

Personality Speaks Urdu: Translation and Validation of the Big Five Inventory

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Abstract

Big Five Inventory (BFI) is an established measure to assess personality encompassing five dimensions: extraversion, agreeableness, conscientiousness, neuroticism and openness to experience. The aim of the present research was to translate the BFI (44 items) into Urdu and validate its psychometric attributes in the Pakistani population. In Study 1, the scale was translated using forward and back-translation procedures, followed by expert review and pilot testing with 40 participants. In Study 2, BFI-Urdu was administered to $N=500$ participants. Confirmatory Factor Analysis (CFA) confirmed the five-factor structure with excellent model fit indices ($\chi^2/df=2.84$, CFI = .94, GFI = .96, RMSEA = .06, SRMR = .05). Internal consistency coefficients ranged from .86 to .91, with evidence supporting satisfactory convergent and discriminant validity. These findings support the psychometric soundness and cultural appropriateness of the Urdu version of the BFI. The availability of a validated Urdu-BFI facilitates reliable personality assessment in clinical, educational, and organizational settings and provides a robust tool for future cross-cultural and indigenous personality research in Pakistan.

Keywords: Big five personality inventory, Urdu translation, CFA, psychometric validation, personality traits

Introduction

Personality is a configuration of individual differences in mind, feeling, and behaviour (Moghadam et al., 2021). It integrates cognition with emotional, physical and social processes (Yuns et al., 2018). Several definitions for personality have been provided over the years that have stressed the processes of thought, emotional regulation, and behavioral tendencies (Geramian et al., 2012; Kagan & Segal, 1988). Personality is defined as "individual differences among people in behavior, cognition, affect, and motivation" (John et al., 2008, p.3), with personality traits conceptualized as habitual patterns of thought, emotion, and behaviour that are relatively enduring, relatively consistent across situations, and that shows some limited amount of relative stability over the adult life course in behavior (Roberts, 2009). Personality traits can predict major life outcomes, such as academic success (De Feyter et al., 2012), career outcomes (Judge et al., 2013), mental health and physical well-being (Strickhouser, 2017). Accurate assessment of personality is an important goal across psychology science and applied practice.

One of the most influential and widely accepted frameworks of personality is the Big Five model (Goldberg, 1993; McCrae, 1987). The Big Five model conceptualizes personality in terms of five factors: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. These traits reflect stable patterns of behavior, cognition, and

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emotion. For instance, extraversion is underpinned by sociability and vitality; agreeableness by empathy and trustworthiness, conscientiousness by organization and responsibility, neuroticism by emotional instability, and openness by creativity and openness for new experiences (Rossberger, 2014; Yunus et al., 2018). These traits have been associated with unique personality attributes, including talkativeness within extraversion, empathy within agreeableness, self-discipline within conscientiousness, irritability within neuroticism, and imagination within openness (Bozionelos et al., 2014; Weele, 2013).

The cross-cultural strength of the Big Five framework in different languages and cultures has been well-established in extensive studies (Siraji et al., 2025). Due to its conceptual clarity and wider applicability, BFI is invariably sound factorial validity and reliability across cultures. Translations of BFI have been done into different languages, including Spanish (Roiz et al., 2022), German (Lang et al., 2001), Chinese (Carciofo et al., 2016), Arabic (Alansari, 2016), Malay (Razaob et al., 2024), Italian (Ubbiali et al., 2013), Danish (Palsson et al., 2020), Persian (Minaei & Hassani, 2022), and No psychometrically sound personality assessment in Urdu language is available even with international validations. The current substitutes are characterized by significant shortcomings. The BFI-10 (10-item) Urdu is not a suitable instrument to measure the entire range of the five personality dimensions (Costa et al., 2023; Steyn and Ndofirepi, 2022), and longer versions (e.g., a 128-item version) are not feasible in practice and research as they have a high respondent burden. Thus, an extensive Urdu translation of the 44-item version of BFI is needed. The establishment of reliability and validity of Urdu BFI is likely to be useful in personality testing in research, clinical practice, educational, and organizational setting in Pakistan. The hypotheses of this research are as follows: 1) the translation of big five inventory (BFI-44) to Urdu, 2) to test factorial structure of BFI-Urdu with the help of Confirmatory Factor Analysis (CFA), 3) to investigate reliability of the five dimensions of personality, and 4) to determine convergent and discriminant validity of BFI-Urdu.

Method

Research Design

This study employed a sequential methodological design consisting of two distinct phases, aligned with best practices for cross-cultural scale adaptation and validation (Beaton et al., 2000). The first phase focused on translation, while the second phase on confirmatory factor analysis (CFA).

Phase 1: Urdu Translation

Sample

The study included $n=40$ bilingual adults. They were chosen purposively and participated in the test–retest procedures. Participants were fluent in both English and Urdu to ensure cross-language equivalence and facilitate the initial evaluation of the translated inventory.

Assessment Measure

The Big Five Inventory (John & Srivastava, 1999)

The Big Five Inventory was used to test the extraversion, agreeableness, conscientiousness, neuroticism and openness to experience qualities of personality. They were conducted using a 5-point Likert that included 44 questions that were strongly disagree to

strongly agree. The original BFI shows good psychometric qualities, where in the five traits reported internal consistency coefficients are maintenance of 0.75-0.90, and evidence of factorial, convergent and discriminant scale-score cross-cultural validity is high (John and Srivastava, 1999; John et al., 2008). The Urdu version was retained in its original 44-item structure, with identical response format and scoring procedures, to ensure linguistic, conceptual, metric, and functional equivalence with the source instrument.

Procedure

In phase 1, an Urdu version of the measure was created relying on the original English version. It was translated as per the guidelines of International Test Commission (ITC, 2017) and involved forward translation, backward translation, expert panel review, and pilot testing to ensure that there was language and ideas equality in the translation. The BFI was translated into Urdu by two bilingual psychologists working independently as they ensure that they translated all the information correctly, with understanding of cultural variation. The various translations under consideration were put through the filter of a panel of psychologists who condensed the various translations. Two other bilingual translators once more converted the BFI into Urdu. Translators preserved the meaning and ideas in such a way that the version translated was correct. The Urdu version was completed and the disagreements among the subject experts were resolved. To scrutinize the final version, a review panel was composed of experts in the area to make sure that there was no wrong grammar construction, that it is culturally fitting, and it has the same meaning throughout 44 items. Bilingual participants/volunteers (n=40) used to verify the cultural and conceptual similarity of the translated measure were filled during the pilot testing phase by answering the English and Urdu version of survey. The two versions (English and Urdu) were counterbalanced in that the two versions were introduced in counterbalanced order during two different sessions that were conducted in different weeks. Half of the participants completed the English version first followed by the Urdu version, while the remaining participants completed the Urdu version first followed by the English version. This procedure allowed for the assessment of cross-language equivalence and temporal stability (test-retest reliability).

Phase 2: Validation of Urdu-BFI

Research Design

Confirmatory factor analysis (CFA) was applied to examine the structure of the Urdu version of the BFI in the second phase. We validated the inventory by testing its reliability and construct validity, both convergent and discriminant validity. Convergent validity of the Urdu-translated BFI was conducted to validate the factor structure of the Urdu version.

Sample

Urban and semi urban regions in South Punjab were used to select a sample of N=500 adults. The analysis of the priori power was performed with G Power 3.1 to establish whether the sample size is adequate. With the assumptions of medium effect size ($f^2 = .15$), an alpha of .05, and power $(1 - \beta) = .95$, a minimum of 400 subjects was needed as the required minimum sample size in structural equation modeling. Thus, a sample of 500 participants was deemed to be appropriate to guarantee a strong model estimation, consistent parameter estimates, and sufficient statistical power (Faul et al., 2009; Kline, 2016). The last sample included n = 280 (56%) males and n = 220 (44%) females among those who are students and community members with different educational and work backgrounds. The age of the participants was

between 18 and 40 ($M = 28.34$, $SD = 6.85$). The average age of the male participants was $M = 27.72$ ($SD = 6.42$), and the average age of the female participants was $M = 29.24$ ($SD = 7.28$). The participation was voluntary and the demographic distribution allowed the reasonable extrapolation to the young adult populations.

Assessment Measure

Urdu - Big Five Personality Inventory (Urdu - BFI)

BFI translation into Urdu was used to collect data, which was originally created by John and Srivastava (1999). The tool comprises 44 questions where the responses are measured using a 5-point Likert scale against strongly disagree to strongly agree. It assesses personality factors in reference to five personality dimensions that are extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience.

Procedure

The data were collected when the Department of Psychology, Islamia University BWP gave the formal consent. The objectives of the study were well presented to all the participants and procedures of keeping a secret were spelled out. Informed consent was signed by all the participants before the participation. The questionnaire was self-administered, though the supervisors in the questionnaire team were available to provide guidance on terminologies where it was necessary. The process of data collection lasted five weeks and was implemented both in the community and university context. There was no time constraint on the respondents to fill out the questionnaire. In order to provide data quality and minimize the possibility of estimation bias, we filtered out partial answers and missing values that might affect factor estimation and reliability research. Preliminary reliability and descriptive statistics were calculated. The first step was the Exploratory Factor Analysis (EFA) to understand the underlying factor structure of the Urdu-translated items. Confirmatory Factor Analysis (CFA) was then used to test the hypothesized measurement model and measure the model fit when valid fit indices were established. The two-step validation method enhances construct validity because it combines both exploratory and theory-based analyses and aligns with the current standards of cross-cultural scale adaptation (Hair et al., 2021; Rogers, 2024).

Ethical Considerations

- The Institutional Review Board (office number 348/AS&R) authorized the studies 1 and 2 and the ethical guidelines were followed.
- All the participants were made aware of the objectives of the study beforehand and the voluntary nature of the study in advance and they were assured the right to drop out at any point.
- No identification data were gathered, there was no participation whatsoever, and no incentive was given.
- All the information was highly confidential and was utilized as a part of academic research.

Results

To test the hypothesized five-factor structure of the Urdu-translated Big Five Inventory, which is based on the structure of the original model posited by John and Srivastava (1999), Confirmatory Factor Analysis (CFA) was performed with the help of IBM SPSS AMOS

version 25.0 (Arbuckle, 2020). The pri a priori assumption was the Urdu-BFI would reproduce the original five-factor structure (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to experience) which would yield satisfactory model fit statistics. CFA has been conducted in a Structural Equation Modeling (SEM) framework, because in a Structural Equation Model, it is possible to assess measurement structure and construct validity simultaneously. The model fit was also assessed in terms of various goodness-of-fit measures such as the chi-square /df ratio (χ^2/df), Comparative Fit Index (CFI), Goodness-of-Fit Index (GFI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). The last CFA model fitted the recommended acceptable fit (CFI and GFI $\geq .90$, $\chi^2/df < 3$, RMSEA ≤ 0.8 , SRMR ≤ 0.8) criteria established by Hair et al. (2021) and Hu and Bentler (1999). Within the SEM framework (Panahi et al., 2023) convergent and discriminant validity were examined as part of the CFA results. Convergent validity was supported through statistically significant standardized factor loadings and Average Variance Extracted (AVE) values. Discriminant validity was assessed using the Fornell–Larcker criterion (Fornell & Larcker, 1981), whereby the square root of AVE for each construct exceeded its inter-factor correlations, indicating adequate construct distinctiveness (see Table 2).

Table 1

Estimates of Pearson’s Correlation between the Urdu and English BFI (N= 40)

Scale	<i>r</i>
English – Urdu	.783**
Urdu – Urdu (test-retest)	.877**

Note. ** $p < .01$

Table 1 presents the correlations between the English and Urdu versions of the Big Five Inventory (BFI). A significant positive correlation was observed between the English and Urdu versions ($r = .783$, $p < .01$), indicating strong cross-language correspondence. In addition, the Urdu version demonstrated high test–retest reliability over a one-week interval, with a statistically significant correlation ($r = .877$, $p < .01$).

Linguistic Validation of the Big Five Personality Inventory (BFI)

The psychometric evaluation includes reliability estimates, convergent validity and discriminant validity.

Table 2

Reliability and Psychometric Properties of each factor of the Urdu-translated Big Five Inventory

Item No	Factors				
	1	2	3	4	5
P1	0.71				
P6	0.73				
P11	0.81				
P16	0.78				

P21	0.74				
P26	0.77				
P31	0.72				
P36	0.68				
P2		0.69			
P7		0.72			
P12		0.68			
P17		0.73			
P22		0.69			
P27		0.74			
P32		0.71			
P37		0.73			
P42		0.77			
P3			0.73		
P8			0.74		
P13			0.77		
P18			0.79		
P23			0.68		
P28			0.73		
P33			0.78		
P38			0.72		
P43			0.69		
P4				0.74	
P9				0.68	
P14				0.74	
P19				0.72	
P24				0.71	
P29				0.72	
P34				0.69	
P39				0.73	
P5					0.71
P10					0.74
P15					0.76
P20					0.72
P25					0.77
P30					0.71
P35					0.68
P40					.69
P41					.76
P44					.67
K	8	9	9	8	10
α	.89	.89	.91	.90	.86
CR	0.90	0.91	0.92	0.89	0.88
AVE	.55	0.52	0.54	0.51	0.51
MSV	.29	0.17	0.29	0.11	0.23

Note. α = Cronbach's alpha, λ (lambda) = standardized factor loading, CR = composit reliability, k = number of items, AVE = Average variance extracted, MSV = Maximum Shared Variance

Above table presents the assessment of convergent validity included a review of factor item loadings and computation of average factor variance statistics. Composite reliability and Cronbach's alpha were expected to be $\alpha = .70$ or higher and item variance requirements of minimum .50 (Hair et al 2010; Henseler et al., 2016). The BFI established an adequate convergence validity between its factors of extraversion, agreeableness, conscientiousness, neuroticism and openness to experiences according to variance explanations that reached 55%, 52%, 54%, 51% and 51% respectively. The factors in this questionnaire were reliable based on Cronbach's alpha and composite reliability. The extraversion subscale consisted of 8 items ($\alpha = .89$), the agreeableness subscale consisted of 9 items ($\alpha = .89$), the conscientiousness consisted of 9 items ($\alpha = .91$), neuroticism consisted of 8 items (.90) and openness to experience consisted of 10 items ($\alpha = .86$).

Confirmatory Factor Analysis of translated BFI

Table 3 shows the model fit statistics of five subfactors of the BFI which are Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience.

Table 3

Fit Indices of CFA of Urdu translated BFI (N = 500)

Model	χ^2	Df	χ^2/df	GFI	CFI	NNFI	RMSEA	SRMR
Initial Model	3855.74	892	4.32	.87	.88	.89	.08	.08
Model Fit	2528.17	890	2.84	.96	.94	.92	.06	.05

Note. SRMR = Standardized root mean square, RMSEA=root mean square error of approximation, NNFI = non-normed fit index, GFI= Goodness of fit index, CFI=comparative fit index

The χ^2 (890) value provided the assessment for absolute model fit of Big Five Inventory (BFI) data with adults presented in Table 3. The statistical results established that the model fit with 2528.17 at $p < .05$ provides an excellent model fit. Multiple indices including goodness of fit index, RMSEA, and SRMR were estimated for data-model homogeneity (Hair et al., 2010; Hu and Bentler, 1999). The χ^2/df ratio should range from 0 to 3 for acceptable fit, while RMSEA values should be below .08 and SRMR values below .05. For null model comparison indices, such as GFI, TLI and CFI, a value of .90 or greater is preferred, although sometimes a threshold of $.8 \leq .9$ is correspondingly measured acceptable. According to the model fit evaluation criteria, the RMSEA and SRMR values were .08. When contrasted to the null model, the value of CFI, NNFI and GFI for the BFI was .88, .89, and .87, respectively.

For null model comparison indices, such as GFI, TLI and CFI, a value of .90 or greater is preferred, although sometimes a threshold of $.8 \leq .9$ is correspondingly measured acceptable. According to the model fit evaluation criteria, the RMSEA and SRMR were 0.08. When contrasted to the null model, the value of CFI, NNFI and GFI for the BFI was 0.88, 0.89, and 0.87, respectively. Moreover, χ^2/df was found to be 4.32. These statistics suggest that the initial model does not satisfy the recommended fit criteria. To address this issue, modifications to the model were undertaken (Xiong et al., 2025). Figures 1 and 2 present model fit and CFA. The results showed improved fit, with RMSEA= 0.06 and SRMR= 0.05. The GFI, CFI, and NNFI for the Big Five Inventory (BFI) were reported as .96, .94, and .92, respectively, while the χ^2/df

ratio decreased to 2.82. Thus, it was inferred that sample variance-covariance and population variance-covariance are in accordance with the observed data.

Discriminant Validity

The Fornell-Larcker criterion established statistical evidence showing five personality traits to be distinct from one another. Analysis of Variable Extraction (AVE) revealed values exceeding Maximum Shared Variance (MSV) indicators which thus indicating high discriminant validity.

Table 4

Fornell-Larcker Criterion and Descriptive Statistic for the Factors of BFI

Variables	MaxR(H)	1	2	3	4	5
1. Neuroticism	0.90	0.717				
2. Agreeableness	0.91	-0.250	0.718			
3. Openness	0.92	-0.336	0.320	0.712		
4. Conscientiousness	0.92	0.072	0.410	0.480	0.738	
5. Extraversion	0.91	-0.220	0.390	0.430	0.540	0.744

Note. * $p < .05$, ** $p < .01$

The data showed that AVE square roots surpassed all correlational values which confirmed good discriminant validity values during analysis (see Table 3.3 for reference). The AVE of each factor was evaluated against the MSV of that factor during the second method. Hair et al. (2010) established that measure of shared variance must be lower than average variance extracted in order to prove factor-explanatory power exceeds other factors. The study results showed that the AVE exceeded the MSV values indicating sufficient discriminant validity of the BFI measurement scale.

Determining Psychometric Properties of the Big Five Personality Inventory (BFI) Scale

Two phases of validation established the psychometrics of BFI (John & Srivastava, 1999). The Confirmatory Factor Analysis (CFA) method validated the original factor structure of the Urdu-translated BFI in Phase I. Phase II set out to measure both convergent and discriminant validity of the scale which determined its psychometric properties.

Figure 1

Confirmatory Factor Analysis for Urdu-translated Big Five Inventory (BFI) For Adult (N=500), Initial Model

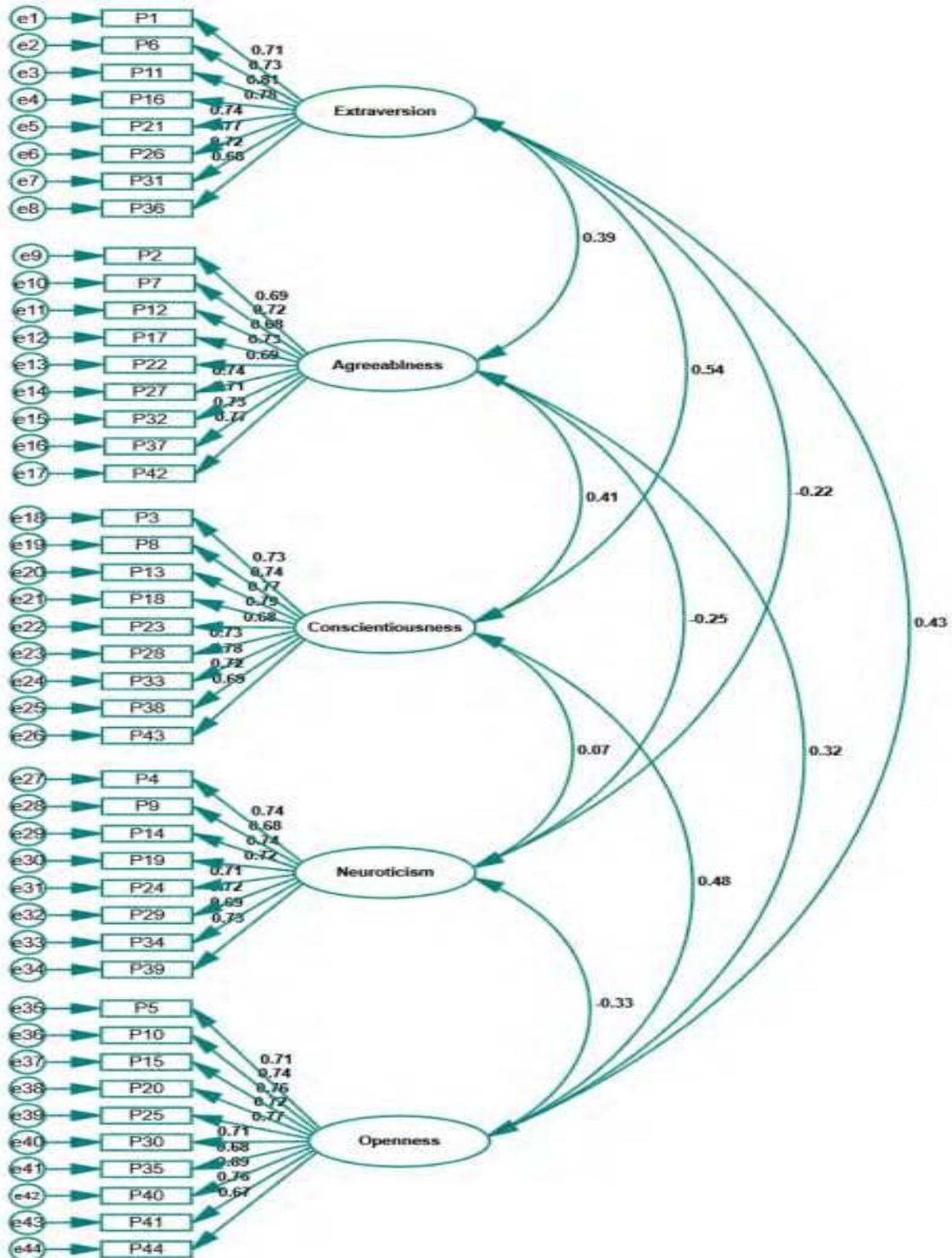
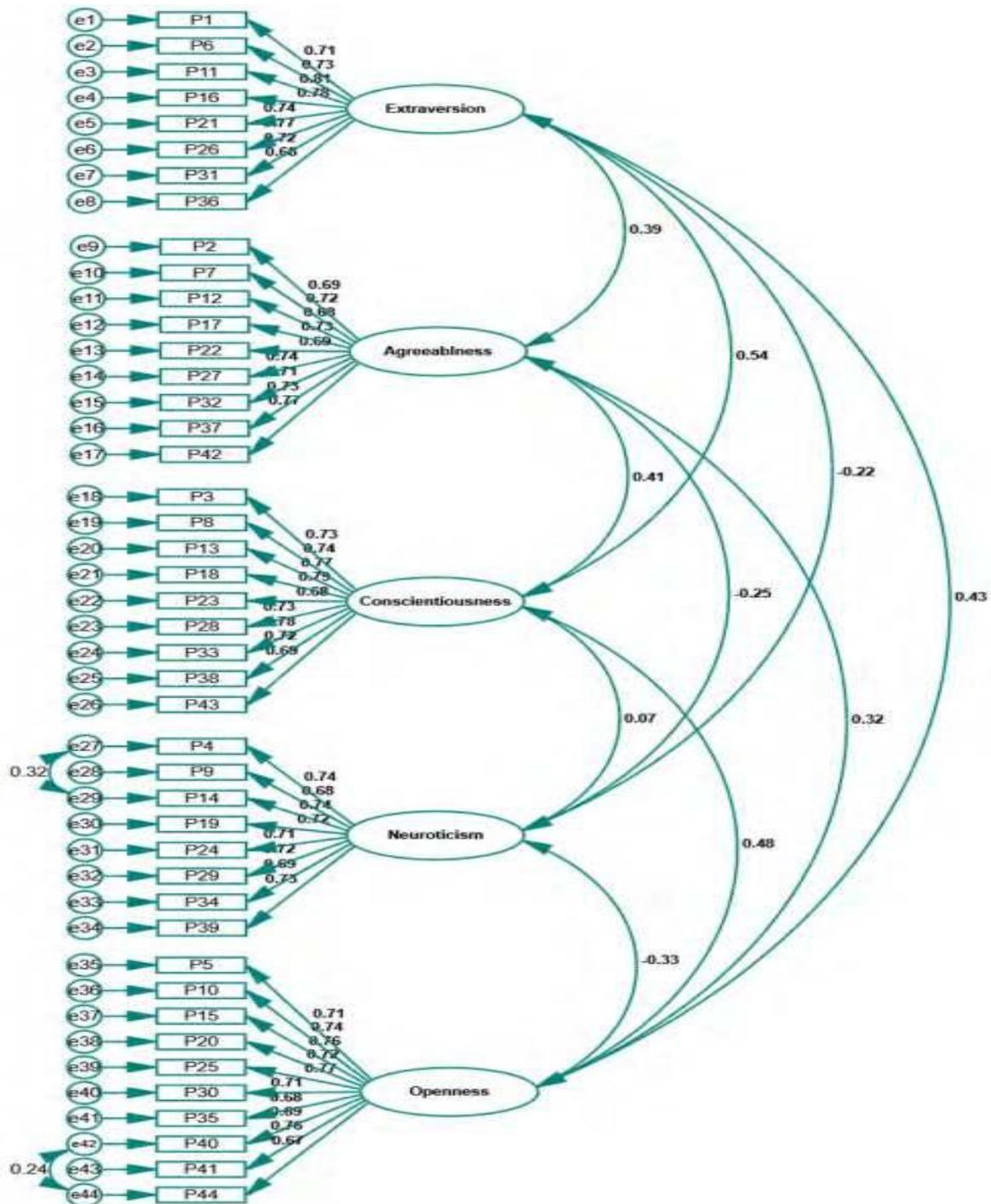


Figure 2
 Confirmatory Factor Analysis for Urdu-translated Big Five Inventory (BFI) For Adult (N=500), Model Fit



Discussion

Personality assessment is important in studies of psychology because it provides insight into personal features that influence cognition, behaviour and emotion management. The Big Five Personality Inventory (BFI) is one of the most popular frameworks that have been extensively employed to investigate the personality traits worldwide. The presence of BFI in various languages is ensuring culturally sensitive and inclusive research, relevance in various

settings, especially in the large population of Urdu speaking Pakistan. The present study was an attempt to translate and confirm the BFI (John and Srivastava, 1999) into Urdu with the view of making language and cultural adjustments. The process of translation was based on the instructions of the International Test Commission (2017) and involved forward translation, review of experts, back translation and pilot testing. Those bilingual professionals/translators were Ph.D. students and lecturers, who majored in psychology and linguistics. Their purpose in translating and reconciling the scale was to make sure that no meaning was lost in the translation even to Urdu speakers.

In line with the theoretical assumptions of the Big Five model, psychometric analysis proved the reliability and validity of BFI-Urdu. The Urdu one contains 44 items and covers five character traits just like the initial inventory. The model was adjusted accordingly and supported by CFA, where all the important indexes (CFI = .94, GFI = .91, RMSEA = .06, SRMR = .05) were within reasonable figures (Hu and Bentler, 1999). Findings confirm that Urdu version retains the original theoretical model and can reliably measure the five personality traits (extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience) within the Pakistani context. Our findings align with previous cross-cultural validations of the BFI and related Big Five measures in non-Western contexts, which have similarly demonstrated the structural robustness of the five-factor model (e.g., Schmitt et al., 2007; Benet-Martínez & John, 1998; Razaob et al., 2024; Yunus et al., 2018; Minaei & Hassani, 2022).

Results confirmed that the internal consistency values were above $\alpha=.80$, confirming strong reliability. This suggests that the translated items function coherently within each trait domain and reliably capture stable individual differences in personality, consistent with the theoretical conceptualization of the Big Five traits (McCrae & Costa, 2008). Evidence for construct validity was also supported through convergent and discriminant validity analyses. Hair et al. (2010) established that measure of shared variance must be lower than average variance extracted in order to prove factor-explanatory power exceeds other factors. In our study, the AVE exceeded the maximum shared variance (MSV) values across all personality traits, confirming sufficient discriminant validity of the BFI measurement scale. The structural integrity of the scale was also tested with the application of Fornell-Larker criterion that proved that every personality dimension was unique and non-overlapping. These results correspond with previous studies (John et al., 1999; Soto and John, 2017; Siraji et al., 2025; Palsson et al., 2020), indicating that the Urdu BFI is a psychometrically acceptable instrument used to assess personality in people who speak Urdu.

The current research offers a reliable and culture-adapted Urdu translation of BFI to the people of Urdu speaking population. It opens the way of more research and psychological practices to Pakistan and other Urdu speaking people. This work has good evidence that Urdu-BFI is a valid, reliable and culturally relevant tool that can be used to measure the Big Five personality traits and thus contributed to the study of personality and practicing psychology among the Urdu people.

Conclusion

The present research provides strong evidence that the Urdu version of the Big Five Personality Inventory (Urdu-BFI) is a valid instrument for the measurement of personality in a

Pakistani adult sample. The scale has been subjected to a rigorous process of translation and validation. Results demonstrated satisfactory reliability, robust construct validity and cultural sensitivity. These findings are consistent with the theoretical framework of the Five-Factor personality (McCrae & Costa, 2008), which underpins the original inventory. These results indicate that the core structure of the Big Five personality dimensions was preserved in the Urdu version, supporting the cross-cultural applicability and theoretical generalizability of the Five-Factor Model.

Limitations and Suggestions

There are several limitations to this study that need to be considered. Due to limited access, the sample was mostly composed of university students. This may restrict the generalization of the findings to broader or more diverse populations. In addition, Item Response Theory (IRT) could optimize the scale by the fact that it would hold items invariant across groups so that the scale becomes less error prone and unbiased (Edelen & Reeve, 2007). Further research can be done to find out more invariance across gender or age groups. Further research can compare the Urdu version of 10-item and 44-item BFI-Urdu since this has been done in other languages (Carciofo et al., 2016).

Implications

The Urdu-BFI offers researchers a standardized tool for investigating personality in relation to mental health, academic performance, organizational behavior, and social functioning across Pakistan. Clinicians and practitioners may also benefit from its application in assessment, counseling, and intervention planning. This reliable measure paves the way for future cross-cultural and comparison studies, in support of the global validity of personality theories. Moreover, the Urdu-BFI facilitates cross-cultural research by enabling meaningful comparisons between Urdu-speaking populations and other language versions of the BFI. Additional testing of Urdu-BFI among diverse population groups is required to ensure its utility and the promotion of culturally relevant psychological interventions.

Author Declarations

Conflict of interest

No conflict of interest was reported between the authors.

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