach's alpha, a widely used indicator of internal consistency that examines the extent to which the items in a scale are closely related. Cronbach's alpha range from 0 to 1, with values above .75 generally indicating strong internal consistency (Izah et al., 2023). Kilic (2016)

further suggested that a coefficient of .70 or above indicates good reliability, whereas an excessively high alpha value above .90 may suggest redundant items. In addition, Taber (2018) noted that Cronbach's alpha values between .61 and .65 may be interpreted as indicating moderate reliability.

The pilot study reliability analysis (refer to Appendix C) showed that the Short Grit Scale (Grit-S) demonstrated good reliability ($\alpha = .711$). The Lying Flat Tendency Scale (LFTS) initially showed poor internal consistency ($\alpha = .292$) using the original item set. After removing items 1, 5, and 6, the internal consistency improved to $\alpha = .637$, indicating moderate reliability. The Future Self-Continuity Questionnaire (FSCQ) also demonstrated moderate internal consistency ($\alpha = .649$). Overall, the pilot study findings indicated that the instruments showed acceptable reliability and were suitable for the actual study after refinement.

Actual Study

In the actual study, reliability assessments were also conducted for all instruments using Cronbach's alpha. The reliability analysis for the actual study (refer to Appendix D) indicated that all three instruments demonstrated acceptable internal consistency. The Future Self-Continuity Questionnaire (FSCQ) demonstrated satisfactory reliability with a Cronbach's alpha of .74 ($n = 234$). Similarly, the Short Grit Scale (Grit-S) and the Lying Flat Tendency Scale (LFTS) showed acceptable internal consistency, with Cronbach's alpha values of .71 and .78 respectively ($n = 234$). Overall, all scales were sufficiently reliable for use in the present study.

As part of the ethical procedure, participants were assured that no personally identifying information would be reported and that all responses would remain confidential and be used only for academic research purposes.

Data Analysis Plan and Processing

Data were analysed using IBM SPSS Statistics Version 23. Descriptive statistics were first utilized to summarize participant' demographic characteristics. The Pearson Product-Moment Correlation (PPMC) analysis was conducted to examine the relationships among the variables. Multiple linear regression (MLR) assumptions, including normality, linearity, homoscedasticity, independence of residuals, and multicollinearity, were assessed prior to hypothesis testing to ensure the data were suitable for analysis.

A simple mediation analysis was conducted using Hayes' PROCESS macro (Model 4) to test whether grit mediates the relationship between future self-continuity and lying flat tendency. Age and gender were included as covariates in the mediation analysis because prior research suggests that demographic differences may be associated with lying flat tendency among college students (Lu et al., 2025; Zhu et al., 2025). The indirect effect was tested using bootstrapping with 10,000 resamples, and significance was considered when the 95% confidence interval did not include zero.

Chapter IV

Result

Data Cleaning

IBM SPSS Statistics Version 23 was used for data cleaning in order to ensure the accuracy and reliability of the findings. Responses were removed if participants did not provide consent, failed the attention check, were not undergraduate or full-time students, had a diagnosed mental health disorder, or submitted repetitive responses, as these cases did not meet the criteria for our target population.

377 responses in all were collected through Microsoft Forms. After being screened, 1 response was disregarded because it lacked consent, 69 for failing the attention check, 39 for not being undergraduate students, 11 for being part-time students, another 11 for having diagnosed mental health conditions, and 12 for submitting repetitive responses. Altogether, 143 cases were removed before analysis. The remaining 234 valid responses were retained for the final data analysis.

Normality Assumptions

Five indicators were used to assess the assumption of normality: the histogram, skewness and kurtosis values, Quantile–Quantile (Q–Q) plots, and the Kolmogorov–Smirnov (K–S) test. While the histograms and Q–Q plots provided visual support for evaluating the distribution, the skewness, kurtosis, and K–S test supplied numerical proof.

Histogram

According to Yang and Berdine (2021), a bell-shaped histogram generally indicates a roughly normal distribution, whereas the presence of outliers may suggest a violation of

normality. In this study, the histogram results showed no evidence of normality violations across the three variables. Lying flat tendency, future self-continuity, and grit all displayed bell-shaped distributions (refer to Appendix E), suggesting that the data were clustered closely around the mean.

Q-Q Plot

According to Oppong and Agbedra (2016), when the points in a Q-Q plot roughly match along a straight diagonal line, the data are said to be normally distributed. In light of the Q-Q plot results (see Appendix F), no abnormalities of normality were observed for lying flat tendency, future self-continuity, and grit, because the diagonal line contained an equal distribution of data points.

Skewness and Kurtosis

As stated by Ghasemi and Zahediasl (2012), kurtosis values should fall within ± 2.58 for samples of 200 or more. As shown in Table 1, the skewness values were between .016 and .414, while kurtosis values were between $-.370$ and .514 (see Appendix G). These results indicate that all variables met the assumption of normality at an acceptable level.

Table 1

Skewness and Kurtosis

	Skewness	Kurtosis
Lying flat tendency	.315	-.370
Future self-continuity	.414	.514
Grit	.016	.376

Kolmogorov-Smirnov Test (K-S Test)

The K–S test results for lying flat tendency, future self-continuity, and grit are shown in Table 2. Mishra et al. (2019) state that a p -value higher than .05 means that the null hypothesis is accepted and the data are regularly distributed. However, the significance values for all variables in this study were below .05, suggesting that they were not normally distributed (see Appendix H).

Table 2***Kolmogorov-Smirnov (K-S) Test***

Variables	Significant value
Lying flat tendency	<.001
Future self-continuity	.002
Grit	.015

Summary of Normality Assumptions

In conclusion, lying flat tendency, future self-continuity, and grit showed no violations of normality according to the histogram, skewness, kurtosis and Q-Q plot. However, all variables indicated violations in the K–S test. Despite this, it can be concluded that all variables met the assumption of normality overall, as four out of the five indicators supported normality.

Descriptive Statistics

After removing responses that failed to satisfy the requirements for inclusion during data cleansing, there were still 234 valid responses in total remained for the final analysis (i.e., undergraduate students in Malaysia, full-time students with no reported mental health issues). Table 3 provides a comprehensive summary of the demographic characteristics of the

respondents, including nationality, age, gender, race, and parents' marital status (refer to Appendix I).

All 234 respondents were Malaysian ($n = 234$), with ages between 19 and 40 years ($M = 22.59$, $SD = 1.856$). Majority of them were female ($n = 169$, 72.2%), while males made up a smaller proportion ($n = 65$, 27.8%). In terms of race, most respondents were Chinese ($n = 215$, 91.9%), followed by Malay ($n = 12$, 5.1%) and Indian ($n = 3$, 1.3%). Other race groups, including Ceylonese, Dusun, Kadazan, and mixed Malay-Chinese, were each represented by one respondent. Regarding parents' marital status, most participants reported that their parents were married and living together ($n = 167$, 71.4%), followed by widowed ($n = 38$, 16.2%), divorced ($n = 16$, 6.8%), and married but living separately ($n = 13$, 5.6%).

Table 3

Descriptive Statistics for the Demographic Data of Respondents ($N = 234$)

	<i>n</i>	<i>%</i>	<i>M</i>	<i>SD</i>
Nationality				
Malaysian	234	100		
Age			22.59	1.856
Gender				
Female	169	72.2		
Male	65	27.8		
Race				
Chinese	215	91.9		
Malay	12	5.1		
Indian	3	1.3		
Others	4	1.6		

Parents' Marital Status

Married and living together	167	71.4
Married but living separately	13	5.6
Divorced	16	6.8
Widowed	38	16.2

Assumptions of Multiple Linear Regression***Multiple Linear Regression (MLR)***

The Multiple Linear Regression (MLR) method was used to investigate if the independent and dependent variables had linear connections, ensuring that the regression coefficients were both efficient and unbiased. The main assumptions of MLR comprise independence of errors, multicollinearity, linearity of residuals, normality of residuals, and homoscedasticity.

Multicollinearity

The collinearity between the independent variables was evaluated using tolerance and the Variance Inflation Factor (VIF). Table 4 presents the tolerance and VIF values for the predictors in this study, namely future self-continuity and grit. According to Chen et al. (2022), VIF values of 10 or higher indicate multicollinearity, while tolerance values below .10 also suggest multicollinearity (Kim, 2019). Therefore, none of the variables violated the multicollinearity assumption (see Appendix J).

Table 4*Tolerance and Values of VIF*

	Tolerance	VIF
Future self-continuity	.914	1.094
Grit	.914	1.094

Independence of errors

The independence of errors was evaluated using the Durbin-Watson test in this study. The resultant number was 2.032 (see Appendix J), which is around 2.0 and within the permitted range, indicating that the assumption is met (Al-Rawabdeh et al., 2021). Therefore, the results suggest that the assumption of error independence was not violated.

Normality of Residuals, Linearity of Residuals, and Homoscedasticity

The linearity, normality of residuals, and homoscedasticity were evaluated using a scatterplot (see Appendix J). Based on the scatterplot, the residuals were randomly and evenly distributed surrounding the zero line, demonstrating that the homoscedasticity, linearity, and residual normality assumptions were satisfied.

Multivariate Outliers

To find possible multivariate outliers in current study, Mahalanobis distance, Cook's distance, and leverage were employed. A case would be removed if it violated at least two of these residual statistics. The cutoff value for Mahalanobis distance was set at 15, with values above this indicating an outlier (Barnett, 1978). Based on the case summaries table, all Mahalanobis distance values were below 15, indicating no violations. Similarly, no violations of Cook's distance were found, as all values were below 1. The average leverage was

computed using the formula $2(k+1)/n$, where values exceeding this threshold indicate potential issues (Kleinbaum et al., 2014), resulting in $2(2+1)/234 = 0.0256$. A total of 13 cases exceeded the leverage cutoff, ranging from 0.0259 to 0.0568. However, these cases were retained as they did not violate the Mahalanobis distance and Cook's distance.

In summary, no data was eliminated and all cases satisfied the overall residual statistics. Therefore, all 234 responses were retained for the final data analysis.

Inferential Statistics

This study examined four research hypotheses. The Pearson correlation coefficient (one-tailed test) was used to test the first three hypotheses, while Hayes' PROCESS macro (Model 4) was employed to investigate the final hypothesis. The assumptions of normality for parametric testing were met beforehand, demonstrating the normal distribution of the data. The results of the Pearson correlation and Hayes' PROCESS macro (Model 4) are presented below according to the corresponding study hypotheses.

H₁: There is a significant positive relationship between future self-continuity and grit among undergraduate students in Malaysia.

The outcomes of the Pearson Product–Moment Correlation (PPMC) showed that the relationship between future self-continuity and grit among undergraduates in Malaysia was statistically significant at the .001 level and positively correlated, $r(232) = .293, p < .001$ (see Table 5). According to Obilor and Amadi (2018), correlation coefficients below ± 0.40 are considered weak. Therefore, the results show a weak but significant positive correlation between grit and future self-continuity. Hence, H₁ was supported.

H₂: There is a significant negative relationship between grit and lying flat tendency among undergraduate students in Malaysia.

The results of PPMC indicated a statistically significant negative relationship between grit and lying flat tendency among undergraduate students in Malaysia, $r(232) = -.532$, $p < .001$ (see Table 5). According to Obilor and Amadi (2018), correlation coefficients between ± 0.40 and ± 0.60 are considered moderate. Therefore, the finding showed a moderate and significant negative relationship between grit and lying flat tendency. Hence, H₂ was supported.

H₃: There is a significant negative relationship between future self-continuity and lying flat tendency among undergraduate students in Malaysia.

The results of PPMC showed that the association between future self-continuity and lying flat tendency was statistically significant at the .05 level and negatively correlated, $r(232) = -.126$, $p = .027$ (see Table 5). According to Obilor and Amadi (2018), correlation coefficients below ± 0.40 are considered weak. Therefore, the results show a weak but significant inverse relationship between future self-continuity and the tendency to lie flat. Hence, H₃ was supported.

Table 5

Correlation Among Future Self-Continuity, Grit, and Lying Flat Tendency

Variables	Future self-continuity	Grit
Future self-continuity	-	-
Grit	.293***	-
Lying flat tendency	-.126*	-.532***

H4: Grit significantly mediates the relationship between future self-continuity and lying flat tendency among undergraduate students in Malaysia.

The current study used the PROCESS macro to investigate the total, direct, and indirect effects among future self-continuity, grit, and lying flat tendency. In addition, age and gender were included as control variables to account for their possible impact on the outcome variable. With 95% confidence intervals, 10,000 bootstrap samples were used for the analysis.

FSC, Grit, and Lying Flat Tendency. Based on the results, the mediation analysis demonstrated that future self-continuity (FSC) was a strong predictor of grit in the *a*-path ($b = .027, SE = .006, t = 4.641, p < .001, 95\% \text{ percentile CI } [.016, .039]$). However, neither age ($b = -.012, SE = .020, t = -.572, p = .568, 95\% \text{ percentile CI } [-.052, .029]$) nor gender ($b = .103, SE = .084, t = 1.216, p = .225, 95\% \text{ percentile CI } [-.064, .269]$) significantly predicted grit. For the *b*-path, grit significantly predicted lying flat tendency ($b = -3.04, SE = .324, t = -9.394, p < .001, 95\% \text{ percentile CI } [-3.678, -2.403]$). Age also significantly predicted lying flat tendency ($b = .272, SE = .100, t = 2.712, p = .007, 95\% \text{ percentile CI } [.074, .470]$). In contrast, gender did not significantly predict lying flat tendency ($b = .499, SE = .416, t = 1.199, p = .232, 95\% \text{ percentile CI } [-.321, 1.318]$). Moreover, future self-continuity's direct effect on lying flat tendency (*c*-path) was not significant ($b = .016, SE = .030, t = .534, p = .594, 95\% \text{ percentile CI } [-.044, .076]$).

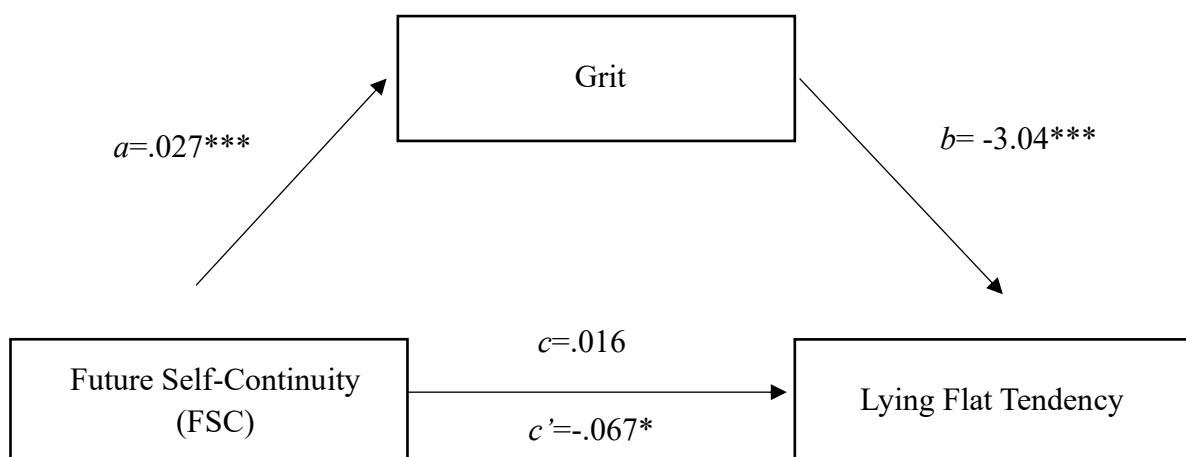
Although future self-continuity had no significant direct effect on lying flat tendency, the indirect effect through grit was significant, since the bootstrap confidence interval did not encompass zero (refer to Appendix M). In addition, the total effect model of future self-continuity (*c'*-path) showed a significant effect on lying flat tendency ($b = -.067, SE = .034, t = -1.973, p < .05, 95\% \text{ percentile CI } [-.134, -.000]$). Age was also significant in the total

effect model ($b = .307$, $SE = .118$, $t = 2.613$, $p < .01$, 95% percentile CI [.076, .539]), suggesting that age was an important control variable for lying flat tendency. However, gender remained non-significant ($b = .187$, $SE = .487$, $t = .383$, $p = .702$, 95% percentile CI [-.772, 1.145]).

In conclusion, the results showed a significant indirect impact of future self-continuity on lying flat tendency via grit. However, the direct effect of future self-continuity on lying flat tendency was non-significant. Interestingly, the total effect of future self-continuity on lying flat tendency was significant ($p < .05$). The results indicate an indirect-only mediation, where the direct effect (c) was not significant, but the mediated effect ($a \times b$) was (Zhao et al., 2010). Therefore, Hypothesis 4 was supported.

Figure 3

Mediating Effect of Grit on Future Self-Continuity and Lying Flat Tendency



Note: $N = 234$. Path coefficients (a , b , c , and c') indicate unstandardized regression estimates, with corresponding p -values shown in parentheses. Path c represents the future self-continuity's direct effect on lying flat tendency, while path c' represents the total effect of FSC on lying flat tendency. Paths a , b , and c' were significant, *** $p < .001$ and * $p < .05$, whereas path c was not significant, indicating an indirect-only mediation.

Chapter V

Discussion

H₁: There is a significant positive relationship between future self-continuity and grit among undergraduate students in Malaysia.

The current study found that future self-continuity was positively and strongly correlated with grit among undergraduate students in Malaysia. Despite the low level of relationship, findings indicate that students who felt a stronger psychological relationship with their future selves were more likely to report increased perseverance and long-term commitment. This contributes to the finding that future-oriented self-perceptions can serve as a motivational source of goal persistence.

This observation is in line with past studies that indicate that future self-continuity is positively correlated with grit and other types of perseverance. Wei et al. (2025) established that future self-continuity was a significant predictor of grit among college students, and Wu and Lopez (2025) also reported that students with greater future self-continuity showed greater academic grit. Similar findings were also demonstrated by Hendusinabad and Sepehrianazar (2024), who found that future self-continuity was a significant predictor of academic grit. Therefore, the current research adds to this body of evidence by demonstrating that the positive relation is also evident in the case of undergraduate students in Malaysia.

In terms of Organismic Integration Theory, this observation can be attributed to the fact that students with higher future self-continuity are likely to feel that their current efforts are worthwhile investments in their future selves. Students might be more inclined to self-regulate their behavior and persevere through challenges when long-term objectives are perceived as self-relevant and self-approved, as well as when goal-directed behavior is

perceived as self-relevant and self-approved (Ernst et al., 2018; Ryan & Deci, 2000).

Concisely, the current result supports the notion that future self-continuity might serve as a significant psychological asset bolstering grit among undergraduate students.

H₂: There is a significant negative relationship between grit and lying flat tendency among undergraduate students in Malaysia.

The present study found that grit was significantly and negatively related to lying flat tendency among undergraduate students in Malaysia. This indicates that students who reported higher perseverance and stronger commitment toward long-term goals were less likely to adopt disengaged, low-striving, and withdrawal-oriented responses such as lying flat. Compared with the other direct relationships tested in the present study, this association was moderate in strength, suggesting that grit may be one of the more important psychological factors linked to lower lying flat tendency.

The result is consistent with earlier research indicating that grit has the conceptual opposite of disengagement and withdrawal. Calleja-Núñez et al. (2023) found that grit was associated with stronger engagement and lower disaffection, while Whitfield and Wilby (2021) indicated that grit people were less likely to disengage and more likely to persist in the case of adversity. Kim and Jang (2022) further noted that individuals with higher grit tend to cope with difficult situations more effectively and demonstrate better problem-solving ability. Taken together, these studies support the present finding that gritty students are less likely to respond to academic or life difficulties through passive withdrawal.

The present result also contributes to the understanding of lying flat tendency by supporting its interpretation as a form of motivational disengagement rather than mere laziness. Students high in grit are more likely to tolerate setbacks, sustain effort, and remain focused on future goals even when immediate rewards are limited. In contrast, students low

in grit may be more vulnerable to giving up or disengaging when confronted with stress, uncertainty, or repeated difficulty. Therefore, the present finding suggests that grit may serve as an important protective factor against lying flat tendency among undergraduate students.

H₃: There is a significant negative relationship between future self-continuity and lying flat tendency among undergraduate students in Malaysia.

The results of the current study revealed that future self-continuity had a significant, negative correlation with lying flat tendency among undergraduate students in Malaysia. The outcome, though the strength of the relationship was weak, implied that students who were more psychologically related to their future selves were less likely to support withdrawal-oriented attitudes and low-effort coping tendencies. The significance of this finding is that it provides preliminary empirical evidence for a relationship that has been conceptually examined in literature but has never been directly tested.

The finding aligns with broader studies on future self-continuity, which show that the more one is connected to their future selves, the more likely they are to behave in future-oriented, self-regulated ways. Hong et al. (2024) established that greater meaning in life was linked with future self-continuity, and Yang et al. (2024) established that it was linked with a greater preference for future rewards over immediate gratification. Zhao et al. (2024) further showed that future self-continuity was negatively associated with procrastination. Combined with results indicating that the lying flat tendency is also characterized by a lack of goal commitment, reduced striving, and an aversion to effort (Lu et al., 2023; Liu, 2025; Zhu et al., 2025), the negative correlation in the current study appears theoretically consistent.

One reason is that students who feel psychologically connected to their future selves are more inclined to acknowledge that the current effort will lead to their well-being in the future. As a result, they might not be motivated to reduce effort or be less attentive to challenging

tasks. Conversely, current sacrifices may be less valuable in the eyes of the future self, which is far away, and passive reactions such as lying flat may be observed. Concisely, the current result adds to the perception that future self-continuity could be utilized as a future-directed psychological resource that is linked to reduced lying flat tendency in undergraduate students in Malaysia.

H₄ : Grit significantly mediates the relationships between future self-continuity and lying flat tendency among undergraduate students in Malaysia.

The mediating effect of grit in the relationship between future self-continuity and lying flat tendency was confirmed by the current findings among undergraduate students in Malaysia. To be more precise, grit was predicted by future self-continuity significantly, lying flat tendency was predicted by grit significantly, and the mediation was significant. Simultaneously, the direct effect of future self-continuity on lying flat tendency was not significant, but the overall effect was significant when grit was also added to the model. The trend indicates that grit plays a significant explanatory role in the relation to lower lying flat tendencies regarding future self-continuity. That is, students with stronger attachments to their future selves might not become inclined to lie flat, since they will be more persevering towards long-term goals.

This finding is theoretically consistent with Organismic Integration Theory. According to this perspective, individuals are more likely to sustain effort when their goals are internalized and experienced as self-endorsed rather than externally imposed (Ryan & Deci, 2000). Students who have greater future self-continuity might be more inclined to perceive their current academic and personal endeavours as applicable to their future selves, thus internalizing long-term objectives more strongly. This internalization is reflected in greater grit, which, in turn, reduces the likelihood of disengagement and withdrawal-oriented

responses, such as lying flat. Therefore, the present study extends prior research by showing that the relationship between future-oriented self-perceptions and a tendency to lie flat may be better understood through perseverance as a mediating mechanism.

This mediation finding is also consistent with earlier studies showing that grit commonly functions as an important pathway linking future-oriented or self-related variables to downstream outcomes. Wei et al. (2025) found that future self-continuity predicted grit, while Chen et al. (2024) and Li and Hashim (2025) showed that grit can mediate the relationship between cognitive or motivational factors and adaptive outcomes. The present study extends this logic to lying flat tendency, a contemporary form of disengagement that has rarely been examined together with future self-continuity and grit in a single model.

Another notable finding in the mediation model was that age significantly predicted lying flat tendency, whereas gender did not. This suggests that older undergraduate students may be more vulnerable to the lying flat tendency, even after accounting for future self-continuity and grit. A possible explanation is that older undergraduate students may be more likely to face stronger academic demands and greater uncertainty about graduation and future employment, thereby increasing their vulnerability to withdrawal-oriented responses (Ahorsu et al., 2020; Rätty et al., 2020). In contrast, the non-significant effect of gender suggests that the mediating mechanism involving future self-continuity, grit, and lying flat tendency remains relevant across gender when gender is statistically controlled. Overall, the present findings support hypothesis 4 and further narrow down the description of the association between future self-continuity and reduced lying flat tendency via grit among undergraduate students in Malaysia.

Conclusion

Theoretical Implication

The uniqueness of the present study lies in its identification of grit as a meaningful mediating mechanism linking future self-continuity to lying flat tendency, which has not been directly tested in previous research. Theoretically, the findings deepen our understanding of Self-Determination Theory, particularly Organismic Integration Theory (OIT), by showing that future-oriented self-perceptions may be associated with greater self-endorsed goal pursuit, which, in turn, is reflected in greater perseverance and lower disengagement. OIT proposes that individuals are more likely to sustain effort when their goals are internalized and experienced as personally meaningful rather than externally imposed (Ryan & Deci, 2000). Students who had greater future self-continuity in the current study reported greater grit more frequently, suggesting that, as students have a greater sense of psychological connectedness to future selves, they may be more inclined to invest in long-term objectives because those objectives become more personally significant and valuable to pursue.

In turn, grit was negatively associated with lying flat tendency, indicating that students who are more persistent and better able to maintain effort toward long-term goals are less likely to adopt disengaged, low striving responses when facing pressure. This finding contributes to the theoretical understanding of lying flat by positioning it not merely as a social trend or passive attitude, but as a form of motivational disengagement that may emerge when perseverance and self-endorsed goal pursuit are weakened. In other words, lying flat tendency may be better understood as a psychologically meaningful response to diminished future-oriented striving rather than as simple laziness or lack of discipline. The mediation finding further suggests that future self-continuity may not influence lying flat tendency only

directly, but also through its association with grit, highlighting the importance of persistence as an explanatory pathway.

Another theoretically meaningful finding is that age significantly predicted lying flat tendency, even after controlling for the focal variables. This suggests that lying flat tendency may not be explained solely by motivational constructs such as future self-continuity and grit, but may also vary according to demographic and developmental factors among undergraduates (Yang et al., 2025). A possible explanation is that older undergraduate students may face greater academic pressure, uncertainty regarding graduation and career transition, or accumulated stress from prolonged exposure to performance-related demands, thereby making them more vulnerable to withdrawal-oriented responses (Ahorsu et al., 2020; Rätty et al., 2020). Although gender was not a significant predictor in the present model, controlling for gender remains theoretically relevant because it shows that the mediational pathway involving future self-continuity, grit, and lying flat tendency is not merely an artifact of gender differences. Collectively, the present findings extend the existing literature by offering a more focused motivational explanation of the lying flat tendency and by demonstrating the value of integrating Organismic Integration Theory with the constructs of future self-continuity and grit in the Malaysian undergraduate context.

Practical Implication

Practically, the findings suggest that actions can be taken by first identifying undergraduate students who show low future self-continuity, low grit, or greater tendencies toward disengagement, as these students may be more vulnerable to adopting a lying flat tendency. Since grit was found to have a strong mediating effect on future self-continuity and lying flat tendency, interventions that strengthen both students' future-oriented self-connection and their perseverance may be useful in reducing disengagement. For example,

universities may consider implementing student development or counselling programmes that help students form clearer and more meaningful images of their future selves, such as guided goal-setting workshops, future-planning exercises, career exploration activities, and reflective interventions that encourage students to connect their present academic efforts with valued future outcomes. When students can better see how their current efforts are going to help their future selves, they may be more willing to internalize long-term goals and remain committed to them.

In addition, programmes that cultivate grit may help students maintain effort in the face of academic stress, uncertainty, and setbacks. This may include resilience-building activities, structured mentoring, academic coaching, or skills training that emphasize persistence, adaptive coping, and sustained commitment to long-term goals. Students with stronger grit are likely to be more capable of persisting despite difficulties and therefore less likely to respond through passive withdrawal or low-effort coping. The significant effect of age on lying flat tendency also suggests that universities should pay closer attention to older undergraduate students, who may require additional support as they approach later stages of study and encounter greater pressure related to academic completion and future career demands. Although gender was not significant in the final model, the present findings remain relevant across gender because the proposed psychological mechanism was examined while statistically controlling for gender differences. In brief, by strengthening future self-continuity and grit, higher education institutions may be better positioned to reduce lying flat tendency, foster proactive academic engagement, and promote more adaptive coping among undergraduate students.

Limitation of Study

Despite its contributions, the present study has several limitations. First, the present study uses a cross-sectional research design, which limits the use of causal or time-related inferences between variables in the study. Since the data were measured at a single point, the study could only demonstrate correlations among FSC, grit, and lying flat tendency, not their order or direction. It is unclear whether future self-continuity increases grit and reduces lying flat, or whether individuals with higher grit and lower lying flat tendency are more likely to report stronger future self-continuity. Without data collected over time, it is difficult to determine the direction of these relationships, making it challenging to distinguish cause from effect. Consequently, although mediation analysis was conducted, the findings should be interpreted as indicative of statistical associations rather than causal mechanisms.

Second, the study relied exclusively on self-report measures, which may introduce various forms of response bias. Participants may be influenced by social desirability, recall inaccuracies, or subjective interpretation of questionnaire items, potentially leading to overreporting or underreporting of behaviours and attitudes. Such biases can affect data validity and inflate observed relationships due to common method variance (Podsakoff et al., 2003).

Third, the use of a convenience, unrestricted self-selected sampling method limits the generalizability of the findings. Participants who voluntarily chose to take part in the study may differ systematically from those who did not, resulting in self-selection bias. This may reduce the representativeness of the sample and limit the extent to which the findings can be generalised to the broader population of Malaysian undergraduate students (Etikan et al., 2016). In addition, the sample may not adequately reflect the population's diversity, particularly in terms of demographic characteristics such as gender and race. For example,

the sample was predominantly female and largely comprised of Chinese participants. This imbalance may further limit the study's external validity.

Recommendation of the Study

Based on the findings of the present study, several recommendations can be made for future research. First, future studies should employ a longitudinal design to examine the relationships among future self-continuity, grit, and lying flat tendency over time. Although the present study provides useful initial evidence for the associations among these variables, the cross-sectional design does not allow conclusions regarding causal direction or temporal ordering. A longitudinal approach provides a clearer understanding of whether stronger future self-continuity contributes to greater grit over time and, in turn, whether this reduces lying flat tendency.

Second, future research may test additional psychological mechanisms to further explain the lying flat tendency. While the present study identified grit as a significant mediator, other variables, such as perceived stress, self-esteem, academic burnout, future time perspective, and basic psychological need satisfaction, may also play important roles in understanding why some students become more vulnerable to disengagement. Examining additional mediators or moderators may provide a more comprehensive explanation of lying flat tendency and broaden the theoretical understanding of this phenomenon.

Third, future studies should aim to recruit a more diverse and representative sample of undergraduate students in Malaysia. In the present study, most respondents came from a limited demographic background, particularly in terms of gender and race. Expanding the sample to include students from different universities, academic disciplines, ethnic groups, and socioeconomic backgrounds would improve the generalizability of the findings and provide a more complete picture of the lying flat tendency in the undergraduate context of

Malaysia. In addition, given that age significantly predicted lying flat tendency in the present study, future research may also explore whether this pattern differs across year of study or developmental stage among undergraduates.

Finally, future research may benefit from using intervention-based or mixed-method designs. For example, experimental or programme-based studies could examine whether interventions that strengthen students' future self-continuity or grit are effective in reducing lying flat tendency. Qualitative approaches may also provide richer insight into how students interpret disengagement, academic pressure, and future uncertainty in their daily lives. In addition, future studies may address the limitations of self-report measures by incorporating multiple methods of data collection, such as behavioural indicators or reports from relevant others, to reduce response bias and provide a more comprehensive understanding of the relationships among future self-continuity, grit, and lying flat tendency. In sum, future studies should continue to examine lying flat tendency through broader methodological and theoretical approaches to develop a deeper, more nuanced understanding of this emerging phenomenon.

Conclusion

This study examined the relationships between future self-continuity (FSC), grit, and lying flat tendency among undergraduate students in Malaysia, as well as the mediating role of grit within this framework. The results showed that FSC and grit were positively correlated, whereas both were negatively related to lying flat tendency. In addition, grit significantly mediated the relationship between FSC and lying flat tendency, indicating that students with a stronger sense of connection to their future selves tend to exhibit higher perseverance, which is associated with lower disengagement. Among the control variables, age was significant, whereas gender was not. These findings extend the application of

Organismic Integration Theory in understanding a contemporary socio-psychological phenomenon and highlight the importance of future-oriented thinking and perseverance in shaping students' coping behaviours. Practically, the results suggest that fostering future self-continuity and grit may help reduce lying flat tendency. Overall, this study underscores the importance of understanding lying flat among undergraduates to address disengagement and promote adaptive coping in the face of increasing academic and social pressures.

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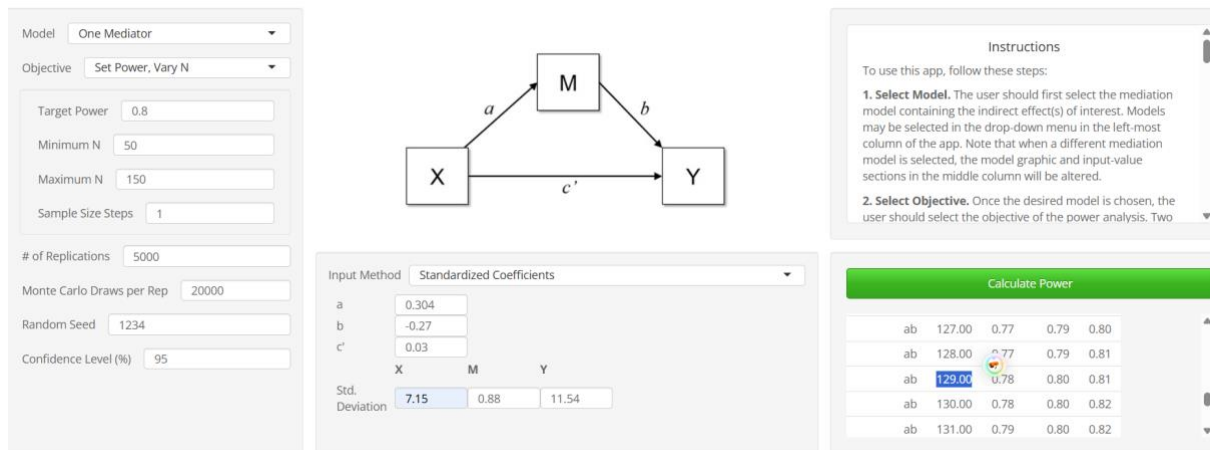
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Appendices

Appendix A

Monte Carlo Result



Appendix B

Ethical Clearance



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15 January 2026

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

Dear Dr Lee,

Ethical Approval For Research Project/Protocol

We refer to the application for ethical approval for your students' research project from Bachelor of Social Science (Honours) Psychology programme enrolled in course UAPZ3013. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No	Research Title	Student's Name	Supervisor's Name	Approval Validity
10.	Predictive Roles of Rejection Sensitivity, Maladaptive Perfectionism and Rumination on Depression Among University Students in Malaysia	1. Hii Xiu Jing 2. Joan Chai Wan Ying 3. Sophia Kong Ke Ying	Dr T'ng Soo Ting	15 January 2026 – 14 January 2027
11.	The Predictors of Impulsive Buying of Youth in Malaysia	1. Khaw Jing Chun 2. Ong Chee Seng 3. Phang Wen Jun 4. Li Zihao 5. Tan Woi Yu	Mr Lim Ooi Sheng	
12.	Online Shopping Addiction, Perceived Social Support, Social Media Usage as Predictors of Life Satisfaction Among Young Adults in Malaysia	1. Chin Yi Ying 2. Katherine Lim Mean 3. Mak Wen Xuan	Dr Nurul Iman Binti Abdul Jalil	
13.	Relationship Between Self-Control, Perceived Social Support, and Internet Addiction with Cyberbullying	1. Mandy Ooi Wen Min 2. Tay Xu Chi 3. Yip Jun Kit	Dr Ooh Seow Ling	
14.	The Relationship Between Attachment Styles, Conflict Resolution Strategies, and Romantic Relationship Satisfaction Among Young Adult	1. Shirley Chew Mei Yee 2. Yeoh Jin Min	Dr Ooh Seow Ling	
15.	Red Pill Ideology as a Mechanism Linking Gender Norms to Relationship Cynicism: The Buffering Effect of Egalitarian Orientation	1. Ally Tan Sze Man 2. Tun Xin Jie 3. Zoe Ong Jia Jing	Dr Au Zher Wen	
16.	The Relationship Between Violent Game Exposure, Trait Aggression, and Conflict-resolution Styles Among University Students in Malaysia	1. Geh Zhi Yan 2. Soo Jing Xiang 3. Tee Yu Yang	Dr Au Zher Wen	
17.	The Influence of Instagram Use on Body Image Among Gen Z: The Mediating Role of Social Comparison	1. Chua Xiao Qing 2. Elaze Ng Yong Xuan 3. Wong Yong Sing	Dr Ooh Seow Ling	
18.	Shyness, Social Media Use, and Neuroticism as Predictors of Cyberbullying Victimization Among Young Adults in Malaysia	1. Cheng Xin Rou 2. Priyadarsini a/p Gunalan 3. Soh Jing Wen	Dr Lee Wan Ying	
19.	Examine the Associations Between Self-efficacy, Peer Influence, and Impulsivity on Internet Gaming Disorder Among Emerging Adult Multiplayer Online Battle Arena (MOBA) Players in Malaysia	1. Chan Zi Yuan 2. Lim Wen Yan 3. Tan Yun Lin	Dr T'ng Soo Ting	
20.	Examining the Role of Gaming Addiction and Perceived Stress on Aggressive Behaviour Among Young Adults in Malaysia	1. Jeston Lee Tze Xiang 2. Khor Ming 3. Ooi Phey Joo	Ms Tee Geok Hong	
21.	The Relationship Between Mental Health Literacy, Mental Health Stigma and Barriers to Seeking Mental Health Support Among Young Adults in Malaysia	1. Kam Yee Ching 2. Tang Kar Zhan 3. Yong Si Xian	Ms Tee Geok Hong	
22.	Association Between Parental Marital Conflict-resolution, Romantic Relationship Self-efficacy, and Attitudes Toward Singlehood Among Malaysian Emerging Adults	1. Kristin Ong Kai Tzu 2. Wonard Prinaus Kayau	Dr Tan Soon Atun	
23.	Visualizing the Future Self and Its Effect on Future Self-Continuity and Intention to Be Single: An Experimental Study	1. Hoon Xin Yi 2. Joanne Ooi Rou Yan	Dr Tan Soon Atun	
24.	Future Self Continuity and Lying-flat Tendency Among Undergraduate Students in Malaysia: The Mediating Role of Grit	1. Chan Lee Yi 2. Ho Si Qing 3. Tan Qian Yine	Dr Tan Soon Atun	

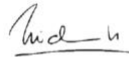
The conduct of this research is subject to the following:

- (1) The participants' informed consent be obtained prior to the commencement of the research;
- (2) Confidentiality of participants' personal data must be maintained; and
- (3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.
- (4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

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

Thank you.

Yours sincerely,



Professor Dr Zuraidah Abd Manaf
Chairman
UTAR Scientific and Ethical Review Committee

c.c. Dean, Faculty of Arts and Social Science



Appendix C

Reliability Test for Pilot Study

FSCQ

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.649	.648	10

Grit-S

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.711	.701	8

LFTS

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.292	.393	6

LFTS (Revised version)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.637	.642	3

Appendix D

Reliability Test for Actual Study

FSCQ

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.740	.743	10

Grit-S

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.710	.707	8

LFTS

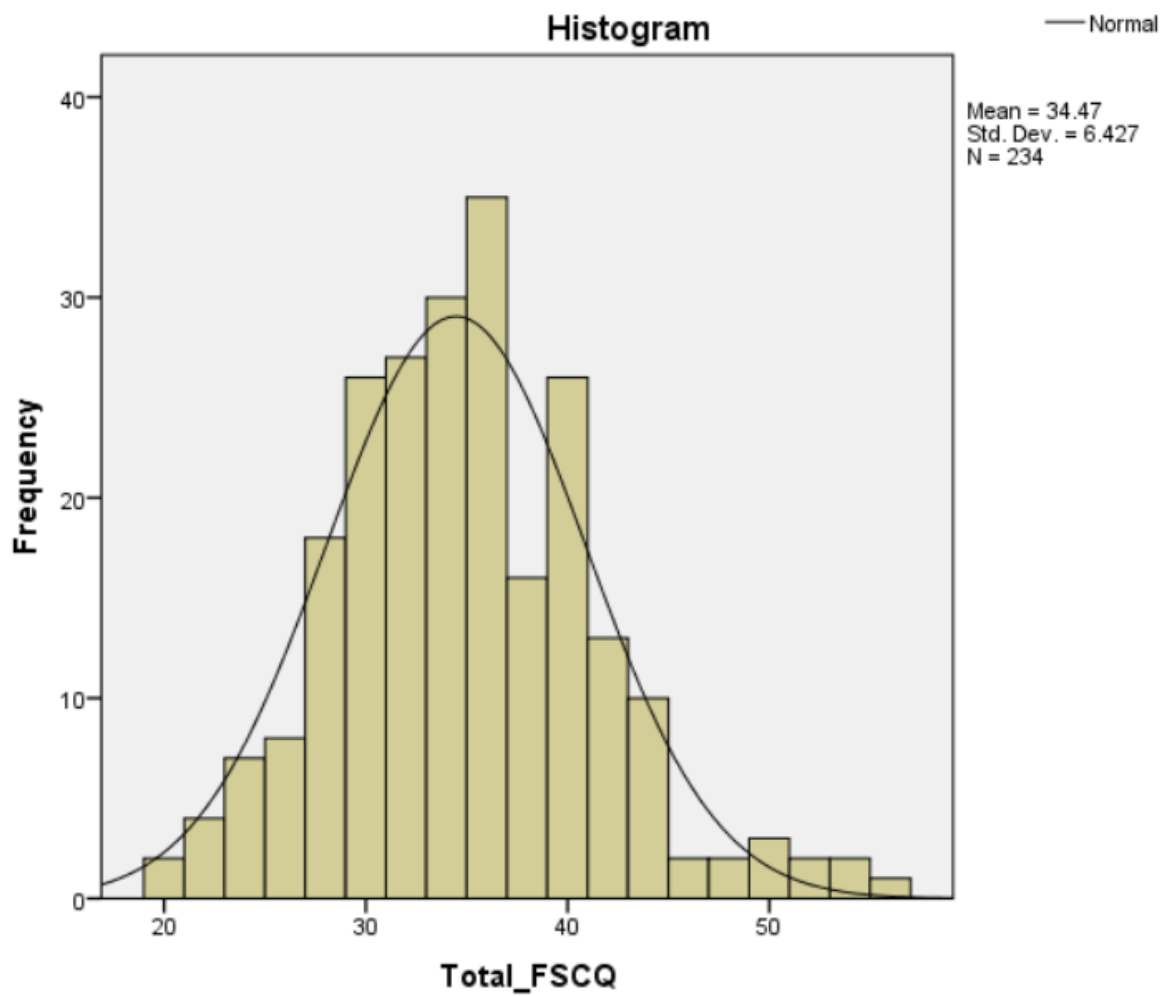
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.778	.786	6

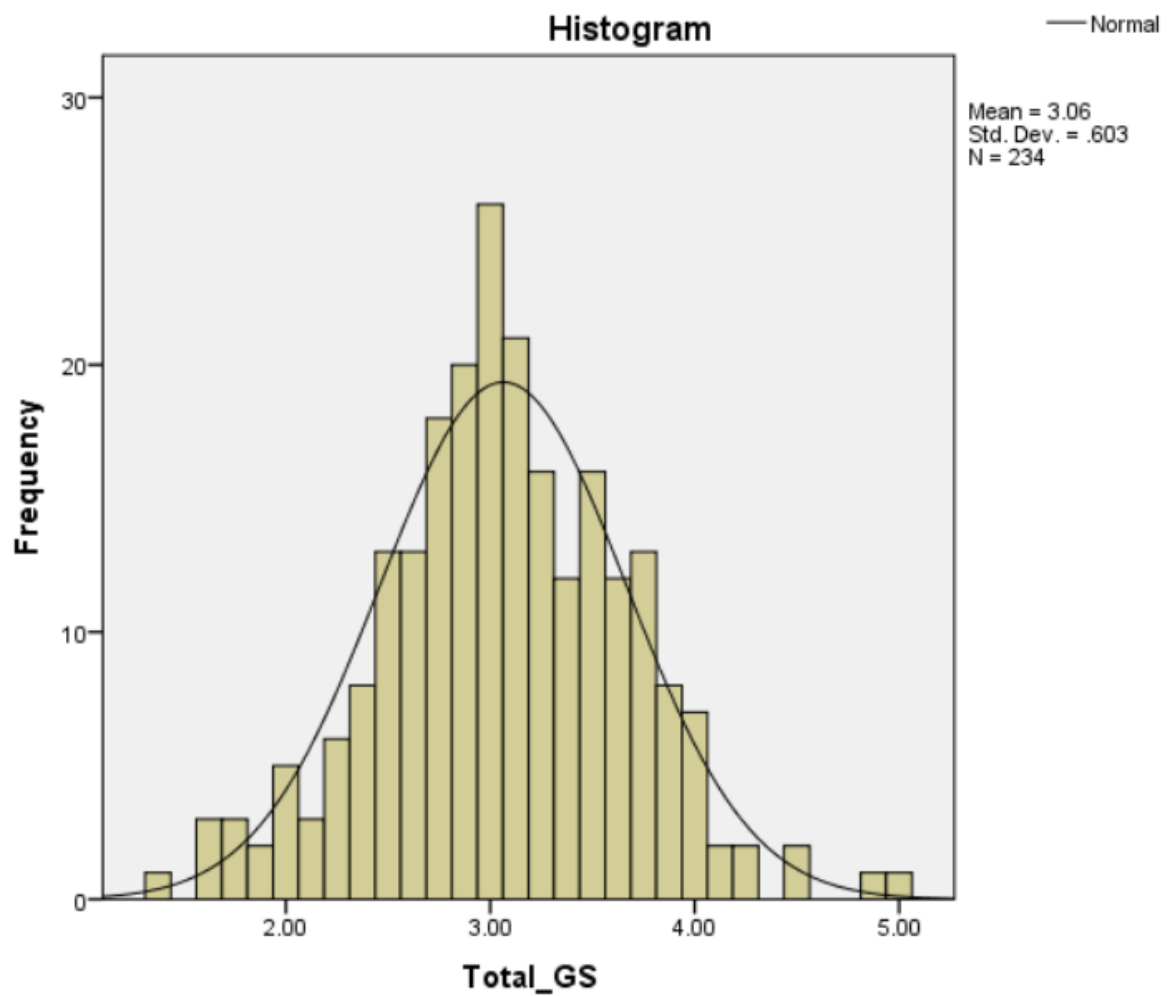
Appendix E

Histogram

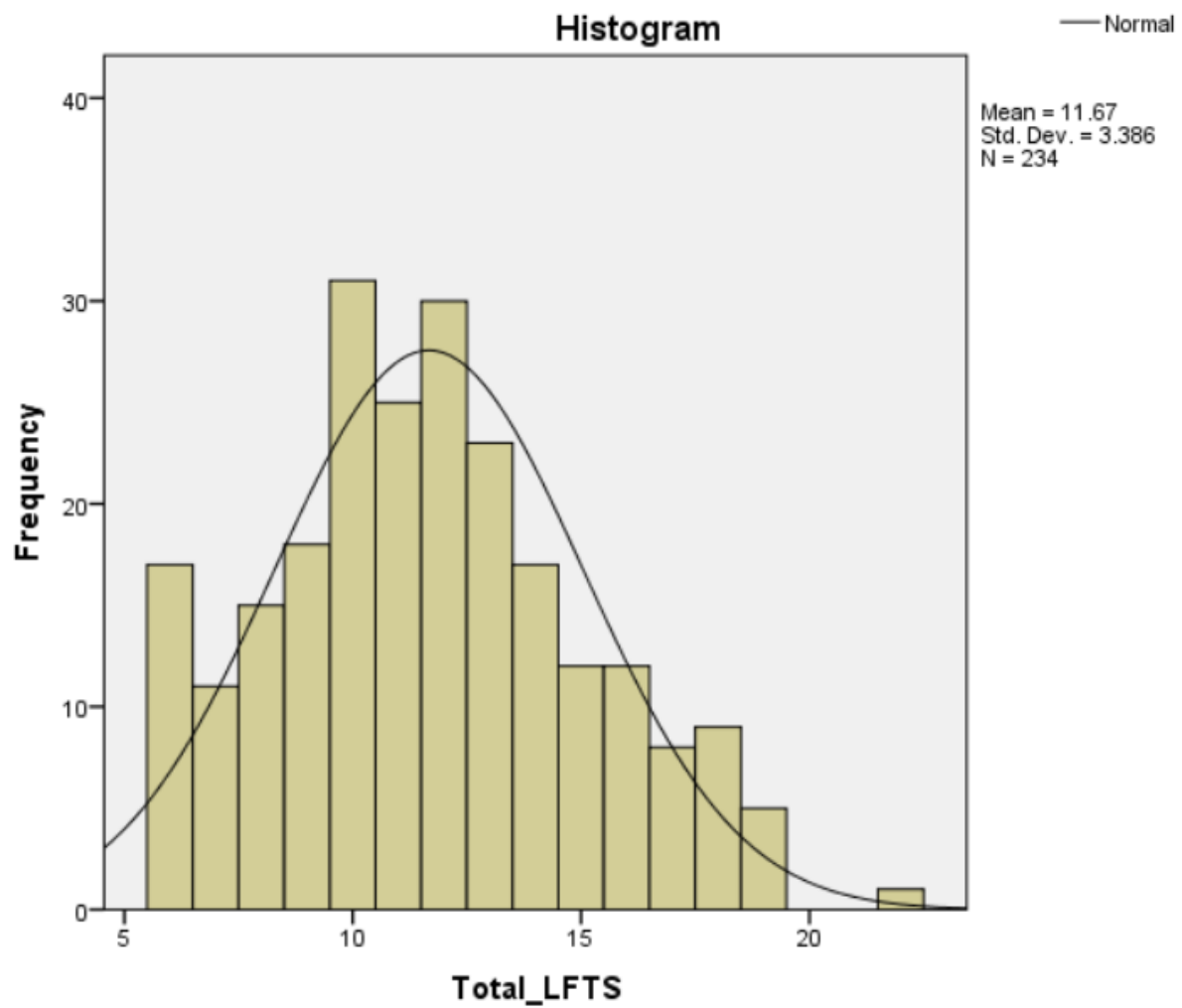
FSC



Grit



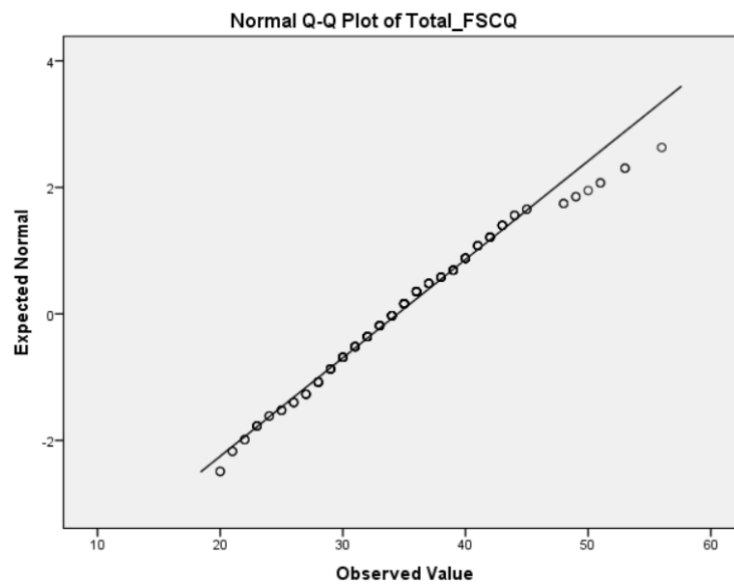
Lying Flat Tendency



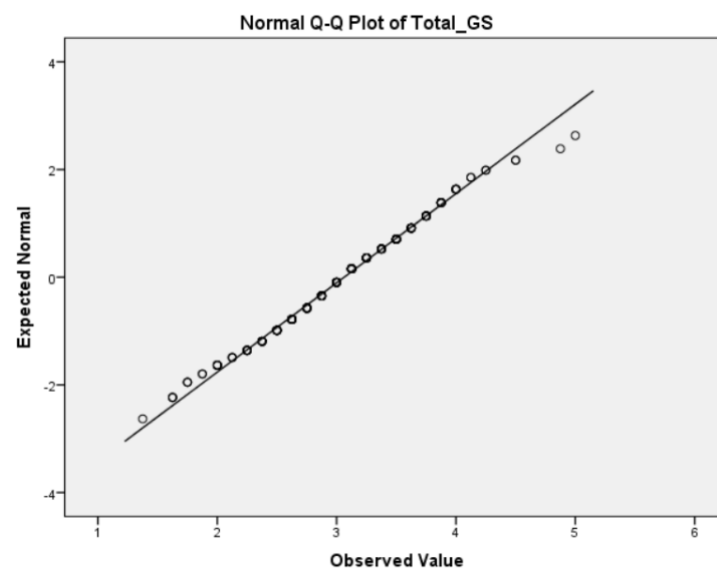
Appendix F

Q-Q Plot

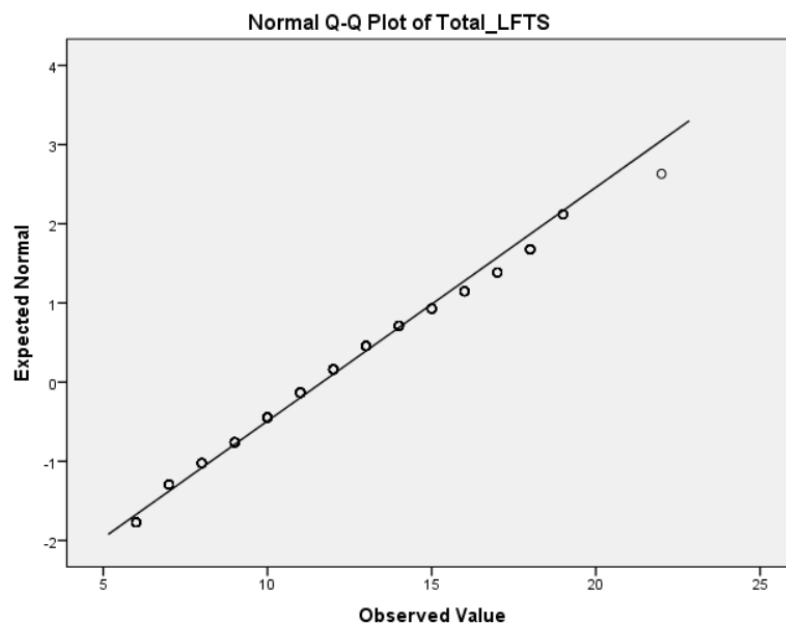
FSC



Grit



Lying Flat Tendency



Appendix G

Skewness and Kurtosis

FSC

Total_FSCQ	Mean		34.47	.420
	95% Confidence Interval for Mean	Lower Bound	33.64	
		Upper Bound	35.29	
	5% Trimmed Mean		34.30	
	Median		34.00	
	Variance		41.306	
	Std. Deviation		6.427	
	Minimum		20	
	Maximum		56	
	Range		36	
	Interquartile Range		9	
	Skewness		.414	.159
	Kurtosis		.514	.317

Grit

Total_GS	Mean		3.0630	.03942
	95% Confidence Interval for Mean	Lower Bound	2.9854	
		Upper Bound	3.1407	
	5% Trimmed Mean		3.0659	
	Median		3.0000	
	Variance		.364	
	Std. Deviation		.60302	
	Minimum		1.38	
	Maximum		5.00	
	Range		3.63	
	Interquartile Range		.75	
	Skewness		.016	.159
	Kurtosis		.376	.317

Lying Flat Tendency

			Statistic	Std. Error
Total_LFTS	Mean		11.67	.221
	95% Confidence Interval for Mean	Lower Bound	11.23	
		Upper Bound	12.10	
	5% Trimmed Mean		11.59	
	Median		11.50	
	Variance		11.468	
	Std. Deviation		3.386	
	Minimum		6	
	Maximum		22	
	Range		16	
	Interquartile Range		5	
	Skewness		.315	.159
	Kurtosis		-.370	.317

Appendix H

Test of Normality

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total_LFTS	.089	234	.000	.973	234	.000
Total_FSCQ	.077	234	.002	.983	234	.007
Total_GS	.066	234	.015	.991	234	.164

Appendix I

Descriptive Statistics

Age

Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 19	5	2.1	2.1	2.1
20	7	3.0	3.0	5.1
21	25	10.7	10.7	15.8
22	98	41.9	41.9	57.7
23	54	23.1	23.1	80.8
24	29	12.4	12.4	93.2
25	9	3.8	3.8	97.0
26	2	.9	.9	97.9
27	2	.9	.9	98.7
30	2	.9	.9	99.6
40	1	.4	.4	100.0
Total	234	100.0	100.0	

Gender

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Female	169	72.2	72.2	72.2
Male	65	27.8	27.8	100.0
Total	234	100.0	100.0	

Race

Race

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Ceylonese	1	.4	.4	.4
Chinese	215	91.9	91.9	92.3
Dusun	1	.4	.4	92.7
Indian	3	1.3	1.3	94.0
Kadazan	1	.4	.4	94.4
Malay	12	5.1	5.1	99.6
MALAY n Chinese	1	.4	.4	100.0
Total	234	100.0	100.0	

Nationality

Nationality

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Malaysian	234	100.0	100.0	100.0

Parents' Marital Status

What is your parents' current marital status?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Divorced	16	6.8	6.8	6.8
Married and living together	167	71.4	71.4	78.2
Married but living separately	13	5.6	5.6	83.8
Widowed	38	16.2	16.2	100.0
Total	234	100.0	100.0	

Appendix J

Model Summary Table

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.533 ^a	.284	.278	2.877	2.032

a. Predictors: (Constant), Total_GS, Total_FSCQ

b. Dependent Variable: Total_LFTS

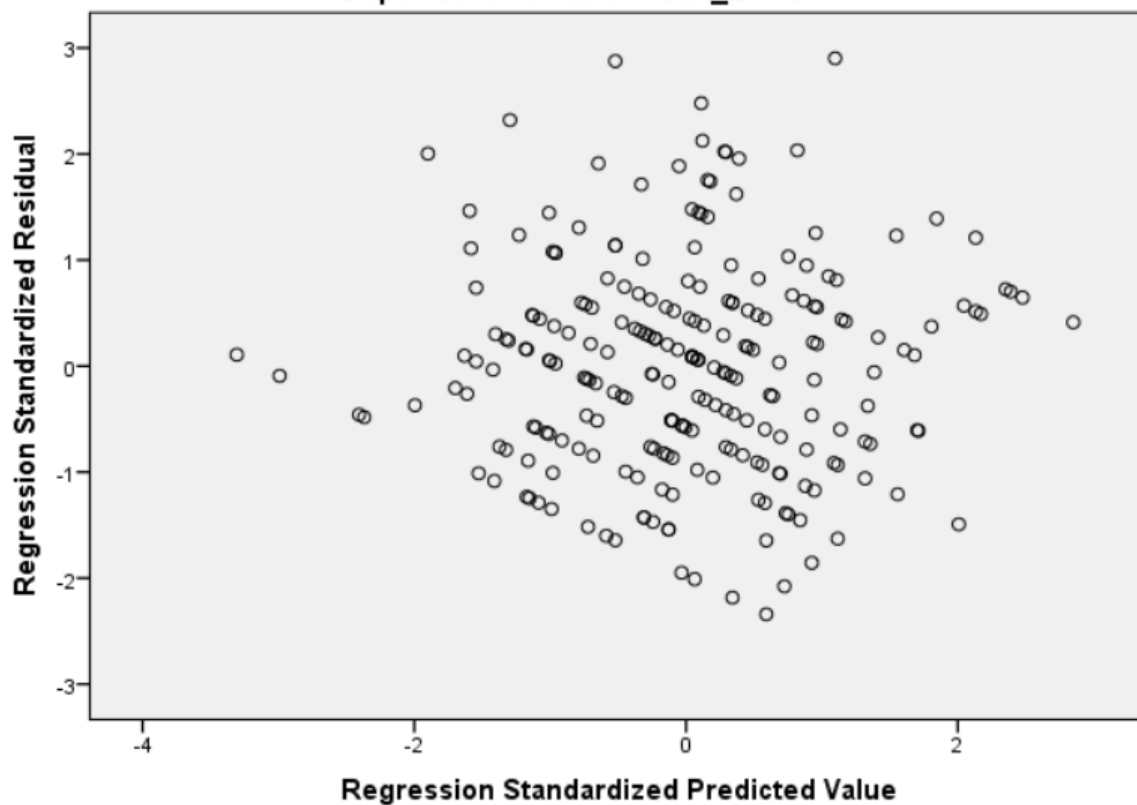
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	20.394	1.239		16.460	.000	17.953	22.836		
	Total_FSCQ	.017	.031	.033	.564	.573	-.043	.078	.914	1.094
	Total_GS	-3.044	.327	-.542	-9.312	.000	-3.688	-2.400	.914	1.094

a. Dependent Variable: Total_LFTS

Scatterplot

Dependent Variable: Total_LFTS



Appendix K

Pearson Correlation

Correlations

		Total_LFTS	Total_FSCQ	Total_GS
Total_LFTS	Pearson Correlation	1	-.126 [*]	-.532 ^{**}
	Sig. (1-tailed)		.027	.000
	N	234	234	234
Total_FSCQ	Pearson Correlation	-.126 [*]	1	.293 ^{**}
	Sig. (1-tailed)	.027		.000
	N	234	234	234
Total_GS	Pearson Correlation	-.532 ^{**}	.293 ^{**}	1
	Sig. (1-tailed)	.000	.000	
	N	234	234	234

*. Correlation is significant at the 0.05 level (1-tailed).

**. Correlation is significant at the 0.01 level (1-tailed).

Appendix L

Mediation Analysis

OUTCOME VARIABLE:

GS

Model Summary

R	R-sq	MSE	F	df1	df2	p
.3052	.0931	.3341	7.8730	3.0000	230.0000	.0001

Model

	coeff	se	t	p	LLCI	ULCI
constant	2.3554	.5054	4.6606	.0000	1.3596	3.3512
FSCQ	.0274	.0059	4.6414	.0000	.0157	.0390
Age	-.0117	.0204	-.5717	.5681	-.0519	.0285
Gender	.1027	.0844	1.2161	.2252	-.0637	.2690

Standardized coefficients

	coeff
FSCQ	.2915
Age	-.0359
Gender	.0764

Covariance matrix of regression parameter estimates:

	constant	FSCQ	Age	Gender
constant	.2554	-.0012	-.0094	-.0030
FSCQ	-.0012	.0000	.0000	.0000
Age	-.0094	.0000	.0004	.0001
Gender	-.0030	.0000	.0001	.0071

OUTCOME VARIABLE:

LFTS

Model Summary

R	R-sq	MSE	F	df1	df2	p
.5571	.3103	8.0471	25.7615	4.0000	229.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	14.1420	2.5949	5.4499	.0000	9.0290	19.2550
FSCQ	.0161	.0302	.5335	.5942	-.0435	.0757
GS	-3.0401	.3236	-9.3941	.0000	-3.6778	-2.4025
Age	.2719	.1003	2.7124	.0072	.0744	.4695
Gender	.4987	.4157	1.1995	.2316	-.3205	1.3178

Standardized coefficients

	coeff
FSCQ	.0306
GS	-.5414
Age	.1491
Gender	.0661

Covariance matrix of regression parameter estimates:

	constant	FSCQ	GS	Age	Gender
constant	6.7336	-.0217	-.2467	-.2295	-.0480
FSCQ	-.0217	.0009	-.0029	.0000	.0000
GS	-.2467	-.0029	.1047	.0012	-.0108
Age	-.2295	.0000	.0012	.0101	.0014
Gender	-.0480	.0000	-.0108	.0014	.1728

***** TOTAL EFFECT MODEL *****

OUTCOME VARIABLE:

LFTS

Model Summary

R	R-sq	MSE	F	df1	df2	p
.2111	.0446	11.0997	3.5759	3.0000	230.0000	.0147

Model

	coeff	se	t	p	LLCI	ULCI
constant	6.9812	2.9132	2.3965	.0174	1.2413	12.7211
FSCQ	-.0670	.0340	-1.9729	.0497	-.1339	-.0001
Age	.3074	.1177	2.6127	.0096	.0756	.5393
Gender	.1865	.4867	.3832	.7019	-.7724	1.1454

Standardized coefficients

	coeff
FSCQ	-.1272
Age	.1685
Gender	.0247

Covariance matrix of regression parameter estimates:

	constant	FSCQ	Age	Gender
constant	8.4865	-.0392	-.3126	-.1012
FSCQ	-.0392	.0012	.0000	-.0003
Age	-.3126	.0000	.0138	.0021
Gender	-.1012	-.0003	.0021	.2369

```
***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y
      Effect      se      t      p      LLCI      ULCI      c_cs
      -0.0670     .0340    -1.9729   .0497    -.1339    -.0001    -.1272

Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI      c'_cs
      .0161      .0302     .5335   .5942    -.0435     .0757     .0306

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
GS      -.0832      .0187      -.1218      -.0482

Completely standardized indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
GS      -.1578      .0350      -.2284      -.0903

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
10000

----- END MATRIX -----
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