

DEVELOPMENT AND VALIDATION OF GRIT SCALE IN URDU LANGUAGE FOR ADULTS

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DOI: <https://doi.org/10.5281/zenodo.15088213>

| Received | Revised | Accepted | Published |
|------------------|-------------------|-------------------|-------------------|
| 03 October, 2024 | 06 November, 2024 | 23 December, 2024 | 30 December, 2024 |

ABSTRACT

The objective of the study was to develop and validate a grit scale in the Urdu language. A cross-sectional survey research design and purposive sampling technique were used. Data was collected from Central Punjab, Pakistan, from February 2022 to December 2023. The grit scale was based on six factors including Perseverance of Effort, Steadfastness in Adverse Situations, Perseverance-Commitment, Adaptability to New Situations, Spirited Initiative, and Consistency of Interest. Initially, 73 statements were developed using both inductive and deductive approaches. After expert evaluation, 70 out of 73 items were selected. A pilot study further reduced the scale to 62 items. For the exploratory factor, data was collected using a self-reported questionnaire from 600 participants. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity showed acceptable values above 0.6, indicating the sampling adequacy of the Grit Scale. The KMO value of the grit scale was 0.969. Further, for confirmatory factor analysis data was collected again from 802 participants, and the CFI was 0.942, both with significant *p*-values of less than 0.01. The results indicated appropriate model fit indices for a significant model fit. The grit scale demonstrated high reliability, with a Cronbach's alpha of 0.942 at a *p* < 0.001 level of significance. After all analyses, 20 reliable and valid items were retained in the scale.

Keywords: Grit, Urdu, Perseverance-commitment, Steadfastness in adverse situations, Adaptability of new situations, Perseverance of effort, Consistency of interest and Spirited-initiative.

INTRODUCTION

Modern technological developments and the emergence of a global culture have profoundly altered human lifestyles and raised the standard for success in life. The traditional focus on cognitive abilities in education has proven insufficient in preparing students for future challenges (Bowles et al., 2001; Heckman & Rubinstein, 2001). According to researchers, non-cognitive abilities are crucial for promoting good psychological health and character

development (Farrington et al., 2012; Kautz et al., 2014; Kautz & Zanolini, 2014; Jones et al., 2015;). Shechtman et al. (2013) emphasized that these factors are essential for an individual's ability to overcome life's challenges. Along with cognitive development, non-cognitive skills equip students with the tools they need to achieve success and navigate the complex problems that life presents (Gutman & Schoon, 2013).

The concept of grit as a predictor and vital element of success and achievement has garnered significant interest in educational and personality psychology over the last decade. Moreover, grit has gained acceptance in various other fields, including business, medicine, and education. Defined as passion and perseverance toward long-term goals, grit has been identified as a crucial personal trait for achieving objectives in diverse situations. Grit is closely tied to a specific type of hope, which refers to the belief that tomorrow can be better than today. This hope is rooted in the idea that we can shape our future through our own actions. However, feeling optimistic about the future is different from making a conscious decision to take action toward improvement (Duckworth et al., 2007).

There are six domains of grit including Perseverance of Effort, Steadfastness in Adverse Situations, Perseverance-Commitment, Adaptability to New Situations, Spirited Initiative, and Consistency of Interest. Perseverance of effort refers to an individual's intrinsic capacity to exert sustained, long-term effort toward achieving personal or professional goals despite obstacles or failures (Duckworth et al., 2007). Remaining steadfast in challenging circumstances signifies obedience to the pursuit of goals, indicating a person's ability to maintain determination even in the face of adversity (Scarre, 2012). This steadfastness also reflects a strong sense of moral integrity (Kelly et al., 2014).

Furthermore, grit encompasses the behaviors individuals engage in to overcome obstacles and persist in their interests, commitments, and efforts despite setbacks and failures (Duckworth, 2007). Grit enables people to uphold their commitments, and it is considered that their personality is the result of perseverance rather than chance (Sudina et al., 2021).

Adaptability, another aspect of grit, involves adjusting to new situations. Adaptability is defined as the ability to constructively manage one's psycho-behavioral processes in response to unfamiliar, shifting, or unpredictable circumstances (Martin et al.,

2012). According to VandenBos (2007), adaptability is "the ability to make appropriate responses to changed or changing situations; the ability to modify or adjust one's behavior when confronting different circumstances or individuals." This ability includes affective responses to novelty and change, along with cognitive and behavioral adjustments (Martin & Rubin, 1995; Martin et al., 2013).

Finally, spirited initiative refers to the capacity to make quick decisions and take action. The concept of "titiksha" (Srivastva & Cooperrider, 1998) describes spirited initiative as an optimistic, resourceful approach to overcoming obstacles.

Interest is a crucial motivator for achieving life's goals, as it reflects a desire to learn, explore the world, embrace novelty, and remain open to creativity and diversity. Passion is often rooted in an area of interest. Research has shown that consistency of interest is correlated with mental health, and it can also enhance the meaning of life through traditions and practices (Zhang et al., 2018).

To assess all possible forms of grit among adults, there was a pressing need to develop a grit scale in the Urdu language that encompasses all relevant domains of grit. The present scale is based on six factors including Perseverance of Effort, Steadfastness in Adverse Situations, Perseverance-Commitment, Adaptability to New Situations, Spirited Initiative, and Consistency of Interest.

Methodology

In the scale development process, both deductive and inductive methods were employed. The deductive approach involved a literature review on the construct to clarify the nature and scope of the target tool. The inductive method included conducting nine interviews as Kline (2005) suggests that information tends to be repeated after about eight interviews, making this sample size sufficient. These interviews were conducted to understand and confirm the dynamics of the grit construct being applied.

The study was conducted on adults aged 19 years and above. The sample was collected

from Central Punjab, Pakistan, between February 2022 and December 2023. A cross-sectional survey research design and purposive sampling technique were employed for data collection. Permission for the study was obtained from the Advanced Studies and Research Board (A.S.R.B) at the University of Lahore, Sargodha Campus, Pakistan.

Data was collected using a self-reported questionnaire, and written informed consent was obtained from participants prior to data collection. The purpose, significance, and response format of the study were explained to the participants. They were assured of confidentiality and thanked at the end of the activity.

Initially, 73 statements were developed using both deductive (literature review and previous scales) and inductive (interviews with the target population) methods. For expert evaluation of the scale, five subject experts including four PhDs and one M.Phil. scholar from the Department of Psychology at the University of Lahore, Sargodha Campus, Pakistan were consulted. Only clear, suitable, and significantly relevant items were selected. Based on the expert evaluations, 12 items were refined, and 3 irrelevant, repetitive, or ambiguous items were discarded. The response options for the items were also confirmed at this stage. The scale was finalized as a 5-point Likert

scale, ranging from 1 = Never to 5 = Always. Data analysis was performed using the Statistical Package for Social Sciences (SPSS-22) and Analysis of Moment Structures (AMOS-22). Reliability analysis, exploratory factor analysis (EFA), and confirmatory factor analysis (CFA) were conducted on the data.

A pilot study was conducted on the remaining 70 items with a sample of $n = 200$, and 62 items were retained after the pilot study. For the exploratory factor, data was collected using a self-reported questionnaire from 600 participants. The Sample adequacy was assessed using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity. The KMO value was 0.969, and Bartlett's test was significant at $p < .001$. Items with factor loadings below 0.4 were discarded, resulting in six factors with 54 remaining items, and factor loadings ranging from 0.405 to 0.718. The high KMO value indicates strong sample adequacy, as KMO values of 0.6 and above are considered suitable for confirming sample adequacy (Pallant, 2013). To confirm the results of EFA the CFA was done on 30 items with the sample $N = 802$. CFA confirm the 6 factors including Perseverance of effort, Steadfastness in adverse situations, Perseverance-commitment, Adaptability of new situations, Spirited-initiative, Consistency of interest of Grit scale.

Results

Table-I: Factor Loading of Grit Scale (N = 600)

| Item no | PE | Item no | SAS | Item no | PC | Item no | ANS | Item no | SI | Item no | CI |
|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|
| 1 | .538 | 16 | .538 | 22 | .653 | 9 | .635 | 13 | .643 | 27 | .566 |
| 2 | .600 | 17 | .600 | 23 | .699 | 10 | .570 | 14 | .588 | 28 | .639 |
| 3 | .518 | 18 | .518 | 24 | .717 | 11 | .679 | 15 | .569 | 29 | .635 |
| 4 | .626 | 19 | .626 | 25 | .689 | 12 | .565 | - | - | 30 | .539 |
| 5 | .631 | 20 | .631 | 26 | .538 | - | - | - | - | - | - |
| 6 | .595 | 21 | .595 | - | - | - | - | - | - | - | - |
| 7 | .515 | - | - | - | - | - | - | - | - | - | - |
| 8 | .530 | - | - | - | - | - | - | - | - | - | - |

Note: PE = Perseverance of effort, SAS= Steadfastness in adverse situations, PC= Perseverance-commitment, ANS=

Adaptability of new situations, SI=Spirited-initiative, CI=Consistency of interest

Table-II: Model Fit Summary of 30 Items (N = 802)

| P-Value | CMIN/DF | GFI | CFI | RMSEA | TLI | RMR |
|---------|---------|-----|-----|-------|-----|-----|
|---------|---------|-----|-----|-------|-----|-----|

| | | | | | | |
|------|-------|------|------|------|------|------|
| .000 | 4.098 | .924 | .942 | .058 | .929 | .039 |
|------|-------|------|------|------|------|------|

Figure-I: Confirmatory Factor Analysis 21 items

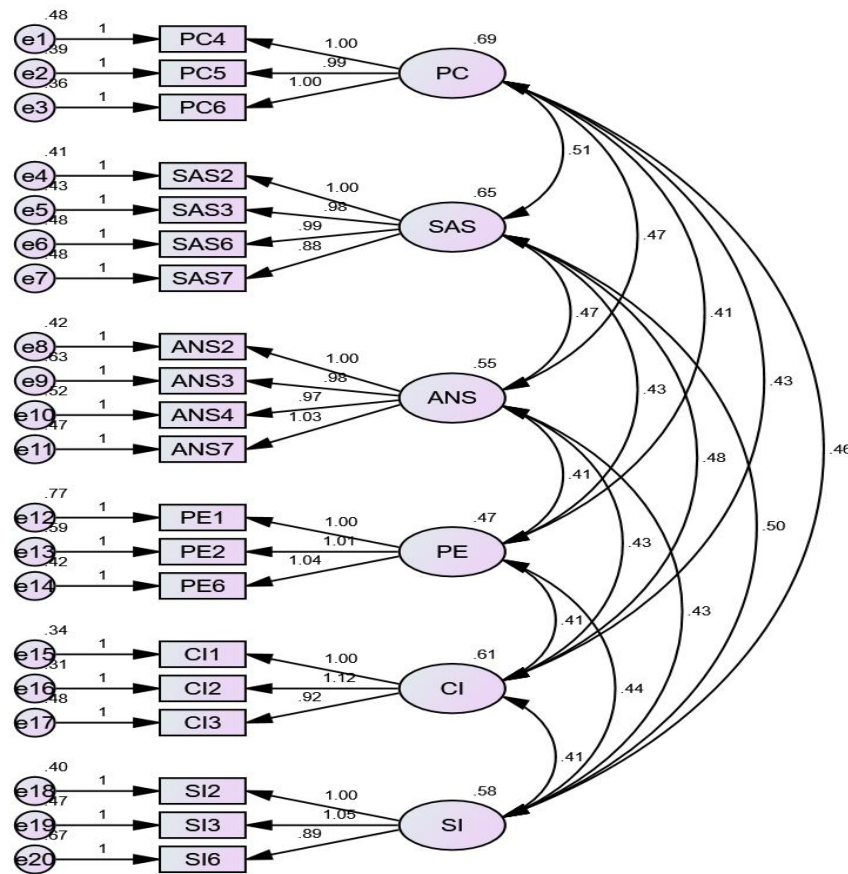


Table-III: Cronbach Alpha for the Grit Scale and its Six Subscales (N = 802)

| Subscales | N | α |
|-------------------------------------|---|----------|
| Perseverance-commitment | 3 | .850 |
| Steadfastness in adverse situations | 4 | .841 |
| Adaptability to new situations | 4 | .812 |
| Perseverance of effort | 3 | .713 |
| Consistency of interest | 3 | .830 |
| Spirited initiative | 3 | .760 |

Discussion

The present study aimed to develop and validate a Grit Scale in the Urdu language, encompassing six key domains: Perseverance of Effort, Steadfastness in Adverse Situations, Perseverance-Commitment, Adaptability to New Situations, Spirited Initiative, and Consistency of Interest. The scale demonstrated strong psychometric properties, including high reliability and validity, making it a robust tool for assessing grit among Urdu-speaking populations. The findings align with previous research on grit

as a multidimensional construct that plays a critical role in achieving long-term goals and overcoming challenges (Duckworth et al., 2007; Duckworth & Quinn, 2009).

The exploratory factor analysis (EFA) revealed six distinct factors, consistent with the theoretical framework of grit. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (0.969) and Bartlett's Test of Sphericity ($p < .001$) confirmed the suitability of the data for factor analysis. The high KMO value indicates that the sample size was adequate, and the data were well-

suited for identifying underlying factors (Pallant, 2013). The factor loadings ranged from 0.405 to 0.718, suggesting that the items were strongly associated with their respective factors. This finding is consistent with previous study that emphasized the importance of perseverance, adaptability, and consistency in grit (Duckworth et al., 2007).

Confirmatory factor analysis (CFA) further validated the six-factor structure, with a Comparative Fit Index (CFI) of 0.942 and a Root Mean Square Error of Approximation (RMSEA) of 0.058, indicating an excellent model fit (Hu & Bentler, 1999). The results of the CFA support the theoretical model of grit as a multidimensional construct, consistent with earlier research (Duckworth et al., 2007). The high reliability of the scale, as evidenced by a Cronbach's alpha of 0.942, further underscores its robustness. The subscales also demonstrated strong internal consistency, with Cronbach's alpha values ranging from 0.713 to 0.850, indicating that each domain reliably measures its respective construct.

The development of this Urdu Grit Scale addresses a significant gap in literature, as there is a lack of culturally appropriate tools to measure grit in Urdu-speaking populations. The inclusion of culturally relevant domains, such as steadfastness in adverse situations and spirited initiative, reflects the unique socio-cultural context of Pakistan. This aligns with the findings of Srivastva and Cooperrider (1998), who emphasized the importance of cultural adaptability and resilience in overcoming challenges. The scale's ability to capture these nuances makes it a valuable tool for researchers and practitioners working in diverse cultural settings.

The findings also highlight the importance of grit in promoting psychological well-being and success. Consistent with previous research, grit was found to be closely associated with perseverance, adaptability, and consistency of interest, all of which are critical for achieving long-term goals (Duckworth et al., 2007; Zhang et al., 2018). The scale's emphasis on adaptability to new situations is particularly relevant in today's

rapidly changing world, where individuals must constantly adjust to new challenges and environments (Martin et al., 2012). This aligns with VandenBos's (2007) definition of adaptability as the ability to modify one's behavior in response to changing circumstances.

The study has several practical implications. The Urdu Grit Scale can be used in educational, organizational, and clinical settings to assess individuals' levels of grit and identify areas for intervention. For example, educators can use the scale to identify students who may benefit from programs aimed at enhancing perseverance and adaptability. Similarly, organizations can use the scale to select employees who demonstrate high levels of grit, which is associated with better job performance and resilience (Eskreis-Winkler et al., 2014). Clinicians can also use the scale to assess clients' ability to cope with adversity and develop targeted interventions to improve their psychological well-being.

Despite its strengths, the study has some limitations. The sample was drawn exclusively from Central Punjab, Pakistan, which may limit the generalizability of the findings to other regions or cultural contexts. Future studies should validate the scale in diverse populations to ensure its broader applicability. Additionally, the cross-sectional design of the study limits the ability to draw causal inferences. Longitudinal studies are needed to explore the long-term effects of grit on success and well-being.

Conclusion

In conclusion, the Urdu Grit Scale is a reliable and valid tool for assessing grit in Urdu-speaking populations. Its development represents a significant contribution to the field of psychology, providing researchers and practitioners with a culturally appropriate instrument to measure this important construct. The scale's strong psychometric properties and alignment with theoretical models of grit make it a valuable tool for future research and practice.

Conflict of Interest:

There is no conflict of interest.

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