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A Measure for Assessing Academic Virtues and Strengths in the University Setting: Construction and Initial Examination of Structure and Correlates

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Abstract

This research demonstrates the construction and preliminary examination of the structure of a domain-specific measure, namely the *Character Strengths Scale for University Students* (CSSUS). Reflecting the use of the 24 Values in Action (VIA) strengths in the study domain, the CSSUS likely adds greater specificity to the findings pertinent for devising and implementing meaningful strategies for furthering academic development, student learning, and well-being in higher education. Derived from best practices, the item generation process 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. The initial examination of the factors of the CSSUS was based on a sample of 540 undergraduate and graduate students studying in Lahore, Pakistan. Results

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Data Availability Statement included at the end of the article

provided evidence of a four-factor structure of the CSSUS. Furthermore, the CSSUS and its subscales were positively related to academic achievement and the measures of satisfaction with life, positivity, and student self-efficacy. In addition, the CSSUS and its subscales were negatively related to the measure of academic burnout. The correlations provided evidence of the concurrent criterion-related validity of the scale. Moreover, female students reported higher levels of love and spirituality, whereas male students higher levels of leadership, creativity, and bravery. Also, there was no significant difference in the use of academic virtues with regard to gender, level of education (undergraduate and graduate), study discipline (agricultural sciences, humanities, health sciences, and engineering technology), type of university (public and private), and level of academic performance (low, medium, and high). The theoretical contribution and practice implications of the results are discussed. Limitations of the study and prospects for future research are also discussed.

Keywords
Academic strengths and virtues, Character Strengths Scale for University Students, domain-specific measure, satisfaction with life, positivity, academic achievement, student self-efficacy, academic burnout

Introduction

Character strengths are ubiquitous, unique, elevating, and morally valued personality traits. These find expression in people's thoughts, feelings, and behaviors as well as help them thrive and lead a fulfilling life (Peterson & Park, 2009; Peterson & Seligman, 2004). Promoting optimal functioning among individuals, character strengths empower them to accept the positive, become more self-assured, endure the tedious and monotonous, and navigate through life's trials and tribulations with fortitude (Linley & Harrington, 2006; Niemiec, 2020). Character virtues are defined by the strengths they encompass and are well-known as ingredients of the *good life* (Peterson & Seligman, 2004).

Character strengths are considered instrumental for flourishing in education and fostering academic success (Lavy, 2020; Wagner et al., 2021). Character virtues are related to academic performance and academic engagement (Villacís et al., 2021). Furthermore, different sets of character strengths predict the academic, social, and institutional dimensions of adaptation to university life (Grinhauz et al., 2022). Moreover, character strengths interventions/courses have furthered well-being, personal growth initiative, and the X-Factor among university students (e.g., Duan & Bu, 2019; Green, 2021, 2022a, 2024a; Smith et al., 2020). It is also pertinent to note that character strengths contribute towards students' character building, as they instill in them the desire to act with integrity. Character strengths are therefore just as pivotal as advancing academic and critical thinking skills among them (Park & Peterson, 2009).

The first criterion for character strengths to be defined and acknowledged as strengths is that they contribute to different fulfilments leading to the *good life* (Peterson & Seligman, 2004). Different life domains (e.g., family, work, study/education, health, recreation, community, and spirituality) may therefore offer numerous possibilities for fulfillment to individuals (Wagner et al., 2021). This research focuses on character strengths in the study domain—one of the most essential life domains in the lives of university students. It demonstrates the construction of the *Character Strengths Scale for University Students* (CSSUS)—a domain-specific measure reflecting academic activities and situations familiar to university students. The CSSUS embodies academic strengths that aim at enriching students' academic life and as such offer them opportunities to experience fulfillment. Each academic strength is applied to a relevant area of the academic setting or study domain in which it is most naturally or logically demonstrated or manifested. For instance, individual assessments, subject area, critical thinking, student-teacher relationship, group activities, academic performance, academic competencies, and study goals. It is important to note that with regard to the CSSUS, character strengths denote academic strengths. Likewise, character virtues signify academic virtues. The section, Step 1 of the Item Development Process of the CSSUS, sheds more light on the academic strengths associated with the CSSUS.

This research also aims at identifying the factor structure of the CSSUS, which is an important aspect of scale validation of strengths measures. Furthermore, it aims at ascertaining the criterion validity of the CSSUS and its subscales based on measures assessing educational (academic achievement, student self-efficacy, and academic burnout) and well-being (life satisfaction and positivity) outcomes. Research based on most of the strengths measures reviewed in this paper has chiefly focused on criterion validity (Wagner & Ruch, 2021); for instance, their relationship with measures of educational and well-being constructs (e.g., Datu & Bernardo, 2020; Kaya, 2022; Villacís et al., 2021; Wagner et al., 2020; Weber & Harzer, 2022; Zábó et al., 2023). Lastly, this research determines the differences in gender, level of education, study discipline, university type, and level of academic performance in relation to each factor (academic virtue) of the CSSUS.

VIA Strengths and Virtues Framework

The VIA Strengths Inventory and Classification Scheme (cf. Figure 1) developed by Peterson and Seligman (2004) comprises 24 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).

1. Wisdom and Knowledge: Cognitive strengths that entail the acquisition and use of knowledge.
1. Creativity: Thinking of novel and productive ways to do things. 2. Curiosity: Taking an interest in all of ongoing experience. 3. Open-mindedness: Thinking things through and examining them from all sides. 4. Love of learning: Mastering new skills, topics, and bodies of knowledge. 5. Perspective: Being able to provide wise counsel to others.
2. Courage: Emotional strengths that involve the exercise of will to accomplish goals in the face of opposition, external or internal.
6. Authenticity/integrity: Speaking the truth and presenting oneself in a genuine way. 7. Bravery: Not shrinking from threat, challenge, difficulty, or pain. 8. Persistence: Finishing what one starts. 9. Zest/vitality: Approaching life with excitement and energy.
3. Humanity: Interpersonal strengths that involve ''tending and befriending'' others.
10. Kindness: Doing favors and good deeds for others. 11. Love: Valuing close relations with others. 12. Social intelligence: Being aware of the motives and feelings of self and others.
4. Justice: Civic strengths that underlie healthy community life.
13. Fairness: Treating all people the same according to notions of fairness and justice. 14. Leadership: Organizing group activities and seeing that they happen. 15. Teamwork: Working well as member of a group or team.
5. Temperance: Strengths that protect against excess.
16. Forgiveness: Forgiving those who have done wrong. 17. Modesty/humility: Letting one's accomplishments speak for themselves. 18. Prudence: Being careful about one's choices; not saying or doing things that might later be regretted. 19. Self-regulation: Regulating what one feels and does; being self-disciplined.
6. Transcendence: Strengths that forge connections to the larger universe and provide meaning.
20. Appreciation of beauty and excellence: Noticing and appreciating beauty, excellence, or skilled performance in all domains of life. 21. Gratitude: Being aware of and thankful for the good things that happen. 22. Hope: Expecting the best and working to achieve it. 23. Humor: Liking to laugh and tease; bringing smiles to other people. 24. Spirituality: Having coherent beliefs about the higher purpose and meaning of life.

Figure 1. The VIA character strengths inventory and classification scheme.

Functions of Character Strengths in the Academic Context. The six functions of character strengths (priming, mindfulness, appreciation, buffering, reappraisal, and resilience) suggested by Niemiec (2020) are presented in Figure 2 in the context of university education. Priming, mindfulness, and appreciation may assist in making effective use of opportunities in the academic life (e.g., encouraging and constructive experiences on campus, academic success, and positive events). On the other hand, buffering, reappraisal, and resilience may support in transforming and managing challenges in the academic life (e.g., academic stressors, issues, and conflicts). The six functions underscore the significance of using character strengths in the academic setting.

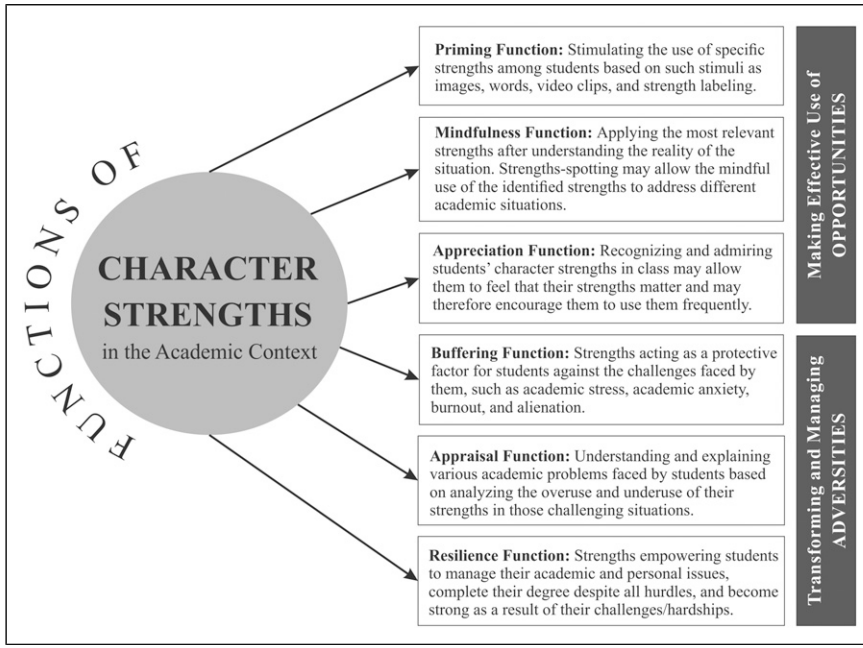

Figure 2. Functions of character strengths in the academic context.

Factor Structure of Existing Strengths Measures. Despite the extensive research on character strengths, several of the existing measures conflict with the theoretical six-factor/virtue model (Shoshani & Shwartz, 2018)—presented in Figure 1—because samples of participants from different countries (e.g., Pakistan, United States, China, Germany, and Australia) have yielded a five- (e.g., McGrath, 2014; Singh & Choubisa, 2010), four- (e.g., Anjum & Amjad, 2021; Brdar & Kashdan, 2010), three- (e.g., Duan et al., 2013; Shryack et al., 2010), or two- (Peterson, 2006; cf. Vanhove et al., 2016) factor structure. Section 1 in the Online Supplemental Materials file presents the factor structure of major character strengths measures for adults. It is noteworthy that a general factor of character may also exist (e.g., Feraco et al., 2023; Ng et al., 2017). Hence, it is important to determine the factor structure of the CSSUS to make a worthwhile contribution to the extant literature.

Scope of the CSSUS

Domain-general strengths are all-purpose strengths applicable to a wide array of situations rather than a particular life domain. Domain-specific strengths—such as the academic strengths embodied in the CSSUS—as opposed to the domain-general strengths represent context-relevant competencies. For instance, an item of

creativity in the domain-general context is, "I am always coming up with new ways to do things" (Peterson et al., 2005). In the domain-specific context of the CSSUS, the item reflecting creativity is, "I like using innovative ideas when completing my university work." Further, for self-regulation, a domain-general item is, "It is easy for me to stay disciplined" (Peterson et al., 2005), whereas the domain-specific item of the CSSUS is, "It is easy for me to remain disciplined in my studies." The domain-specific CSSUS may add greater specificity to the results in terms of the context-relevant competencies the strengths represent. For instance, creativity as an academic strength may influence or contribute to educational outcomes (e.g., academic fit, academic satisfaction, and academic self-efficacy) based on its domain-specific context, which is incorporating innovative ideas in *university work*. In the domain-general context, creativity may also influence the educational outcomes; however, the domain-specific context provides *context-matching* explanatory power to the results and as such make them more relatable to the academic context. The same may hold true for academic virtues embodying various strengths with context-specific competencies. Research based on the CSSUS may therefore produce robust results. Previous studies have also suggested that domain-specific measures strengthen findings from which solid conclusions may be drawn (e.g., Cramer et al., 2023; Maltby et al., 2019; Teimouri et al., 2022).

Additionally, most of the character strengths interventions/courses for university students—as reviewed earlier—have solely focused on the development of the outcome variables. These have not focused on the development of students' character strengths/virtues over time. The CSSUS may be suitable for assessing university students' character virtues in the context of the study domain and as such address the aforementioned research gap. All things considered, the CSSUS may serve as an additional indicator for evaluating the effectiveness of strengths interventions for university students and at the same time provide greater specificity to the findings.

Furthermore, based on extensive research, the VIA Institute on Character (2023) concludes that being aware of one's strengths, understanding them, and consequently applying them help in boosting self-confidence, nurturing happiness, reducing stress, strengthening relationships, addressing problems, attaining goals, and finding meaning. In a similar vein, strength-spotting exercises based on the CSSUS may help university students in becoming aware of their academic strengths, understanding them, and as a result applying them to become more self-assured, address academic challenges, achieve educational goals, derive meaning from their university education, and attain academic well-being.

How Academic Virtues as Personal Resources may Further Academic Success? – Theoretical Perspectives

Academic virtues constituting academic strengths represent important personal resources that may help university students in achieving academic excellence. The Broaden and Build theory of positive emotions (Fredrickson, 2001) and the

Conservation of Resources theory (Hobfoll, 2010) were elected to explicate how academic virtues as personal resources may bolster academic success. There has been extensive research on the two theories, which provide valuable insights into the dynamics of resources; that is, how they may: (a) be built, (b) build, orchestrate, or attract other resources, or (c) collectively contribute towards the desired outcomes. In the context of university students/young adults, the Broaden and Build theory has shed light on the important role of positive emotions in building various types of resources (e.g., body-mind-spirit dimensions of wellness, career adaptability, competence need satisfaction at work, self-esteem, social support, well-being, and resilience) as well as mitigating the constant negative effect of the fear of COVID-19 (Green et al., 2020, 2023, 2024a; Kardaş & Yalçın, 2021). In addition, the Conservation of Resources theory has provided useful insights into the functioning of college/university students' personal resources (e.g., the use/investment, expansion, and/or acquisition of resources) with regard to augmenting academic self-efficacy, academic thriving, academic engagement, and career adaptability as well as decreasing burnout (Alarcon et al., 2011; Green et al., 2024b; Green & Rizwan, 2024; Lin & Jiang, 2023).

Broaden and Build Theory of Positive Emotions. In line with the theory, academic virtues as positive traits or psychological states represent valuable resources that may broaden university students' horizons permitting them to gain a comprehensive understanding of their academic situation to take the required actions (Fredrickson, 2001, 2013) to excel in their studies. Essentially, broadening of the thought-action repertoires enables university students to interact with the academic setting; that is, engage with the activities that it has to offer. This mindful awareness of the academic environment and the associated interaction with it brought about by the academic virtues—as enduring psychological, cognitive, and social resources—manifested through positive thoughts, feelings, and activities likely increase interest in the learning process and further enhanced learning capacities (Reschly et al., 2008) to contribute to academic success.

Conservation of Resources Theory. The principle of resource investment and the concept of resource caravans of the Conservation of Resources theory (Hobfoll, 2010) may provide useful insights into how academic strengths may influence academic success. According to the principle of resource investment, augmenting and investing in strengths-based academic resources representing academic virtues may help university students in orchestrating gains in resources required for attaining academic excellence. It is noteworthy that individuals must invest in resources to prevent resource loss, augment existing resources, recover from resource loss, and/or acquire new resources. Fundamentally, individuals value resources or the things that may be acquired or achieved through them (Hobfoll, 2010), such as positive outcomes.

Furthermore, in line with the concept of resource caravans (Hobfoll, 2010), academic strengths constituting a virtue may capitalize on each other's effect to collectively advance various indicators of academic success (e.g., academic achievement, academic engagement, and academic thriving; Green & Rizwan, 2024). Resource

caravans are a collection of multifaceted resources evoked in time of need. These resources group together in several different ways to help individuals achieve positive outcomes (Hobfoll, 2010) and therefore they do not act independently. The optimal combination of resources in the resource caravans jointly address the problem in question or produce the desired outcome (Carlson et al., 2023; Hobfoll, 2010). The combination of academic strengths in a virtue is intended to do exactly the same.

What may incite the Application of Academic Virtues and Strengths?

The theory of Self-Determination (Deci & Ryan, 2000) casts light on how students may put their academic strengths to use. According to the theory, the basic needs of autonomy, competence, and relatedness as three essential components of human motivation further growth and development. The basic psychological needs satisfacton influences the intrinsic motivation for academic activities (Vergara-Morales & Del Valle, 2021). The construct has also been shown to influence academic engagement (Chen & Zhang, 2022), academic self-efficacy, academic identity (Chen, 2024), psychological well-being, and resilience (Kardaş & Yalçın, 2021) among university students. Research also suggests that higher levels of basic psychological needs satisfaction are related to high levels of academic integration, which bolster both academic performance and academic success (Mohamedhoesein & Crul, 2018) among university students. In the same vein, character virtues are related to academic performance and academic engagement (Villacís et al., 2021) as well as different indicators of well-being (e.g., Kaya, 2022; Zábó et al., 2023). Furthermore, character strengths are related to academic self-efficacy (Datu & Mateo, 2020), academic integration, institutional commitment (Browning et al., 2018), and psychological well-being (Hausler et al., 2017). It is also relevant to note that academic virtues composed of the academic strengths aim at enriching the academic life to permit students to excel in their studies and experience well-being. More essentially, character virtues have been shown to be related to basic psychological needs satisfaction (Brdar & Kashdan, 2010). In light of the above, it may be inferred that the use of academic virtues and strengths is activated by the desire to satisfy the basic psychological needs of autonomy, competence, and relatedness. The theory of Self-Determination has been used before to describe the theoretical foundation of strengths interventions (cf. Green, 2024a; Quinlan et al., 2012).

Difference between the CSSUS and Existing Strengths Measures – A Critical Review

It is not possible to compare the CSSUS with potentially all the existing strengths measures for adults. Nevertheless, the five categories of strengths measures for adults reviewed in this section provide sufficient insights into the research gaps, which may be addressed through the development of the CSSUS. This section in no way implies that the CSSUS is better than the previous strengths measures. The CSSUS just has different

uses and advantages. It should be noted that the existing strengths measures are well-established and useful measures that have made valuable contributions to the strengths literature.

Measures Assessing Strength Knowledge, Use, and Deficit Correction Behavior. The first category of measures comprises such generic measures as the Strengths Knowledge Scale (e.g., "I am aware of my strengths") and the Strengths Use Scale (e.g., "I achieve what I want by using my strengths") by Govindji and Linley (2007). Another measure in this category is the Strengths-Use and Deficit Correction Behavior Scale (van Woerkom et al., 2016) that assesses strength use (e.g., "I use my strengths proactively") and deficit correction (e.g., "In this organization, I receive training to improve my weak points") from both an individual and organizational standpoint. The measures in this category do not assess the 24 VIA strengths as does the CSSUS. In these measures, the term "strengths" reflects an individual's strong suits, competencies, or qualities.

VIA Measures of Different Lengths. The second category includes the popular 240-item VIA Inventory of Strengths (VIA-IS) by Peterson et al. (2005) and the three briefer versions for adults (i.e., measures comprising 3, 5, and 8 items per strength) derived from it (Anjum & Amjad, 2021; Littman-Ovadia, 2015; McGrath, 2019; Moreira et al., 2021). In addition, the Chinese Virtues Questionnaire (CVQ) by Duan et al. (2013) included in this category of measures is a 96-item measure (e.g., "I see beauty that other people pass by without noticing"). Its items have been selected from the original VIA-IS. As compared to the CSSUS, the aforementioned measures take time to complete and assess the VIA strengths in a generalized context.

Brief Measures Representing Each Character Strength through a Single Item. The third category contains measures representing each strength through a single item. These also do not assess the character strengths in the context of the study domain as does the CSSUS. The Short Measure of Character Strength (Furnham & Lester, 2012) in this category uses the IQ-based normal, bell-curve distribution system of rating, which is quite complex. There are also measures in this category that use the relatively less popular semantic differential scale (e.g., Chou et al., 2021; Kaya, 2022). The CSSUS, on the other hand, uses the very familiar 5-point Likert-type scale (1 = *strongly disagree*; 5 = *strongly agree*). Also, the 24-item Strengths Rating Form (CSRM; Ruch et al., 2014) is included in this category. A sample item of the CSRF is "Kindness (generosity, nurturance, care, compassion, altruistic love, 'niceness'): Kind and generous people like doing favors and good deeds for others. They appreciate being generous and nice to others." The CSRM is also different from the CSSUS because it takes time to complete if one is to carefully read each item's description before rating it. Moreover, items of the CSRM represent multiple thoughts, which is considered a "don't" in questionnaire design (Best & Kahn, 2016).

Adaptations of the Applicability of Character Strengths Rating Scales. The fourth category includes the Applicability of Character Strengths Rating Scales (ACS-RS; Harzer &

Ruch, 2013), which also differ from the CSSUS because they assess the application of the 24 character strengths based on the extent to which each is encouraged, useful, important, and demonstrated in a particular life domain (Wagner et al., 2021). As such, assessing each strength based on the four criteria is a time consuming and repetitive process and may lead to acquiescence bias. It is noteworthy that the ACS-RS does not provide any information regarding how the character strengths may be applied to the work context based on the different areas of the work domain. Also, the different adaptations of the ACS-RS are not tied to the specific areas of the life domain that each is based on. In case of the CSSUS, as mentioned earlier, the major areas of the study domain in which the character strengths are demonstrated or manifested include assessments, academic performance, study goals, critical thinking, group activities, subject area, university degree, and study deadlines.

Measures Focusing on the Intensity of Use of Each Character Strength. The last category includes the Signature Strengths Scale (McGrath, 2017) and the Overuse, Underuse, and Optimal-Use Scale (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 strength. As compared to the CSSUS, both measures are domain-general in nature. Moreover, the second measure is a lengthy measure because of its 72 items (24 strengths x the 3 facets of a strength).

Major Research Gaps Addressed through the CSSUS

The existing character strengths measures are domain-general measures as reviewed in the previous section. Their items do not assess how the character strengths may be applied to the different aspects of the academic setting mentioned above. The construction of the CSSUS inspired from the VIA Strengths and Virtues model (Peterson & Seligman, 2006) bridges this gap. Furthermore, most of the existing strengths measures for adults take time to complete. The CSSUS as a 24-item brief measure may therefore provide a good assessment of the use of character strengths in the study domain to advance research and practice about improving academic life for university students. Additionally, the items of some measures reflect multiple thoughts as they describe the VIA character strength in two to three sentences and/or through two to four of its attributes/synonyms. Each item of the CSSUS focuses on a single concept reflecting a VIA character strength that is applied to a relevant area of the academic setting for students to derive the maximum benefit.

Method

Item Development Process of the CSSUS

The items of the CSSUS were developed based on the following four-step process derived by Boateng et al. (2018) from their meta-analysis on scale development and validation.

Step 1: Identification of the Domain. With regard to the CSSUS, the domain denotes the *academic strengths;* that is, the *academic version of the VIA character strengths*. Based on an extensive literature review, step 1 comprised the following three substeps (McCoach et al., 2013).

(1) *Purpose of the Domain:* The predominant purpose of academic strengths is to enrich university students' academic life or make the good life possible for them at university.
(2) *Confirmation that there are No Existing Measures:* The difference between the CSSUS and the existing strengths measures for adults reviewed earlier confirms that there are no existing measures like the CSSUS and therefore it is in all possibility the first domain-specific measure that assesses the use of university students' character strengths in the academic setting.
(3) *Description of the Domain and Preliminary Conceptual Definition:* The domain represents a set of 24 VIA character strengths; each of which is applied to a relevant area of the academic setting in which the students may benefit the most from its use. For instance, open-mindedness is most likely best demonstrated through the use of critical thinking in studies to analyze concepts from different angles to enhance learning. Also, leadership may be best practiced through leading group activities on campus and persistence through completing university work on time despite obstacles getting in the way.

Step 2: Item Generation. As recommended by Boateng et al. (2018), item generation was based on the deductive and inductive methods. The deductive method entailed a detailed literature review. The inductive method was based on a focus group with seven university students who provided their input regarding how the character strengths may be manifested in the academic setting. The discussion focused on how to configure (i.e., adapt, combine, or modify) domain-general items to reflect the academic setting. The students were provided a handout containing examples of existing domain-general items of each VIA character strength. The goal was to generate a list of tentative items for the CSSUS by the end of the session through a group activity. Based on the list of the tentative items, 48 items (two for each strength) were finalized by the first author and two students of MPhil Psychology as the initial pool of items for the CSSUS. This is because the minimum recommended initial pool of items is at least twice the desired

number of items in the final scale (Schinka et al., 2012). Section 2 in the Online Supplementary Materials file presents the initial pool of items.

Step 3: Content Validity. This entailed determining the logical and face validity of the CSSUS. In the first round of logical validity, each item of the CSSUS was evaluated by three expert judges in terms of its (1) relevance, (2) representativeness, and (3) clarity (Grant & Davis, 1997). The decision to drop or retain items was based on the *sumscore decision rule*, which is the total score for an item across all judges. This is a simple yet effective rule for retaining items (Morgado et al., 2017). As a consequence of the first round, 24 items were dropped because the sumscore of each was less than 24 on each of the three criteria. Section 3 in the Online Supplementary Materials file presents the 24 items retained by the three judges.

In the second round of logical validity, two new expert judges analyzed the retained items to improve their technical quality as well as suggest new items for those strengths whose both items had been dropped in the first round. As a result, (a) nine items were modified to aptly reflect the strength in question, (b) the two items of open-mindedness were combined to reflect the character strength more comprehensively, and (c) a new item for the strength of bravery and another for the strength of forgiveness were developed. Section 4 in the Online Supplementary Materials file presents the changes made by the two judges.

For the face validity, a focus group was conducted with ten university students. The items of the CSSUS were discussed in detail with the students based on such questions as: (a) What meaning does the item convey to you? (b) Does the item appropriately reflect/measure the strength in the context of university education or the study domain? If not, how can it be improved? (c) Is the item easy to comprehend? and (e) Can the item be misinterpreted? Six items were identified as problematic during the discussion. Students were asked to modify them in a group activity tasked towards the end of the focus group session. Section 5 in the Online Supplementary Materials file presents the six modified items.

Step 4: Field Pre-testing of the Items of the CSSUS. This was based on 15 university students who completed the CSSUS. They were asked to identify those items that they believed did not truly reflect the academic setting or appeared to be confusing. They were also asked to write their suggestions for improving the ambiguous items or rephrase/revise them in the space provided at the end of the questionnaire. Based on students' suggestions and revisions, seven items were reconsidered and reworded to increase clarity and flow. Section 6 in the Online Supplementary Materials file presents the reworded items. Students found the rest of the 17 items clear and easy to comprehend and believed that each represented the character strength for which it was developed.

The factor structure was identified through principal component analysis (PCA) based on the 24 items of the CSSUS finalized through this step. Each item of the CSSUS was rated on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5

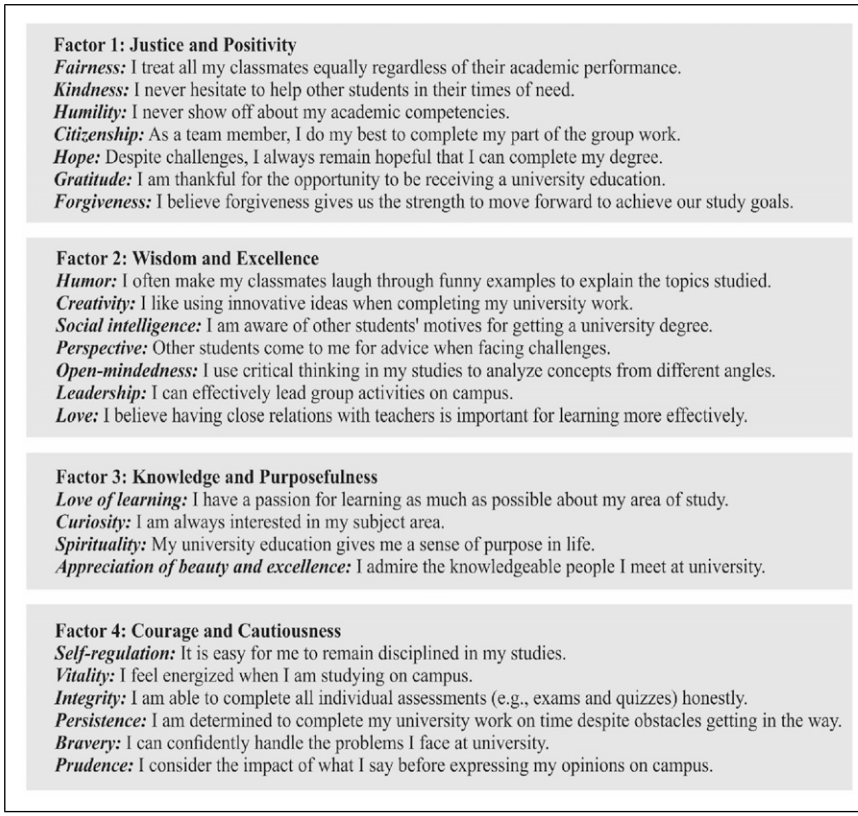

Figure 3. Factor structure of the CSSUS.

(*strongly agree*). The finalized items of the CSSUS loaded under its four factors (identified through PCA) are presented in Figure 3. Section 7 in the Online Supplementary Materials file presents the definition of each academic strength.

Participants

Five hundred and forty university students participated in the study. The participants—298 (55%) men and 242 (45%) women—were studying in three public universities and four private universities situated in Lahore. The average age of the participants was 23.49 years (SD = 2.17) and the majority (448; 83%) reported being single. The demographic information and associated descriptive statistics of the sample representative of the university student population in Pakistan are presented in Table 1.

Table 1. Demographic Characteristics of the Sample.

Variable	Freq	%
Gender		
Male	298	55
Female	242	45
Average age 23.49 years (*SD* = 2.17)		
Marital Status		
Single	448	83
Married	92	17
Level of Education		
Undergraduate	367	68
Graduate	173	32
Study discipline		
Agricultural sciences	103	19
Humanities	124	23
Health sciences	140	26
Engineering and technology	173	32
Type of university		
Private	312	58
Public	228	42
Level of academic performance		
Low	45	8
Average	155	29
High	340	63

External Measures

Satisfaction with life Scale (SWLS). Developed by Diener et al. (1985), this five-item (e.g., "If I could live my life over, I would change almost nothing") scale reflects people's deliberate evaluative judgment regarding their life according to their own personal criteria (Pavot & Diener, 1993). In this study, a five-point Likert-type scale (1 = *strongly disagree*; 5 = *strongly agree*) was used to rate each item of the scale. Further, the internal consistency reliability of the SWLS based on the current sample equated to .90.

Student Self-Efficacy Scale (SSES). Representing a general sense of student self-efficacy, this 10-item (e.g., "If I try hard enough, I can obtain the academic goals I desire") measure by Rowbotham and Schmitz (2013) was derived from the generalized self-efficacy scale (GSES) by Schwarzer and Jerusalem (1995). The SSES reflects the same competence-based and action-oriented internal resources (e.g., persistence, self-regulation, self-reliance, self-motivation, and creativity; Green et al., 2024a) as those embodied in the GSES (cf. Green, 2020, 2022b). The SSES used a five-point Likert-type scale (1 = *hardly true*; 5 =

exactly true) to rate each item. With respect to the current sample, the value of Cronbach's alpha amounted to .82.

Academic Burnout Scale (ABS). This was assessed through the five-item exhaustion subscale of the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981) adapted for university students by Schaufeli et al. (2002). Academic burnout reflects the exhaustion, fatigue, and strain experienced by students on account of their university studies. A sample item of the EES is: "I feel emotionally drained by my studies." In this study, all items were rated on a five-point Likert-type scale (1 = *never*; 5 = *always*). The internal consistency reliability of the EES pertaining to the study sample calculated to .81.

Positivity Scale (PS). The 8-item Positivity Scale by Caprara et al. (2012) represents a positive view of one's self, one's life, one's future, and one's confidence in others. A sample item of the PS is "I look forward to the future with hope and enthusiasm." Each item of the PS is rated on a 5-point Likert-type scale (1 = *strongly disagree*; 5 = *strongly agree*). Furthermore, the internal consistency of the scale based on this sample equated to .85.

Academic Achievement (AA). This was assessed through participants' latest Grade Point Average (GPA) that they were asked to report in the survey questionnaire. A GPA between 1 and 2 represented low academic performance, between 2.1 and 3 average academic performance, and between 3.1 and 4 high academic performance.

Procedure

This study is based on the first author's PhD research. The approval to collect data for the study was obtained from the heads of the departments and senior faculty members of the various programs offered under the four disciplines (Agricultural Sciences, Humanities, Health Sciences, and Engineering and Technology). In this regard, a data collection request letter was sent to them explaining the purpose and scope of the CSSUS as well as soliciting their help with the process. After obtaining the approval from the departments under a discipline, the link to the online survey was sent to the relevant program officers and coordinators who then posted it in different WhatsApp class groups. In addition, faculty members were requested to share the survey link in their WhatsApp class groups. No restrictions were imposed on participation and all students participated voluntarily and anonymously. Students were asked to carefully read the Participant Information Webpage—preceding the survey—that covered the following aspects: purpose of the study, how to participate in the study, disadvantages and advantages of participation, and confidentiality of the collected data. This page also asked for students' consent to participate in the study. They were only able to proceed to the online survey if they checked the "I agree" option. Furthermore, participants were required to rate all the items on the survey for it to be submitted.

Statistical Analyses

Preliminary analysis entailed checking the presence or absence of common method bias in the data collected from the online survey by applying the Herman's one-factor test. There is absence of common method bias when the percentage of total variance extracted is less than 50% (Podsakoff et al., 2003). Furthermore, as the CSSUS is a brand new measure; therefore, PCA was used for identifying the initial factor structure of the CSSUS as undertaken by previous validation studies on character strengths measures (e.g., Ho et al., 2016; Macdonald et al., 2008; Neto et al., 2014). Furthermore, the promax oblique rotation method was used. Previous validation studies on character strengths measures have also employed this rotation method (e.g., Kaya, 2022; Zábó et al., 2023). It is noteworthy that promax oblique rotation is a much suitable method when factors are expected to be correlated with each other (DeVellis, 2012). The same was believed for the factors of the CSSUS. Additionally, multiple criteria were used for retaining the factors of the CSSUS according to current psychological research practice (Goretzko et al., 2021). In addition, various *a priori* criteria were considered for item deletion or retention. Next, the internal consistency reliability of the scale was determined based on computing Cronbach's alpha. Furthermore, Pearson product-moment correlation coefficients were computed to determine the relationship of the CSSUS and its subscales with academic achievement and the measures of satisfaction with life, positivity, student self-efficacy, and academic burnout. This provided evidence of the concurrent criterion-related validity of the CSSUS and its subscales. Finally, multivariate analysis of variance determined the mean differences in the factors of the CSSUS as a function of gender, level of education, study discipline, university type, and level of academic performance.

Results

Preliminary Analysis

Herman's one-factor test indicated that there was no threat of common method bias as the percentage of total variance was less than 50% for the total survey items of the sample (28.19%).

Exploring the Factor Structure of the CSSUS

Principal component analysis with promax rotation was performed on the 24 items of the CSSUS. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was .94, which indicated that the size of the sample was excellent for factor analysis (Ho et al., 2016). Further, the Bartlett's Test of Sphericity was statistically significant; that is, χ^2 (276, $N = 540$) = 4853.31, $p < .001$. This showed that as the variables had sufficiently high correlations; therefore, performing a factor analysis was appropriate (Carpenter, 2018). Four factor retention criteria were used. First, the *Kaiser-Guttman Rule*

indicated four factors with eigenvalues greater than one. The Kaiser-Guttman Rule was created for PCA and it is recommended to be used in conjunction with other factor retention criteria to obtain solid results (Goretzko et al., 2021) as undertaken in this study. Second, the variance accounted for criterion indicated that 52% of the total variance was explained by four factors. A range of 50–60% of total variance extracted is recommended in the discipline of Humanities (Pett et al., 2003). Third, the *scree test* also suggested four factors to retain. Finally, *analysis of the conceptual interpretability of the factor structure*—as a factor retention criterion—indicated that the four factors of the CSSUS presented a simple and psychologically meaningful solution reflecting a clear and logical representation of the 24 academic strengths. Research suggests the importance of retaining factors that can be meaningfully interpreted and are comprehensible (Beavers et al., 2013; Worthington & Whittaker, 2006) to make meaningful contributions to the field.

Additionally, based on the *a priori* criteria for item retention or deletion, no item was omitted because all items had loadings greater than .4. According to Pett et al. (2003), the minimum acceptable item loading is that of .3. Furthermore, cross-loadings did not pose any problem, as the difference between the primary and secondary loadings was much greater than the acceptable difference of .15 (Worthington & Whittaker, 2006). Moreover, all factors of the CSSUS had more than three items, which is the minimum number of items that a factor should contain (Carpenter, 2018).

After rotation, the first factor, Justice and Positivity, accounted for 34.98% of the total variance with an eigenvalue of 8.40, the second factor, Wisdom and Excellence, accounted for 7.03% of the total variance with an eigenvalue of 1.69, the third factor, Knowledge and Purposefulness, accounted for 5.31% of the total variance with an eigenvalue of 1.28, and the fourth factor, Courage and Cautiousness, accounted for 4.83% of the total variance with an eigenvalue of 1.16. Furthermore, the factors of the CSSUS were related to one another and the correlations ranged between .49 and .63. Table 2 presents the mean and standard deviation of the 24 strengths pertaining to the male, female, and overall students in the sample as well as the factor loadings, eigenvalues, and percentage of variance. The factor structure of the CSSUS is presented in Figure 3. Table 3 presents the descriptive statistics of the sample's characteristics in relation to the four factor structure of the CSSUS.

Internal Consistency Reliability

The value of Cronbach's alpha calculated to .85, .79, .78, and .81 for justice and positivity, wisdom and excellence, knowledge and purposefulness, and courage and cautiousness respectively. The internal consistency reliability of the four factors of the CSSUS was therefore adequate. Furthermore, the CSSUS (global) demonstrated excellent internal consistency reliability ($\alpha = .92$).

Table 2. Descriptive Statistics, Factor Loadings, Eigenvalues, and Percentage of Variance.

	Men		Women		Overall		Factor Loadings			
VIA Strengths	*M*	*SD*	*M*	*SD*	*M*	*SD*	1	2	3	4
Fairness	4.21	1.03	4.21	.99	4.21	1.02	**.893**	−.121	−.218	.127
Kindness	4.38	.89	4.33	.91	4.36	.90	**.677**	.196	.126	−.169
Humility	4.02	1.09	3.94	1.06	3.99	1.08	**.657**	−.135	−.178	.320
Citizenship	4.43	.91	4.38	.79	4.41	.86	**.629**	.020	.197	.025
Hope	4.43	.92	4.44	.84	4.43	.88	**.600**	.033	.279	−.107
Gratitude	4.44	.90	4.42	.91	4.43	.90	**.581**	−.051	.322	−.055
Forgiveness	4.16	1.03	4.17	.97	4.16	1.01	**.538**	.154	.047	−.037
Humor	3.22	1.28	3.32	1.24	3.27	1.26	−.145	**.939**	−.196	−.021
Creativity	3.97	1.02	3.77	.96	3.87	1.00	.057	**.627**	.132	.011
Social intelligence	3.69	1.06	3.74	.96	3.71	1.01	.170	**.591**	.023	−.113
Perspective	3.73	1.05	3.72	1.00	3.72	1.03	−.064	**.570**	.210	.019
Open mindedness	3.98	1.07	4.02	.99	4.00	1.04	−.079	**.538**	.224	.055
Leadership	3.89	1.07	3.67	1.11	3.79	1.09	.054	**.521**	−.032	.118
Love	3.66	1.28	3.89	1.10	3.78	1.21	.087	**.508**	−.136	.182
Love of learning	4.09	1.08	4.14	1.03	4.12	1.06	−.006	.001	**.752**	.119
Curiosity	3.95	1.05	4.01	.97	3.98	1.01	−.138	.038	**.738**	.191
Spirituality	3.73	1.17	3.96	1.03	3.85	1.11	−.033	−.057	**.688**	.181
Appreciation	4.34	.99	4.36	.84	4.34	.93	.254	−.032	**.649**	−.198
Self-regulation	3.48	1.19	3.52	1.04	3.50	1.13	−.187	.017	.195	**.699**
Vitality	3.55	1.15	3.52	1.14	3.54	1.14	−.043	.103	−.041	**.684**
Integrity	3.97	1.10	3.91	1.07	3.94	1.01	.120	−.096	.159	**.647**
Persistence	4.02	.99	3.97	1.01	4.00	1.00	.110	−.056	.229	**.531**
Bravery	4.02	.98	3.84	1.03	3.93	1.01	.248	.260	−.183	**.462**
Prudence	3.88	1.09	3.92	.96	3.90	1.04	.257	.096	.008	**.444**
M							30.00	26.14	16.28	22.81
SD							4.80	5.04	3.18	4.44
Eigenvalue							8.40	1.69	1.28	1.16
% Of variance							35.00	7.03	5.31	4.83
Cumulative % variance							35.00	42.03	47.34	52.17

Note: Factor 1 = justice and positivity; factor 2 = wisdom and Excellence; factor 3 = knowledge and purposefulness; factor 4 = courage and cautiousness. Factor loadings appear in bold text.

Concurrent Criterion-related Validity of the CSSUS

According to Table 4, CSSUS and its subscales/academic virtues were each positively related to academic achievement and the measures of student self-efficacy, positivity, and satisfaction with life. In addition, the CSSUS and the academic virtues were each

Table 3. Descriptive Statistics of the Sample's Characteristics in Relation to the Factors of the CSSUS.

Variable	Justice and Positivity		Wisdom and Excellence		Knowledge and Purposefulness		Courage and Cautiousness	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Gender								
Male	30.07	4.97	26.13	5.28	16.15	3.32	22.92	4.60
Female	29.90	4.59	26.17	4.73	16.44	2.98	22.68	4.24
Level of Education								
Undergraduate	29.90	4.87	26.22	5.10	16.32	3.16	22.80	4.45
Graduate	30.19	4.65	25.98	4.90	16.20	3.21	22.83	4.43
Study discipline								
Agricultural sciences	30.08	4.54	26.23	4.57	16.26	3.09	23.08	3.96
Humanities	29.94	4.82	26.48	5.02	16.53	3.06	23.13	4.39
Health sciences	29.59	5.47	25.89	5.41	15.99	3.54	22.71	4.76
Engineering and technology	30.32	4.34	26.06	5.02	16.35	3.00	22.51	4.49
Type of university								
Private	30.25	4.43	26.12	4.81	16.31	3.15	22.85	4.26
Public	29.64	5.25	26.18	5.34	16.25	3.22	22.76	4.67
Level of academic performance								
Low	29.98	5.27	26.02	4.21	16.04	3.37	22.82	4.21
Average	29.92	5.09	26.37	5.06	16.44	3.17	22.94	4.41
High	30.03	4.61	26.06	5.13	16.24	3.16	22.76	4.49

Table 4. Bivariate Correlations for Testing the Criterion-Related Validity of the CSSUS and Its Subscales.

No.	Factor	Student Self-Efficacy	Academic Achievement	Academic Burnout	Satisfaction with Life	Positivity
1	Justice and positivity	.43***	.17***	−.18***	.51***	.55***
2	Wisdom and Excellence	.48***	.18***	−.11*	.48***	.50***
3	Knowledge and purposefulness	.44***	.09*	−.17***	.55***	.58***
4	Courage and cautiousness	.56***	.20***	−.22***	.57***	.59***
5	CSSUS	.59***	.21***	−.19***	.61***	.64***
	M	38.54	3.20	13.60	19.55	31.98
	SD	6.50	.49	3.16	3.55	4.67

Note. *$p < .05$; **$p < .01$; ***$p < .001$.

negatively related to the measure of academic burnout. The correlations provide evidence of the concurrent criterion-related validity of the CSSUS and its subscales.

Academic Strengths and Virtues of Male and Female Students

The top five academic strengths rated by university students are: (1) gratitude and hope, (2) citizenship, (3) kindness, (4) appreciation, and (5) fairness. The top three academic strengths among male students are: (1) gratitude, (2) hope and citizenship, and (3) kindness. Further, the top three academic strengths among female students are: (1) hope, (2) gratitude, and (3) citizenship. Furthermore, MANOVA results indicated that there was no statistically significant difference between male and female students for academic virtues (F (4, 535) = 1.03, p = .393, Wilks' Λ = .992, η_P^2 = .008). Univariate tests indicated that there was no statistically significant difference between male and female students for justice and positivity (F (1, 538) = .18, p = .670, η_P^2 = .000), wisdom and excellence (F (1, 538) = .01, p = .931, η_P^2 = .000), knowledge and purposefulness (F (1, 538) = 1.12, p = .290, η_P^2 = .002), and courage and cautiousness (F (1, 538) = .38, p = .536, η_P^2 = .001). In addition, MANOVA results indicated no statistically significant difference between male and female students for academic strengths (F (24, 515) = 1.24, p = .198, Wilks' Λ = .945, η_P^2 = .055). Concerning individual strengths, female students reported significantly higher levels of love (F (1, 538) = 4.88, p = .028, η_P^2 = .009) and spirituality (F (1, 538) = 5.76, p = .016, η_P^2 = .010) than male students. Furthermore, male students reported significantly higher levels of leadership (F (1, 538) = 5.43, p = .020, η_P^2 = .010), creativity (F (1, 538) = 5.34, p = .022, η_P^2 = .010), and bravery (F (1, 538) = 4.33, p = .038, η_P^2 = .009) than female students.

Academic Virtues of Undergraduate and Graduate Students

According to the MANOVA results, there was no statistically significant difference between undergraduate and graduate students for academic virtues (F (4, 535) = .99, p = .706, Wilks' Λ = .996, η_P^2 = .004). Further, univariate tests indicated that there was no statistically significant difference between undergraduate and graduate students for justice and positivity (F (1, 538) = .43, p = .514, η_P^2 = .001), wisdom and excellence (F (1, 538) = .26, p = .609, η_P^2 = .000), knowledge and purposefulness (F (1, 538) = .16, p = .691, η_P^2 = .000), and courage and cautiousness (F (1, 538) = .01, p = .944, η_P^2 = .000).

Academic Virtues of Students in the Four Study Disciplines

MANOVA results showed that there was no statistically significant difference among the four study disciplines (Agricultural Sciences, Humanities, Health Sciences, and Engineering and Technology) for academic virtues (F (12, 1410.48) = .78, p = .668, Wilks' Λ = .983, η_P^2 = .006). Additionally, univariate tests showed that there was no statistically significant difference among the four study disciplines for justice and positivity (F (3, 536) = .62, p = .605, η_P^2 = .003), wisdom and excellence (F (3, 536) = .33, p = .806, η_P^2 = .002), knowledge and purposefulness (F (3, 536) = .69, p = .557, η_P^2 = .004), and courage and cautiousness (F (3, 536) = .63, p = .599, η_P^2 = .003).

Academic Virtues of Private and Public University Students

Based on MANOVA results, there was no statistically significant difference between private and public universities for academic virtues (F (4, 535) = .98, p = .420, Wilks' Λ = .993, η_P^2 = .007). Specifically, there was no statistically significant difference between private and public universities for justice and positivity (F (1, 538) = 2.10, p = .148, η_P^2 = .004), wisdom and excellence (F (1, 538) = .03, p = .875, η_P^2 = .000), knowledge and purposefulness (F (1, 538) = .05, p = .823, η_P^2 = .000), and courage and cautiousness (F (1, 538) = .06, p = .809, η_P^2 = .000).

Academic Virtues of Students based on their level of Academic Performance

MANOVA results indicated that there was no statistically significant difference among students with low, average, and high academic performance for academic virtues (F (4, 534) = .27, p = .975, Wilks' Λ = .996, η_P^2 = .002). Notably, there was no statistically significant difference among students with low, average, and high academic performance for justice and positivity (F (1, 537) = .03, p = .969, η_P^2 = .000), wisdom and excellence (F (1, 537) = .23, p = .797, η_P^2 = .001), knowledge and purposefulness (F (1, 537) = .34, p = .710, η_P^2 = .001), and courage and cautiousness (F (1, 537) = .09, p = .917, η_P^2 = .000).

Discussion

This research demonstrated the construction and examined the initial factor structure of the CSSUS—possibly the first domain-specific strengths measure reflecting the use of character strengths in the academic setting. A comprehensive procedure was followed for the item development of the CSSUS. It was based on the following steps derived from various best practices (Boateng et al., 2018): (1) identification of the domain, (2) item generation, (3) content validity, and (4) field pretesting of the items. Furthermore, PCA was used to explore the factor structure of the CSSUS. Results indicated a four-factor structure of the CSSUS. Previous studies have also identified a four-factor structure of their respective character strengths measures (e.g., Macdonald et al., 2008; Zábó et al., 2023). Most of these studies are from countries having a collectivistic culture like that of Pakistan; for instance, Croatia (Brdar & Kashdan, 2010), Iran (Khodayarifard et al., 2020), Portugal (Neto et al., 2014), Singapore (Chou et al., 2021), and Turkey (Kaya, 2022). In addition, most of the four-factor structures of strengths measures are based on university/college students (e.g., Brdar & Kashdan, 2010; Chou et al., 2021; Kaya, 2022; Khodayarifard et al., 2020) as in the case of the CSSUS. It is noteworthy that each four-factor structure has a different composition of strengths (e.g., Brdar & Kashdan, 2010; Chou et al., 2021; Kaya, 2022; Neto et al., 2014). The composition of strengths in the four factors of the CSSUS is different from that in the other four-factor structures possibly because it is a domain-specific measure. As in the case of the domain-general measures, the composition of strengths in each factor of the CSSUS most likely varies because of the research context (e.g., religion, language, dominant vs. less dominant collective values, and population characteristics). Cross-cultural research is needed to delve deeper into this area of study to provide conclusive evidence.

There are also some similarities between the four-factor structure of the CSSUS and that of the other character strengths measures. For instance, kindness, fairness, humility/modesty, gratitude, and forgiveness in the first factor of the CSSUS—Justice and Positivity—are also part of the Interpersonal strengths factor (Brdar & Kashdan, 2010), Niceness factor (Macdonald et al., 2008), and Humanity factor (Chou et al., 2021; Kaya, 2022). In addition, four strengths (perspective, social intelligence, leadership, and open-mindedness) in the second factor of the CSSUS—Wisdom and Excellence—match with the same strengths in the Leadership factor (Chou et al., 2021). Furthermore, with regard to the third factor of the CSSUS—Knowledge and Purposefulness—such strengths as appreciation, curiosity, and love of learning are included in the Intellect strengths factor (Macdonald et al., 2008) as well. Additionally, the four strengths that form the Courage factor of the six-factor VIA character strengths and virtues model (Peterson & Seligman, 2004) are also present in the fourth factor of the CSSUS, Courage and Cautiousness.

It should be noted that some of the existing four-factor structures are not composed of all the 24 strengths (e.g., Chou et al., 2021; Kaya, 2022; Zábó et al., 2023). The factor structure of the CSSUS, on the other hand, embodies all the 24 VIA strengths (cf.

Figure 3). In addition, previous structures have many cross loadings or the difference between their highest and second highest loadings is too small or negligible (e.g., Brdar & Kashdan, 2010; Kaya, 2022; Macdonald et al., 2008; Zábó et al., 2023). Moreover, the highest loading for some items retained in a factor is less than .25 (e.g., McGrath & Walker, 2017). In case of the CSSUS, the cross loadings have a more than sufficient difference between the highest and second highest loadings and its factor loadings are well above the .32 limit (Tabachnick & Fidell, 2014). The lowest loading of the CSSUS is .44.

Criterion-related validity of the CSSUS and its subscales indicated positive correlations with academic achievement and the measures of satisfaction with life and positivity. Previous studies have also indicated that character virtues are related to the aforementioned constructs (e.g., Kaya, 2022; Ruch et al., 2014; Villacís et al., 2021; Zábó et al., 2023). Evidence of criterion-related validity also came from the positive relationship of the CSSUS and its subscales with the measure of student self-efficacy. Additional evidence of criterion-related validity came from the negative relationship of the CSSUS and its subscales with the measure of academic burnout. As the CSSUS is a domain-specific measure reflecting the study domain; therefore, context-specific measures—assessing student self-efficacy and academic burnout—were elected to establish its criterion-related validity. The CSSUS assesses the use of character strengths in the academic setting to further academic excellence as well as enrich university life. Student self-efficacy as a domain-specific measure represents valuable internal resources that augment academic performance (Green, 2019) much like those embodied in generalized self-efficacy to address academic challenges (Rowbotham & Schmitz, 2013). On the other hand, academic burnout reflects the exhaustion, emotional drain, and strain experienced by students because of their university studies (Schaufeli et al., 2002) that may be detrimental to their academic performance.

Results indicated that the top three academic strengths demonstrated by the Pakistani male and female university students belonged to the justice and positivity virtue. Further, results indicated that there was no significant difference in the use of academic virtues with regard to gender, level of education (undergraduate and graduate), study discipline (agricultural sciences, humanities, health sciences, and engineering and technology), type of university (private and public), and level of academic performance (low, average, ad high performance). These findings suggest the significance and ubiquity of the academic strengths—grouped under the four virtues or factors—in the university setting. At the same time, findings suggest the relevance of the four virtues to the academic setting. Each virtue has the capacity to enrich university life. Findings also imply that university students, on the whole, are able to demonstrate each academic virtue to a more or less similar extent.

Theoretical Contribution

Findings of this study make important contributions to theory. First, through possibly the first domain-specific character strengths measure—reflecting the academic life

familiar to university students—this research adds a new dimension to the VIA Character Strengths Inventory and Classification Scheme (Peterson & Seligman, 2004). For instance, academic strengths as an extension of the 24 VIA character strengths take the form of studying concepts from different points of view (open-mindedness), following a study routine conscientiously (self-regulation), addressing various problems encountered at university with self-confidence (bravery), having the passion for learning as much as possible about one's area of study (love of learning), meeting university deadlines despite obstacles (persistence), feeling invigorated while studying on campus (vitality), and deriving a sense of purpose from university education (spirituality). As such, academic strengths are likely to enrich university students' academic life or make the good life possible for them at university.

Second, this research suggests a new application of the Broaden and Build theory of positive emotions (Fredrickson, 2001) and the Conservation of Resources theory (Hobfoll, 2010) with regard to how academic virtues as personal resources may bolster academic success. Furthermore, this contribution explicates how students may put their academic strengths to use based on the theory of Self-Determination (Deci & Ryan, 2000). The use of academic strengths is triggered to satisfy the three basic psychological needs to further student development and well-being. It is also pertinent to mention here that the academic strengths embodied in the CSSUS have the capacity to fulfill the basic psychological needs. For instance, the need for autonomy is automatically satisfied when students are able to put their strengths to use. This is possibly because when individuals use their strengths, they perceive their behaviors as self-initiated, which gives them a sense of autonomy (Bakker & van Woerkom, 2018). However, some academic strengths that may tend to satisfy the need for autonomy more than the other two needs are: spirituality (deriving a sense of purpose from university education), self-regulation (remaining disciplined in studies), and vitality (feeling energized when studying on campus). Furthermore, the need for competence may be fulfilled through the use of such academic strengths as open-mindedness (using critical thinking in studies to analyze the concepts studied) leadership (leading group activities on campus), and bravery (handling academic issues with confidence). Finally, the need for relatedness may be fulfilled through the use of the following academic strengths: love (having close relations with teachers to learn more effectively), kindness (helping other students), and humor (making classmates laugh through funny examples to explain the topics studied). In the future, researchers may explore this area to draw meaningful conclusions regarding the connection between psychological needs and the use of academic strengths.

Third, the significant relationship of the four virtues with academic burnout suggests the protective role of character strengths/virtues. In line with the Broaden-and Build theory (Fredrickson, 2001), positive traits represented by the virtues may serve as resources to broaden students' thought-action repertoires to enable them to gain a clearer understanding of their academic situation. This clarity may permit them to take the required action to counter academic burnout. In essence, pursuing different kinds of thoughts and behaviors—demonstrating creativity, getting out of one's comfort zone,

and visualizing scenarios of success—may have an undoing effect that may free individuals from the grip of the adverse condition or negativity (Fredrickson, 2001).

Fourth, the concept of *resource caravans* derived from the Conservation of Resources Theory (Hobfoll, 2010) may provide insights into how academic virtues may be related to positivity, life satisfaction, and academic achievement. Resource caravans are a collection of resources that group together in distinct ways for individuals to achieve positive outcomes (Hobfoll, 2012). Based on this concept, academic strengths constituting each virtue represent valuable psychological resources that may act in synergy to capitalize on the effect of each to augment positivity, life satisfaction, and academic achievement.

Finally, the principle of *resource investment* of the Conservation of Resources Theory (Hobfoll, 2010) provides a plausible explanation as to how academic virtues may be related to student self-efficacy—reflecting competence-based and action-oriented internal resources (Green, 2020, 2022b). In line with the principle of resource investment, people need to invest in resources to protect against resource loss, recover from losses, and most importantly gain more resources (Hobfoll, 2010). As such, augmenting and investing in academic resources such as the academic strengths embodied in each virtue may enable university students to orchestrate resource gains in the form of self-efficacy to excel in their academic endeavors.

Practice Implications

Findings of this study have a number of practice implications. First, the four factors or academic virtues of the CSSUS may play an instrumental role in assessing pertinent aspects of the academic setting. For instance, the *justice and positivity virtue* provides information about the extent to which students promote a positive classroom environment through healthy relationships with others and build and maintain a positive outlook regarding their university education and complete it despite challenges. Further, the *wisdom and excellence virtue* assesses the degree to which students are astute enough to achieve academic excellence based on using critical thinking and innovative ideas in their studies, dispensing meaningful advice to other students, leading group activities on campus, and cultivating healthy relations with teachers to enhance learning. Likewise, the *knowledge and purposefulness virtue* examines students' thirst for knowledge to advance in their area of study, derive inspiration from knowledgeable people on campus, and find purpose in their university education. Additionally, the *courage and cautiousness virtue* determines the extent to which students use their emotional strengths (bravery, integrity, vitality, and persistence)—representing energy, confidence, dedication, focus, and truthfulness—to accomplish their educational goals against all odds. The fourth virtue also assesses the degree to which students are watchful on campus and are disciplined in their studies. It is relevant to mention here that feedback to university students about their academic strengths may be provided based on how the four factors assess the different aspects of the academic setting.

Second, the assessment of the different aspects of the academic setting through the four virtues of the CSSUS—explicated in the previous point—may enable researchers, educators, strengths-based practitioners, and counsellors to advance research and practice for enriching academic life, furthering academic development and student learning, and ensuring student success. For instance, various strengths-based initiatives focusing on the academic virtues may be tested and implemented for countering academic stress, academic anxiety, and academic burnout as well as fostering academic resilience, academic fit, and academic satisfaction among university students. In addition, academic strengths interventions—as strengths-based initiatives—may be developed and implemented for university students for furthering such outcomes as positivity (Caprara et al., 2012), career adaptability (Savickas & Porfeli, 2012), and engagement in career construction (Savickas et al., 2018). It is noteworthy that services of positive psychologists, student development specialists, and instructional design specialists may be required to develop training modules based on the four virtues of the CSSUS. Furthermore, students' academic strengths profiles may be compiled for several guidance and counseling purposes, such as: (a) encouraging them to make effective use of their identified signature strengths to attain their academic, personal, and vocational goals, address their academic challenges, and develop their lesser or dormant academic strengths; (b) helping them to adapt to the university life in terms of the social, institutional, and academic dimensions (cf. Grinhauz et al., 2022); and (c) furthering career readiness among them to facilitate a smooth transfer from university to work and at the same time enable them to build a strong foundation to excel in their future careers.

Third, results showed that the four academic virtues are related to student self-efficacy, academic achievement, satisfaction with life, positivity, and academic burnout. As such, strategies may be developed and implemented for instilling the four academic virtues in university students. Emphasizing more on the development of courage and cautiousness virtue may be particularly relevant because it had the strongest correlations with the five variables.

Fourth, training interventions, workshops, and interactive lectures may be effective at cultivating the four academic virtues among university students. These capacity-building initiatives may help university students become cognizant of their academic strengths and virtues and as a consequence apply them to address their academic challenges as well as achieve academic excellence. To increase the effectiveness of the capacity-building segments, the facilitator/strengths practitioner may need to focus on the following best practices: (a) explaining students the overall importance and scope of the learning initiative and its content, (b) engaging students emotionally in the teaching-learning process, (c) encouraging them to write down the lessons learned at the end of each session, (d) providing them individualized feedback regarding their participation in the learning initiative, (e) including activities that focus on identifying and addressing the obstacles to developing academic strengths, (f) allowing learners to reflect critically on their personal and professional development, and (g) relying on multiple

learning activities based on individual and collaborative learning formats (Green, 2024b; Brown et al., 2003; Sin & Lyubomirsky, 2009).

Fifth, faculty members may be instrumental in fostering the four academic virtues among their students. Some important techniques in this regard include: (a) offering a positive, warm, and friendly learning environment in which students participate actively without inhibitions (justice and positivity); (b) providing students opportunities to demonstrate critical thinking, problem-solving, creative thinking, and leadership skills (wisdom and excellence); (c) helping them to develop a suitable study routine as well as motivating them to cultivate the academic spirit and follow-through on their academic goals (courage and cautiousness); and (d) becoming a role model and mentor in their respective fields to guide their students in their pursuit for knowledge and learning as well as motivate them to derive fulfillment from their academic activities and accomplishments (knowledge and purposefulness). In addition, the faculty members may forge affective connections with students based on a genuine, trustworthy, and empathetic attitude to help them learn more effectively (Green & Rizwan, 2024). Moreover, educators may use the priming, mindfulness, and appreciation functions of character strengths (cf. Figure 2) suggested by Niemiec (2020) to instill academic virtues and strengths in university students.

Finally, the CSSUS may be equally suitable for university students in other countries. This is possibly because character strengths have a universal application (Peterson & Seligman, 2004) also in the academic context. Moreover, the CSSUS is in the English language and may well be used in English speaking countries. As such, the domain-specific CSSUS may further research for higher education development not only in Pakistan, but also abroad.

Limitations and Prospects for Future Research

This study has certain limitations, which are mentioned in this section. First, no prior research was found on domain-specific character strengths reflecting the study domain or academic setting. This required following a much thorough approach for developing the CSSUS to ensure that it properly reflects the substance of each of the 24 VIA character strengths in the context of the academic setting. Availability of similar research conducted in the past provides a solid theoretical foundation for creating something new or improving the existing. Nevertheless, this limitation presented an opportunity to fill an important gap in the literature through a context-relevant scale for measuring university students' academic virtues and strengths.

Second, as with many psychological measures, the CSSUS and other measures may have introduced self-report biases on account of social desirability, demand characteristics, and acquiescence. However, the Herman's one-factor test indicated an absence of common method bias, which was controlled through a meaningful coversheet of research information (Participant Information Sheet), a clear set of instructions, and proximal or physical separation of items of focal constructs on the survey (Jordan & Troth, 2020). Furthermore, great care was taken to keep the items of the CSSUS

succinct, straightforward, and free of double-meaning during the item development process to control the threat of common method bias (Podsakoff et al., 2012).

Third, this study is based on university students enrolled in the disciplines of agricultural sciences, humanities, health sciences, and engineering and technology. As such, it may be pertinent to test the applicability of the CSSUS among students in other disciplines to improve its generalizability. Also, in the future, the difference in the academic strengths of university students belonging to different income groups and geographic regions/provinces may be examined. This may add greater depth and value to the research on academic virtues and strengths.

Finally, this research examined the relationship of CSSUS with some existing measures to determine its criterion validity. Future research may consider assessing the relationship of the CSSUS with other constructs to broaden its scope and evaluate its potential. The relationship of CSSUS may be examined with various indicators of the *good life* (which is the first criterion of character strengths; Peterson & Seligman, 2004), such as art of living (Green & Rizwan, 2023) and PERMA-oriented well-being (Butler & Kern, 2016). In addition, it may be important to test how the domain-specific CSSUS may influence various educational outcomes (cf. Weber & Harzer, 2022). Future research may also focus on determining the incremental validity of the CSSUS, as it is a more stringent test of validity. In addition, future research may focus on a comprehensive examination of the psychometric properties of the CSSUS because it is a brand new measure that has a wide application in the university setting.

All in all, the CSSUS has opened new avenues of research for bolstering academic development, student learning, and academic well-being. Researchers may use the CSSUS in several innovative ways to further higher education development.

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Ethical Statement

Ethical Approval

This research is part of a series of studies based on the first author's PhD thesis approved by the Examination Committee, School of Graduate Studies, Asia e University, Malaysia. All procedures performed in the study were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent

Informed consent was obtained from all individual participants included in the study.

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Data Availability Statement

The data that support the findings of this study are available on reasonable request from the corresponding author. The data are not publicly available due to information that could compromise the privacy of the research participants.

Supplemental Material

Supplemental material for this article is available online.

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