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Measuring Grit Gen Z: Adaptation and psychometric properties of Grit-O Indonesian version

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Abstract

Grit defined as persistence and passion for achieving long-term goals, has received increasing attention in psychology research due to its association with academic achievement, career, and resilience. Although the Grit-O Scale developed by Angela Duckworth (2007) has been widely used internationally, validated instruments for measuring grit in Indonesian cultural and linguistic contexts are still limited. Therefore, adapting and examining the psychometric properties of such scales is important to ensure their suitability for research and assessment in Indonesia. This research aims to adapt the Grit-O Scale of Angela Duckworth (2007) into the context of Indonesian culture and language. The study involved 153 respondents between the ages of 18 and over 28. The adaptation process is carried out through several stages: (1) translation, (2) synthesis, (3) back translate, (4) readability test, and (5) finalization. Reliability testing was performed using Omega McDonald and stratified alpha composites, while construct validity was checked using confirmatory factor analysis (CFA). The results showed that the adapted scale showed high reliability, with a value of 0.850, and a validity indicating good two-factor model conformity, with RMSEA = 0.043, CFI = 0.990, SRMR = 0.068, and TLI = 0.987. These findings provide preliminary evidence that the Indonesian version of the Grit-O Scale demonstrates acceptable reliability and validity for use in the Indonesian context.

Keywords: *adaptation scale; gen z; grit; Indonesian version; psychometrics evaluation*

INTRODUCTION

The concept of grit was introduced by Duckworth et al. (2007) as a combination of perseverance (perseverance of effort) and consistency of interest. Grit is an important factor in explaining how individuals are able to achieve long-term goals despite challenges and failures. Individuals with high grit levels tend to have resilience to adversity, focus on achieving long-term goals, and not easily give up when faced with failure (Duckworth & Quinn, 2009). In the context of the younger generation, especially Generation Z who grew up in the digital era

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and rapid change, grit is one of the important factors to understand their fighting power in facing academic and professional challenges (Arco-Tirado et al., 2018). Generation Z who are known to be adaptive but tend to seek instant results, measuring grit is important to understand their fighting power in studies and work (Duckworth & Quinn, 2009). Growing up in the digital era with characteristics of quickly adapting but also easily losing focus, grit is one of the important factors that can explain the difference in learning resilience and work performance (Tortul et al., 2020).

Research on grit has been widely conducted in various countries, some of these global level studies have sought to adapt the Grit-S and Grit-O measuring instruments to fit into their respective cultural contexts. For example, Fernández-Martín et al. (2018) conducted a cross-cultural adaptation of Grit-S in Spanish and found that the two-factor structure remained consistent with the original version. Another study by Arco-Tirado et al. (2018) also confirms that language adaptation requires a rigorous process, including translation, back-translation, and construct validity testing through confirmatory factor analysis. Another study by Ibrahim et al. (2023) on medical students in Malaysia also found that the translated version of Grit-S had good reliability (α = .71) as well as adequate model fit (CFI = .96, RMSEA = .041). This kind of adaptation emphasizes the importance of the translation process, back translation, and construct validity tests to ensure the accuracy of cross-cultural measurements. Meanwhile, a recent study by Du et al. (2024) on physical education teachers in China also strengthens the evidence for the validity of this scale construct in the East Asian context.

However, in Indonesia, research on grit is still limited, especially those that use the original version of the Grit-O (Original Grit Scale) measuring instrument which has more complete items than the Grit-S. In addition, research that specifically adapts grit measuring tools for the context of Generation Z, both students and young workers, is still rare. Most previous studies have focused on the context of primary or secondary education, without taking into account the differences in the psychological and professional characteristics of Generation Z who have already entered the workforce. This condition creates the need to adapt and validate the Indonesian version of the Grit-O measuring instrument that is linguistically and culturally relevant for the group.

Several studies related to other psychological scale adaptations in Indonesia show that the process of translation, back-translation, and psychometric validation is essential to ensure cultural and linguistic conformity. For example, the adaptation of the Academic Resilience Scale (Erawati et al., 2025) and the Resilience Evaluation Scale (Primasari et al., 2022) produced a measure with high reliability after passing construct validity tests and trials in the student population.

There has been no research that builds an instrument to measure GRIT through satisfactory psychometric measurements and reports the psychometric properties of instruments to measure GRIT in Indonesia, GRIT is a very important concept to be developed (Vivekananda, et al., 2024). Research on GRIT has mostly been conducted in the West, particularly in America, and until 2023 research on GRIT is the focus of the field of psychology.

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In Indonesia, research on GRIT is still limited to descriptive and correlational research. GRIT really needs to be developed and owned by everyone in themselves, so it is important to develop GRIT in Indonesia. This shows that there is still limited research on the development of GRIT measuring instruments in Indonesia (Tamba & Wicaksono, 2023). Research with grit scale in Indonesia is only limited to descriptive research and correlation research, there has been no research that discusses the development or validation of grit scale. Grit measuring instruments are important to be developed and modified considering that there is still a rare research using grit measuring instruments in Indonesia. Not only that, grit measuring instruments are also not necessarily acceptable to people in Indonesia because they are multi-cultural. This is possible to arise a new interpretation in the Indonesian people (Indraswari, 2020). Researcher wanted to adapt the GRIT measuring instrument for the Indonesian context due to the importance and scarcity of measurement tools for Gen-Z students and workers.

This research focuses on the adaptation and evaluation of the Indonesian version of Grit-O scale psychometry in Generation Z students and workers. The results of this adaptation are also expected to be used in the field of education and the world of work in order to understand the dynamics of perseverance and motivation of this generation more accurately, as well as to support the development of perseverance and resilience to long-term challenges.

Therefore, this study aims to adapt and validate the Indonesian version of Grit-O measuring tool in Generation Z students and workers. This group also has unique characteristics such as technology orientation, multitasking, and a tendency to seek instant results (Soeryanto & Kurniawan, 2023). Given that grit plays an important role in learning resilience and professional performance, the adaptation of the Indonesian version of Grit-O is urgently needed to support generational psychology research and human resource development in the modern era (Gunawan et al., 2024). At the very least, valid and reliable measuring tools in Indonesian limit the ability of researchers to understand and accurately measure grit in this population. Therefore, research on the adaptation and validation of the Indonesian version of Grit-O is important to fill this gap. This research is expected to provide a valid and reliable instrument to measure grit in the context of Indonesian culture and enrich the understanding of the fighting power and perseverance of the younger generation in the modern era.

RESEARCH METHOD

Research participants

Generation Z (Gen Z) is those born between 1997 and 2012 with an age range ranging from 13 to 28 years old (goodstat.id, 2023). Almost half of Generation Z has entered productive age, while the rest will only be able to enter the world of work in the coming years (idntimes, 2024). However, because this study focused on students and workers, participants were limited to 18-28 years old.

This study involved respondents obtained through the dissemination of online questionnaire links within a predetermined data collection period. During this period, 153

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complete and analyzeable responses were obtained. All responses that came in and met the criteria for the completeness of the answers were then used as research samples. The sampling technique used in this study is non-probability sampling with a convenience sampling approach, where participants who voluntarily fill out a questionnaire during the data collection period are used as research respondents. Thus, the sample size of 153 people represented the number of participants who participated and provided complete responses during the data collection process. This approach was chosen by considering the ease of access to respondents and the time efficiency in data collection.

Table 1. Description of the Demographic Condition of Research Respondents

Category	Number	Percentage %
Gender		
Woman	129	84,3
Man	24	15,7
Activity		
Worker	74	48,4
College student	79	51,6
Age		
18-21 years old	19	12,4
22-24 years old	98	64,1
25-28 years old	36	23,5

Data collection instruments

The instrument used in this study is the Grit-O Scale, which was developed by Duckworth et al. (2007) to measure grit levels. This scale consists of 12 items divided into two main dimensions, namely Consistency of Interest which reflects consistency in interests and goals that are not easily changed because they are distracted by other ideas/projects when completing tasks with various obstacles and problems, and staying focused on the original/main goal. Perseverance of Effort which reflects surviving challenges and obstacles in every process by being hardworking and diligent in completing tasks and meeting targets, and persevering in choices. Each item was answered using a four-point Likert scale, with a range of answers from 1 (not like me at all) to 4 (very much like me), and vice versa for unfavorable items. This scale allows respondents to indicate their level of agreement with each statement.

Data collection processing

According to Beaton et al. (2000), the order of stages of adaptation of measuring tools is 1) translation, 2) synthesis, 3) back translation, 4) expert judgement review, 5) trial. The researcher uses sampling based on the availability of elements and the ease of obtaining them in order to get a concept about grit that better describes the persistence and perseverance of gen z who work and become students in Indonesia. Data analysis testing is carried out through the JAMOVI statistical application.

Two translators whose mother tongue is the target language who is entrusted to carry out independent translations, then make a written report on the translation that has been

prepared, provide comments to highlight difficult and unclear phrases, justify the choice of translation and summarize in a written report, make a translation that can represent the language used so that it can be understood by the population, and highlight the ambiguous meaning of the original questionnaire. The readability test of the original statement item grit-o (2007) which amounted to 12 items was translated into Indonesian by two linguists from the original measuring instrument. Both translators are translators who are not familiar with the construction of grit measuring instruments. The two bilinguals (who spoke Indonesian and English) were instructed to translate the scale precisely based on the context, not verbatim.

The translation results were then formulated by the researcher to see the possibilities between the two outcomes. The results of the translations from the two linguists were then synthesized. The researcher synthesizes independently by resolving any discrepancies, to compiling the results of the synthesized translation. The two translations are then compared and synthesized into a single version through joint discussion between researchers and translators to reach agreement on the most conceptually appropriate term. The reverse translation process checks how well the adaptation item matches the original item. For the back translation, researcher discussed discrepancies with the two translators and then revised the translated version. This was followed by the use of online translation assistance and double-checking via DeepL, Microsoft Translator and Google Translate. This step aimed to ensure that the item's meaning remained consistent with the original version.

Perform the content validation process. This readability is tested by experts who have met the criteria for research focus on psychological research. To assess the comprehension and clarity of the language as well as to ensure that the instructions and all items can be easily understood by the respondent. The readability test was carried out through assessment by five colleagues in the psychology master's program at Yogyakarta State University. The assessors were selected based on relevant academic history, namely having taken advanced research methodologies, psychometrics, as well as the development and evaluation of psychological measurement tools as part of the master's curriculum. The assessment process is carried out within the framework of structured academic activities that encourage peer evaluation as part of instrument development learning. Thus, master's students in psychology are considered to have adequate academic capacity to evaluate the suitability, relevance and clarity of the content of the item with the measured construct. The collection of evidence of the validity of the content was carried out by calculating the Aiken's V index by five panels of experts who conducted the assessment. Items are rated from 1 (highly irrelevant) to 5 (highly relevant). The validity of the content was assessed using the Aiken's V coefficient, based on the assessment of a number of experts on the relevance of each item to the constructed measured construct and a value of 0.91 was obtained. Aiken's V value ≥ 0.80 is considered to indicate high content validity (Goyal et al., 2021; Amalia et al., 2025).

The process of adapting the instrument was carried out to ensure that the measuring instrument is linguistically and culturally relevant in the context of this research. Evaluation of psychometric properties is carried out to ensure that the measuring tool has adequate reliability

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and validity (Souza et al., 2017). Psychometric evaluation was carried out to test the validity of the content, reliability, and validity of the construct of the adapted instrument. The grit scale was deployed by collecting large-scale data to test the validity and reliability of the instrument in the context of the target culture. Analysis of results by validity test and reliability test of stratified alpha composite using the help of JAMOVI 2.3.28 software.

RESULTS AND DISCUSSION

Results

Reliability

Composite reliability is a technique for testing the overall reliability of an instrument construct consisting of several factors or dimensions and is able to measure the overall coefficient of the instrument. The reliability coefficient is at 0.0–1.0. The closer the number moves closer to the value of 1 indicates the perfect value. The minimum limit for a psychometric result to be said to be reliable is generally 0.70 - 0.80 as a determinant of whether the reliability of a measurement score can be said to be reliable or not. The reliability in this study uses the reliability of stratified alpha composites through the help of JAMOVI and excel statistical applications. The results of reliability estimates are presented in Table 2 below.

Table 2. Reliability statistic

Scale	Mc Donald □	Composite reliability stratified alpha
Dimension Perseverance of effort	0,770	
Dimension Consistency of interest	0,897	0,850
Grit	0,813	

The grit-o scale shows a high level of reliability (Mc Donald ω= 0.813), which indicates excellent internal consistency in measuring grit in gen z college students and workers. The dimensions of the grit-o scale show good reliability, consistency of interest (ω= 0.897), and perseverance of effort (ω= 0.77). According to the Reliability Coefficient Interpretation (Ponterotto & Ruckdeschel, 2007) the result was 0.85 with 153 samples and 12 items being included in the reliable category.

Table 3. Confidence Intervals

	total cons	total cons+persv	total persv
N	153	153	153
Mean	14.7	33.4	18.7
95% CI mean lower bound	14.1	32.5	18.0
95% CI mean upper bound	15.3	34.4	19.4

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The results of the table 3 showed that the average score on the consistency of interests dimension was 14.7 and the 95% confidence interval was [14.1, 15.3], which suggests that the estimated average population is likely to be within this range with a relatively moderate level of respondent variation. In the perseverance of effort dimension, an average score of 18.7 and a 95% confidence interval of [18.0, 19.4] were obtained. Meanwhile, the combined scores of the two dimensions showed an average of 33.4 and a 95% confidence interval of [32.5, 34.4]. The relatively narrow range of confidence intervals shows that the average population estimate is quite stable based on the analyzed sample data, and generally illustrates that respondents' confidence in the measured construct tends to be high (O'Brien & Yi, 2016).

Validity

Construct Validity tests the suitability of a measuring instrument with basic theory through factor analysis. Confirmatory Factor Analysis (CFA) to confirm the hypothesized factor structure based on the theory. The validity of the construct was tested using Confirmatory Factor Analysis (CFA) with several model feasibility indices (goodness of fit) such as RMSEA, SRMR, and χ^2/df (Zasiekina et al., 2024; Howat-Rodrigues et al., 2021). The model is stated to have a good fit if the RMSEA ≤ 0.08, CFI and TLI ≥ 0.90, and the SRMR ≤ 0.08 which indicates that there is no significant difference between the model and the empirical data (Wang et al., 2020). The validity of the construct is evaluated through Confirmatory Factor Analysis (CFA) to confirm the two-dimensional structure of grit: perseverance of effort and consistency of interests. The conformity index shows the extent to which the factor structure of the adaptation model is close to the original theoretical model and assesses the contribution of each item to the constructed being measured.

Table 4. Model fit indices two factor model

Model fit	Result	Criteria	Interpretation
SRMR	0,068	<0,08	Fit
RMSEA	0,043	<0,08	Fit
X^2/df	64,4/50= 1,28	<2	Fit
p	0,083	p > 0.05	Fit
CFI	0,990	>0,90	Fit
TLI	0,987	>0,90	Fit
NNFI	0,987	>0,90	Fit
RNI	0,990	>0,90	Fit
NFI	0,980	>0,90	Fit
RFI	0,974	>0,90	Fit
IFI	0,990	>0,90	Fit

Table 4 shows the results of the fit model test against the Indonesian version of the Grit Gen Z measurement instrument showing that the model has an excellent level of conformity. The SRMR (0.068) and RMSEA (0.043) values were below the 0.08 threshold, indicating that the model had an adequate goodness of fit. The ratio of χ^2/df = 1.28 and the value of p = 0.083 (p > 0.05) also showed that the model did not differ significantly from the empirical data, making it acceptable. All other conformity indices such as CFI (0.990), TLI/NNFI (0.987), RNI (0.990), NFI

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(0.980), RFI (0.974), and IFI (0.990) all went beyond the >0.90 criteria, which reinforces the evidence that this model is consistent with the data. Overall, these results indicate that the structure of the Indonesian version of the Gen Z Grit measurement model has an excellent fit model and can be used to validly measure grit constructs in the context of the Indonesian adolescent population.

The two-factor model represents the dimensions of consistency of interests and perseverance of effort indicating a good level of model suitability. Based on the evaluation criteria, the CFI and TLI value models that exceed 0.90 and RMSEA and SRMR that are below 0.08 show that the two-factor model has an adequate goodness-of-fit (Shi et al., 2019). In addition, standardized factor loadings are in the moderate to high range, which suggests that the factor is able to adequately represent latent constructs (Yaşlıoğlu & Toplu, 2020).

Table 5. Loading two factor model

Factor	Item number	Values	Interpretation
Consistency of interest	cons1	0.72	Fit
	cons2	0.66	Fit
	cons3	0.50	Fit
	cons4	0.58	Fit
	cons5	0.73	Fit
	cons6	0.66	Fit
Perseverance of efforts	persv1	0.73	Fit
	persv2	0.56	Fit
	persv3	0.90	Fit
	persv4	0.93	Fit
	persv5	0.94	Fit
	persv6	0.85	Fit

Based on the results of the loading factor analysis from table 5 information, it shows a loading factor value ranging from 0.50 to 0.94 which confirms that all loading values are significantly correlated with the latent factor measured. Most items show a factor loading value above 0.50 indicating a moderate to strong correlation with the latent factor, which strengthens the overall validity of the construct. Loading values between 0.4 and 0.9 are considered, loading below 0.40 can be considered weak. Low loading factors generally below 0.4 indicate a weak relationship between observed variables and latent factors. A commonly accepted threshold for factor loading is below 0.30 is generally considered low and can indicate that the item is not adequately measuring the latent construct. Loading between 0.30 and 0.70 is considered moderate and acceptable in most cases (Moshagen & Musch, 2013).

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Table 6. Loading one factor model

	Item number	Values	Interpretation
Factor 1	cons1	0.2136	Inadequate Model Fit
	cons2	0.1443	Inadequate Model Fit
	cons3	-0.0787	Inadequate Model Fit
	cons4	-0.1031	Inadequate Model Fit
	cons5	0.1466	Inadequate Model Fit
	cons6	0.1553	Inadequate Model Fit
	persv1	0.6092	Fit
	persv2	0.4372	Inadequate Model Fit
	persv3	0.7294	Fit
	persv4	0.8512	Fit
	persv5	0.8297	Fit
	persv6	0.6257	Fit

Table 7. Comparison model fit indices

Model	χ^2	df	CFI	TLI	RMSEA	SRMR
One-factor	249	54	0.741	0.684	0.153	0.149
Two-factor	81.1	53	0.963	0.954	0.058	0.072

To evaluate the unidimensional construct, the analysis showed that the single-factor model had an inadequate degree of conformity, with values $\chi^2(54) = 249$, CFI = 0.741, TLI = 0.684, RMSEA = 0.153, and SRMR = 0.149. These values are beyond the limits of the model feasibility criteria recommended in the CFA analysis (Sathyanarayana & Mohanasundaram, 2024), which indicate that one-dimensional models are not able to adequately explain the structure of the relationships between indicators. A comparison between the two models shows that the two-factor model provides a significantly better level of fit than the one-factor model. These findings provide empirical evidence that the constructs measured in this study are more accurately represented as multidimensional constructs consisting of two dimensions. Thus, the two-factor structure is maintained because it is representative with a theoretical framework. These results are in line with previous research that confirms that both dimensions represent individual perseverance in achieving long-term goals (Credé et al., 2017).

Model mismatches in CFA analysis are often triggered by the influence of cultural interpretations that mitigate the strength of the relationship between indicators and their latent variables. Cultural context differences can lead to translation loss or trigger social desirability bias, which statistically lowers the Estimate value and worsens the fit index of models such as CFI and RMSEA. This condition indicates a problem with measurement invariance, where instruments developed in one culture do not have functional equivalence when applied to populations with different cultural backgrounds, resulting in a loading factor value that requires a more culturally sensitive model respecification (Zhu et al., 2025).

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Discussion

The results of the CFA analysis show that the two-factor model has an excellent model fit rate, as indicated by the values of CFI (0.990), TLI (0.987), IFI (0.990), and RMSEA (0.043) and SRMR (0.068) which are within the recommended acceptance limits. This high conformity index indicates that the two-dimensional structure of grit—consistency of interest and perseverance of effort—is well represented in the empirical data in this study sample. In confirmatory factor analysis, a high conformity index value usually indicates that the theoretical model has a strong representation of the relationship between latent variables and their indicators (Khademi et al., 2023; Baharum et al., 2023). In addition, the high level of conformity can also be influenced by the homogeneity of respondent characteristics, especially if the sample comes from a relatively uniform population such as students with an equal educational background. This condition allows the psychological structure of the grit construct to be measured more stably, resulting in consistent parameter estimation and a high model fit index.

The findings of this study show the relevance of several grit studies in Indonesia. Research on the Indonesian college student population shows that the dimensions of perseverance of effort and consistency of interest are relatively stable structures in explaining grit constructs (Muhibbin & Wulandari, 2021; Rusli et al., 2021; Fun et al., 2023; Az Zahra et al., 2025). However, the value of the model suitability index in this study tends to be higher than some previous studies that reported CFI and TLI values in the range of 0.90–0.95. This difference is likely influenced by the characteristics of the sample. Nevertheless, the similarity in the pattern of the findings strengthens the argument that the two-factor grit structure remains relevant in the context of the Indonesian population, especially in the college student.

The findings on the strength of grit can also be understood within the framework of Indonesian culture that emphasizes the value of perseverance, patience, and hard work in achieving long-term goals. In societies that tend to be collectivists, such as Indonesia, individuals are often encouraged to maintain efforts and commitments to goals that are considered socially and academically valuable (Salima et al., 2024). Such cultural values can strengthen an individual's tendency to show perseverance in the face of adversity. Therefore, the results of this study not only reflect the psychological characteristics of individuals, but also show the possibility of the influence of cultural context on the way grit is manifested in Indonesian society.

Theoretically, this study provides additional support to the two-factor grit model put forward by Duckworth et al. (2007), which views grit as a combination of consistency of interest and perseverance in effort. The results of the analysis showed that the two-factor model had a much better conformity rate than the single-factor model, as seen from the comparison of the model conformity index which showed higher CFI and TLI values and a much lower RMSEA in the two-factor model. These findings reinforce the argument that grit is not a one-dimensional construct. Thus, this research contributes to strengthening the generalization of grit theory in the context of non-Western cultures, especially in Gen-Z in Indonesia.

When compared directly with grit validation research that has been conducted in Indonesia, the pattern of the results of this study shows similarities in terms of the structure of

factors that support the two-dimensional model. Several previous studies have reported that single-factor models tend to result in lower model fit rates than two-factor models (Hayat et al., 2025). The two-factor model shows a significant increase in conformity. The consistency of these findings shows that the two-factor grit structure has cross-study validity in the Indonesian context, thus supporting the use of this model in educational psychology research and organizational psychology in Indonesia.

Various studies have proven that the structure of the Grit-O factor corresponds to the two-factor model. This scale shows high internal reliability, with Cronbach's alpha values generally above 0.70 (van Zyl et al., 2022). Cross-cultural research has also shown that Grit-O has good measurement invariance across different age groups, education levels, and cultural contexts (van Zyl et al., 2022). This makes Grit-O an instrument that can be used consistently in a wide range of populations. In the context of education, Grit-O has been used to predict academic achievement and learning persistence, both in general students and first-generation students (Midkiff et al., 2017). Adaptations of this scale have also been carried out in various countries, such as Colombia, the Netherlands, and India, which show good results of validity and reliability (van Zyl et al., 2020).

Various studies have shown that Grit-O has good factor validity, with a consistent two-dimensional structure (van Zyl et al., 2020; Villegas et al., 2022). Cronbach's alpha values for both dimensions are usually above 0.70 indicating adequate internal reliability (Li et al., 2023). In addition, some cross-cultural studies have also found that Grit-O shows good measurement invariance between groups based on gender and cultural context (Li et al., 2023).

In terms of psychometric properties, the results of the analysis show that the structure of the Grit-O factor tends to be stable and consistent in various populations, with two main dimensions, namely perseverance of effort and consistency of interest (van Zyl et al., 2020; Stone & Schmidt, 2022). The construct validity test through Confirmatory Factor Analysis (CFA) supports this two-factor model in students from various countries. In addition, internal reliability measured using Cronbach's alpha is generally above 0.70, indicating good internal consistency (Alhadabi et al., 2019; Nogueira-López et al., 2023; Young & Archer, 2023).

In the context of Generation Z, both students and workers have unique characteristics that influence the manifestation of grit, such as a tendency towards career flexibility and an orientation towards work-life balance. Studies in college students show that Grit-O is able to provide valid and reliable results in measuring perseverance and consistency of interest (Tortul et al., 2020; Schmidt et al., 2021). The process of adapting the Grit-O (Original Grit Scale) for Generation Z students and workers is an important step to ensure the equality of meaning and cultural relevance of each item of statement. Adaptations are done through translation and back-translation processes to maintain semantic equivalence between the original version and the translated version. In addition, cultural adjustments are made to ensure that the items of scale can be understood according to the social context and values of the target population (Fernández-Martín et al., 2018; Jaramillo-Rincón et al., 2024). The involvement of linguists in this stage is crucial so that the validity of the content is maintained.

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In terms of psychometric properties, the Grit-O scale shows consistent results in a wide range of cross-cultural and population contexts. In a study on university students in Lima, Peru, it showed good internal reliability with Cronbach's alpha values of 0.72 and omega of 0.79 (Villegas et al., 2022). Other studies have also found strong construct validity as well as adequate internal consistency in Argentine students (Tortul et al., 2020). This shows that Grit-O can be relied upon to measure two main dimensions, namely perseverance of effort and consistency of interest, as also found in studies in the Netherlands and the United States (Stone & Schmidt, 2022; van Zyl et al., 2020).

In the context of Generation Z, Grit-O has proven to be relevant for measuring perseverance and consistency of interest, both in the educational and work environments. In students, the results of the scale adaptation showed good validity and reliability, as well as a positive correlation with academic engagement (Villegas et al., 2022; Tortul et al., 2020). On the other hand, in the working population, studies show that Grit-S (short version of Grit-O) also has adequate psychometric properties, such as in physical education teachers and amateur runners (Du et al., 2024; Nogueira-López et al., 2023). This indicates that the grit construct can be widely applied to the young working population, including Generation Z.

Grit means keep moving forward. Grit means sticking to an interesting and meaningful goal. Grit means investing, week after week after year, in challenging practices. Grit means to fall seven times, and get up eight times. Grit predicts high achievement by encouraging individuals to show up and work very hard, constantly, toward a goal that is highly valued over the years. It's about having direction and commitment to keep working hard even after experiencing difficulties or failures. The ability to be steadfast, stick to what matters and bounce back from failure is an essential component of success. This adaptation as a whole can be said to be good overall in measuring grit constructs in the context of Indonesian culture. Thus, the Indonesian version of Grit-O can be used as an instrument to measure grit in Indonesia.

CONCLUSION

The findings of this study show that evidence supporting the adaptation of the Grit-O Scale to the Indonesian cultural and linguistic context has been successfully carried out. Preliminary evidence supports that the Indonesian version of the scale demonstrates acceptable reliability and validity for measuring perseverance among Generation Z students and workers in Indonesia. In this sample, the scale seems to serve as a useful tool for assessing grit in a local context. However, these findings should be interpreted with caution, as broader implementation requires additional psychometric evaluation. Further research is suggested to involve a more diverse sample in terms of age group, occupational background, and sociocultural context to reinforce the generalization of the findings. In addition, further analyses such as measurement invariant testing and longitudinal studies are needed to check the stability of the persistence construct in different groups and over time. In a practical context, the Indonesian version of the Grit-O Scale can serve as an early assessment tool in higher education and organizational settings to explore perseverance and consistency of purpose among young individuals in

Indonesia.

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Appendices

Final version of the Grit-O adaptation scale (Duckworth., Peterson., Matthews., & Kelly., 2007)

Dimension	No item	Item description	
		Original version	Adapted version
Consistency of interests	1.	I often set a goal but later choose to pursue a different one	*Saya sering menetapkan tujuan, tetapi kemudian saya memilih untuk mengejar tujuan yang berbeda*
	2.	New ideas and new projects sometimes distract me from previous ones.	*Ide-ide dan proyek-proyek baru terkadang mengalihkan perhatian saya dari yang sebelumnya*
	3.	I become interested in new pursuits every few months.	*Saya menjadi tertarik pada kegiatan baru setiap beberapa bulan*
	4.	My interests change from year to year.	*Minat saya berubah dari tahun ke tahun*
	5.	I have been obsessed with a certain idea or project for a short time but later lost interest.	*Saya pernah terobsesi dengan ide atau proyek tertentu dalam waktu yang singkat, tapi kemudian kehilangan minat*
	6.	I have difficulty maintaining my focus on projects that take more than a few months to complete.	*Saya merasa kesulitan mempertahankan fokus saya pada proyek yang membutuhkan waktu lebih dari beberapa bulan untuk menyelesaikannya*
Perseverance of efforts	7.	I have achieved a goal that took years of work.	*Saya pernah mencapai tujuan yang membutuhkan kerja keras selama bertahun-tahun*
	8.	I have overcome setbacks to conquer an important challenge.	*Saya telah mengatasi kemunduran untuk menaklukkan tantangan penting.*
	9.	I finish whatever I begin.	*Saya menyelesaikan apapun yang saya mulai*
	10.	Setbacks don't discourage me.	*Kemunduran tidak membuat saya patah semangat*
	11.	I am a hard worker.	*Saya seorang pekerja keras*
	12.	I am diligent.	*Saya adalah orang yang rajin*