Personality Traits and their Effects among University Students in Malaysia: A Systematic Review

Claudia Yong, Zaida Nor Zainudin, Mohd Ashraff Mohd Anuar, Wan Norhayati Wan Othman

Faculty of Educational Studies, Universiti Putra Malaysia, 43400, UPM, Selangor, Malaysia
Corresponding Authors Email: zaidanor@upm.edu.my

Abstract
    Personality traits have been consistently proven to have an extent of influence on individual's behavior, emotion, and cognition. In the university setting, various studies noted different personality traits predispose students to varied academic preference and performance, decision making styles, probability of obtaining a university degree, and furthermore, happiness. The purpose of this review was to explore how university students' personality traits were investigated in past research and the effects that comes with different personality traits. Precisely, this literature review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Studies which assigned personality traits as an independent variable among university students in Malaysia and published from the year 2013 to 2022 were included. The initial search retrieved 668 articles, with 21 articles included in this review. Summarily, this review found evidence that personality traits are not limited to The Big-Five categories as personality traits have been investigated within different epistemologies. Within the context of university students in Malaysia, personality traits predispose certain outcomes such academic performance, motivation, coping strategies, language learning, level of stress, and happiness. These outcomes, however, could be influenced by other underlying affects and mediators. This review could provide utility to university students, tertiary educational institutions, mental health institutions and other related bodies not only in the assessment of personality traits and their effects, but also in recognizing personality traits as one of university students' inextricable assets.
Keywords: Personality Traits, University Students, Systematic Review, Malaysian Universities

Introduction

Personality refers to the underlying traits that regulates the way an individual commonly behaves, thinks, and feels (McGeown et al., 2014). In the research of personality traits, a principal rule of thumb is to consider the first law of personality development (Roberts & Nickel, 2017) which maintains that personality traits are cumulative throughout lifespan. This phenomenon was found to be consistent phenomenon across samples, measures, and methods (Costa et al., 2019).

Classification of personality traits started with purely rational or theoretical approach. Jung's (1923) classification for example, noted two major orientations of personality which were introversion and extraversion. Later, lexical hypothesis and factor analysis efforts (Eysenck & Eysenck, 1968; Goldberg, 1990) enabled the emergence of many other categorisations such as the Eysenck's Giant Tree and Myers-Briggs Type Indicator (MBTI). Eventually, "The Big Five" or "Five-Factor Model" (McCrae & Costa, 1987) became the most widely recognised personality trait model (Matz et al., 2016).

In short, The Big Five describes five major traits of personality that could be better remembered with the acronym OCEAN (O is for Openness; C is for Conscientiousness; E is for Extraversion; A is for Agreeableness; N is for Neuroticism). Notably, The Big Five model is the most prominent model to date for its high cross-cultural replicability and test-retest reliability (Feher & Vernon, 2021). Nonetheless, Feher & Vernon (2021) in their review highlighted that despite the popularity of The Big Five, the model does not provide a comprehensive measure of personality. The HEXACO, supernumerary traits, and Cloninger and colleagues' psychobiological model of personality for examples, discussed dimensions of personality which are lacking within The Big Five model. Finally, Feher & Vernon (2021) also noted that in comparison with The Big Five, The Dark Tetrad traits, SDPS, and trait EI were also found to be better in predicting criterion variables. As such, it is important to consider alternative personality models and traits when assessing personality and criterion relationships.

Researching personality traits in the university setting is important as personality traits affects academic preference (Ariff et al., 2020) which in turn influence development or changes in student's personality (Wen et al., 2021), academic performance (Nechita et al., 2015; Mateus et al., 2021), decision making styles (Rahaman, 2014; Bajwa et al., 2016), the probability of obtaining a university degree (Schurer et al., 2015), and happiness (Mahendra & Humayra, 2019; Ziapour et al., 2018).

Additionally, attention should be given to explore personality traits in this specific context as it was noted that most personality development occurs across lifetime (Roberts & Nickel, 2017). Importantly, regarding the rate of change, Roberts & Mroczek (2008) discussed that personality traits change drastically during young adulthood and these changes have significant and consequential throughout lifespan into old age.

Accordingly, the purpose of this review was to identify how personality traits were measured and the effects of different personality traits among students, specifically in the context of Malaysian universities. Furthermore, this review also aimed to explore the gaps and recommendations on the subject in existing literature in hopes to provide clearer directions for future efforts.

Objectives

The aim of the review were to

- Identify how personality traits of university students in Malaysia were measured.
- Identify the effects of different personality traits of university students in Malaysia.
- Identify the gaps and limitation in the literature concerning personality traits and university students in Malaysia.

Methodology

A systematic search for articles from multiple databases was done to retrieve relevant published articles on personality traits and their effects on university students in Malaysia. The pre-specified eligibility criteria include studies that included investigation of personality traits as a predictor of an outcome, university students, validated instruments in assessing personality traits, published in peer-reviewed journals, English language, full-text available online, and published in between the year 2013 to 2022.

Keywords that were included consist of "Personality traits" or "The Big Five" or "five factor model" or "neuroticism" or "openness", "conscientiousness" or "extraversion" or "agreeableness" or "university students" or "undergraduate students" or "postgraduate students" and "Malaysian" or "Malaysia". Any term related to university students in Malaysia which includes undergraduate and postgraduate students who studies at a tertiary level or post-secondary level and personality traits, including all sub-traits and other facets of personality were also included.

Lastly, electronic databases such as PubMed, Medline Complete, Academic Search Complete, SCOPUS, Psychology and Behavioral Science Collection, and CINAHL Plus were searched with initial search totaled to 668 articles, 605 articles were excluded after screening through title and abstract as aspects of personality traits or sub-traits or university students were not present. Full text of 37 articles were then screened, with final 21 articles included in this review as shown in the PRISMA flow chart (Figure 1).
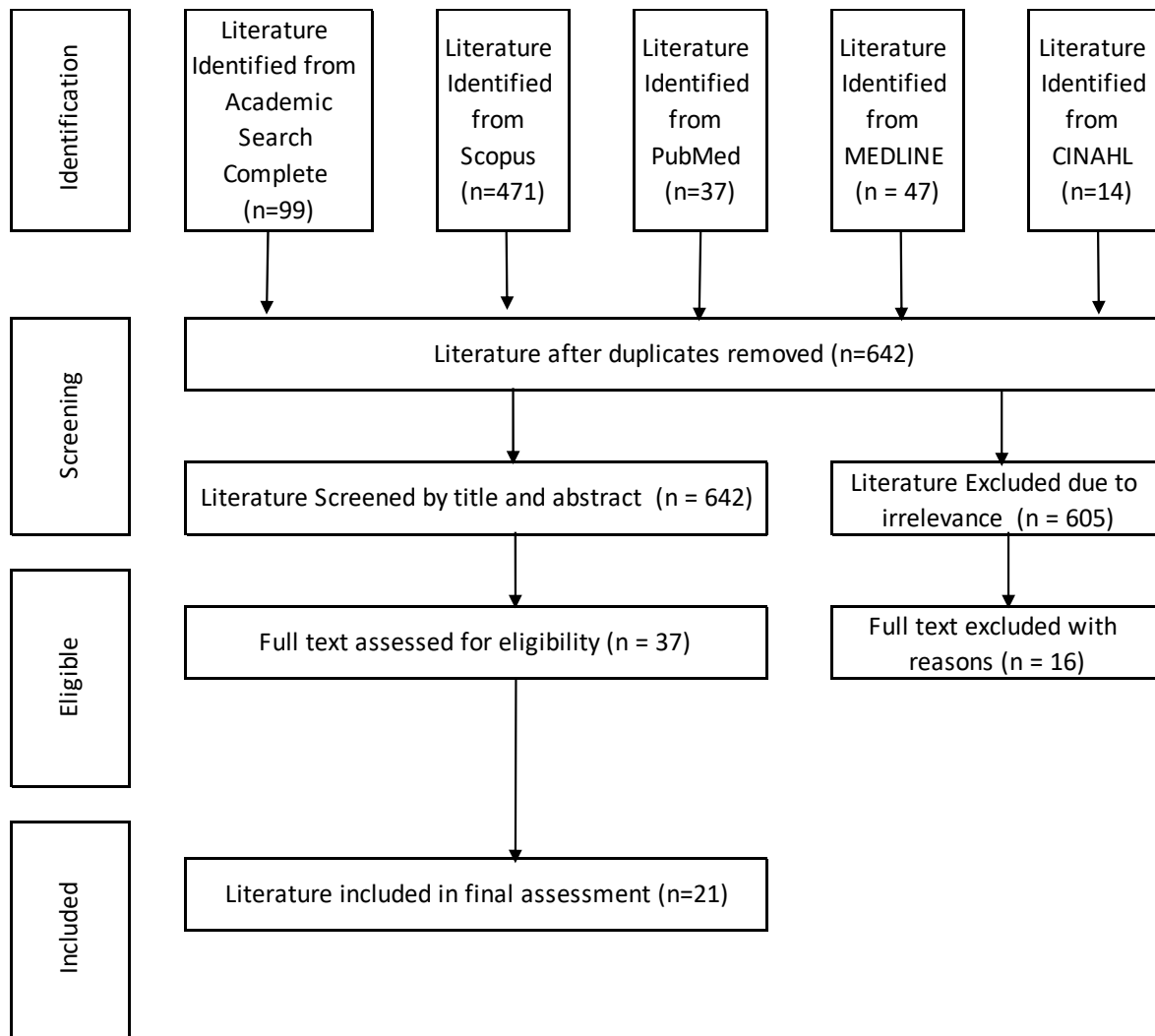
Figure 1. PRISMA flow chart

Findings and Discussion

The summary report of the selected articles is presented in Table 1. The findings of the review are in the following sequence, from the left – authors and year of publication, title of articles, sample of study, and finally the findings that are in alignment with the purpose of this review.

Table 1
Summary of Selected Literature

Authors (Year)	Article's Title	Country	Sample (university)	Findings
Chung et al (2019)	The role of the dark tetrad and impulsivity in social media addiction: Findings from Malaysia.	Malaysia	128 smartphone users (unspecified) university in Malaysia	This study found aversive personality traits, particularly four traits collectively known as the Dark Tetrad to have unique features that could trigger pathological online behaviour.
Naqshbandi et al (2017)	To Facebook or to Face Book? An investigation of how academic performance of different personalities is affected through the intervention of Facebook usage.	Malaysia	1165 students in five (unspecified) public universities in Malaysia	This study found that personality factors influences students' performance and Facebook usage. Moreover, this study noted novel finding which highlighted positive utility of Facebook specifically in improving academic results of extroverts, agreeable and lonely students.
Sam et al (2022)	An exploratory study on the challenges faced and coping strategies used by preclinical medical students during the COVID-19 crisis.	Malaysia	13 preclinical medical students (International Medical University)	This study found indications that personality traits affect strategies to cope with challenges faced during crisis which may either lead to resilience building or experiencing burnout.
Yusoff et al (2013)	A Longitudinal Study of Relationships between Previous Academic Achievement, Emotional Intelligence and Personality Traits with Psychological Health of Medical Students during Stressful Periods.	Malaysia	196 successful medical school applicants (School of Medical Sciences, Universiti Sains Malaysia)	This study found that among other personality traits, neuroticism was the strongest predictor of psychological health of medical students during stressful period.

Zainah et al (2019)	Adult Personality and its Relationship with Stress Level and Coping Mechanism among Final Year Medical Students	Malaysia	152 final year medical students (Universiti Kebangsaan Malaysia)	This study found students with neuroticism have higher tendency to practise avoidant coping mechanism and have higher stress level while extraversion personality predispose student to practise active coping mechanism.
Klobas et al (2018)	Compulsive YouTube usage: A comparison of use motivation and personality effects.	Malaysia	807 students (unspecified Malaysian university)	This study found that different personality traits have different YouTube usage. Agreeable and conscientious students are non-compulsive YouTube users, while neurotic students are more inclined to be compulsive users. Personality traits extraversion and openness have no relationship with compulsive use.
Hassan et al (2016)	How Much We Think of Ourselves and How Little We Think of Others: An Investigation of the Neuronal Signature of Self-Consciousness between Different Personality Traits through an Event-Related Potential Study.	Malaysia	33 medical students (Universiti Sains Malaysia)	This study found that the large amount of dopamine in the brains of extraverts predispose them to be more self-aware. In consequence, self-relevant pronouns are psychologically more important to them than to ambiverts.
Shen et al (2022)	Personality Traits and Sociodemographic Factors Associated with the Use of E-Cigarettes, Waterpipe and Conventional Cigarettes among Medical University Students.	Malaysia	468 students (International Medical University)	This study found evidence that different personality traits portray different preference of cigarettes use.

Yusof et al (2016)	Personality Traits and Stress Levels among Senior Dental Students: Evidence from Malaysia and Singapore.	Malaysia and Singapore	132 students (University Malaya); and 76 students (National University of Singapore)	This study concluded that gender and neuroticism trait were significant predictors for stress levels among selected groups of dental students in Southeast Asia.
Abdollahi et al (2022)	Courage: A Potential Mediator of the Relationship Between Personality and Social Anxiety.	Malaysia	500 undergraduate students (Universiti Putra Malaysia)	This study found neuroticism to be positively related to social anxiety. Additionally, courage mediates the relationship between neuroticism, agreeableness, openness to experience, and extraversion with social anxiety.
Lei et al (2020)	The relationship of smartphone addiction with psychological distress and neuroticism among university medical students.	Malaysia	574 medical students (Universiti Sains Malaysia)	This study found students with neuroticism to be more vulnerable to have smartphone addiction which consequently predispose them to psychological problems.
Bhagat et al (2016)	Study on personality dimension negative emotionality affecting academic achievement among Malaysian medical students studying in Malaysia and overseas.	Malaysia and India	60 medical students (Universiti Sultan Zainal Abidin); 60 Malaysian students (USM-Karnataka Lingayat Education)	This study found that regardless of their residential location, there is a positive significant link between personality dimension negative emotionality of Malaysian medical students and their academic performance.

Tan et al (2018)	Extraversion and happiness: The mediating role of social support and hope.	Malaysia	311 students (different universities in Malaysia)	This study reported trait extraversion to enhance happiness through social support and subsequently also increase hope.
Yusoff et al (2021)	The roles of emotional intelligence, neuroticism, and academic stress on the relationship between psychological distress and burnout in medical students	Malaysia	241 medical students (Universiti Sains Malaysia)	This study reported academic stress and neuroticism significantly increased psychological distress, subsequently increased burnout level. Also, emotional intelligence had a significant direct effect on reducing burnout; however, this relationship was compromised by psychological distress and neuroticism which persistently increase burnout rate.
Tang (2020)	Personality traits, teamwork competencies and academic performance among first-year engineering students	Malaysia	189 students (Curtin University of Technology)	This study reported adventurous trait to negatively correlate with teamwork competencies. Additionally, this study also found teamwork competencies as better predictors of academic performance than personality traits.
Zarina et al (2019)	Barriers to Speaking in English Among Maritime Students	Malaysia	150 final year students from two (unspecified) maritime-based academic programmes in Malaysia.	This study reported that while teachers' pedagogical management have stronger impact in language learning, personality trait moderately affect this relationship as well.

Bhagat et al (2019)	The relationship between big five personality traits and academic performance in medical students	Malaysia	122 medical students (Universiti Sultan Zainal Abidin)	This study found that personality and academic performance are closely related. Also, no statistical significance between big five personality traits with exam scores, except for trait neuroticism.
Cornelius & Ng (2019)	Relationship between personality traits and physical activity participation	Malaysia	205 students (Tunku Abdul Rahman University College)	This study indicated that personality traits such as Extraversion and Openness were positively related to students' physical activity participation.
Othman et al (2017)	Internet addiction and personality: Association with impulsive sensation seeking and neuroticism-anxiety traits	Malaysia	267 students doing attachment in Hospital Tengku Ampuan Rahimah (HTAR)	This study noted impulsive sensation seeking and trait neuroticism-anxiety to predispose increased internet addiction.
Ali et al (2016)	Understanding the academic use of social media: Integration of personality with TAM	Malaysia	388 students Universiti Malaya, Universiti Teknologi Malaysia, Universiti Sains Malaysia, Universiti Putra Malaysia and Universiti Kebangsaan Malaysia	This study found aside from perceived usefulness and quality of information, personality trait openness to experience and conscientiousness as predictors to use technology for academic purposes.

Toh et al (2022)	Why Am I Stressed Out? Neglecting the Internal Stressors among Undergraduate Students in Malaysia.	Malaysia	131 business school of a Malaysian private higher education institution	This study found that individuals especially ones with high neuroticism experience more stress. Women are found to have higher level of neurosis than men. Also, brooding type and high in Agreeableness predispose students to be affected by stress at university.

From the 21 studies included in this review, 18 adopted cross-sectional study design, whereas the remaining 3 employed semi-structured interviews, cohort study, and experimental study respectively.

In terms of location, all studies included university students in Malaysia with two exceptions. Specifically, two studies included not only students in Malaysia but also in another Asian countries. From the 21 studies included in this review, 14 studies specifically noted the university population. The 14 studies include one study which sampled from 5 universities in Malaysia which were Universiti Malaya, Universiti Teknologi Malaysia, Universiti Sains Malaysia, Universiti Putra Malaysia, and Universiti Kebangsaan Malaysia. Another two studies sampled students from International Medical University (IMU), four studies sampled students from school of Medical Sciences, Universiti Sains Malaysia (USM), another two studies sampled students from Universiti Sultan Zainal Abidin (USZA), while 5 other studies sampled students from Universiti Kebangsaan Malaysia (UKM), University Malaya (UM), University Putra Malaysia (UPM), Curtin University of Technology, Tunku Abdul Rahman University College respectively. There were 7 studies which did not specify their university of choice.

Regarding sampling techniques, 11 studies utilized convenience sampling technique, 7 applied purposive sampling technique, 2 utilized stratified random sampling technique, and lastly, 1 study used random sampling in their study. Total number of university students in Malaysia that participated in this study was 6232 students. This number does not include students that has participated yet produced data that couldn't be included in the statistics.

Additionally, this review noted a variety of software what was chosen for data analysis. While 5 studies did not note their software of choice, 12 studies utilized a variation of Statistical Package for the Social Sciences (SPSS) software, while 2 studies utilized Analysis of Moment Structure (AMOS) software, and the remaining 2 studies used Predictive Analytical Software (PASW) and NVivo respectively.

This systematic review was conducted to fulfill three aims. The findings related to each of the aim are summarized as follows

The ways personality traits of university students in Malaysia were measured

Majority of the studies explored personality traits and its constructs using instruments that's been proven to have high reliability and credibility throughout time and locality.

The review has found that there was a total of 11 instruments used to measure personality traits which includes: The Short Dark Triad SD3 (Jones & Paulhus, 2014), The Assessment of Sadistic Personality (ASP) (Plouffe, Saklofske, & Smith, 2017), Ten Item Personality Measure (TIPI) (Gosling, 2003), USM personality inventory (USMaP-i) (Yusoff et al., 2010), Medico Psychological Questionnaire (Raj, 1960), Big Five Personality Inventory (John and Srivastava, 1999), Big Five Inventory (BFIPT) test (John et al., 1991), Big Five Inventory (BFI-2) (Soto & John, 2009), The NEO Five-Factor Inventory (Costa & McCrae, 1989), The Individual and Team Performance (ITP) (ITP Metrics, 2019), and The Zuckerman-Kuhlman personality questionnaire (ZKPQ) (Zuckerman, 1991).

Of the 21 studies included in this review, only one study used the combination of two instruments which was a study done by Chung et al (2019). In their study, Chung et al (2019) used both Short Dark Triad SD3 (Jones & Paulhus, 2014) and The Assessment of Sadistic Personality (ASP) (Plouffe, Saklofske, & Smith, 2017) to assess personality traits. Meanwhile, other studies assessed personality with a single (or partial of an) instrument. Also, two other studies used tailored questions designed by researchers to assess personality traits.

The Effects of Personality Traits to University Students in Malaysia

This review noted that in the context of university students in Malaysia, personality traits affect university students in various ways and on multiple level.

Summarily, this review has found personality traits to have an influence on pathological online use (Chung et al., 2019; Klobas et al., 2018), students' academic performance (Bhagat et al., 2016; Bhagat et al., 2019) and student's online social usage motivation (Naqshbandi et al., 2017; Ali et al., 2016), student's coping strategies (Sam et al., 2022; Zainah et al., 2019), language learning (Zarina et al., 2019), students level of stress (Toh et al., 2022; Yusof et al, 2016; Yusoff et al., 2021), general anxiety, social anxiety (Abdollahi et al., 2022), burnout level (Yusoff et al., 2021), and symptoms of depression during times of crises (Yusoff et al., 2013; Zainah et al., 2019), neuronal signature of self-consciousness (Hassan et al., 2016), happiness (Tan et al., 2018), and other addictive behaviors such as smoking method preference (Yew et al., 2022), smartphone addiction (Lei et al., 2020), and internet addiction (Othman et al., 2017) which tends to lead to psychological problems (Lei et al., 2020; Yusoff et al., 2021) such as depression (Lei et al., 2020).

One the one hand, this review found that most studies included in this review have concluded that personality traits have significant effect on certain outcomes; on the other hand, personality traits were also found to not have as significant effect as other independent variables on certain outcomes. Specifically, Tang (2020) pointed out that personality traits may not be as significant predictor of academic performance as teamwork competencies. Additionally, Zarina et al (2019) in their study found that personality traits only moderately affect the relationship between teachers' pedagogical management and language learning.

Notably, this review has found consistency for certain personality trait to be a liability to university students consistently. Precisely, trait neuroticism was linked to many deviant behaviors and negative outcomes. Neuroticism was found to predispose students to addictive behaviors (Othman et al., 2017; Lei et al., 2020; Yew et al., 2022), higher stress level (Toh et al., 2022; Yusof et al., 2016; Yusoff et al., 2021), increased social anxiety (Abdollahi et al., 2022), lower exam scores (Bhagat et al., 2016; Bhagat et al., 2019), and increased burnout level (Yusoff et al., 2021) as compared to other personality traits.

Meanwhile, this review has found Extraversion, openness, and conscientiousness to have been associated with positive outcomes. For an example, this review found Cornelius & Ng (2019) study which noted that both personality traits extraversion and openness evidently positively related to students' physical activity participation. In addition, Ali et al (2016) reported that beside perceived usefulness and quality of information, combination of trait openness to experience and trait conscientiousness predicts high level of motivation to use technology for academic purposes which benefits students to a large extent. Interestingly, the high level of dopamine in the brains of extraverts also increases tendency to self-awareness which makes certain social conventions psychologically intensely important (Hassan et al., 2016).

Gaps and limitations of the current literature investigating personality traits and their effects to university students in Malaysia

From the 21 articles, this review has found discussions on limitation and suggestions for future research which frequently includes scope of samples, sampling biases, sampling methods, research designs, and response biases.

In brief, this review found common suggestions such as that future research should consider varied (Abdollahi et al., 2022; Cornelius & Ng, 2019; Othman et al., 2017; Yusoff et al., 2021), larger samples (Bhagat et al., 2016; Bhagat et al., 2019; Chung et al., 2019; Cornelius & Ng, 2019; Othman et al., 2017; Sam et al., 2022; Yusof et al., 2016) for the reason that single institution studies commonly has low generalisability (Abdollahi et al., 2022; Bhagat et al., 2016; Sam et al., 2022; Toh et al., 2022; Yew Shen et al., 2022).

Also, this review also found 18 studies to have employed cross-sectional method in which a single population was observed at one point in time (Wang & Cheng, 2020). Alas, cross-sectional studies do not provide evidence for causation relationships (Tan et al., 2018; Toh et al., 2022; Yusof et al., 2016), but merely suggesting the possibility of a relationship (Tan et al., 2018; Yusof et al., 2016).

In addition, this review found several studies highlighting consideration for longitudinal research design (Ali et al., 2016; Naqshbandi et al., 2017; Yusof et al., 2016) as well as consideration for comparative research design between different cultural context (Abdollahi et al., 2022) which could provide higher predictive or explanatory capacity of a certain variable (Toh et al., 2022), in addition being crucial to validate existing literature (Klobas et al., 2018) and consequently, to be integrated into intervention initiatives (Tang, 2020).

Regarding sampling bias, Yusoff et al (2021) and Bhagat et al (2016) noted that future research should observe limitations of non-probability technique, which is subjected to sampling bias. Future studies could consider probability sampling techniques to address this limitation (Yusoff et al., 2021). Additionally, regarding response bias, Abdollahi et al (2022) noted social desirability bias while Shen et al (2022) noted respondent fatigue in their study, which could be redressed with mixed-method study designs (Abdollahi et al., 2022).

Furthermore, Yusof et al (2016) also highlighted limitations of several measurement model which proven to be ineffective in capturing authentic behaviour**.** This review found suggestions to practise effective measurement approach such as deliberating the theoretical and empirical validation for each construct (Tan et al., 2018), using a more comprehensive (Toh et al., 2022) and multi-measurement approach (Chung et al., 2019), using varied predictive and/or moderative variables (Bhagat et al., 2019), as well as duplicating studies that has used a proxy measurement to further validate results (Naqshbandi et al., 2017).

Implication of the review

Specifically, this review found numerous evidence on the importance of early identification of personality traits. Identification of personality traits is necessary not only to boost students' academic achievement and personality growth (Bhagat et al., 2016), but also to allow designation of proper psychological support such as stress management intervention, continuous mentoring support (Yusoff et al., 2013), as well as addictive-behavior management (Shen et al., 2022; Othman et al., 2017). Particularly, it is crucial for students with certain personality traits to be identified rigorously to ensure better management of their emotionality and emotional regulation ability (Bhagat et al., 2016).

In short, this review has highlighted information regarding personality traits of university students which could be used in developing screening or profiling trainings for enrolment officers (Toh et al., 2022), managing students' language learning (Zarina et al., 2019), accommodating students adjustment into campus life, academic and social integration, strengthening cultural intelligence, increasing organizational identity (Tang, 2020), assessing of work load and stress (Yusoff et al., 2021), developing of Mentor-Mentee programs (Bhagat et al., 2016) and other appropriate counseling and guidance (Toh et al., 2022). Among the psychotherapy and counselling intervention that have been suggested to benefit students were stress management counselling such as DEAL-based practice and mindfulness-based stress reduction technique (Yusoff et al., 2021).

Conclusion

This review found personality traits to have been assessed commonly using the Big Five paradigm. Further investigation to the other ranges of personality traits outside of the Big Five is necessary to identify the impact of specific personality traits to university students. This review also found consistent evidence for personality traits having an extent of influence in many aspects of students' lives which includes students' tendency to certain addictive behaviours, academic performance, online social usage motivation, coping strategies, language learning, level of stress, general anxiety, social anxiety, burnout level, and symptoms of depression during times of crises, neuronal signature of self-consciousness, and happiness. Among the initiatives that could benefit from personality trait studies include development of self-management strategies, self-help strategies, intervention and prevention strategies,

and teaching-learning strategies. Limitations on studies included in this review encompass scope of samples, sampling biases and response biases, sampling methods, and research designs. Future studies could address the limitations highlighted here. Further investigation and identification of students' personality traits benefits not only university students, but also provide invaluable insights to university institutions, mental health institutions, and other related bodies.

Conflict of Interest/ Disclosure Statement
There is no potential conflict of interest to disclose.

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