

Values in Action Inventory of Strengths (VIA-IS): Translation and Validation in Urdu Language

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Values in Action is a classification of 24 character strengths grouped under six virtue categories. This classification is claimed to be universal across cultures and religions (Peterson & Seligman, 2004) and its measure that is, Values in Action Inventory of Strengths (VIA-IS) has been translated and validated in many languages. The present study aimed at its Urdu translation and validation on Pakistani adults taken from different educational institutes and workplaces. Study comprised two parts. Part I dealt with the translation and cross-language validation while in Part II, construct validation on a sample of 542 adults and convergent validity on a sample of 210 adult participants were determined. Findings revealed satisfactory alpha coefficients for Urdu version. Significant positive correlations with positive affect and life satisfaction and negative correlations with negative affect were indicators of its convergent validity. Age was negatively associated with five strengths whereas significant gender differences were found on seven strengths. Social desirability effects were nonsignificant. Strength-to-virtue level factor structure exploration resulted in a theoretically meaningful four factor structure. Factors were named as Interpersonal, Cognitive, Vitality, and Transcendence and were comparable to factor structures proposed in studies on VIA-IS from a few other cultures. The study offers a valid Urdu translation for use in future studies with adult Urdu speaking population.

Keywords: Values in Action Inventory of Strengths, Urdu translation, validation, positive and negative affect, life satisfaction

The concept of virtue has been a subject of attention throughout history, ranging from the field of philosophy to education and then

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psychology. In almost last two decades, virtue and character have become focus of many research scholars from both psychology and education. The most important aspect of this research has been the study of virtues and character strengths. Virtue is defined as “any psychological process that enables a person to think and act so as to benefit him or herself and society” (McCullough & Snyder, 2000, p. 1). Character strengths are grouped under virtue categories and are considered as psychological components or mechanisms that define virtues (Sandage, Hill, & Vang, 2003). The publication of a classification of virtues and character strengths by Peterson and Seligman (2004), as opposed to the classification of disorders such as Diagnostic and Statistical Manual of Mental Disorders (DSM-V) or the International Classification of Diseases (ICD), has accelerated the research on the topic. The aim of this classification was to provide a universal language to facilitate research on character. This classification, named as Values in Action (VIA) classification, has provided a systematic approach to the study of character strengths and virtues. It proposes 24 character strengths grouped into six virtue categories. These six virtues are named as *wisdom and knowledge* (including strengths of creativity, curiosity, love of learning, open-mindedness, & perspective), *courage* (including strengths of bravery, honesty, perseverance, & zest), *humanity* (including strengths of kindness, love, & social intelligence), *justice* (including strengths of fairness, leadership, & teamwork), *temperance* (including strengths of forgiveness, humility, self-regulation, & prudence) and *transcendence* (including strengths of appreciation of beauty & excellence, gratitude, hope, humor, & spirituality).

Virtues, as described in the VIA classification, are assumed to be broad, socially desirable individual differences that are cross-culturally valued (Peterson & Seligman, 2004). Character strengths are differentiated from virtues as the observable traits manifest in behavior and relatively consistent in nature. The proposed classification was grounded on literature adopted from many cultures of the world and religious writings as well as discussions with professionals from multiple backgrounds.

A further step taken by Peterson and Seligman (2004) was development of a scale based on the VIA classification. Values in Action-Inventory of Strengths (VIA-IS; Park & Peterson, 2009; Peterson & Seligman, 2004) is an English-language self-report scale measuring 24 strengths proposed in the above-mentioned VIA classification. Peterson and Seligman (2004) reported data from more than 150,000 participants and found that all scales had good alpha coefficients and test-retest correlations (across a period of 4 months),

and scores were meaningfully varied (although they were skewed to the right) on the basis other than social desirability. The structure of the classification (and that of the scale) that is, 24 strengths grouped into 6 virtue categories is based on theoretical literature, wisdom of world religions and discussions with professionals and hence, termed as tentative. Since the foundational work by Peterson and Seligman (2004), the research on character strengths has mushroomed. Although, much research on character strengths was initially carried out using VIA-IS English version, translations and validations in many other languages have been published, for example, in German (Ruch et al., 2010), Chinese (Duan et al., 2012), Spanish (Azañedo, Fernández-Abascal, & Barracac, 2014) and Hindi (Singh & Choubisa, 2010). The VIA-IS translated versions have been widely used in research on diverse samples identifying the associations of specific strengths with demographic variables such as gender and age and outcome variables such as wellbeing, health, and happiness (e.g. Duan et al., 2012; Proyer, Gander, Wellenzohn, & Ruch, 2013). VIA-IS has exhibited substantial stability in endorsement of strengths over time and small to medium inter-correlations between strengths (e.g. Ruch et al., 2010). Studies on the factor structure of VIA-IS have explored the underlying virtue dimensions from strengths scales and yielded diverse findings on the number of virtues ranging from one to five (Dahlsgaard, 2005; McGrath, 2014, 2015a; Ng, Cao, Marsh, Tay, & Seligman, 2017; Park & Peterson, 2006; Peterson, Park, Pole, D'Andrea, & Seligman, 2008; Peterson & Seligman, 2004; Ruch et al., 2010; Shryack, Steger, Krueger, & Kallie, 2010; Singh & Choubisa, 2009 & 2010; Van Eeden, Wissing, Dreyer, Park, & Peterson, 2008). Strength-to-virtue level structure of VIA-IS is still tentative and awaits confirmation across different samples.

In an effort to identify ubiquitous virtues to include in the VIA, Peterson and Seligman (2004) reviewed more than 200 religious and philosophical texts. They guarded against cultural biases in their classification by using source material from many societies. Hence, to which extent their claim is right is worth exploration and confirmation. If the character strengths contained in the VIA are equally valued across cultures, then identifying and developing strengths has widespread utility. The more ubiquitous the strengths are, the more generalizable the results of the VIA related research will be, and the more effective will be the interventions designed to promote the development of virtues.

Gender differences in human characteristics might be expected due to the evolved dispositions or social structures (Eagly & Wood, 1999). Gender differences across cultures are important to note as they

might reflect culture specific gender role identification and socialization. Findings of VIA-IS research in different cultures have shown considerable differences between both genders on endorsements of strengths whereas similarities have been found across different cultures within men and women. For example, Ruch et al. (2010) found higher scores for women for love, kindness, appreciation of beauty and excellence, and gratitude in German sample. In American population, Park and Peterson (2006) found females scoring high on beauty, fairness, kindness, and perspective. Linley et al. (2007) found that women scored higher on strengths of gratitude and appreciation of beauty while men scored higher on creativity; though when strengths were rank ordered, there was high consistency between top five strengths of each. In a study by Biswas-Diener (2006), participants from Inughuit tribe in Kenya rated women higher on kindness and men on self-control. In Pakistani sample, gender differences are expected in line with earlier research using VIA-IS.

As far as age is concerned, humanistic psychology proposes potential for growth and self-actualization with aging (Maslow as cited in Ivztan, Gardner, Bernard, Sekhon, & Hart, 2013). On the other hand, dominant personality psychology, like Big Five theory, proposes stability in personality traits and there is body of research that has found high stability between age groups measured both cross-sectionally and longitudinally (McCrae & Costa, 1990). As claimed by Peterson and Seligman (2004), character strengths are trait-like personality features that can be nourished and enhanced, thus expected to change with age as a result of growth. Linley et al. (2007) compared different age groups ranging from 18 years to 65 and above and found that all strengths tended to increase with age except humor. The strongest association of age was found with strengths of wisdom (curiosity, love of learning), temperance (forgiveness, self-regulation), and justice (fairness). Ruch et al. (2010) also found increase in 15 out of 24 strengths associated with age. It is expected that age would be positively associated with many of the strengths in our sample as well.

As the nature of character strengths is highly desirable, it can be assumed that they are prone to over-representation as a result of social desirability. So far, the scale has been mostly used in anonymous research settings and social desirability tended to be unrelated to the strengths, with the exceptions of few such as prudence or religiousness (e.g., Peterson & Seligman, 2004; Ruch et al., 2010).

Construct validity of VIA-IS has been explored and determined in earlier studies by associations with different indicators of wellbeing (such as positive & negative affect, life satisfaction, & flourishing), health and happiness (e.g. Duan et al., 2012; Harzer & Ruch, 2015;

Leontopoulou & Triliva, 2012; Proyer et al., 2013). Findings of these studies have provided evidence of convergent and divergent validity of the scales since character strengths were consistently and positively associated with variables like positive affect and life satisfaction and negatively associated with variables like negative affect. For the current research, positive affect, negative affect and life satisfaction were chosen for construct validation as in most of the earlier studies.

Urdu is the national language of Pakistan, spoken and understood countrywide. So far, a valid Urdu translation of VIA-IS is not available. Consequently, research in Pakistan using VIA framework is scarce. Park, Peterson, and Seligman (2006) conducted a large-scale study on character strengths in 54 nations but Pakistani sample was not a part. McGrath (2015b) expanded their work to 75 nations and included data from Pakistan for the first time (although it was not mentioned whether data from Pakistan was collected on Urdu or English version). As far as, research conducted within Pakistan is concerned, only two published researches based on VIA framework and Pakistani sample are available to date. Tariq and Zubair (2015) used Brief Strengths Test (Peterson, 2004) to explore the relationship of VIA character strength and learned optimism with social competence. Similarly, Zubair, Kamal, and Artimeva (2018) used Brief Strengths Test (Peterson & Park, 2004) to examine the comparative gender differences in relation to character strengths among Pakistani and Russian university students and found overall higher display of character strengths by women. The Brief Strengths test used in both researches is a 24-item tool that measures each strength using a single item only.

Considering the need for Urdu translated version of full-length VIA-240 to accelerate research on character strengths in Pakistan, we aimed to develop a reliable and valid Urdu version of VIA-IS. Specific aims of the study were translation of the VIA-IS following standard procedures, exploring psychometric properties of translated version, associations with social desirability, and demographic variables of age and gender, establishing test retest reliability, construct validation through associations of strengths with measures of wellbeing, inter-correlations between strengths, and determination of factor structure in an indigenous Pakistani sample. It was hypothesized that the VIA-IS-U will prove to be a reliable scale with good psychometric properties. Character strengths subscales were expected to correlate positively with positive affect and life satisfaction and negatively with negative affect. Age was expected to be correlated positively with character strengths. All strengths were expected to correlate positively with each other.

Method

The present study aimed at translation and validation of Values in Action Inventory of Strengths in Urdu language. Study was completed in two parts. Following are the details:

Instrument

Values in Action Inventory of Strengths (VIA-IS; Peterson & Seligman, 2004). It measures 24 character strengths proposed in the model of character strengths developed by Peterson and Seligman (2004). The inventory consists of 240 statements in total with 10 statements measuring each strength. There are 24 subscales including Appreciation of Beauty and Excellence (item no. 17, 41, 65, 89, 113, 137, 161, 185, 209, & 233), Bravery (item no. 7, 31, 55, 79, 103, 127, 151, 175, 199, & 223), Creativity (item no. 4, 28, 52, 76, 100, 124, 148, 172, 196, & 220), Curiosity (item no. 1, 25, 49, 73, 97, 121, 145, 169, 193, & 217), Forgiveness (item no. 24, 48, 72, 96, 120, 144, 168, 192, 216, & 240), Fairness (item no. 13, 37, 61, 85, 109, 133, 157, 181, 205, & 229), Gratitude (item no. 18, 42, 66, 90, 114, 138, 162, 186, 210, & 234), Honesty (item no. 9, 33, 57, 81, 105, 129, 153, 177, 201, & 225), Hope (item no. 19, 43, 67, 91, 115, 139, 163, 187, 211, & 235), Humor (item no. 22, 46, 70, 94, 118, 142, 166, 190, 214, & 238), Humility (item no. 21, 45, 69, 93, 117, 141, 165, 189, 213, & 237), Judgment (item no. 3, 27, 51, 75, 99, 123, 147, 171, 195, & 219), Kindness (item no. 10, 34, 58, 82, 106, 130, 154, 178, 202, & 226), Leadership (item no. 14, 38, 62, 86, 110, 134, 158, 182, 206, & 230), Love (item no. 11, 35, 59, 83, 107, 131, 155, 179, 203, & 227), Love of Learning (item no. 2, 26, 50, 74, 98, 122, 146, 170, 194, & 218), Perspective (item no. 6, 30, 54, 78, 102, 126, 150, 174, 198, & 222), Perseverance (item no. 8, 32, 56, 80, 104, 128, 152, 176, 200, & 224), Prudence (item no. 16, 40, 64, 88, 112, 136, 160, 184, 208, & 232), Self-regulation (item no. 15, 39, 63, 87, 111, 135, 159, 183, 207, & 231), Social Intelligence (item no. 5, 29, 53, 77, 101, 125, 149, 173, 197, & 221), Spirituality (item no. 20, 44, 68, 92, 116, 140, 164, 188, 212, & 236), Teamwork (item no. 12, 36, 60, 84, 108, 132, 156, 180, 204, & 228) and Zest (item no. 23, 47, 71, 95, 119, 143, 167, 191, 215, & 239). Each item is rated on 5-point Likert type rating scale ranging from 1 (*very much unlike me*) to 5 (*very much like me*). Sample items include “I find the world a very interesting place,” from subscale of Curiosity, and “I always let bygones be bygones,” from subscale of Forgiveness. The scale yields 24 separate scores for strength subscales. For each subscale, scores on all ten items are

averaged, thus resulting scores range from 1 to 5 where high score indicates greater possession of the strength.

The study consisted on following two parts:

Part I: Translation of VIA-IS in Urdu Language

This part describes translation procedure of the VIA-IS and determination of cross-language validity.

Forward-back translation. For translation, standard forward and back procedure was used (MAPI Development Trust, 2014). A translation of the VIA-IS was available with the Values in Action (VIA) Institute (who has the copyright of the instrument). For the study purpose, formal permission to review the translation and use the scale was sought from the institute through agreement. As agreed between the authors and the VIA Institute, already available Urdu translation was reviewed in the translation process at the first step. Both Urdu and English versions already available were given to two bilinguals having degrees/work experience related to Urdu language as well. Task given to them was to rate each item as per the following statement: 'To which extent the following statements (in Urdu) represent the same meaning as by the original English statements?' They rated each statement on three-point scale ranging from '*to great extent/fully*', to '*not at all*'. Two more independent translations were obtained from bilinguals having 16 years of education.

A committee of three members was constituted for review process. Committee members were bilingual experts with experience in translation of scales. All three were faculty members at a public university having education of 16 years and above. The three forward translations were reviewed, and one consensus version was developed. At second step, Urdu version was back translated by three individuals who had master's degree in English and Psychology and were bilinguals. It was made sure that they have not been exposed to the original English version of the VIA-IS before. Thus, three independent back translations were gathered. Another committee of three bilingual experts (having 16 years of education in the disciplines of Psychology or English language) carefully examined each back translated item and checked its compatibility with the original English version items. Special attention was paid to the equality of conceptual meaning of the terms and phrases in both Urdu and English version. In the light of results of first two stages, items were finalized for inclusion in the Urdu version.

Try-out. After finalization of translation, a try-out of the new Urdu version was done. For this, a sample of 10 participants (as recommended by Wild et al., 2005) was selected including both men ($n = 4$) and women ($n = 6$). All participants were M.Phil or M.Sc. Applied Psychology students, who were well-aware of the concepts under study. Their age ranged between 20 and 26 years. Participants were informed about the purpose of administration. They were given special instructions to write about the confusion (if any) about items in margins while completing the questionnaires. They were assured about confidentiality and anonymity of the information provided by them.

The participants took 30-45 minutes to complete the questionnaire. Most of the items were answered without any reported ambiguity in the meaning. A few exceptions were there. The wordings of items for which participants reported confusion in meaning were reconsidered and mostly words were replaced with Urdu synonyms easier and more suitable in conveying meaning. Overall, the participants reported that the questionnaire was easy to understand and interesting, although they reported that it was a very lengthy questionnaire.

Cross language validation. After finalization of the translated version, cross language validation of VIA-IS-U with VIA-IS original English version was done to assess the quality of the translated version by empirical equivalence. Sample for cross language validation consisted of 20 individuals with age range from 20 to 46 years ($M = 28.35$, $SD = 9.18$). Participants had an education ranging from BS Honors to PhD and had good understanding of both Urdu and English. Participants were selected using convenience sampling technique. Half of the participants were given English version first and the other half were given Urdu version first. Both groups were given second questionnaire after two weeks of the administration of the first questionnaire (Anastasi & Urbina, 1997). Correlations and analysis for significance of differences in scores of participants on both versions were calculated.

Results in Table 1 show high correlations between the two administrations (i.e., r between .77 & .94) on all the 24 strengths subscales depicting quality of the translation. Analysis also indicates nonsignificant mean differences between Urdu and English versions on all subscales of the VIA-IS except for one subscale that is, Perseverance.

Table 1
*Correlations and Mean Differences Between VIA-IS and VIA-IS-U
 (N = 20)*

Scales	English Version <i>M(SD)</i>	Urdu Version <i>M(SD)</i>	<i>t</i>	<i>r</i>
Appreciation of Beauty and Excellence	3.58(.56)	3.57(.74)	0.06	.77**
Bravery	3.95(.40)	3.90(.46)	0.92	.94**
Creativity	3.72(.63)	3.77(.60)	-0.72	.92**
Curiosity	3.74(.59)	3.94(.61)	-1.62	.77**
Fairness	3.96(.69)	3.92(.70)	-0.62	.94**
Forgiveness	3.80(.57)	3.70(.55)	1.25	.89**
Gratitude	4.01(.80)	3.89(.75)	1.27	.92**
Honesty	3.91(.54)	3.83(.63)	1.17	.94**
Hope	3.82(.57)	3.77(.45)	0.48	.83**
Humility	3.55(.43)	3.72(.51)	-1.68	.75**
Humor	3.71(.79)	3.80(.71)	-0.80	.88**
Judgment	3.89(.63)	3.87(.65)	0.18	.87**
Kindness	3.85(.71)	3.89(.71)	-0.36	.83**
Leadership	3.97(.71)	3.96(.72)	0.08	.84**
Love	3.72(.69)	3.70(.58)	0.22	.92**
Love of Learning	3.66(.55)	3.66(.46)	-0.00	.86**
Perseverance	3.85(.39)	4.03(.36)	-2.25*	.72**
Perspective	3.87(.52)	3.94(.60)	-0.71	.87**
Prudence	3.65(.33)	3.75(.53)	-0.91	.74**
Self-Regulation	3.31(.32)	3.54(.50)	-1.63	.84**
Social Intelligence	3.82(.54)	3.88(.69)	-0.51	.86**
Spirituality	3.71(.71)	3.85(.69)	-1.66	.92**
Teamwork	3.87(.67)	3.88(.67)	-0.11	.92**
Zest	3.66(.51)	3.68(.58)	-0.17	.81**

* $p < .05$. ** $p < .001$.

Part II: Construct Validation of VIA-IS-Urdu Version (VIA-IS-U)

This part describes the validation of the translated version, VIA-IS-U. Alpha coefficients for each scale were calculated along with descriptive statistics. Test-retest reliabilities on the strengths were explored for a period of 6 months. Convergent validity was determined, and construct validity through factor structure was also established. Following are the details.

Psychometric Properties and Factor Structure of VIA-IS-U.

Sample. Data consisting of 542 adults from different educational institutions and workplaces of Lahore was collected. Age range of the participants was from 18 to 57 years ($M = 26.82$, $SD =$

6.38). Participants had an education ranging from 12 to 18 years. Majority (66%) of them were women.

Instruments. Following instruments were used to establish the convergent validity.

Values in Action-Inventory of Strength-U. As described in Part I of the study.

Brief Social Desirability Scale (BSDS; Haghghat, 2007). This is a 4-item, short form of the Marlowe-Crowne Social Desirability Scale, developed by Haghghat (2007). It was administered to assess social desirability effects on the responses on VIA-IS-U. Items are responded on a *yes/no* format. Each *no* is given a zero and each *yes* is given 1 score. Responses on all four items are added, with resulting scores ranging from 1 to 4. High score indicates high social desirability. The author has recommended both a continuous score and a cut-off score of > 1 (more than one socially desirable answer) to exclude people with a tendency towards social desirability. We used both that is, a continuous score on the scale as indicative of social desirability with high score indicating high social desirability and a cut off score of > 1 describing those with higher scores as producing socially desirable answers. The scale has yielded good reliability and validity and is free from gender specificity (Haghghat, 2007).

Demographic Information Sheet. Demographic information sheet consisted of items related to gender, age, education, and monthly income.

Procedure. All the study measures were administered after translation into Urdu and after getting formal permissions from the authors of the scales. For the translation of the measures, same procedure was adopted as described for the translation of the VIA-IS. Data from participants was collected after acquiring formal permission from the relevant authorities as well as informed consent from individual participants was obtained. Anonymity and confidentiality of the data was maintained.

Results. Descriptive and psychometric properties of the VIA-IS-U were assessed by calculating mean, standard deviation, skewness, and alpha coefficients for the measure.

Table 2 shows that scores are negatively skewed (as in the case of all studies based on VIA-IS) but skewness is within the acceptable range for normal distribution. Alpha reliabilities range from .70 to .86. Top five endorsed strengths in study sample were Gratitude,

Spirituality, Fairness, Kindness, and Honesty, whereas Self-regulation is least endorsed strength.

Table 2
Descriptive Statistics and Alpha Coefficients of the VIA-IS-U (N = 542)

Scales	α	Range		M	SD	skewness
		Min.	Max.			
Beauty	.79	2.29	5.00	3.84	0.51	-.46
Bravery	.74	1.91	5.00	3.79	0.56	-1.21
Love	.72	1.00	5.00	3.89	0.55	-.71
Prudence	.81	1.60	5.00	3.86	0.53	-1.26
Teamwork	.80	2.00	5.00	4.01	0.50	-.34
Creativity	.71	2.30	5.00	3.79	0.51	-.48
Curiosity	.72	2.00	5.00	3.75	0.54	-.34
Fairness	.82	2.00	5.00	4.09	0.49	-.31
Forgiveness	.72	1.80	5.00	3.89	0.54	-.41
Gratitude	.72	2.00	5.00	4.26	0.51	-.47
Honesty	.81	1.50	5.00	4.03	0.47	-.18
Hope	.75	1.70	5.00	3.96	0.53	-.65
Humor	.75	1.90	5.00	3.91	0.56	-.60
Perseverance	.86	2.10	5.00	3.82	0.60	-.37
Judgment	.72	1.70	5.00	3.81	0.57	-.74
Kindness	.70	1.70	5.00	4.05	0.52	-.69
Leadership	.81	1.94	5.00	4.00	0.52	.25
Love of learning	.84	1.90	5.00	3.76	0.54	-.51
Humility	.76	1.90	5.00	3.87	0.50	-.49
Perspective	.74	1.80	5.00	3.82	0.53	-.27
Self regulation	.82	2.00	5.00	3.73	0.52	-.68
Social intelligence	.75	2.10	5.00	3.90	0.49	-.60
Spirituality	.80	2.40	5.00	4.14	0.55	-.39
Zest	.77	1.80	5.00	3.83	0.51	-.37

Note. Beauty = Appreciation of Beauty and Excellence.

Significant gender differences were found on seven subscales. Men scored higher on Bravery ($t = 2.20$; $p < .05$), Hope ($t = 2.58$; $p < .05$), Curiosity ($t = 2.43$; $p < .05$), Self-regulation ($t = 2.87$; $p < .01$), Perspective ($t = 2.89$; $p < .01$) and Zest ($t = 2.02$; $p < .05$); whereas women scored higher on Gratitude ($t = -2.58$; $p < .05$) and Spirituality ($t = -2.04$; $p < .05$). Age was found to be significantly negatively associated with Appreciation of Beauty ($r = -.16$), Love ($r = -.18$), Gratitude ($r = -.21$), Hope ($r = -.12$) and Humor ($r = -.15$).

To analyze the effects of social desirability on the scores of VIA-IS-U, correlations between social desirability scores and character strengths scores were calculated. Only appreciation of beauty was

found to be correlated with social desirability with a very small coefficient value ($r = .09$; $p = .03$). To analyze mean differences between participants above and below the cut off scores of the scale, t -test was run. Nonsignificant differences were found all subscales.

As a first step to factor structure exploration, Confirmatory factor analysis (CFA) using AMOS was performed on sample, to see if data supported the six-virtue structure of the strengths as proposed by Peterson and Seligman (2004). The fit indices of the model named NFI (Normative Fit Index), CFI (Comparative Fit Index), RMSEA (Root Mean Square error of Approximation), SRMR (Standardized Root Mean Square Residual) and AIC (Akaike Information Convergent) were examined. Findings (see Table 4) indicated that the model was a poor fit. Next, exploratory factor analytical procedures were performed on the same sample to explore number of factors for the current data. Multiple tests were used for this purpose, namely Exploratory Factor Analysis, Parallel analysis (PA) and Minimum Average Partial (MAP) test (later two were conducted using SPSS R Menu 2.1; Courtney, 2013). Exploratory factor analysis was conducted on SPSS using PCA (Principal Component Analysis). KMO Statistic (.97) and Bartlette's Test of Sphericity ($p < .001$) showed satisfactory values.

Table 3

Factor Loadings for Principal Component Analysis of VIA-IS-U With Varimax Rotation (N = 542)

Character strengths	Factors			
	F1	F2	F3	F4
Perseverance	.76	.18	.20	.26
Self-regulation	.72	.18	.11	.30
Prudence	.68	.29	.10	.32
Judgment	.70	.24	.15	.22
Creativity	.64	.24	.40	.21
Perspective	.63	.33	.35	.15
Honesty	.56	.41	.16	.30
Love of learning	.56	.18	.36	.31
Bravery	.60	.13	.27	.09
Teamwork	.16	.77	.24	.21
Fairness	.28	.76	.06	.25
Leadership	.28	.76	.19	.22
Forgiveness	.15	.70	.36	.07
Kindness	.26	.67	.37	.14
Humility	.34	.63	.16	.36
Curiosity	.34	.18	.71	.30
Humor	.24	.31	.74	.17

Continued...

Character strengths	Factors			
	F1	F2	F3	F4
Zest	.45	.25	.57	.32
Love	.15	.42	.56	.32
Social IQ	.37	.36	.53	.17
Gratitude	.22	.31	.24	.76
Hope	.38	.21	.31	.67
Spirituality	.35	.33	.18	.69
Appreciation of Beauty and Excellence	.17	.22	.50	.60
Proportion of Variance	.21	.19	.14	.14

Note. F1 = Factor 1; F2 = Factor 2; F3 = Factor 3; F4 = Factor 4. Boldface are factor loadings above .40.

As shown in Table 3, PCA resulted in four factor solution using Kaiser rule, examination of scree plot, total percentage of explained variance criteria ($\geq 50\%$ variance explained by the solution) as well as theoretical logic/interpretability. The solution explains 68% variance.

Finally, Parallel analysis (PA) and Minimum Average Partial (MAP) test were conducted to verify if the number of factors retained were above those retained by chance/error. PA is considered consensus method for reliably deciding on number of factors (Dinno, 2009; Velicer, Eaton, & Fava, 2000) and can be run specifying either 'components' or 'factors' to be extracted. Velicer's MAP criteria is similar to PA, in results and number of factors achieved (Velicer & Jackson as cited in Basto & Pereira, 2012). Both methods of factor determination retain factors above error variance. Both PA and MAP were conducted using SPSS R Menu 2.1 (Courtney, 2013). This menu allows assessment of average partial correlation raised to both second and fourth powers. Results of PA and MAP raised to fourth power suggested 4 factor solution above the error variance. Thus, four factor structure was retained.

As final step to confirm the factor structure of VIA-IS-U, CFA was run on a different sample to compare improvement in fit indices of 4 factor structure over 6 factor structure, earlier tested through CFA.

Findings in Table 4 show that six-factor model yields poor fit indices on current sample, whereas a four-factor solution is better fit with indices within the range of adequate to good.

Table 4
Fit Indices for Confirmatory Factor Analyses

Model	NFI	CFI	IFI	RMSEA	CI	SRMR	AIC
Model 1 (6-factor structure as proposed by Peterson and Seligman, 2004)	.83	.85	.85	.11	[.11,.12]	.23	2082.50
Model 2 (4-factors)	.91	.92	.92	.06	[.06,.07]	.05	765.98

Note. NFI = Normative fit index; CFI = Comparative fit index; IFI = Incremental Fit Index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation. Values for CFI, NFI, and IFI > .90 and values for SRMR and RMSEA < .08 are considered indications of acceptable fit. Smaller values of AIC indicate better fit.

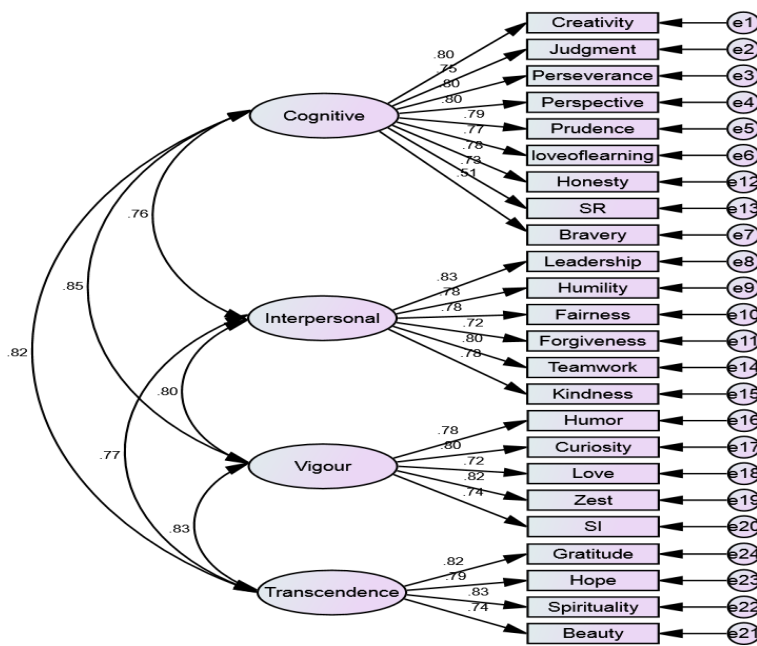


Figure 1. Confirmatory factor analysis of VIA-IS-Urdu.

Figure 1 shows that the factors retained are named as Cognitive (included strengths of perseverance, judgment, bravery, self-regulation, prudence, creativity, perspective, love of learning, &

honesty), Interpersonal (included strengths of fairness, teamwork, leadership, forgiveness, kindness, & humility), Vitality (included strengths of curiosity, humor, social intelligence, zest, & love) and Transcendence (included strengths of gratitude, spirituality, appreciation of beauty, & hope (see Figure 1). These factors are further explained in discussion section.

Convergent validity and test-retest reliability. Convergent-related validity was determined with the help of associations with positive and negative affect and satisfaction with life. Test-retest reliability was determined over a period of six months.

Sample. Sample comprising of 210 participants was collected for convergent validity. Their age ranged between 18-23 years ($M = 19.64$, $SD = 3.07$). All participants were students of masters or BS Honors in three large universities of Lahore. 62 % of the participants were women. The participants were administered VIA-IS-U along with Positive and Negative Affect Schedule (Watson, Clark, & Tellegan, 1988), and Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). All the participants in the above-mentioned sample were contacted again after 6 months interval for second time measurement on VIA-IS-U. Of the whole sample ($N = 210$), 144 completed the second time measurement; thus, constituting the sample for test-retest reliability. This sub-sample had a mean age of 20.11 years with a standard deviation of 2.98 and 58 % were women.

Instruments. Following instruments were used to establish the convergent validity.

Values in Action-Inventory of Strength-U. As described in Part I of the study.

The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). This scale consists of 20 words that describe different feelings and emotions, both positive and negative. The scale consists of two subscales, Positive Affect and Negative Affect. Ten words reflect positive and the other ten reflect negative affect. Separate positive and negative affect scores are calculated for each participant. Participants rate the extent to which he/she experiences these emotional states on a Likert scale of 1 to 5. Positive Affect score is calculated based on responses to items 1, 3, 5, 9, 10, 12, 14, 16, 17,

and 19. Scores can range from 10 - 50, with higher scores representing higher levels of positive affect. Negative Affect score is based on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20. Scores can range from 10 - 50, with higher scores representing higher levels of negative affect. This scale was used as a convergent measure for determination of convergent validity of VIA-IS-U.

Satisfaction With Life Scale (SWLS; Diener et al., 1985). It is a 5-items scale that assesses global cognitive judgments of one's life satisfaction. Thus, it is different from either positive or negative affect that measures affective or emotional component of subjective wellbeing. Items are rated using a 7-point scale that ranges from 7 *strongly agree* to 1 *strongly disagree*, indicating how much one agrees or disagrees with each of the 5 items. Responses on all five items are added to yield an overall score on life satisfaction. Total score ranges between 5 and 35. High score indicates high life satisfaction. The scale has been used in numerous studies and has shown good reliability.

Procedure. As above mentioned under the heading of construct validity.

Results. For convergent validity, it was expected that character strengths will correlate positively with PA and life satisfaction and negatively with NA (as found in previous studies e.g. Ruch et al., 2010). All correlations were in expected direction (see Table 5).

All except three, character strengths (i.e., fairness, forgiveness, & love) are significantly and positively related to positive affect. Eight strengths including creativity, curiosity, gratitude, forgiveness, perseverance, self-regulation, social intelligence, and zest were negatively related with negative affect. With life satisfaction, 16 strengths including appreciation of beauty and excellence, creativity, curiosity, gratitude, humility, humor, judgement, leadership, love, perseverance, perspective, self-regulation, social intelligence, spirituality, teamwork, and zest were significantly positively related. Magnitude of most of the significant correlations with life satisfaction and positive affect is higher than as with negative affect, although only ten differences in correlations reached significance using Fisher's z test (with p ranging from $< .001$ to $.04$, two tailed).

Table 5

Correlations of Character Strengths With Positive and Negative Affect and Life Satisfaction (N = 210)

Character strength	Positive affect	Negative affect	Life satisfaction
Appreciation of beauty and excellence	.24**	-.12	.39**
Bravery	.23**	-.07	.10
Creativity	.32**	-.19*	.31**
Curiosity	.23**	-.21**	.23*
Fairness	.12	-.07	.12
Forgiveness	.14	-.19*	.03
Gratitude	.17*	-.23**	.46**
Honesty	.24**	-.06	.07
Hope	.23**	-.09	.13
Humility	.15*	.03	.17*
Humor	.28**	-.03	.20**
Judgment	.31**	-.13	.31**
Kindness	.16*	.03	.14
Leadership	.21**	-.10	.24*
Love	.10	-.02	.37**
Love of learning	.19*	-.11	.07
Perseverance	.32**	-.15*	.24*
Perspective	.30**	-.02	.27*
Prudence	.25**	-.06	.09
Self-regulation	.20**	-.21**	.41**
Social intelligence	.31**	-.20**	.31**
Spirituality	.18*	-.10	.27*
Teamwork	.17*	-.10	.20**
Zest	.42**	-.23**	.33**

* $p < .05$. ** $p < .01$.

Test-retest reliability. Test-retest reliabilities were calculated for a 6-months time interval. All correlations between time 1 and time two were significant though magnitude ranged from moderate (.37) to high (.68). As compared to many other studies on VIA-IS, these reliabilities were lower though were comparable with VIA-IS on youth sample (Park & Peterson, 2006). Considering average age of the sample used for retest reliability assessment (20 years), another sample of respondents ($N = 85$) with higher age range (a subset of larger sample of 542 respondents used for factor structure determination) was given VIA-IS-U after 6-months time interval. This sample age range was between 27 and 57 years. The retest reliabilities yielded from this sample were high ranging from .67 to .93.

Intercorrelations between strengths. Intercorrelations between strengths were calculated to check for degree of redundancy between strengths. Results show that correlations between strengths scales ranged from $r = .11$ (between Humor & Forgiveness) to $r = .77$ (between Judgment & Prudence) at time 1 and from $r = .05$ (between Curiosity & Teamwork) to $r = .66$ (between Social Intelligence & Humor) at time 2. It indicated that although the 24 strengths might be correlated but are necessarily distinct constructs.

Discussion

The aim of the current work was to translate and validate the Values in Action Inventory of Strengths (VIA-IS) in Urdu language. To date, a large body of research done on character strengths has used VIA-IS English version and conducted in English speaking countries. Nonetheless, more researches are emerging that have focused on translation of the VIA-IS into indigenous languages. Considering the need for an Urdu version of the full-length VIA scale, the current work aimed at development and validation of Urdu translation of VIA-IS to facilitate research on character strengths in communities from Pakistan or abroad whose first language is Urdu. A series of analyses were run on more than one samples (overall $N = 772$) to validate translation and determine psychometric properties.

Standard forward and backward translation procedure was used to ensure accuracy in translation and transfer of conceptual meanings. At each stage, committee approach was adopted to ensure consensus on translation of items. The procedure yielded a very good translation of the instrument. Both English and Urdu versions correlated well. Results of bilingual validation showed high correlations between Urdu and English versions ranging from .72 to .94, depicting quality of the translation. Means of the strengths ranged from 3.73 to 4.26 with top five strengths being gratitude, spirituality, fairness, kindness, and honesty, while self-regulation being least endorsed strength. These results are, to much extent, in line with findings of McGrath (2015b) on Pakistani sample. The rankings of top five and least endorsed strengths are also largely in line with researches conducted in other countries such as Brazil (Noronha, Dellazzana-Zanon, & Zanon, 2015) and Spain (Azañedo et al., 2014), except for spirituality. It is important to mention here that spirituality was among the bottom five in all countries in McGrath (2015a) study on 75 nations except for Indonesia, Kenya, and Pakistan. Similarly, in South African population (Khumalo, Wissing, & Temane, 2008), spirituality was

among the top five strengths. It indicates that although there are many similarities in countries around the world on ranking of strengths, spirituality is a more central aspect of virtuous functioning in Asian countries (like Pakistan & Indonesia) and African countries (like Kenya and South Africa) as compared to America or European countries.

Skewness of the data was within the range for normal distribution though data was negatively skewed, as has been observed in studies on character strengths, due to inherent nature of the constructs (Peterson & Seligman, 2004). Alpha reliabilities were found to be quite high revealing that the translated version is reliable and comparable in alpha values with English version.

Social desirability effects are expected on self-report assessment of strengths (Peterson & Seligman, 2004), yet many studies have demonstrated that empirically, very few strengths are found correlated with social desirability (e.g. Ruch et al., 2010). In this study, both continuous scores and cut off scores were used. No significant differences or correlations (except one significant correlation) between scores of social desirability with strengths supported the previous notion that though respondents may slightly over-represent strengths and thus give negatively skewed responses, still their responses are meaningfully varied on basis other than social desirability. Correlations with age found significant in present study were negative including appreciation of beauty, love, gratitude, hope, and humor but all were small in size. There is some evidence supporting these findings. For example, Ruch et al. (2010) found small negative correlation of age with creativity, perspective, social intelligence, and humor along with many other positive correlations. In this study, no positive correlation reached significance. These findings may be considered initial which need further verification before reaching any conclusion. Significant gender differences were found with men being high on bravery, hope, creativity, curiosity, self-regulation, perspective, and zest, whereas women scored higher on gratitude and spirituality. Other researchers have found gender differences in line with these findings, for example, women endorsing gratitude more than men, while men endorsing bravery, curiosity, creativity, and hope more than women (Azañedo et al., 2014; Brdar, Anic, & Rijavec, 2011; Mann, 2014; Shimai, Otake, Park, Peterson, & Seligman, 2006). Heintz, Kramm, and Ruch (2019) conducted a meta-analytical study including 65 samples and found that women score higher on appreciation of beauty, gratitude, love, and kindness, whereas men scored higher than women on bravery, creativity, open-mindedness, and humor in adult age groups.

Strengths related differently with positive and negative affect scale and life satisfaction. Positive or negative affect scores are not necessarily correlated that is, presence of positive emotions does not fully eradicate the chances of experiencing negative emotions (Schmukle, Egloff, & Burns, 2002). It was expected that character strengths will correlate positively with positive affect and life satisfaction and negatively with negative affect (see, e.g., Ruch et al., 2010). All correlations were in expected direction (see Table 5). Scores on strengths in the present study were either associated with both positive and negative affect in opposite directions (such as creativity, curiosity, gratitude, perseverance, self-regulation, social intelligence, & zest) or many strengths related to one but not to other (e.g., appreciation of beauty related positively to positive affect but not with negative affect, whereas forgiveness related negatively with negative affect but not with positive affect which is quite meaningful). Overall, there was consistency in direction of relationship that proved evidence of convergent validity of the Urdu version of VIA-IS measure for indigenous population. These findings are consistent with (1) the argument presented by Peterson and Seligman (2004) that strengths, owing to their inherent nature, relate positively to positive outcomes more than they relate negatively to negative outcomes (2) as well as supported by Littman-Ovadia's (2015) study on validation of the scale's short form. Ros-Morente, Mora, Nadal, Blasco-Belled, and Berenguer (2018) also found associations between positive affect and virtues of temperance and humanity. Life satisfaction is an overall cognitive evaluation of one's life as compared to positive/negative affect that is emotional component of wellbeing and is less stable than life satisfaction. Correlations with life satisfaction were all positive, most of them were significant and overall higher than with affect measure. Gratitude (with highest correlation), love, appreciation of beauty, and self-regulation are among others that correlated highly with life satisfaction as compared to other significant strengths. Future studies can confirm this using other measures such as depression and flourishing, and personality measures such as HEXACO or Big Five Inventory. This will also add to construct validation of the translated measure.

Test-retest reliabilities of the scale were in low to medium range. Generally, lower reliabilities than those observed in most other studies using VIA-IS were observed. This fact might be attributed to the age of the participants. The average age of the current study sample (20 years) was relatively lower than that of many other studies. Park and Peterson (2006) observed lower 6-months test retest reliabilities, between .48 and .71, on a younger sample with age range 10-17 years.

As mentioned in results section, when retest reliabilities were calculated for a small sample with higher average age, correlations were quite higher and comparable to earlier studies (e.g., Ruch et al., 2010). It may indicate that strengths itself or strengths endorsement stabilizes with age, or simply thinking and analyzing about one's self might vary with time and age and result in variations in stability of endorsements. The two administrations were done on a six months' time interval and many confounding variables might have occurred in between and would have affected the results.

The determination of factor structure in the present study was based on multiple criteria. After rejection of six virtues model through confirmatory factor analysis, exploratory PCA was conducted. More than one models were taken into consideration before retaining one final model. Both exploratory and confirmatory procedures were used. Parallel Analysis and MAP test both suggested four factor solution that was further confirmed on a different sample using CFA. Fit indices of the CFA also supported that 4-factor structure was a good fit for the current study sample. The factors reflect strengths related to positive behavior towards other people (Interpersonal), positive intellectual behavior (Cognitive factor), strengths related to positive life in society/world (Vitality), and strengths reflecting essence of life as whole (Transcendence).

There is evidence for four factor structure of VIA in other cultures as well. Cawley, Martin, and Johnson (2000) found four factors named empathy, order, resourcefulness, and serenity. Dahlsgaard (2005) found support for factors named as temperance, intellect, transcendence, and gregariousness. Park and Peterson (2006) named four factors found in their study as Temperance Strengths, Other-Directed Strengths, Intellectual Strengths and Theological Strengths. Brdar and Kashdan (2010) named their factors as Vitality, Fortitude, Cautiousness, and Interpersonal, whereas MacDonald, Bore, and Munro (2008) named four factors as Positivity, Intellect, Conscientiousness, and Niceness. When compared with other four factor solutions proposed in studies mentioned above, findings of the current study were quite similar. For example, Interpersonal factor related closely to the Niceness factor of Macdonald et al. (2008) and Interpersonal factor in Brdar and Kashdan (2010), Cognitive factor related closely to Openness to Experience (Brdar & Kashdan, 2010) and Intellectual and Temperance strengths (Park & Peterson, 2006) and Intellect and Conscientious (Macdonald et al., 2008). Vitality included strengths that were part of Positivity factor (Macdonald et al., 2008) and Vitality (Brdar & Kashdan, 2010), whereas Theological

strengths (Park & Peterson, 2006) shared strengths from both Vitality and Transcendence factor of the study.

While compared to the Peterson and Seligman (2004) six factor model, strengths in Cognitive factor of this study are from wisdom, courage, and temperance virtues. Interpersonal factor combines 5 out of 6 strengths from virtues of humanity and justice (except social intelligence), whereas Transcendence encompasses 4 out of 5 strengths of transcendence virtue (except humor). Vitality was the most distinct factor from the virtues in that it combines one strength from each of the virtues of transcendence, wisdom, courage; and two from humanity. The most consistent and stable factor has been Interpersonal factor across most of the studies (whether they have recommended three or four factor structure; e.g., Duan et al., 2012). Here, it is important to mention that honesty (included in Cognitive factor) and love (included in Vitality) had very close cross loading on Interpersonal factor where it is included in some other studies.

The differences in factor structures across cultures might either indicate the suitability of the 4-factor structure for the VIA-IS or can be an evidence that different virtues exist cross culturally and diverse strengths are being used to attain each virtue. For example, love is found loading to Interpersonal factor in many studies, whereas in our study it showed higher loading on Vitality factor. It may be the case that in Pakistani culture, love is a strength not taken solely in interpersonal context but as a source of attainment of virtue of vitality. Peterson and Seligman (2004) emphasized that factor analysis does not represent unidimensional structure of the scale but also the fact that individual may not use all strengths in a virtue category or can use any other strength to attain the same virtue. Only further, more sophisticated research can prove or refute these explanations.

Conclusion

Values in Action Inventory-Urdu version (VIA-IS-U) was translated following standard forward-back translation procedures. The results showed that Urdu translation is equivalent to English version in concepts and meanings. VIA-IS-U yielded good psychometric properties including high alpha reliabilities and showed convergent validity through correlations with convergent measures in expected directions. The scale did not indicate social desirability bias. The results of the present study indicate that VIA-IS-U is a valid and reliable measure that can be used in future studies in Pakistan, with Urdu speaking participants.

Limitations, Suggestions, and Implications

So far, it is the first study on translation of VIA-IS in Urdu and determining its psychometric validity and factor structure in Pakistani culture. It has conducted rigorous procedures to establish that VIA-IS-U is a valid and reliable measure to study character strengths in Pakistani Urdu speaking population. Still, there are limitations that should be considered in future research. First, we explored virtue level factor structure but did not explore item-to-strength level structure of the scale. Future studies should focus on item level analysis to check suitability of each item for its respective scale. This will add to improved reliabilities of the scales and more reliable findings on virtue level factor analysis and, even better fit indices of factor models for the data. Most of the participants recruited in the study were relatively younger. Diversity with respect to age was limited. Another important concern is that all participants were highly educated (with minimum BS/Masters level enrollment). For studies concerning basic psychometric properties and initial factorial validity, sample should be diverse with respect to age, education, residential area, and socioeconomic status. As far as socioeconomic status is concerned, it was diverse in this study as participants were recruited from different government and private colleges and universities. Though all the institutes were from the same city, but sample can be termed as diverse as all these institutes/ universities have large number of resident students coming from different cities/rural areas of Pakistan.

Nonetheless, this study has provided first psychometric and factorial evidence regarding VIA-IS-U and its fit to Pakistani culture. VIA-IS-U will facilitate research on character strengths in Pakistan and inclusion of Urdu speaking population in larger data pool on the measure allowing for further cross-cultural comparisons in future.

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