The South African Personality Inventory (SAPI): A Culture-Informed Instrument for the Country's Main Ethnocultural Groups

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Abstract

We present the development and the underlying structure of a personality inventory for the main ethnocultural groups of South Africa, using an emic–etic approach. The South African Personality Inventory (SAPI) was developed based on an extensive qualitative study of the implicit personality conceptions in the country's 11 official languages (Nel et al., 2012). Items were generated and selected (to a final set of 146) with a continuous focus on cultural adequacy and translatability. Students and community adults (671 Blacks, 198 Coloureds, 104 Indians, and 391 Whites) completed the inventory. A six-dimensional structure (comprising a positive and a negative Social-Relational factor, Neuroticism, Extraversion, Conscientiousness, and Openness) was equivalent across groups and replicated in an independent sample of 139 Black and 270 White students. The SAPI correlated overall highly with impression-management aspects, but lower with lying aspects of social desirability. The SAPI social-relational factors were distinguishable from the Big Five in a joint factor analysis; the multiple correlations with the Big Five were .64 (positive) and .51 (negative social-relational). Implications and suggestions for emic–etic instrument and model development are discussed.

Keywords: indigenous assessment, indigenous instrument development, emic–etic approach, personality, Big Five

Personality across cultures is predominantly assessed using models and instruments of Western origin, with little attention to culture-specific manifestations of universal concepts and to concepts more salient in specific cultures. The blind spots left by this approach are often emphasized by indigenous and cultural psychologists (Cheung, Cheung, Wada, & Zhang, 2006). The importance of incorporating indigenous and universal, or emic and etic, elements in the study and assessment of psychological constructs, and personality in particular, has been increasingly recognized over the past decades (Cheung, Van de Vijver, & Leong, 2011; Van de Vijver, 2013). Yet, little work has been done on combining emic and etic elements in personality research and assessment. The present study demonstrates such an emic–etic approach in the multicultural context of South Africa. Part 1 presents the development of the South African Personality Inventory (SAPI) and investigates its underlying structure across groups. Part 2 addresses the role of social desirability. Part 3 examines the nomological network of the new inventory in an emic–etic framework by focusing on its relationship with the Five Factor Model (FFM) of personality.

Emic–Etic Approach to Personality Assessment

The different approaches to personality assessment across cultures are often presented using the dichotomy of *etic* and *emic*. In the etic, or cross-cultural approach, the focus is on the transferability of models and tools (typically of Western origin) across cultures. A major achievement in this tradition is the wide establishment of the FFM or Big Five (covering the five personality dimensions of Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness) and the instruments for its measurement, such as the NEO PI-R (McCrae, 2013), the Big Five Inventory (Schmitt, Allik, McCrae, Benet-Martínez, et al., 2007) and the International

Personality Item Pool (IPIP; Ehrhart, Roesch, Ehrhart, & Kilian, 2008). Studies in this

line of research have typically found fair support for the replication of the FFM

structure across cultures. Although the replication of some factors (especially

Openness) in some cultural regions (especially Africa) compared to Western targets is

sometimes weak, this is typically attributed to issues of data quality rather than model

applicability in the respective cultures (McCrae, Terracciano, & 78 Members of the

Personality Profiles of Cultures Project, 2005). Using these instruments, no

indications have been found that alternative models would be applicable to some

cultures or world regions (McCrae et al., 2005; Schmitt et al., 2007; Zecca et al.,

2013).

By contrast, in the *emic* or indigenous approach, the focus is on assessing

psychological constructs that are particularly salient in a specific, usually non-

Western, cultural context. Research in this line has examined concepts such as *amae*

(sweet indulgence) in Japan and the selfless self in India (Cheung et al., 2006). Many

of these emic concepts refer to social-relational personality aspects, and they have

traditionally been studied in isolation, without an overarching theoretical framework

and without a reference to universal personality models (Cheung et al., 2011).

Recently, there has been a tendency toward increased integration of insights

from emic and etic studies, giving rise to the notion of the emic–etic approach

(Cheung et al., 2011). Research in the Philippines has identified indigenous

personality concepts which were subsequently analyzed together with the FFM; the

outcomes led to the conclusion that the FFM covered the indigenous concepts fairly

well (Katigbak, Church, Guanzon-Lapeña, Carlota, & Del Pilar, 2002). Similar results

have been obtained for Mexican indigenous personality concepts (Ortiz et al., 2007).

In China, on the other hand, research by Cheung and colleagues (Cheung et al., 2001),

starting from an extensive indigenous study of implicit concepts, identified a personality dimension, labeled Interpersonal Relatedness, which was empirically distinct from the FFM. This dimension has been found to offer incremental predictive value in interpersonal and organizational settings, and has been replicated in other samples beyond China, including the US (see Cheung, Cheung, & Fan, 2013).

Another version of the emic–etic approach is one where models or tools are developed simultaneously in different cultures. This multicenter approach aims to strike a balance between emic and etic aspects. With respect to model development, a typical representative of the multicenter approach is the psycholexical study of the implicit personality concepts in different languages (e.g., De Raad et al., 2010). With respect to tool development, the multicenter approach has not been used much, which likely reflects the challenges of developing parallel item sets in the absence of a 'target' set. Perhaps the best example is the Five-Factor Personality Inventory (FFPI; Hendriks, Hofstee, & De Raad, 1999), which was developed simultaneously in Dutch, English, and German and subsequently translated into several other languages, demonstrating good replicability across a number of cultures (Hendriks et al., 2003). The current study presents a multicenter inventory development in both senses: Both the conceptual model and the inventory for its measurement were developed in parallel across ethnocultural groups in South Africa.

The South African Context and the SAPI Project

South Africa is a multicultural and multilingual country. There are four major ethnic groups: Blacks (a term used for people of African descent), Coloureds (mixed descent), Asians/Indians (Asian descent), and Whites (European descent). The country has 11 official languages: nine Bantu languages (all spoken as a first language

in respective subgroups of the Black group) and two Germanic languages (one of which is English), spoken as a first language in the other ethnic groups. This rich diversity has not been adequately accommodated in psychological assessment (Foxcroft & Roodt, 2013). Personality assessment has relied on Western models and tools such as the 16 Personality Factor Questionnaire and the Myers-Briggs Type Indicator, which have often been perceived as instruments for perpetuating ethnic inequalities. The Employment Equity Amendment Act (Government Gazette, 2014) stipulates that psychological assessment is only allowed when the instruments (to be certified by a state-authorized official body) have been demonstrated to be reliable, valid, fair, and free of bias across groups. Little evidence has been collected to meet these requirements for tests currently in use (Foxcroft & Roodt, 2013; Meiring, 2007). There are often indications of psychometric insufficiencies in second-language English speakers and of insufficient construct equivalence across groups (Meiring, Van de Vijver, & Rothmann, 2006). In one of the few instances of local test development, Taylor and De Bruin (2005) devised an instrument to measure the FFM, taking local context into account. Their Basic Traits Inventory (BTI) has been found to have good psychometric properties across the ethnic groups (Ramsay, Taylor, De Bruin, & Meiring, 2008). The BTI is currently well established as an FFM instrument for South Africa; however, it has not been designed to assess any indigenous personality concepts that may be salient in this context.

To meet the demands of reducing bias in testing, the SAPI project aims to develop an indigenous personality model and the instrument for its assessment, which can be used across the ethnic groups in South Africa. The project did not start from a predefined model such as the FFM, but aimed to provide a comprehensive coverage of the personality concepts deemed relevant across groups. The project spanned two

stages: a qualitative stage of conceptual model development and a quantitative stage of instrument development.

Qualitative Stage

The qualitative stage (described in detail in Nel et al., 2012) aimed to uncover the implicit personality conceptions in all 11 languages of South Africa, as manifested in free personality descriptions. Interviews were conducted with native speakers of the 11 languages, in their own language, asking them to describe themselves and nine other persons they know well. The responses were transcribed, translated into English, and content-analyzed in iterative steps involving data categorization at increasing levels of abstraction and quality checks by cultural and linguistic experts. The conceptual model identified in the qualitative stage (Nel et al., 2012) included nine broad personality clusters (e.g., Conscientiousness), 37 mid-level subclusters (e.g., Achievement Orientation and Orderliness within Conscientiousness), and 188 narrow facets (e.g., Organized and Tidy within Orderliness). The nine clusters (Conscientiousness, Emotional Stability, Extraversion, Facilitating, Integrity, Intellect, Openness, Relationship Harmony, and Soft-Heartedness) had a broad correspondence to the Big Five, but showed a richer representation of social-relational concepts. The broad clusters were common to all languages and ethnocultural groups, and most of the narrow facets were also shared among several groups. The content of this conceptual model formed the basis for the subsequent instrument development.

Item Generation

The instrument development spanned two stages: item generation and item selection. The item generation and the characteristics of the total item pool are

described in more detail in Hill et al. (2013). Items were generated in English with input from the content of the free descriptions obtained by Nel et al. (2012). English was chosen because it has arguably one of the richest lexica for personality description, it is the common language of the research team, and is commonly spoken and understood in the different ethnocultural groups of South Africa as it is the main language of instruction across levels of education. The items were subsequently translated into the other 10 languages (see below). Items were created so as to reflect the content of the qualitative model and often employed utterances found in the interview data. Two to 34 items were developed for each of the 188 narrow facets (M = 13); there were 117 to 482 items per cluster, and the total number of items was 2,574. The item generation rules were similar to those used for the FFPI (Hendriks et al., 1999). Items were formulated in the first person singular, used simple language and no negations, and specified concrete behaviors expressed with an object whenever possible (e.g., "I care for others" and "I help others cope with their problems"). The decision to use concrete behaviors was based on literature pointing to improved cross-cultural replicability of psychological constructs when concrete behavior manifestations are used (Hendriks et al., 2003; Ramsay et al., 2008).

Present Study

The present study, building on the preceding qualitative research and item generation, presents the final instrument's characteristics in the main ethnic groups of South Africa. The contribution of the present study over the qualitative study (Nel et al., 2012) is that the present study describes the quantitative instrument based on the qualitative model developed by Nel et al. The contribution over the item generation study (Hill et al., 2013) is that, while Hill et al. described the properties of the total

pool of 2,574 items in separate pilot studies per cluster in university students, the

current study deals with the final version of the instrument (consisting of 146 items)

and involves both university students and community adults in all main ethnocultural

groups. This study examines the properties of the final SAPI version (Part 1) and its

relations to social desirability (Part 2) and the Big Five (Part 3). Indigenous research

is not often conducted at such a detailed level, with separate studies on the different

stages of model and instrument development. The detailed presentation of qualitative

concepts, item generation, and assessment of instrument characteristics makes the

long and complex process of instrument development in a cross-cultural context more

transparent and can be used as an exemplar to inform research in other contexts.

Part 1: SAPI Factor Structure

We first present the consecutive steps of item selection to the final instrument.

We then examine the internal structure of the instrument and its construct equivalence

across groups and samples. In a replication study, we focus on Blacks and Whites, the

two groups where the largest differences have been found in previous studies (e.g.,

Blacks referred more often to social-relational aspects and Whites to personal-growth

aspects in free personality descriptions; Valchev et al., 2013).

Item Selection

The item selection was performed in pilot studies, where questionnaires for

each cluster were administered separately to university students (samples included

439 to 1,023 participants per cluster; see Hill et al., 2013). Both psychometric and

substantive criteria were used in iterative steps. Items were removed if they had

extreme mean values (below 1.50 or above 4.50 on a 5-point Likert scale from 1 to 5),

skewness (absolute value above 2), or kurtosis (above 4). Principal component analysis was conducted separately on facet and cluster level, focusing on the first component to construct homogeneous scales. Items were then subjected to hierarchical factor analysis with Schmid-Leiman transformation (Schmid & Leiman, 1957). In all analyses, items with loadings of at least .30 on both the higher and lower level factors were retained; where that value did not yield sufficient distinction, .40 was used as a cutoff point. With respect to the substantive criteria, we selected items that (a) maximized construct representation, (b) minimized content overlap within and across clusters, and (c) were most in line with the formulation rules of behavior focus, simple language, and translatability.

Applying these criteria separately per cluster, the item set was reduced to 571 items. These 571 items were translated by professional translators from English into all 10 other languages, and the translations were checked by independent language experts. The translators provided comments on the linguistic and cultural adequacy of the items for their respective language. We removed 181 items that were deemed potentially difficult to understand (using idiomatic expressions); 100 items that were deemed too complex (longer than 10 words in any of the 11 languages); and 40 items that were using abstract trait terms; this selection led to a set of 250 items.

The 250 items were administered to a large, multiethnic sample (described in the following section). Factor and internal-consistency reliability analyses were performed separately on the items from each cluster. Items that reduced score reliability were removed in iterative steps, and only items with loadings over .30 (or .40, as explained above) were retained. The factor structure was compared across groups, and items were replaced to obtain optimal factor replicability. The final item set contained 146 items.

Method

Sample. The sample (N = 1,364) included university students and adults from the general population, from the four major ethnic groups. Adults were either employees of security and insurance companies contacted by their human resource department (n = 402) or students' parents who participated in the framework of a separate study (n = 112). Participants were 671 Blacks (425 students; 356 females; age 18 to 73 years, M = 31, SD = 10, 306 missing data), 198 Coloureds (87 students; 123 females; age 18 to 68, M = 30, SD = 11, 65 missing data), 104 Indians (75 students; 55 females; age 18 to 52, M = 27, SD = 9, 30 missing data), and 391 Whites (297 students; 251 females; age 19 to 62, M = 35, SD = 14, 92 missing data). The modal education level in all four groups was Grade 12; the median too, except in the White group, where it was at certificate level (a lower level college degree). On a one-item, self-report English proficiency scale from 1 (*very poor*) to 4 (*very good*), significant differences were found, with M_{Blacks} = 3.43 (SD = 0.57), $M_{Coloureds}$ = 3.57 (SD = 0.50), $M_{Indians}$ = 3.83 (SD = 0.45), and M_{Whites} = 3.66 (SD = 0.54); $F(3, 1345)$ = 25.12, $p < .001$, η^2 = .05. Participation was voluntary.

Instrument. All instruments were administered in English and requested self-reports. English can be considered as the lingua franca in South Africa, and is the preferred language in situations related to formal and informal assessment. A 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*) was used.

The final SAPI version contains 146 items. The following 18 facet scales (with number of items and paraphrased examples[1]) were formed based on the per-cluster factor analysis of the last stage of item selection: Facilitating (10, "I give

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[1] The instrument is copyright-protected, so no verbatim examples are presented.

guidance to people in their life decisions"), Integrity (12, "I acknowledge my mistakes"), Social Intelligence (4, "I understand how people feel"), Interpersonal Relatedness (9, "I help people live in peace"), Warm-Heartedness (12, "I support others when they need it"), Deceitfulness (3, "I mislead others"), Conflict-Seeking (6, "I cause fights"), Hostility–Egoism (13, "I make people feel vulnerable"), Emotional Balance (8, "I calm down easily"), Negative Emotionality (10, "I get angry a lot"), Playfulness (6, "I enjoy laughing with others"), Sociability (7, "I chat with many people"), Achievement Orientation (10, "I get motivated by my goals"), Orderliness (11, "I do things with precision"), Traditionalism–Religiosity (4, "I believe in tradition"), Intellect (10, "I learn new things easily"), Broad-Mindedness (5, "I seek new experiences"), and Epistemic Curiosity (6, "I love learning more about the world"). All scales were unipolar, with items formulated in the direction of the target construct, and items were presented in a random order.

The 18 facet scales correspond in level of abstraction to the 37 subclusters of the qualitative model. The use of mid-level facet scales is important because they offer, firstly, incremental validity (Paunonen, Haddock, Forsterling, & Keinonen, 2003) and, secondly, an indication of the continuity between the qualitative and the quantitative model. The Cronbach's alpha values of the facet scale scores per group are presented in Table 1. As can be seen in the table, most scale scores had satisfactory to very good internal consistency. The very short Deceitfulness scale may need to be expanded in future scale revisions in order to increase its internal consistency.

Table 1

Cronbach's alpha of the 18 Facet Scale Scores per Ethnic Group

Scale (Number of Items)	Black	Coloured	Indian	White	Mean
Facilitating (10)	.84	.85	.87	.88	.86
Integrity (12)	.76	.83	.84	.79	.81
Social Intelligence (4)	.71	.75	.82	.74	.75
Interpersonal Relatedness (9)	.77	.81	.83	.78	.80
Warm-Heartedness (12)	.83	.89	.83	.87	.85
Deceitfulness (3)	.58	.59	.75	.53	.61
Conflict-Seeking (6)	.67	.70	.71	.64	.68
Hostility–Egoism (13)	.80	.84	.89	.83	.84
Emotional Balance (8)	.71	.77	.73	.74	.74
Negative Emotionality (10)	.75	.73	.76	.77	.75
Playfulness (6)	.71	.76	.84	.81	.78
Sociability (7)	.75	.80	.84	.86	.81
Achievement Orientation (10)	.79	.78	.81	.82	.80
Orderliness (11)	.81	.85	.88	.86	.85
Traditionalism–Religiosity (4)	.57	.65	.78	.75	.69
Intellect (10)	.74	.81	.79	.76	.78
Broad-Mindedness (5)	.60	.66	.72	.75	.68
Epistemic Curiosity (6)	.66	.77	.83	.80	.76
Mean	.72	.77	.81	.78	.77

*Note. N*s = 671 (Blacks), 198 (Coloured), 104 (Indian), 391 (White).

Results and Discussion

Factor structure. To examine the internal structure of the SAPI that is common for the four groups, we extracted the pooled-within correlation matrix of the facet scales, weighting covariances by sample size.[2] We subjected this pooled-within correlation matrix to exploratory factor analysis. Based on previous findings from a study that focused only on the social-relational SAPI concepts (Valchev et al., 2014), we expected these concepts to form two separate factors, a positive and a negative one. The rest of the scales were conceptually close to Big-Five factors. So, we expected a structure similar to the Big Five, with a possible expansion of the social-relational domain. We conducted maximum-likelihood factor analysis with Oblimin rotation and examined three- to seven-factor solutions. Based on the interpretability of

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[2] We conducted both item-level and facet-level analyses. The two kinds of analyses showed similar results. We present the facet-level analyses, which are likely to stand better cross-replication and to be more useful for future research and assessment.

the solutions, we retained six factors, presented in Table 2. The first six eigenvalues

were 7.87, 2.30, 1.13, 0.96, 0.78, and 0.75, explaining 77% of the variance. The

structure resembled the Big Five, with separate positive (SR-Positive) and negative

(SR-Negative) Social-Relational factors. The factor structure was simple to interpret,

with only a few double loadings; the most notable was Integrity, which defined SR-

Positive and Conscientiousness equally strongly. As can be seen in the middle panel

of the table, there were some strongly correlated factors, especially SR-Positive and

Conscientiousness. It seems that there may be a common element of presumably

norm-driven, effortful self-regulation that underlies variation on Conscientiousness in

endeavor-related contexts and SR-Positive in interpersonal context (cf. Jensen-

Campbell, Knack, Waldrip, & Campbell, 2007).

To assess the equivalence of the factor structure across the ethnic groups, we

performed target rotations of each group's structure toward the structure in the

pooled-within matrix. The Tucker's phi congruence coefficients are presented in the

bottom panel of Table 2. Coefficients between .85 and .95 are considered indicative of

a fair replication, and coefficients of .95 indicate structure equivalence (Lorenzo-Seva

& Ten Berge, 2006; Van de Vijver & Leung, 1997). By these criteria, the factor

replication was at least fair, and was very good in most comparisons (with only five

out of 24 coefficients below .95).

We also examined the structure replicability separately in the subgroups of

students and adults per ethnic group (a total of eight comparisons). The replicability

was fair, with mean Tucker's phi values across the factors ranging from .86 to .97

across the groups, with a grand mean of .91. The replicability was generally better in

the larger groups, especially in Black and White students (.97 in both groups) and

adults (.91 in both groups). Remarkably, the factors could be identified even in the

Table 2

Factor Loadings in the Pooled-Within Correlation Matrix, Factor Correlations, and Congruence

Coefficients of Groups Target-Rotated toward the Pooled-Within Matrix

	SR- Pos	SR- Neg	N	E	C	O
Facilitating	**.78**	.13	-.11	.07	.05	-.16
Integrity	**.37**	-.22	.01	.05	**.35**	-.05
Social Intelligence	**.55**	-.02	-.01	-.21	.14	.08
Interpersonal Relatedness	**.83**	-.06	-.04	-.01	-.02	.02
Warm-Heartedness	**.88**	-.11	.12	-.06	-.04	.03
Deceitfulness	-.02	**.65**	.04	-.01	-.05	.04
Conflict-Seeking	.03	**.75**	.06	-.10	-.02	.03
Hostility–Egoism	-.03	**.92**	.03	.05	.05	-.02
Emotional Balance	.30	-.07	**-.38**	-.06	.18	-.13
Negative Emotionality	.02	.12	**.81**	.03	.04	-.06
Playfulness	.07	.03	.06	**-.64**	-.08	-.14
Sociability	-.01	.03	-.11	**-.83**	.07	.01
Achievement Orientation	.07	.02	-.08	.01	**.63**	**-.32**
Orderliness	.02	-.06	-.03	.04	**.81**	-.01
Traditionalism–Religiosity	.10	-.12	.08	-.17	**.36**	.12
Intellect	.16	.06	-.22	-.16	.30	**-.43**
Broad-Mindedness	.08	-.04	.02	-.29	-.02	**-.59**
Epistemic Curiosity	.11	-.20	.06	-.06	.20	**-.48**
Factor Correlations						
SR-Pos	1					
SR-Neg	**-.45**	1				
N	-.19	**.36**	1			
E	**-.56**	.05	.05	1		
C	**.69**	**-.51**	-.22	**-.31**	1	
O	**-.45**	.06	.21	**.38**	**-.37**	1
Tucker's phi						
Blacks (*M* = .94)	.95	.99	.94	.97	.85	.92
Coloureds (*M* = .97)	.99	.99	.98	.97	.96	.95
Indians (*M* = .95)	.96	.97	.98	.97	.89	.92
Whites (*M* = .98)	.99	.99	.97	.98	.97	.99
Mean (*M* = .96)	.97	.99	.97	.97	.92	.95

Note. SR-Pos = Positive Social-Relational; SR-Neg = Negative Social-Relational; N = Neuroticism; E

= Extraversion; C = Conscientiousness; O = Openness. *N* = 1364. Factors were extracted using

maximum likelihood with Oblimin rotation. Loadings and correlations with absolute value of .30 or

higher are in boldface.

very small sample of Indian employees (*n* = 29, mean Tucker's phi = .89). Lower

replicability mostly occurred in the last two factors, Conscientiousness and Openness.

In a five-factor solution, these two factors merged and replicability was better. Still,

the factor correlation matrix (middle panel of Table 2) suggests that

Conscientiousness and Openness were not strongly correlated, and they are also

distinct on theoretical grounds; we hence opted for the six-factor solution, thereby

retaining Conscientiousness and Openness as two separate factors.

Replication. The stability of the six-factor solution was addressed in an independent

sample. We administered the same inventory to a sample of 139 Black (108 females;

M_{Age} = 21 years, SD = 2) and 270 White (191 females; M_{Age} = 21, SD = 1) university

Table 3

Factor Loadings in Replication Sample of Black and White Students

Scale	Black						White					
	SR-Pos	SR-Neg	N	E	C	O	SR-Pos	SR-Neg	N	E	C	O
Facilitating	**.62**	.13	-.14	-.06	.04	**-.31**	**.65**	-.13	-.04	-.03	-.18	.13
Integrity	.23	-.12	-.04	.01	**.53**	-.03	.29	.30	-.07	.14	**-.31**	.01
Social Intelligence	**.44**	.00	-.17	.18	.24	-.10	**.61**	.06	.07	.13	.01	.09
Interp. Relatedness	**.70**	-.07	-.05	.08	.07	-.05	**.93**	.05	-.09	-.04	.06	-.02
Warm-Heartedness	**.93**	-.07	.05	.04	.06	.06	**.81**	.17	.10	.10	.00	-.01
Deceitfulness	-.16	**.73**	.11	.08	.04	-.01	.01	**-.58**	.05	.04	**.31**	.03
Conflict-Seeking	.08	**.81**	-.05	.02	-.13	.03	.04	**-.78**	.13	.06	-.01	-.05
Hostility–Egoism	-.02	**.94**	.06	.05	.01	.02	-.17	**-.92**	-.02	-.04	-.05	.02
Emotional Balance	.18	.16	**-.70**	.06	.16	-.09	**.31**	-.02	**-.54**	.11	-.20	.05
Negative Emotionality	.05	**.33**	**.67**	-.06	.11	-.07	.08	-.20	**.85**	-.07	-.03	-.04
Playfulness	.23	.08	.07	**.50**	-.10	-.25	-.11	-.02	.01	**.87**	.03	.08
Sociability	-.04	.11	-.11	**.95**	.09	.01	.21	-.04	-.13	**.55**	-.02	-.05
Achiev. Orientation	.18	.14	-.06	-.19	**.40**	**-.40**	.01	-.02	-.09	.09	**-.84**	.06
Orderliness	.01	-.01	-.07	-.01	**.85**	.01	-.03	.11	.04	-.04	**-.82**	-.08
Tradition.–Religiosity	.12	-.11	.11	.13	**.56**	-.06	.10	.11	.20	.15	-.22	.09
Intellect	-.14	.08	-.27	.09	**.39**	**-.64**	.18	-.17	-.24	.14	**-.43**	.29
Broad-Mindedness	.10	-.03	.00	.15	-.12	**-.76**	-.02	.02	.00	.02	.08	**1.02**
Epistemic Curiosity	.12	-.10	.13	.05	.22	**-.56**	.26	.08	-.01	-.06	**-.43**	.20

Note. SR-Pos = Positive Social-Relational; SR-Neg = Negative Social-Relational; N = Neuroticism; E

= Extraversion; C = Conscientiousness; O = Openness; Interp. Relatedness = Interpersonal

Relatedness; Achiev. Orientation = Achievement Orientation; Tradition.–Religiosity = Traditionalism–

Religiosity. Ns = 139 (Black) and 270 (White). Factors were extracted using maximum likelihood with

Oblimin rotation. Loadings with absolute value of .30 or higher are in boldface.

students. The mode and median education level in both groups was Grade 12. Blacks

($M = 3.57$, $SD = 0.51$) had a slightly better self-reported English proficiency than

Whites ($M = 3.37$, $SD = 0.58$), $F(1, 405) = 12.06$, $p = .001$, $\eta^2 = .03$. The pattern

matrix of the six-factor solution (presented in Table 3) suggested a similar structure to

the one obtained in the reference sample. The Tucker's phi coefficients for the six

factors in Blacks were .97, .98, .93, .97, .96, and .96, and in Whites, .97, .99, .97, .91,

.93, and .87. In conclusion, the factor structure was fairly well replicated in an

independent sample of both Black and White students.

Part 2: SAPI and Social Desirability

Personality measures often contain elements of socially desirable responding

(e.g., Bäckström, Björklund, & Larsson, 2009). A systematic tendency for personality

factors to be associated with social desirability has been observed across measures (Li

& Bagger, 2006; Ones, Viswesvaran, & Reiss, 1996). Some classic instruments such

as the Eysenck Personality Questionnaire (EPQ) contain specific scales to measure

forms of lying or socially desirable responding. Many instruments in the Big Five or

FFM family do not have such separate scales, which is backed by the understanding

that social desirability is an element of personality rather than an external, nuisance

factor (McCrae & Costa, 1983) and by the observation that social desirability does not

affect factor structure (Marshall, De Fruyt, Rolland, & Bagby, 2005). Given the

association of personality with social desirability, it is important to be able to assess

the links between the concepts measured in a personality instrument and different

aspects of social desirability.

Culture also plays a role in the prevalence of different types of social

desirability. For example, people from more individualistic cultures more often use

self-deception, whereas people from more collectivistic cultures more often use impression management (Lalwani, Shavitt, & Johnson, 2006). However, indigenous personality studies typically do not measure social desirability. This is an omission of previous research, firstly, in view of the potential effects of culture on social desirability and, secondly, because indigenous personality factors often involve social-relational concepts, which are likely to be associated with social desirability. The present study aims to fill this gap by assessing two central aspects of social desirability, as outlined below.

Different distinctions between types of social desirability, such as egoistic versus moralistic or self-deception versus impression management, can be found in the literature. For the purposes of the current study, we draw a distinction between lying (as in the EPQ lie scale) and impression-management tendencies. The two aspects of social desirability may be differentially associated with substantive personality factors. In a study focusing only on the social-relational SAPI concepts, we found them to be more strongly related to impression management than to lying (lying was in fact positively related to the *negative* social-relational concepts in a multiple regression analysis; Valchev et al., 2014). The lying aspects of social desirability can be viewed as a purposeful distortion of responses; the impression-management aspects can be viewed as a personality characteristic of effortful self-regulation in an interpersonal context (Uziel, 2010). We examine the associations of all SAPI factors with both types of social desirability.

Method

Sample. Only the social desirability scale that accompanies the SAPI was administered to the reference sample ($N = 1,364$) described in Part 1. Both the social

desirability scales of the SAPI and the BTI (as an established FFM instrument in

South Africa) were administered to 220 White students (164 females, $M_{Age} = 21$

years, $SD = 1$), who were part of the replication sample described in Part 1.

Instruments. The SAPI factor scores were computed as mean scores on all

items of the facets defining the respective factor. Because the Integrity facet

contributed equally to SR-Positive and Conscientiousness, its items were included in

the computation of both factors. In the reference sample, the factors' Cronbach's

alphas varied from .78 to .94 ($M = .86$) in Blacks, .82 to .95 ($M = .89$) in Coloureds,

.82 to .96 ($M = .90$) in Indians, and .83 to .94 ($M = .89$) in Whites. In the separate

White student sample, Cronbach's alpha varied from .85 to .94 ($M = .89$).

For the social desirability scale used with the SAPI, 12 items were adapted

from the Marlowe-Crowne scale (Crowne & Marlowe, 1960) and the Balanced

Inventory of Desirable Responding (Paulhus, 1991). The items were simplified by

removing modifiers (such as *always* and *sometimes*) and shortening the statements to

bring them in line with the formulation criteria of the SAPI. There are six items in the

positive direction (e.g., "I consider different options before committing to a choice")

and six in the negative (e.g., "I have done things that I keep secret from others";

examples are paraphrased). Social desirability items were presented randomly among

the SAPI items. The negative items were reverse-scored. In the reference sample,

Cronbach's alpha was .68 (Blacks), .65 (Coloureds), .65 (Indians), and .71 (Whites).

In the White student sample, Cronbach's alpha was .72.

The BTI social desirability scale contains 13 items that employ extreme

statements about positive or denial of negative behaviors (e.g., featuring the words

always, *never*, *everything*, and *everyone*) and can thus be considered as a lie scale, in

contrast to the more neutrally phrased, impression-management-oriented social-desirability scale of the SAPI. The items were presented randomly among the BTI items (presented in Part 3). Cronbach's alpha was .61. The correlation between the two social desirability scales was $r(220) = .40$, $p < .001$.

Results and Discussion

We first correlated the SAPI social desirability score to each of the SAPI factors separately. The results are presented in the left panel of Table 4. The SAPI social desirability scale correlated substantially with all factors except Extraversion. The correlation pattern is similar to the meta-analysis of Li and Bagger (2006), where impression management was correlated with all factors except Extraversion and Openness. We tested the differences in correlation size across the groups using Fisher's r-z transformation. None of the correlations differed significantly (at .001 level) from the Black group, which was the largest and was used as reference.

Table 4

Correlations and Multiple Correlations of the SAPI Factor Scales with the SAPI and BTI Social-Desirability Scales

| | Correlations SAPI SD per Group | | | | Multiple Correlations BTI SD and SAPI SD | |
	Black	Coloured	Indian	White	BTI SD	BTI SD + SAPI SD
SR-Pos	.46***	.41***	.57***	.38***	.32***	.54***
SR-Neg	-.57***	-.64***	-.67***	-.56***	.28***	.59***
Neuroticism	-.60***	-.63***	-.57***	-.53***	.19**	.50***
Extraversion	.09*	.05	.30**	.00	.14*	.24**
Conscientiousness	.60***	.53***	.58***	.52***	.27***	.61***
Openness	.40***	.38***	.54***	.27***	.16*	.42***

Note. SAPI = South African Personality Inventory; BTI = Basic Traits Inventory (Taylor & De Bruin, 2005); SD = Social Desirability; SR-Pos = Positive Social-Relational; SR-Neg = Negative Social-Relational. For the analysis including only the SAPI SD, Ns = 671 (Black), 198 (Coloured), 104 (Indian), 391 (White). For the analysis including the BTI SD, $N = 220$ (Whites).

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

To better appreciate the meaning of this overall positive association with social desirability for the SAPI, we conducted a hierarchical multiple regression analysis on the SAPI factor scores as outcomes, where the BTI social desirability scale was entered as a predictor in the first step and the SAPI social desirability scale was added in the second step. The outcomes are presented in the right panel of Table 4. The SAPI scales had much weaker associations with the lying aspects (measured in the BTI) than with the impression-management aspects of social desirability (measured in the SAPI). Extraversion remained relatively unaffected by both forms of social desirability. In conclusion, these results suggest that the SAPI is overall strongly associated with impression-management aspects of social desirability, but the associations with a measure of faking are much weaker. It is important to note that no substantial cross-cultural differences were found in the association of the SAPI with social desirability.

Part 3: SAPI and the Big Five

Having established the internal structure of the SAPI, we turned to an examination of its links with the dominant model of personality, the Big Five. One of the first questions in the development of a new, indigenous personality measure is, to what extent this measure is distinct from existing FFM tools associated with a universal personality structure. Some studies, like those in the Philippines (Katigbak et al., 2002) and Mexico (Ortiz et al., 2007) have concluded that the indigenous measures they analyzed add only little information, "local flavor" to the FFM. Others, like Cheung et al. (2001), have made a stronger case for the expansion of the FFM with additional constructs such as Interpersonal Relatedness. The questions of the degree of overlap between indigenous and universal measures are usually addressed

by administering both measures to the same respondents from the indigenous culture,

and assessing their distinctiveness in a joint factor analysis of the two instruments and

in multiple regression, where the universal instrument is used to predict variation in

the indigenous instrument. We examined the overlap between the SAPI and the FFM

by means of both techniques. Because of this focus on the degree of overlap between

the two models, rather than on cross-cultural equivalence (addressed for the SAPI in

Part 1), this part of the study employed only White university students.

Method

    Sample. The sample of 220 White students described in Part 2 was used.

    Instruments. The facet and factor SAPI scores (described in Parts 1 and 2,

respectively) were used in this analysis. The Cronbach's alpha values of the facet

scores ranged from .63 to .89 ($M = .78$); the values for factors are presented in Part 2.

    The BTI, developed in South Africa (Taylor & De Bruin, 2005), measures the

FFM using 180 items and provides both factor and facet scores. Each factor subsumes

4 to 5 facets, and each facet is measured by 6 to 10 items. All scales are unipolar;

items are formulated in the positive direction, except for Neuroticism. Similarly to the

SAPI items, most BTI items involve concrete behaviors. The BTI items were

developed using the IPIP as a model and contain formulations similar to "I like being

with others" and "I forgive easily." Items are presented in blocks per factors and

facets.

    Principal component analysis on facet level with Varimax rotation produced

the expected five factors. The Cronbach's alpha values of facet scores ranged from

.59 to .91 ($M = .79$); the values for factors ranged from .84 to .96 ($M = .90$).

Results and Discussion

We first conducted a joint maximum-likelihood factor analysis with Oblimin rotation on the BTI and SAPI facet scales. Based on previous research (Valchev et al., 2014) and the findings in Part 1, we expected two factors beyond the Big Five (SR-Positive and SR-Negative) to be identified. We examined solutions with five to eight factors. We retained the seven-factor solution based on interpretability and extent of double loadings. The first seven eigenvalues were 11.11, 4.37, 3.24, 2.52, 2.13, 1.96, and 1.37, explaining 64% of the variance. The pattern matrix of the seven-factor solution is presented in Table 5.[3]

Table 5

Factor Loadings and Correlations from the Joint Factor Analysis of the BTI and SAPI Facet Scales

	SR-Pos	E	N	C	A	O	SR-Neg
BTI							
E: Ascendance	.06	**-.54**	-.17	.26	-.11	.12	-.26
E: Liveliness	-.11	**-.78**	-.03	.18	.07	.14	.01
E: Positive Affectivity	.11	-.24	**-.40**	.08	**.34**	-.07	.09
E: Gregariousness	-.06	**-.71**	-.15	-.08	**.31**	-.02	-.07
E: Excitement-Seeking	-.11	**-.36**	-.10	**-.35**	-.02	.25	-.01
N: Affective Instability	.03	-.18	**.82**	-.09	-.10	-.10	-.09
N: Depression	.00	-.02	**.87**	-.06	-.09	.09	.04
N: Self-Consciousness	.01	.15	**.79**	.03	.09	.07	.04
N: Anxiety	-.04	.04	**.80**	.13	.06	-.07	.03
C: Effort	-.03	.06	-.05	**.72**	.10	.22	.04
C: Order	.00	.06	-.02	**.70**	-.01	-.10	.01
C: Dutifulness	.13	-.01	-.18	**.52**	.26	.02	.06
C: Prudence	.00	.07	.06	**.79**	-.01	.06	.12
C: Self-discipline	-.09	-.11	-.02	**.76**	.08	.08	-.02
O: Aesthetics	.15	.07	.12	.05	.17	**.51**	.01
O: Ideas	.04	.13	-.24	.13	-.08	**.57**	-.04
O: Actions	-.12	-.24	-.03	.01	.09	**.60**	.09
O: Values	.04	.02	.02	-.09	.09	.20	.09
O: Imagination	.09	-.13	-.03	.07	.00	**.65**	-.10
A: Straightforwardness	.09	-.23	-.11	.17	**.33**	-.02	.10
A: Compliance	.08	-.14	.04	.03	**.49**	.06	.05
A: Prosocial Tendencies	.00	-.15	-.01	.16	.24	.14	.05
A: Modesty	.13	-.04	.12	.08	**.33**	.08	.17
A: Tendermindedness	.27	.03	-.03	.05	**.61**	.15	.06

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[3] We conducted the analyses reported in this section also on a small sample of Black students ($N = 102$). The results were similar to the ones in White students, with factor congruence coefficients between .85 and .96 ($M = .90$). The multiple correlation coefficients between SAPI and BTI scales in Blacks were on average .10 higher than in Whites.

SAPI

Facilitating	**.65**	-.04	.00	.17	.14	.09	-.08
Integrity	**.36**	-.14	-.07	.14	-.04	.02	**.44**
Social Intelligence	**.70**	-.09	.02	-.15	.04	.06	.06
Interpersonal Relatedness	**.74**	.04	-.12	-.02	.25	.02	.07
Warm-Heartedness	**.74**	.01	.00	-.03	.26	.05	.18
Deceitfulness	-.07	.01	.03	-.17	.08	.06	**-.64**
Conflict-Seeking	.12	-.05	.10	.05	-.01	-.01	**-.87**
Hostility–Egoism	-.04	-.07	.06	-.02	-.13	-.01	**-.84**
Emotional Balance	**.43**	-.12	**-.52**	.04	-.12	-.02	.09
Negative Emotionality	.06	.02	**.70**	.06	.11	-.08	-.28
Playfulness	.18	**-.61**	.01	-.17	-.07	.03	.02
Sociability	.19	**-.65**	-.07	-.05	.15	-.08	.02
Achievement Orientation	**.35**	-.20	-.05	**.46**	**-.34**	-.05	.24
Orderliness	.19	-.10	.11	**.63**	-.27	-.10	**.32**
Traditionalism–Religiosity	.18	-.24	.03	.22	.04	-.18	.07
Intellect	**.47**	-.29	-.14	.20	**-.36**	.26	.00
Broad-Mindedness	.29	**-.31**	.02	-.06	-.22	**.46**	-.02
Epistemic Curiosity	**.53**	.08	-.05	.17	-.27	.18	.18

Factor Correlations

SR-Pos	1						
E	**-.33**	1					
N	-.15	.30	1				
C	**.32**	-.11	-.13	1			
A	.13	-.13	.00	.07	1		
O	.26	-.24	-.19	.03	.17	1	
SR-Neg	**.41**	-.02	-.20	.29	.20	.11	1

Note. BTI = Basic Traits Inventory (Taylor & De Bruin, 2005); SAPI = South African Personality Inventory. E = Extraversion; N = Neuroticism; C = Conscientiousness; O = Openness; A = Agreeableness; SR-Pos = Positive Social-Relational; SR-Neg = Negative Social-Relational. *N* = 220. Factors were extracted using maximum likelihood with Oblimin rotation. Loadings and correlations with absolute value of .30 or higher are in boldface.

There were four noteworthy findings. First, SR-Positive and SR-Negative emerged as distinguishable factors beyond the Big Five, confirming previous findings where only the social-relational scales had been studied (Valchev et al., 2014). In the six- and five-factor solutions, the two social-relational factors merged into a single, bipolar factor, but remained distinguishable from the Big Five. In the five-factor solution, Openness was not recognizable as a factor. Second, the factors were less correlated than in the factor analysis of the SAPI facets (described in Part 1), but the SAPI facets now displayed more substantial double loadings. Still, in most cases,

facets could be unambiguously assigned to factors based on loading sizes, using .40 as a cutoff point. Third, most facets loaded on their expected factor. The major deviation in this respect were two Openness facets in the SAPI (Intellect and Epistemic Curiosity), which loaded primarily on SR-Positive. It appears that, when Openness is assessed by a mainstream FFM measure, these two facets share less with this factor than with a broad social-relational factor, suggesting that these facets may be affected by social desirability. Finally, the BTI Openness-to-Values facet and the SAPI Traditionalism–Religiosity facet did not load on any factor in this solution. In an eight-factor solution, these two facets defined a common factor that could be interpreted as a Traditionalism factor. Because this factor was only defined by two facets and might not stand cross-validation, we discarded the eight-factor solution. The finding is nonetheless suggestive of a direction into which the Big Five could be further expanded.

We then performed a multiple regression analysis on the SAPI facets and factors with the BTI factors as predictors. A generally accepted suggestion in research on indigenous personality concepts is that multiple correlation coefficients (R) over .40 are indicative of high overlap between the indigenous and imported measure (Katigbak et al., 2002; Ortiz et al., 2007). On the level of facets, Rs ranged from .38 to .71, $M = .54$. Five facets had Rs close to .40: Deceitfulness (.41), Social Intelligence (.41), Epistemic Curiosity (.45), Traditionalism–Religiosity (.38), and Conflict-Seeking (.40). On the level of factors, Rs ranged from .51 to .75, $M = .64$; the values for the social-relational factors were .64 (positive) and .51 (negative). In summary, although the joint factor analysis of BTI and SAPI identified two social-relational factors beyond the Big Five, the outcomes of multiple regression analyses suggest that

the variance in these social-relational factors is not entirely unique and that Big Five factors covary with at least some aspects of the social-relational factors.

General Discussion

Instrument Development

Our research presents a case of multicenter instrument development on a scale that has hardly been done before. In the typical case of psychological test development, instruments are developed in a single culture and subsequently adopted directly or adapted for use in other cultures. This often raises issues of bias in cross-cultural research that cannot be accounted for (Van de Vijver & Leung, 1997). In contrast, our conceptual model was developed from ethnographic data collected in 11 distinct languages (Nel et al., 2012). Throughout item development and selection, translatability and cultural adequacy of the items was a primary concern, as the final aim is to devise an instrument that can be used in these 11 languages without bias. The current study focused on the characteristics of the English version across groups; future research should address the other 10 language versions. In the final stages of item selection, the characteristics of the translated items became one of the criteria guiding selection. Factor replicability across groups was another main criterion for the selection of items and of a factor solution. These steps were aimed to ensure the fair representation of implicit personality concepts across groups and to maximize the chances of achieving construct equivalence in their measurement. Following similar steps for every new instrument would pose a heavy burden on test developers, and it may often be unnecessary. Still, with the increasing internationalization of psychology (Van de Vijver, 2013), the issues these steps are aimed to tackle may gain relevance for practitioners and test developers. Our findings suggest that posing the requirement

for structure replicability across ethnic groups in the development of a personality inventory can reduce the presence of idiosyncratic elements and increase the chances for subsequent factor replication. When cross-cultural comparisons are envisaged, it will be beneficial to implement procedures that focus on maximizing structure replicability from the onset in instrument development.

Our findings on social desirability suggest that it is useful to maintain a distinction between impression-management-focused aspects (Uziel, 2010) and lying aspects (as in the EPQ Lie scale). The former are likely to be broadly associated with personality (except Extraversion) in different cultural groups, whereas the latter may have a more circumscribed effect that is more in line with the view of social desirability as response distortion. The extent to which both aspects are neutral to the factorial structure of personality (Marshall et al., 2005) is an interesting question for future research.

Model Development

Our findings give a new perspective to the emic–etic study of personality. Our model development was emic insofar as it was based on an indigenous study in a single country, South Africa. On the other hand, there are markedly different ethnocultural groups within South Africa, which were all represented in model development, allowing the study to transcend narrow emic constructs. So, the model is not specific to one particular ethnocultural group but is applicable to all major groups in South Africa. For example, the notion of *ubuntu* (referring to the inherently interpersonal aspects of humanity; Nel et al., 2012), although etymologically attributed to one specific subgroup (the Nguni), defines a shared meaning system across groups, as evidenced in the common recognition of the broad social-relational

domain. Finer distinctions of more specific emic elements could be identified in in-depth studies of specific groups, while the common model allows meaningful comparisons across groups. Personality constructs are probably neither completely emic nor completely etic. Theory and assessment in cross-cultural personality studies have often treated the emic and etic perspectives as incompatible. Statistical tests of equivalence test the null hypothesis of identical factors, thereby focusing on the shared, etic aspects of personality. Our combined emic–etic study calls for an approach that treats cross-cultural similarities and differences in a more balanced manner, in which both kinds of components are represented in an instrument.

The emergence of a structure similar to the Big Five from an indigenous perspective gives the universality of the Big Five much stronger support than the replication of the Big Five in questionnaires specifically designed to measure it, which may to an extent impose the structure on the data (Church, 2008). The accumulation of further evidence in a similar direction from indigenous studies would imply that the Big Five (or a similar set of major personality factors) can be considered a "derived" rather than a Western-"imposed" etic concept (Berry, 1989). On the other hand, it should be noted that not all of the Big Five factors appeared equally well replicable. In the SAPI, Openness was associated with the lowest replicability (although still acceptable), and its facets tended to merge with other factors when analyzed jointly with an FFM instrument. Problems with the replicability of Openness are well known in the literature on personality in non-Western context (e.g., Cheung et al., 2008). It can be concluded that Openness can be identified with the SAPI in South Africa, although, similarly to China, it does not appear to be particularly salient as a coherent personality concept.

Expansion of the Big Five

The different salience and manifestations of common personality concepts in different cultures are an important consideration in an emic–etic perspective. In contrast to Openness, the social-relational factors were highly salient: They were defined by a large number of facets and were identified both in the factor analysis of the SAPI and in a joint factor analysis with the BTI. The salience of the social-relational concepts is in line with our previous research on these concepts (Valchev et al., 2014) and with research in other collectivistic cultures such as China (Cheung et al., 2001). Claims for the expansion of the Big Five model of personality often involve social-relational concepts, especially in collectivistic contexts. Our findings are in line with such claims insofar as the two social-relational factors remained distinct from the Big Five. We only assessed the overlap between the SAPI and the Big Five in Whites. The Big Five originated in a Western context of Germanic language speakers, so a test in the White group is relevant. Still, the monocultural nature of our test is a limitation, and a full comparison across groups should be done in a future study.

The distinctiveness between the SAPI and the Big Five was larger in the results of joint factor analysis than in multiple regression analysis. We argue that the criterion value of $R \leq .40$, proposed by Katigbak et al. (2002) and Ortiz et al. (2007), is probably too low. For example, the multiple correlation of Agreeableness with the other four Big Five factors in the BTI was .53, also above .40. In meta-analysis, if less than 75% of the variation in effect sizes can be explained, it is common to assume that there are additional moderators not yet accounted for (Hunter & Schmidt, 1990). The same reasoning probably holds here. Therefore, we argue that a squared multiple correlation of .75 would be a better lower threshold for concluding that the social-

relational factors can be fully accounted for by the Big Five factors. In summary, our findings point to a need to expand the Big Five toward a richer representation of the social-relational domain. Further evidence for this need would be derived from predictive validity studies and research in other cultures.

Another recent suggestion for a Big Five revision and expansion implicates the domain of honesty and humility (Ashton & Lee, 2007). The closest concept in the SAPI was the Integrity facet, which loaded on SR-Positive and Conscientiousness. So, honesty–humility does not seem to suggest itself as a strong separate factor in the SAPI. Finally, it is interesting to note the tendency for a small Traditionalism factor to form in the joint factor analysis of SAPI and BTI. Such a factor has been mentioned as a potential additional factor in psycholexical studies (Saucier, 2008), and the Interpersonal Relatedness dimension (Cheung et al., 2001) is also saturated in traditionalism content. Such a factor may point to an area of overlap between the personality and value domains, which invites further investigation.

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