

The Relationship between Grit Personality and Resilience

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Abstract

Grit personality and resilience traits are important elements that influence the quality of student learning. The objective of this study was to identify the level of grit and resilience as well as the relationship between both variables. This study used a quantitative study design in the form of a survey. A total of 387 respondents among UKM students were selected through cluster random sampling techniques. The Short Grit Scale (Grit-S) and Resilience Scale Questionnaire were used to collect data. The analysis results showed that the respondents had a medium-high grit level (SD = 0.866) and high resilience trait level (SD = 0.738). Pearson's correlation analysis was used to determine the relationship among the variables, and regression analysis was used to determine the regression coefficient of the variables on each other. Findings showed a moderate positive correlation between grit and resilience ($r = 0.442$, $p < 0.01$). Grit explained 19.3% of resilience's total variance. Based on this evidence, it can be said that grit personality is a predictor of resilience. As grit is an emerging concept in the literature, more concrete findings and evidence are required for a comprehensive and conclusive understanding of its implications.

Keywords

Grit Personality, Resilience, Student Subjective Well-Being, Covid-19 Pandemic, Malaysia

1. Introduction

Learning resources and experiences in higher education institutions have a significant impact on the quality of life of university students (Botha, Mostert, & Jacobs, 2019). Dynamic relationships between individuals and the educational environment influence students' development in terms of knowledge and skills,

thinking, professional identity, value, and psychological aspects. The spread of the Covid-19 pandemic recently all over the world has impacted various aspects of life such as economics, social, cultural, and universal well-being. Educational institutions were also not spared by the spread of the outbreak with many closing their premises and turning to online learning. The reality of the Covid-19 crisis has raised various issues related to the learning process such as access to learning technology, readiness, adaptation, assessment, and many others which have been widely discussed in an attempt to provide a comprehensive understanding of the impact of pandemics in the context of higher education. Psychological positive elements such as grit personality and resilience have been found to play an important role in developing university students' capacity to successfully cope with the challenges and pressure of academic life. Moreover, multiple studies have shown that there is a positive relationship between grit and resilience in students' subjective well-being (Kimhi et al., 2020; Lee, 2018; Li et al., 2018; Moen & Olsen, 2020).

Grit is one of the personality traits that explain one's ability to maintain determination and motivation for a long time despite failure or hardship (Duckworth et al., 2007). Studies have proven that grit personality is capable of influencing mental health, learning motivation, and students' academic achievement (Lam & Zhou, 2019). Meanwhile, resilience is the ability to function under adversity and is positively associated with important academic attitudes such as engagement, commitment, and performance. The American Psychological Association (2014) defined resilience as a process of adaptation in the face of difficulty, trauma, tragedy, threats, and even sources of stress. Indeed, students with high resilience have been found to gain many positive outcomes such as better mental health, greater well-being, and high self-efficacy. Resilience studies have been the focus of researchers during the Covid-19 pandemic as it measures the ability of students to adapt to managing their mental health impact throughout the pandemic outbreak (Bono et al., 2020).

A person who can maintain their mental health and rebuild themselves after facing any form of challenge or difficulty is a person with high levels of resilience (Vella & Pai, 2019). Kong et al. (2021) and Wang and Kong (2020) in their respective studies found that resilience traits are contributors to the well-being of life and self-confidence of adolescents and adults in China. From the findings, we understood the relationship between grit personality and resilience but there is the possibility that some students might show a low level of both grit and resilience level during the Covid-19 pandemic. Therefore, to address this disparity in level and understanding, both variables are discussed together since the previous studies suggest that personality grit could be a variable that predicts students' resilience level and resilience is one of the factors that promote students' well-being.

In addition, it is the intention of this study to add to the information and knowledge on the role of resilience in improving well-being and satisfaction among university students in Malaysia. Identifying the level of grit and resilience

of university students is important as various studies have proven that grit and resilience traits help individuals to rise from hardship and adapt to a challenging environment. There is a need for a study on grit to be conducted in Malaysia where there are social and cultural differences among its population and to fill the knowledge gap in studies on grit personality and resilience among Asian students. The objective of this study was thus to identify grit personality levels and resilience traits levels among university students in Malaysia as well as to study the relationship between grit personality and resilience traits. This paper is organised as follows. The first section is an introduction to the study while the second section deals with the literature reviews. The third section describes the research methodology used in this study. The fourth section presents the results and discusses the main findings that emerged from the research. The fifth and final section then presents the conclusions of the study, as well as the limitations and suggestions for future studies based on the findings.

2. Literature Review

2.1. Grit Personality

According to Duckworth et al. (2007), grit personality is a psychological variable that explains the strength of an individual's character, perseverance in the face of challenges, and motivation to achieve life goals despite the difficulties (Duckworth et al., 2007). In general, grit in the field of psychology is closely related to the concepts of perseverance, endurance, strength, hard work, desire to improve performance, and self-awareness. Nora Izaach (2017) explained that individuals with a high level of grit have the potential to achieve their purpose of accomplishing success. Duckworth et al. (2007) divided grit into two dimensions, namely: 1) consistency of interest which is defined as the ability to maintain interest in one's purpose; 2) perseverance of effort which is defined as individuals that are not afraid to face setback or obstacles in achieving their ambitions and work hard to achieve their long-term goals. Individuals with high grit will not change their direction or give up easily when they are frustrated or bored with something. They will continue to work hard and remain on the path they choose (Duckworth et al., 2007). In line with this explanation, Nora Izaach (2017) explained that individuals with a high level of grit have the potential to achieve their purpose in life. Based on the above explanation, it can be concluded that grit is durability and a passion for achieving long-term goals and having consistent perseverance to continue on the path of life despite encountering challenges and obstacles along the way.

The concept of grit has been widely studied especially in terms of its relationships with mental health, learning motivation, and academic achievement (Lam & Zhou, 2019). However, several studies explain that there are differences in influence in the context of culture (Datu, 2017; Datu et al., 2016, 2021). According to these studies, students in the United States have an independent self-view in which attainment of their preferences is individualistic compared to countries

with a collectivist culture such as the Philippines and Malaysia where students tend to have an interdependent self-view, in which harmonious relationships and preferences of others are emphasized. Therefore, to assume that grit is a universal manifestation could be misleading. Thus, there is a need to study the concept of grit among university students in Malaysia so that evidence on how grit is understood in this context can be attained.

2.2. Resilience

According to the American Society of Psychology, resilience is a process of bouncing back from difficult experiences and having a good adaptation process to difficulty, trauma, tragedy, threats, or significant sources of pressure (American Psychological Association, 2014). According to Yildirim and Belen (2019), resilience has been proven to positively affect various mental health and well-being factors such as life satisfaction, positive emotions, emotional control, and flourishing. Recently, the Covid-19 pandemic has impacted individuals in terms of life challenges and general well-being and resistance traits are seen to help individuals face stress by reviving their spirit and adapting to the difficult environment they encounter.

There are various instruments used to measure resilience among students and one of the most used is the Resilience Scale by Wagnild and Young (1993). This resilience refers to five (5) self-resistance features, namely self-reliance, meaningfulness, equanimity, perseverance, and existential aloneness.

The first dimension which is self-reliance refers to the ability to make decisions without expecting the help of others. The second dimension, namely meaningfulness refers to the ability of the individual to explain a meaning based on the events or events that occur. The third dimension which is, equanimity refers to the ability of the individual to balance the perspective between human life and experience. The fourth dimension, namely perseverance refers to the persistence of the individual despite hardships or frustration. The final dimension, which is existential aloneness refers to someone who feels that everyone is unique despite sharing the same experience; however, the level of acceptance is different for each individual. These five dimensions are measured to assess students' durability in adapting to the difficulties they face where a resilient person could cope with the changes or hardships that occur in their life (Wagnild & Young, 1993).

Past studies have suggested that resilience is widely related to several aspects such as wellbeing, mental health, and crisis management (Kong et al., 2021; Yildirim & Belen, 2019). However, there has not been much research focusing on the relationship between resilience and grit, especially among Malaysian students. Past studies have proven that resilience plays an important role in improving students' general well-being while in the middle of a crisis. In this regard, Malaysian university students are no exception as they too face many challenges while pursuing their studies. Thus, it is expected that this study would be able to provide evidence in terms of how resilience is understood in the Malaysian context.

3. Research Methodology

This study employed a quantitative research approach in the form of an online survey to identify the relationship between grit personality and resilience among students at Universiti Kebangsaan Malaysia.

3.1. Participant

The study sample consisted of 387 students ($n = 387$), between the age ranges of 19 to 50 years who were degree, master's, and Ph.D. students from public universities in Malaysia. The cluster random sampling technique was used in selecting the samples. The participants included 82 males (21.2%) and 305 females (78.8%). *Krejcie and Morgan (1970)* Sample Size Table were used to select 341 sample sizes from the 33,983 student population of the university.

3.2. Research Instrument

The questionnaire consisted of three parts. The first part or Part A consisted of questions on demographic while the second part or Part B comprised the Grit Personality Scale, and lastly, Part C contained the Resilience Scale. The questions in the demographic section contained items on respondent's age, gender, ethnicity, and level of education.

Part B of the questionnaire adopted the Short Grit Scale (Grit-S) by *Duckworth and Quinn (2009)* to measure grit personality and the Resilience Scale by *Wagnild and Young (1993)* to measure resilience. The Short Grit Scale (Grit-S) is a self-report questionnaire with 8 items covering two components where four (4) items measure the consistency of interest, and four (4) items measure the perseverance of effort. In this study, the grit component in the questionnaire was measured using a 5-point Likert scale where 1 represented the statement "Highly describes me" while 5 represented "Does not describe me at all".

The Resilience Scale by *Wagnild and Young (1993)* was built to measure the level of resilience through self-report. The questionnaire contains 25 items that included 5 resilience constructs which are self-reliant, meaningfulness, equanimity, perseverance, and existential aloneness. In this study, the resilience component in the questionnaire was measured based on a 7-point Likert scale where the score of 1 represented "Strongly disagree" while the score of 7 represented "Strongly agree". The score for each scale and subscale was calculated based on the mean value of the item in the scale and subscale.

A pilot study was conducted to test the validity and reliability of the instruments. This pilot study involved a total of 35 university students that have the same characteristics of real participants. The questionnaire is provided in the form of a google form and the link is provided to respondents. Cronbach's alpha coefficient was used to assess the reliability of the instruments. The Cronbach's alpha coefficient obtained for the grit was 0.906, and 0.913 for resilience

3.3. Data Analysis

This study used SPSS version 23.0 software to analyse the data. Since the level of

measurement for the demographic data was at the nominal level, the set of data was analysed descriptively. The descriptive analysis involved frequency, percentage, mean and standard deviation. Meanwhile data for the grit scale and resilience questionnaire were analysed using parametric analysis. To identify the level of grit personality among the university students, the mean score interpretation developed by Nunnally and Bernstein (1994) was used. The mean score range and its respective interpretation is shown in **Table 1**.

Similarly, an interpretation table based on a range of mean scores was developed to identify the level of students' resilience based on their scores on the 7-point Likert in the questionnaire, as shown in **Table 2** below.

The inferential analysis performed on the data included Pearson correlation, r , and regression statistics. The Pearson correlation was used to identify the relationship between the variables of grit personality and the student's resilience traits. The significance level was set at the $p < 0.05$ for the Pearson correlation method. The strength of the relationship between the variables is based on the coefficient value, r . The value of r (in the range -1 to $+1$) reflects the strength and direction of the relationship between the variables; if $r = -1$, it indicates that there is a high negative relationship between the two variables, and if $r = +1$ indicates that there is a high positive relationship between two variables. However, if $r = 0$, it indicates there is no relationship between the variables (Chua, 2011). The interpretation of the correlation coefficient value, based on Cohen (1988), is shown in **Table 3**.

When there is a significant relationship between the variables measured, regression analysis is then performed. This analysis is conducted to construct a prediction equation that would allow an independent variable to predict the dependent variable.

Table 1. Mean score interpretation for level of grit personality level (Nunnally & Bernstein, 1994).

Mean Score	Level
4.01 - 5.00	High
3.01 - 4.00	Medium High
2.01 - 3.00	Medium Low
1.00 - 2.00	Low

Table 2. Mean score interpretation for level of resilience.

Mean Score	Level
5.01 - 7.00	High
3.01 - 5.00	Medium
1.00 - 3.00	Low

Table 3. Interpretation of Pearson's correlation coefficient value, r (Cohen, 1988).

r Value	Correlation Strength
0.50 - 1.00	Strong
0.30 - 0.49	Moderate
0.10 - 0.29	Weak

4. Results

4.1. Descriptive Analysis

This section presents the results of the descriptive analysis performed on the demographic data of the respondents. A total of 387 respondents provided completed questionnaires which were valid for analysis. **Table 4** shows the respondents' profile based on the demographic information collected.

4.2. Level of Grit Personality and Resilience

This section presents the inferential analysis performed on the data to identify the students' level of grit and student resilience. **Table 5** shows the overall mean score obtained and the level of grit personality among respondents (UKM students). The result obtained in the study in this study showed that the dimensions with the highest grit personality mean scores were perseverance of effort (mean = 3.60, SD = 0.930697), and the consistency of interest (mean = 3.43, SD = 0.987). Both dimensions were scored at the medium-high level. Meanwhile, the overall mean score for grit personality for students was 3.51 (SD = 0.866), indicating a medium-high grit personality level.

Next, **Table 6** shows the mean scores and levels for the dimensions of resilience among respondents (UKM students) along with the overall mean score and level of resilience. The results showed that the dimensions of the resilience with the highest mean score was perseverance (mean = 5.66, SD = 0.930697), followed by self-reliant (mean = 5.62, SD = 0.845), existential aloneness (mean = 5.42, SD = 0.884), equanimity (mean = 5.23, SD = 0.892), and meaningfulness (mean = 5.21, SD = 0.867), in that order. Based on **Table 6**, the overall mean score for resilience among the students was 5.47 (SD = 0.884), indicating a high resilience level.

4.3. Relationship between Grit Personality and Resilience

To answer the research questions and objectives established for this study, which is to identify the relationship between grit personality and student resilience, a correlation analysis was performed. The null hypothesis established to test the relationship is as follows:

Ho1: There is no significant relationship between Grit Personality and Student Resilience.

Table 7 presents the results of the hypothesis testing performed to identify the relationship between variable of grit personality and student resilience. The results of the Pearson correlation analysis showed that the dimension of consistency of interest had a moderately significant relationship ($r = 0.337$, $p < 0.01$) with

Table 4. Respondent's demographic profile.

Demographic Information		Frequency	Percentage (%)
Gender	Male	82	21.2
	Female	305	78.8
Ethnicity	Malay	294	76.0
	Chinese	52	13.4
	Indian	35	9.0
	Others	6	1.6
Education level	Degree	244	63.0
	Master	107	27.6
	Doctor of Philosophy	36	9.3

Table 5. Level of grit personality.

	Mean	Standard Deviation (SD)	Level
Consistency of Interest	3.43	0.987	Medium-high
Perseverance of Effort	3.60	0.931	Medium-high
Overall (Grit Personality)	3.51	0.866	Medium-high

Table 6. Level of resilience.

	Mean	Standard Deviation (SD)	Level
Perseverance	5.66	0.869	High
Self-reliance	5.62	0.845	High
Existential aloneness	5.42	0.884	High
Equanimity	5.23	0.892	High
Meaningfulness	5.21	0.867	High
Overall (Resilience)	5.47	0.73822	High

Table 7. Relationship between grit personality and student resilience.

	Student Resilience		Correlation Strength
	r	Sig. p	
Consistency of Interest	0.337**	0.000	Moderate
Perseverance of Effort	0.456**	0.000	Moderate
Overall (Grit Personality)	0.442**	0.000	Moderate

**significant at 0.01 level.

resilience while the dimension of perseverance of effort also showed a moderately significant relationship ($r = 0.456$, $p < 0.01$) with resilience. Overall, grit

personality was found to have a moderate positive relationship with student resilience traits ($r = 0.442$, $p < 0.01$). The relationship shown was found to be significant. Therefore, the null hypothesis failed to be accepted. It is thus concluded that there is a significant relationship between grit personality and student resilience.

4.4. Regression Analysis of Grit Personality and Resilience

Ho2: Grit personality does not significantly predict student resilience level.

Based on the results presented in **Table 8**, the correlation between the two variables was found to be low ($r = 0.442$). The adjusted R² value of 0.193 indicated that grit personality contributed 19.3% to variance in student resilience.

Table 9 presents the results of the ANOVA in which a significant F statistic ($p = 0.000$) was obtained. The results of the simple regression tests show that grit personality has a significant relationship with student resilience, $F(1, 385) = 93.296$, $p < 0.001$, with adjusted R² value = 0.193.

Table 10 shows that a linear equation can be constructed based on the unstandardised coefficients:

$$y = c + b(x)$$

where: y is the estimated student resilience score value;

c is the constant value (intercept);

b is the regression coefficient (Grit Personality), and

x is the predictive variable score value (independent variable).

Table 8. Model summary.

Model	R	R ²	Adjusted R ²	SD
1	0.442 ^a	0.195	0.193	0.66318

a. Predictor: (Constant), Grit Personality.

Table 9. ANOVA^a.

<i>Model</i>	<i>Sum of square</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Regression	41.032	1	41.032	93.296	0.000 ^b
Residual	169.326	385	0.440		
Total	210.358	386			

a. Dependent Variable: Resilience; b. Predictors: (Constant), Grit Personality.

Table 10. Coefficients table^a.

	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	t	Sig.
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>		
Constant	4.150	0.141		29.433	0.000
Grit Personality	0.376	0.039	0.442	79.659	0.000

a. Dependent Variable: Resilience.

Results in **Table 10** show that there is a significant influence between grit personality and student resilience based on the following regression equation:

$$\text{Student Resilience} = 4.150 + (0.376 \times \text{Grit Personality})$$

The prediction of resilience is $4.150 + 0.376x$. Based on this equation, the student resilience level will increase by 0.376 for each grit personality level. The simple regression tests show that Grit personality has a significant relationship with student resilience, $F(1, 385) = 93.296$, $p < 0.001$, with an adjustable R^2 value = 0.193. The results of this linear regression analysis show that the model built has a significant F value ($p < 0.01$). This indicates that Grit personality can contribute 19.3% of the collective variant of student resilience. Therefore, the null hypothesis failed to be accepted. Grit personality thus significantly predicts student resilience.

The findings of this study suggest that the grit personality level of UKM students is a medium-high level, and their resilience level is high. Based on the findings from the correlation test, the study showed that there is a significant relationship between grit personality and student resilience among UKM students. The regression analysis also proves that Grit personality can predict the student's level of resilience significantly. This study tested both the hypotheses constructed for the study and found that both null hypotheses were rejected. **Table 11** presents a summary of the hypothesis testing results.

5. Discussion

Grit personality is a psychological trait that involves two factors, namely consistency of interest and perseverance of effort (Duckworth et al., 2007). Previous studies have linked Grit personality with various aspects such as academic achievement; however, not many studies have linked grit personality to resilience traits (Lam & Zhou, 2019). Based on the descriptive analysis performed, the result showed that the level of grit among the UKM students was medium-high. This finding suggests that university students have a medium-high level of consistency of interest and perseverance in the pursuit of university learning. This study was conducted during the pandemic when the learning approach was primarily online, and as such, students need to be more persistent despite the difficulties they face in the learning process (Aparicio et al., 2017). Among the challenges that students need to face are the difficulties of focusing when learning online, lack of resources and learning tools, and problems of internet instability

Table 11. Conclusion of hypothesis testing.

	<i>Hypothesis</i>	<i>Conclusion</i>
Ho1	There is no significant relationship between Grit personality and student resilience	Rejected
Ho2	Grit personality does not significantly predict student resilience level	Rejected

(Bibi Noraini, 2020). The challenges indirectly encourage students to shape themselves to be more focused on their interests even though online learning methods are considered less entertaining and less interesting for some students. As the pandemic has limited students access to the physical library to obtain learning materials, students need to find other alternatives such as accessing the e-library to complete the assigned tasks or study assignments. This reflects the perseverance of effort to overcome challenges which is a component of a grit personality. Consistency in learning interest and perseverance of effort to overcome the challenges encountered proves that university students are capable of maintaining their focus and effort in studies despite the changes in teaching and learning approaches and are able to quickly adapt to unexpected crises (Bono et al., 2020; Listio et al., 2020).

The findings of this study also showed that the student's resilience level was of a high level. Based on the scores for each resilience construct (self-reliance, meaningfulness, equanimity, perseverance, and existential aloneness), it can be concluded that university students can make any decisions without expecting the help of others, are able to explain a meaning based on events (ability to make reasoning), are able to balance the perspective of human life and experience, are able to maintain persistence despite hardship or frustration, and are able to understand that each individual is unique despite sharing the same experience (Wagnild & Young, 1993). Resilience is an important trait in life, especially for university students as students are exposed to learning challenges including unexpected challenges such as the pandemic outbreak experienced recently. This statement was reinforced by Paredes et al. (2021) who described the advantages of students with high levels of resilience are their ability to adapt and reduce future anxiety levels.

Based on the finding, students with a moderately high level of grit can increase their level of resilience in university education. This finding is also supported by several previous studies that have proven grit personality has a relationship with an individual's resilience level (Georgoulas Sherry & Kelly, 2019; Meyer et al., 2020). Other studies have also shown that there are relationships between these two variables. However, a slight difference was found in a study among health students where the strength of the correlation between grit and resilience showed a poor positive relationship (Calo et al., 2019). Additionally, Hayden (2018) found that grit personality did not show a clear relationship with resilience. Nonetheless, Hayden (2018) explained that this might be attributed to the possibility of bias in self-assessment where the respondents might have assumed that they have a higher level of grittiness. The variances in the findings give the impression that there could be other possible external factors (such as gender, ethnicity, education level, etc.) that may have influenced the relationship between these two variables. Therefore, there is a need to explore the relationship between grit personality and resilience even further by considering other possible external factors that may affect the relationship.

The findings of this study also showed that grit personality can predict the

level of resilience of an individual. In line with Musso et al. (2019), the findings suggest that grit personality may be described as having a similar concept to that of resilience; however, both variables can stand on their own. Most recent studies have identified the ability of Grit personality in predicting academic achievement, subjective well-being, and work performance (Azlin & Mohamad, 2019; Calo et al., 2019; Lam & Zhou, 2019). This study has contributed to the research gap by identifying the ability of grit personality to predict resilience. The results of this study also illustrate the important role of grit personality in increasing the level of resilience of students by fostering consistency in interest and perseverance in efforts. If students succeed in nurturing a grit personality, they can overcome any kind of challenge and would be able to deal with hardships, as well as bounce back from failure (Georgoulas Sherry & Kelly, 2019).

6. Conclusion

Based on the results obtained, the university students in this study were seen to have a medium-high level of grit personality and a high level of resilience. Grit personality has a significant relationship with resilience and can predict the individual's resilience. Both variables have an important role in shaping student personality to develop an individual who is consistent, hard-working, self-reliant, insightful, and calm in the face of hardship, with perseverance and ability to understand the uniqueness of life experiences.

Furthermore, grit affected college students' well-being through resilience during the recurrent outbreak of Covid-19. Therefore, lecturers, universities, and social departments should create a better learning environment for university students, pay more attention to cultivating and improving individual grit, attach importance to students' resilience and provide timely treatment, and try to reduce the adverse effects of stressful life events that university students may encounter in their life, to improve the general wellbeing of students.

Based on the finding of the study, three main directions for future research were identified for further exploration into the concept of grit and resilience so as to allow conclusive evidence to be gathered. Firstly, the use of the research method selected for this present study has limited the interpretation of the findings in that it has restricted the analysis from identifying any causal relationship or confounding factors that may have indirectly contributed to the main outcome in the relationship between grit and resilience. Therefore, in order to better understand the implication of grit and resilience on university students, a longitudinal study is suggested for future research.

Secondly, this study used a self-report measure, and this opened the possibility of self-report biases and social desirability. Hence, to have a better understanding of the implication and role of grit and resilience, is recommended that future research includes interviews with the respondents or a mixed method research design that combined both the qualitative and quantitative for the data collection. By using both the quantitative and qualitative research design, the limitations of both designs could be addressed (Kelle, 2006). Moreover, the quantita-

tive method in a mixed mode approach helps researchers to explore more variations of qualitative findings in other domains of the research variables.

Thirdly, most of the literature has focused on both individualistic and collectivist populations but achieving generalisation was not possible as each population group would have a different perspective on the concept of grit. Therefore, the implication based on the studies' findings may not be similar. As grit is still a growing area of study in the psychological field, the concept is still lacking in its generalisation. Hence, to reach a generalisation for the concept of grit, understanding of the cultures and background history of the specific target populations is necessary, and this can be achieved through the combination of both the quantitative and qualitative methods.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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