# DEVELOPMENT OF A VALID INSTRUMENT FOR ASSESSING UNIVERSITY STUDENT CHARACTER STRENGTHS IN PAKISTANI ACADEMIC SETTING

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**ASIA e UNIVERSITY**

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# DEVELOPMENT OF A VALID INSTRUMENT FOR ASSESSING UNIVERSITY STUDENT CHARACTER STRENGTHS IN PAKISTANI ACADEMIC SETTING

ZANE ASHER GREEN

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## ABSTRACT

This research comprised two studies. The purpose of Study 1 was to develop and evaluate the psychometric properties of the Character Strengths Scale for University Students (CSSUS)—a domain-specific measure reflecting the use of character strengths in the academic setting. The purpose of Study 2 was to test the application of the CSSUS. The study population comprised students from 18 undergraduate programs under the disciplines of social sciences, management sciences, and computer sciences at 22 universities of Islamabad. A random name picker on the Internet randomly identified three sets of different undergraduate programs from the 18. A stratified random sample was drawn from each set. Derived from best practices, the item development of the CSSUS was based on four steps: (1) identification of the domain, (2) item generation, (3) content validity, and (4) field pre-testing of the items of the CSSUS. Furthermore, findings of Study 1 based on scale development (extraction of factors) and scale evaluation (tests of dimensionality, validity, and reliability) indicated that the CSSUS has good psychometric properties. Exploratory factor analysis (EFA) performed on sample 1 indicated a four-factor structure of the CSSUS with eigenvalues greater than one. Four factor retention criteria were employed. Three criteria indicated a four-factor structure of the CSSUS. However, one criterion indicated a two-factor structure, which was also tested. Results indicated that as compared to the two factors, the four factors could be better interpreted because they presented a psychologically meaningful solution having greater conceptual clarity. The four factors were named as justice and positivity, wisdom and excellence, courage and cautiousness, and knowledge and purposefulness. Next, confirmatory factor analysis (CFA) was performed on sample 2 to test the two- and four-factor structures of the CSSUS obtained through EFA. CFA also tested a unidimensional model of the CSSUS to examine whether the character/academic strengths construct was best explained by a single underlying factor or multiple distinct factors. Results revealed that as compared to the one- and two-factor structures, the four-factor structure had the best fit. Tests of validity and reliability were also performed on sample 2. The CSSUS and its subscales demonstrated good concurrent validity as each was significantly positively correlated with the Personal Growth Initiative Scale and Brief Perceived Social Support Questionnaire. The CSSUS and its subscales also showed adequate convergent validity as each was significantly positively correlated with the Brief Strengths Scale and its subscales. Further, the CSSUS and its subscales demonstrated appropriate discriminant validity because each was not significantly correlated with the Academic Anxiety Scale. The CSSUS and its subscales also showed adequate internal consistency reliability and the CSSUS strong split-half reliability. Moreover, based on sample 1, character virtues added unique variance in the prediction of career adaptability above and beyond the variance accounted for by gender, age, and personality traits. This indicated incremental validity of the CSSUS. Additionally, findings of Study 2—based on sample 3—indicated that three virtues (justice and positivity, wisdom and excellence, and knowledge and purposefulness) out of the four moderated the relationship between academic stress and academic thriving. Also, three virtues (wisdom and excellence, courage and cautiousness, and knowledge and purposefulness) out of the four mediated the relationship between prosocial behavior and academic engagement. The two strengths-based applications provide additional evidence of the construct and predictive validity of the CSSUS. Overall, researchers in Pakistan and abroad may use the psychometrically sound

CSSUS to add greater specificity to results pertinent for furthering academic development, student learning, and career readiness.

**Keywords:** Character strengths scale for university students, character virtues, personal growth initiative, social support, academic anxiety, career adaptability, personality traits, academic stress, academic thriving, prosocial behavior, academic engagement

## APPROVAL

This is to certify that this thesis conforms to acceptable standards of scholarly presentation and is fully adequate, in quality and scope, for the fulfilment of the requirements for the degree of Doctor of Philosophy.

The student has been supervised by: **Professor Dr Gunasegaran Karuppannan**

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This thesis was submitted to Asia e University and is accepted as fulfilment of the requirements for the degree of Doctor of Philosophy.

**Professor Dr Siow Heng Loke**
Asia e University
Chairman, Examination Committee
(12 August 2024)

## DECLARATION

I hereby declare that the thesis submitted in fulfilment of the PhD degree is my own work and that all contributions from any other persons or sources are properly and duly cited. I further declare that the material has not been submitted either in whole or in part, for a degree at this or any other university. In making this declaration, I understand and acknowledge any breaches in this declaration constitute academic misconduct, which may result in my expulsion from the programme and/or exclusion from the award of the degree.

**Name**: Zane Asher Green

**Signature of Candidate**: **Date**: 12 August 2024

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| ACS-RS | Applicability of Character Strengths Rating Scales |
| ACST | Abbreviated Character Strengths Test |
| EFA | Exploratory Factor Analysis |
| CFA | Confirmatory Factor Analysis |
| CFI | Comparative Fit Index |
| CCMA | Career Construction Model of Adaptation |
| CSRF | Character Strengths Rating Form |
| CSSUS | Character Strengths Scale for University Students |
| CS-SDS | Character Strengths—The Semantic Differential Scale |
| CSSUS | Character Strengths Scale for University Students |
| CVQ | Chinese Virtues Questionnaire |
| GACS | Global Assessment of Character Strengths |
| IPIP-VIA | International Personality Item Pool Values in Action |
| IVyF | Inventario de Virtudes y Fortalezas [Inventory of Virtues and Strengths] |
| KMO | Kaiser-Meyer-Olkin |
| LISREL | Linear Structural Relationships |
| NFI | Normed Fit Index |
| ORG-B5 | Organizational Frame of Reference Big-Five Personality Measure |
| OUOU | Overuse, Underuse, and Optimal-Use |
| PAF | Principal Axis Factoring |
| RMSEA | Root Mean Square Error of Approximation |

| | |
|---|---|
| SEM | Structural Equation Modeling |
| SKS | Strengths Knowledge Scale |
| SMCS | Short Measure of Character Strength |
| SPSS | Statistical Package for Social Sciences |
| SRCS | Self-Rated Character Strengths |
| SRMR | Standardized Root Mean Square Residual |
| SSS | Signature Strengths Scale |
| SUDCO | Strengths-Use and Deficit Correction Behavior Scale |
| SUS | Strengths Use Scale |
| TICS | Three-dimensional Inventory of Character Strengths |
| TLI | Tucker-Lewis Index |
| VIA | Values in Action |
| VIA-IS | Values in Action Inventory of Strengths |

# CHAPTER 1

## INTRODUCTION

Character strengths are morally valued personality characteristics that find expression in people's thoughts, feelings, and behaviors. These "make the good life possible" because they contribute to people's thriving, flourishing, and fulfillment (Peterson & Seligman, 2004, p. 4). Character strengths advance optimal functioning among individuals (Linley & Harrington, 2006) permitting them to change for the best, become more self-assured, and achieve excellence in life (Levesque, 2011). Every individual possesses character strengths, which need to be identified, appreciated, practiced, and strengthened to lead a more rewarding and meaningful life (Park & Peterson, 2009). Character strengths are considered instrumental for flourishing in education and advancing academic success (Lavy, 2020; Wagner et al., 2021). Studies have indicated that character strengths are related to cognitive and emotional categories of educational outcomes, such as academic achievement (Datu & Bernardo, 2020; Kern & Bowling, 2015) and well-being (Hausler et al., 2017; Kretzschmar et al., 2023; Wagner et al., 2020). With regard to tertiary level students, different character strengths have been shown to relate to academic performance, academic engagement, academic integration, and institutional commitment (Browning et al., 2018; Villacís et al., 2021) as well as predict career adaptability, meaning in life, and the academic, social, and institutional dimensions of adaptation to university life (Grinhauz et al., 2022; Lin & Jiang, 2023). It is noteworthy that monitoring the development of students' character strengths is just as imperative as measuring their academic abilities and monitoring their learning progress. Several higher education and social programs seek to further academic and critical thinking skills among young people to help them attain their life goals. Though these skills are pivotal; but, without good character, students may lack the desire to act

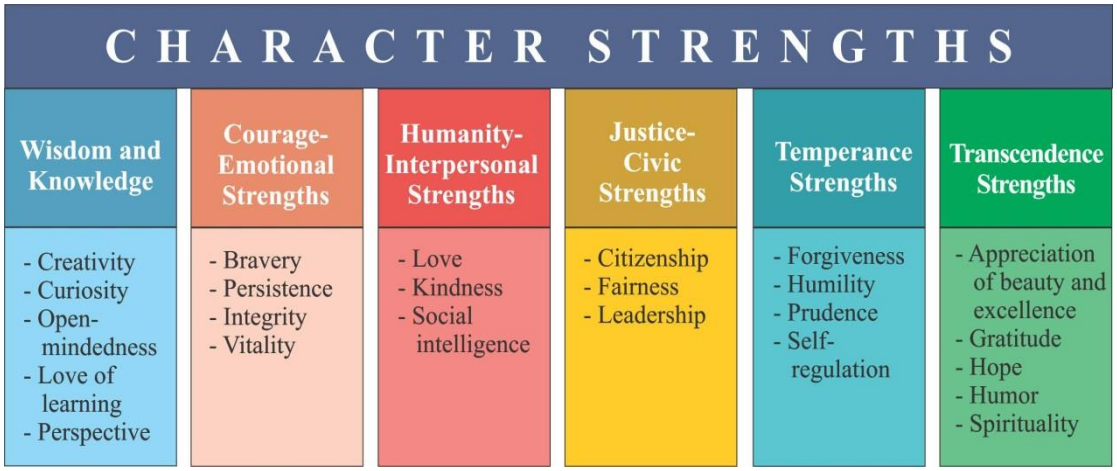
ethically (Park & Peterson, 2009). Essentially, character strengths represent the various facets of good character (Park & Peterson, 2009). Research indicates that possessing character strengths is not sufficient; rather students must become cognizant of their strengths to aptly use them to attain positive outcomes for enriching their lives (Duan & Bu, 2019; Green, 2022a).

Considering the importance of character strengths for students, the development of a domain-specific measure that assesses their use in the academic setting may be important as it may add greater specificity or explanatory power to the findings. For instance, open-mindedness as an academic strength may influence an outcome (e.g., academic engagement) based on its domain-specific application, competency, and/or context, which is the use of critical thinking in studies to analyze concepts from various perspectives. In the domain-general context, the general competency embodied in open-mindedness (e.g., "I always examine both sides of an issue;" Peterson et al., 2005) may influence academic engagement. The domain-specific context therefore provides greater insights into how open-mindedness may influence academic engagement as well as makes the interpretation of findings more meaningful and relatable to the context. It is noteworthy that several studies have demonstrated that domain-specific measures strengthen findings (e.g., Cramer et al., 2023; Maltby et al., 2019; Teimouri et al., 2021, 2022). Furthermore, context-specific findings may be pertinent for advancing research and practice about improving academic life for university students by connecting the dots within the study domain. The context-relevant findings provide increased insights into how the strengths/virtues may influence the variables of interest. As such, research in higher education based on the new domain-specific measure, Character Strengths Scale for University Students (CSSUS), is expected to produce context-specific results.

## 1.0 Background of the Study

The Values in Action (VIA) Character Strengths Inventory and Classification Scheme (cf. Figure 1.1) developed by Peterson and Seligman (2004) comprises 24 character strengths, which are conceptually allocated to the following six fundamental virtues: (1) wisdom and knowledge, (2) courage, (3) humanity, (4) justice, (5) temperance, and (6) transcendence. All 24 strengths are important because each represents a competency that facilitates the attainment of positive outcomes for oneself and others (Niemiec, 2018). Despite the extensive research on character strengths, several of the existing measures conflict with the aforementioned theoretical six-factor/virtue model (McGrath & Walker, 2016; Shoshani & Shwartz, 2018). This is because samples of participants from different countries (e.g., Pakistan, United States, China, Germany, Australia, and Africa) have yielded five factors (e.g., Littman-Ovadia & Lavy, 2012; Singh & Choubisa, 2010), four factors (e.g., Anjum & Amjad, 2020, 2021; Brdar & Kashdan, 2010), three factors (e.g., Duan & Bu, 2017; Duan et al., 2013), or two factors (e.g., Blasco-Belled et al., 2018) of the strengths measure validated. There is also evidence that a general factor of character exists (Cheng et al., 2022; Feraco et al., 2023; Ng et al., 2017). The following figure presents the original six-factor model proposed by Peterson and Seligman (2004).

**Figure 1.1: VIA classification of character strengths and virtues**



A four-factor structure of the CSSUS was expected based on four reasons. First, it is difficult to confirm a six-factor structure of the VIA character strengths measures, as it represents a rather tentative classification (Park & Peterson, 2006; Peterson et al., 2008; Peterson & Seligman, 2004). Researchers that have directly tested a six-factor structure have been able to partially confirm it. Moreover, it is believed that a six-factor structure cannot be interpreted properly because of the rather random allocation of strengths to some of the factors (Macdonald et al., 2008). Second, most of the five-factor character strengths measures (e.g., McGrath, 2014; Singh & Choubisa, 2010) are those that are based on the Values in Action Inventory of Strengths (VIA-IS; Peterson et al., 2005)—the lengthiest VIA measure. The 24-item CSSUS was therefore not expected to have a five-factor structure. Above and beyond, there is reasonable evidence that character strengths measures representing a single item per strength are based on a four-factor structure (e.g., Kaya, 2022; Neto et al., 2014). As such, it was believed that the CSSUS would have a four-factor structure. Third, the CSSUS was expected to have a four-factor structure because other collective cultures like that of Pakistan have also identified four factors of their respective VIA measures. These pertain to the collective culture of Croatia (Brdar & Kashdan, 2010), Iran (Khodayarifard et al., 2020), Portugal (Neto et al., 2014), Singapore (Chou et al., 2021), and Turkey (Kaya, 2022). It is also pertinent to note that the Urdu version of the VIA measure has yielded a four-factor structure as indicated in two studies from Pakistan (Anjum & Amjad, 2020, 2021). In addition, most of the four-factor strengths measures are based on university/college students from a collective culture (e.g., Brdar & Kashdan, 2010; Chou et al., 2021; Kaya, 2022; Khodayarifard et al., 2020). Fourth, the CSSUS was not expected to have a two- or three-factor structure because too few factors may present a solution that lacks conceptual interpretability and thus may not

conform to the original concept or theory (Fabrigar et al., 1999; Hayton et al., 2004; Zwick & Velicer, 1986).

Furthermore, the difference between the CSSUS and the existing five categories of strengths measures for adults build a strong case for its construction and validation. The first category comprises such generic measures as the Strengths Knowledge Scale and Strengths Use Scale (Govindji & Linley, 2007). The term "strengths" in these measures denotes a person's strong points or capabilities. As such, these do not assess the 24 character strengths as does the CSSUS.

The second category includes the popular 240-item VIA-IS by Peterson et al. (2005) and the three briefer versions for adults derived from it—that is, measures comprising 3, 5, and 8 items per strength (Anjum & Amjad, 2021; Littman-Ovadia, 2015; McGrath, 2019)—take time to complete and assess the strengths in a generalized context as compared to the CSSUS.

The third category contains measures representing each strength through a single item. These measures also do not assess the strengths in the context of the study domain as assessed by the CSSUS. The Short Measure of Character Strength (SMCS; Furnham & Lester, 2012) in this category is also different from the CSSUS, as it uses the IQ-based normal, bell-curve distribution system of rating, which is quite complex as compared to the widely used Likert-type rating scale. Also, the 24-item Character Strengths Rating Form (CSRF) in this category is different from the CSSUS because it takes time to complete if one is to carefully read each item's description before rating it (Ruch et al., 2014).

The fourth category includes the Applicability of Character Strengths Rating Scales (ACS-RS; Harzer & Ruch, 2013), which are also different from the CSSUS because they assess the application of the 24 strengths based on the extent to which each

is encouraged, useful, important, and demonstrated in a particular life domain (Wagner et al., 2021). Thus, assessing each domain-general strength based on the four criteria is a time consuming and repetitive process.

The last category includes the Signature Strengths Scale (SSS; McGrath, 2017) and the Overuse, Underuse, and Optimal-Use Scale (OUOS; Freidlin et al., 2017). The first asks respondents to identify their signature strengths and the second allows them to assign 100% of their use across the three facets—overuse, underuse, and optimal use—of each character strength. As compared to the CSSUS, both measures are domain-general in nature. Moreover, the OUOS is a lengthy measure because of its 72 items (i.e., 24 items x three facets).

Research based on most of the aforementioned measures has chiefly focused on criterion validity (Wagner & Ruch, 2023); for instance, their relationship with achievement, well-being, and interpersonal relationships (e.g., Boiman-Meshita & Littman-Ovadia, 2022; Datu & Bernardo, 2020; Wagner et al., 2020). There is therefore a need to test the incremental validity of character strengths measures because it is a more stringent test of validity. Moreover, testing the incremental validity based on an outcome variable other than from educational, social, and positive psychology is likely to make a singular contribution to the field. Also, there is a need to test the application of strengths measures beyond the usual indicators of academic performance and well-being.

With regard to testing the incremental validity, the CSSUS was the focal predictor; career adaptability the outcome; and gender, age, and personality traits the covariates. It should be noted that incremental validity requires that the association between a focal predictor and an outcome variable goes beyond the well-established association between a covariate and that outcome variable (Wang & Eastwick, 2020).