Technical Brief

USE OF THE U.S. ENGLISH VERSION OF THE CPI 260® ASSESSMENT IN INDIA

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INTRODUCTION

The *California Psychological Inventory*™ (CPI™) assessment has a long history of use, with over 50 years of extensive empirical research (Gough & Bradley, 2005). The CPI 260® assessment is the most recent version of the CPI assessment to be made commercially available and is meant to give a "true-to-life description of the respondent, in clear, everyday language, in formats that can help the client to achieve a better understanding of self" (Gough & Bradley, 2005, p. 1). Those interested in CPI assessments for use in the United States are encouraged to review the respective manuals and support documents (Devine, 2005; Gough & Bradley, 1996/2002, 2005; Manoogian, 2002/2005, 2006; McAllister, 1996; Megargee, 1972; Meyer & Davis, 1992).

Cross-cultural research has been conducted on the CPI assessment in numerous cultures in numerous languages (Ahmad, 1986; Ahmad, Haque, & Anila, 1994; Albu & Pitariu, 1999; Alfano & Traina, 1972; Armentrout, 1977; Banissoni, 1967; Blane & Yamamoto, 1970; Brengelmann, 1959; Casas, Segura, Camacho, & Mojarro, 1998; Cook, Young, Taylor, O'Shea, Chitashvili, Lepeska, Choumentauskas, Ventskovsky, Hermochova, & Uhler, 1998). CPI manuals, technical documents, and/or independent research on translations of the CPI assessment are also available in the following languages: German (Weinert, 1998), Hungarian (Olah, 1985), Mandarin Chinese (Yang & Gong, 1993), Polish (Kottas & Markowska, 1966), Romanian (Pitariu, 1995), Russian (Tarabrina & Grafinina, 1998), Spanish (Gough & Seisdedos, 1992), U.K. English (OPP, 2005), and Urdu (Ahmad, 1986).

This technical brief evaluates the effectiveness, and details the psychometric properties, of the U.S. English version of the CPI 260 assessment for use in India. It draws on four samples obtained from India and includes information from the CPI 260 U.S. normative sample, a U.S. commercial sample, and a U.S. workforce sample (see pp. 4–6 for more information on the U.S. samples). The four Indian samples include the following:

- **India general population sample:** individuals in India, solicited through a contractor and paid for their time, who can read and write U.S. English
- **India general population subsample:** individuals from the India general population sample who did *not* trigger an invalidity indicator on the CPI 260 assessment
- **India single company sample:** individuals from a single company in India who can read and write U.S. English (participants in this sample completed the CPI 260 assessment only)
- **India multiple companies sample:** individuals from a number of different companies in India who can read and write U.S. English (participants in this sample completed the CPI 260 assessment only)

This document is meant to provide ease of use for practitioners who use the CPI 260 assessment in India or in mixed-culture groups, as well as academics and researchers interested in the measurement properties of the assessment in the Indian culture.

Data Collection Process

The India single company sample comprises employees at a single westernized company located in India with a corporate headquarters in the United States. The India multiple companies sample was collected by the distributors of the CPI 260 assessment in India and comprises respondents from numerous companies in India. Many of these participants are in companies with corporate headquarters located in the U.S. or Europe. The participants in this sample are completely separate from the participants in the India single company sample.

Data for the India general population sample were collected through a third-party market research company hired to recruit participants to complete the CPI 260 assessment as well as demographic and validity items. Following the completion of the demographic items and the CPI 260 assessment, a subset of participants was randomly selected and contacted a second time, then asked to complete a second assessment, the *Adjective Check List*.

The India general population sample was selected to reflect the working population within the Indian culture because employed adults are the primary users of the CPI 260 assessment. No personally identifying information was collected, and respondents were paid for their participation. As a result of the desire to represent employed adults in each of the target cultures, to be included in the India general population sample, respondents had to be employed part- or full-time, be at least 18 years old, and have indicated their country of origin and country of residence to be India. Respondents with too many omitted items (19 or more) were not included in the sample. The

TABLE 1. NUMBER AND PERCENTAGE OF RESPONDENTS WITH FAKE GOOD, FAKE BAD, AND RANDOM INDICATORS IN INDIAN SAMPLES

	India General Population Sample (*N* = 1,108)		India Single Company Sample (*N* = 2,413)		India Multiple Companies Sample (*N* = 197)	
Invalidity Indicator	***n***	**%**	***n***	**%**	***n***	**%**
Fake good	19	1.7%	174	7.2%	5	2.5%
Fake bad	266	24.0%	12	0.5%	0	0.0%
Random	152	13.7%	11	0.5%	0	0.0%

sample includes an approximately equal number of men and women.

Initial analyses of the India general population sample indicated that it included an unusually large number of participants whose response pattern resulted in the triggering of one of the CPI instrument's invalidity indicators—*fake good, fake bad,* or *random*—particularly fake bad and random. In response, a subsample of the India general population sample was created in which respondents flagged with an invalidity indicator were deleted from the sample.*

The number and percentage of cases flagged with each invalidity indicator are shown for each sample in Table 1. The India general population subsample is not included in the table because these respondents, by definition, do not include anyone with fake good, fake bad, or random invalidity indicators. As stated above, the India general population sample contains an unusually large percentage of respondents whose results are flagged as fake bad and/or random. To make sense of these results, however, it is necessary to delve into the scoring of the invalidity indicators.

The invalidity indicators are all weighted composites of other scales measured on the CPI 260 assessment. First, fake good is a weighted composite score comprising the weighted raw scores for the Dominance, Empathy, Good Impression, Well-being, and Flexibility scales. The computation of fake good is independent of the computation of fake bad and random. The fake bad and random indicators are computed using two intermediate computations. The first is a weighted combination of Communality, Well-being, Flexibility, and Achievement via Conformity; the second is a weighted combination of Tolerance, Independence, Good Impression, and Communality. Comparisons are then made against normative values and, depending on the range of scores on the two intermediate computations, an individual's results can be assigned either fake bad or random status. The same person cannot get both a fake bad and a random result. Because the measure of Communality is in both of these computations, with the largest weighting in one of the intermediate computations, the impact of the low Communality scores in the India general population sample is intensified here. Several of the other measures that received low scores in the Indian data (e.g., Well-being, Tolerance, and Flexibility) also appear in these computations.

To the extent that the average scores for these measures are appropriate for India, the results suggest that there may be a need to modify the computation of the invalidity indicators in India or to determine whether renorming the Indian folk scale computations addresses this issue. Due to the very low score on Communality in the India general population sample, and the fact that Communality may not work in a general sample of Indians due to cultural differences, it is suggested that great weight should not be put on the computations of the invalidity indicators and, further, that the high rates of fake bad and random results are not necessarily a problem of the

*U.S. scoring of the CPI 260 assessment was used for all samples and analyses reported in this technical brief in order to show patterns of differences. It shows how each of the CPI 260 scales functions psychometrically in India. The India general population subsample described here will be used to create the standardization formulas for India in the future and will be reflected in commercial reports. Note that this standardization will result in means of 50 and standard deviations of 10 for the sample. Raw scores and U.S. standard scores are noted in the analyses that follow.

sampling strategy used for the India general population sample.

The rate of each invalidity indicator is shown in the *CPI™ Manual* for numerous male and female samples, some of which are summarized here for comparison purposes. The rate of fake good cases reported in the *CPI™ Manual* for women ranges from 0% for several samples to 8.5% for a sample of police officer applicants, and for men ranges from 0% for several samples to 7.5% for a sample of police officer applicants. The rate of fake bad cases for women ranges from 0% for several samples to 8.8% for a sample of psychiatric patients, and for men ranges from 0% for several samples to 4.9% for a sample of psychiatric patients. Finally, the rate of random cases for women ranges from 0% for several samples to 3.8% for a sample of high school students, and for men ranges from 0% for several samples to 4.9% for a sample of psychiatric patients (Gough & Bradley, 1996/2002).

Comparison Samples

Providing comparisons for the Indian samples' psychometric properties are three U.S. samples—the U.S. normative sample, a U.S. commercial sample, and a U.S. workforce sample—used in different parts of this document. Both the U.S. normative sample and the U.S. commercial sample come from the *CPI 260® Manual* (Gough & Bradley, 2005); the U.S. workforce sample was selected to mirror the demographic composition of the U.S. working population according to the Bureau of Labor Statistics (BLS), 2006 (Anderson, 2007). Descriptions of the U.S. normative sample can be found in the *CPI™ Manual* (Gough & Bradley, 1998) and the *CPI 260® Manual* (Gough & Bradley, 2005). Further descriptions of the U.S. commercial and workforce samples follow.

Sample Descriptions

The demographic characteristics of each Indian sample are summarized in Table 2. Note that not all respondents completed the same demographic items, as different platforms (SkillsOne® and CPP's research Web site) were used for data collection. The demographic composition of the U.S. commercial and workforce samples is also included in Table 2. These samples are used as comparison samples throughout this document.

Mean Scores

The CPI 260 assessment comprises three sets of scales. The main focus of the CPI assessment is on the measurement of what Gough (1957, 1987; Gough & Bradley, 1996/2002, 2005) calls *folk concepts,* such as Dominance, Self-control, and Sociability. Folk concepts can be found anywhere people interact. The CPI 260 assessment also contains three *vector scales,* which assess one's orientations toward the interpersonal world, societal values, and the self (Gough & Bradley, 2005). The final group is *special purpose scales* that typically measure various work-related dispositions.

The CPI 260 scale raw score means and standard deviations for the four Indian samples are presented in Table 3, along with those from the CPI 260 U.S. normative sample for comparison purposes (Gough & Bradley, 2005). Table 4 presents the standard score means and standard deviations for each sample. It is risky to make inferences from apparent differences (Gough & Bradley, 2005) across countries or cultures such as those shown in Tables 2 and 4. While some of the differences may be interpretable, additional data from a variety of samples remain to be collected. In addition, the interpretation of the results with a larger body of Indian respondents will help validate whether results such as these are accurate descriptions of people in India. In the U.S. normative sample, the standard score mean for each scale is 50, with a standard deviation of 10; therefore, these data are not included in Table 4.

Table 3 shows the degree of mean, or average, differences between the various samples. Table 4 indicates that the India general population sample and subsample averages and standard deviations are more in line with the expected average for people in general (i.e., mean = 50, *SD* = 10), as represented by the standard CPI 260 U.S. normative sample (*N* = 6,000). These averages are similar to those found in four European samples (Schaubhut, Thompson, & Morris, in press)—that is, about one-half standard deviation from the norm mean of 50, or 5 points above or below 50. On the other hand, the India single company and India multiple companies samples are more comparable to the U.S. commercial sample in the table, which is more representative of typical users of the CPI 260 assessment who complete the assessment for selection or training and development purposes and who tend

TABLE 2. DEMOGRAPHIC CHARACTERISTICS OF INDIAN AND U.S. SAMPLES

Demographic Characteristics	India General Population Sample (N = 1,108)		India General Population Subsample (n = 671)		India Single Company Sample (N = 2,413)		India Multiple Companies Sample (N = 197)		U.S. Commercial Sample (N = 4,000)		U.S. Workforce Sample (N = 5,000)	
	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Age	31.9	6.9	32.5	7.1	30.7	4.0	36.5	10.0	40.4	12.1	41.1	10.4
Years working in occupation	8.6	6.5	9.0	6.7	No data		Insufficient data		12.6	9.0	13.5	9.7
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Men	599	54.1	385	57.4	1,986	82.3	151	76.6	2,000	50.0	2,753	42.7
Women	507	45.8	285	42.5	427	17.7	42	21.3	2,000	50.0	2,135	55.1
Gender not reported											112	2.2
Employment status					No data		Insufficient data		No data			
Employed full-time	1,028	92.8	617	92.0							5,000	100.0
Employed part-time	80	7.2	54	8.0							0	0.0
Not working for income	0	0	0	0							0	0.0
Retired	0	0	0	0							0	0.0
Student	0	0	0	0							0	0.0
None of the above	0	0	0	0							0	0.0
Satisfied with work	1,062	96.5	640	96.1	No data		Insufficient data		No data		4,764	95.8
Education level	No data		No data									
Some high school					1	0.0	0	0.0	42	1.1	38	0.8
High school diploma					12	0.5	0	0.0	154	3.9	375	7.5
Trade/technical training					7	0.3	0	0.0	52	1.3	131	2.6
Some college—no degree					11	0.5	0	0.0	505	12.6	822	16.4
Associate degree					15	0.6	0	0.0	188	4.7	293	5.9
Bachelor's degree					1,310	54.3	11	5.6	1,437	35.9	1,710	34.2
Master's degree					902	37.4	24	12.2	1,179	29.5	1,153	23.1
Professional degree					153	6.3	9	4.6	155	3.9	252	5.0
Doctorate					2	0.1	1	0.5	266	6.7	198	4.0
Organizational level					No data		Insufficient data					
Entry level	61	5.5	30	4.5					157	3.9	220	4.4
Nonsupervisory	108	9.7	70	10.4					634	15.9	792	15.8
Supervisory	203	18.3	123	18.3					382	9.6	755	15.1
Management	356	32.1	230	34.3					1,513	37.8	2,302	46.0
Executive	285	25.7	153	22.8					700	17.5	684	13.7
Top executive	95	8.6	65	9.7					245	6.1	215	4.3

Note: Some respondents did not provide information for all demographic items. Due to rounding, total percentages may not add up to 100.

TABLE 3. CPI 260® SCALE RAW SCORE MEANS AND STANDARD DEVIATIONS FOR INDIAN AND U.S. SAMPLES

	India General Population Sample (N = 1,108)		India General Population Subsample (n = 671)		India Single Company Sample (N = 2,413)		India Multiple Companies Sample (N = 197)		U.S. Norm Sample (N = 6,000)	
CPI 260® Scale	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Dominance (Do)	18.02	5.33	19.26	5.73	22.29	5.42	22.66	5.03	16.80	6.53
Capacity for Status (Cs)	12.34	3.45	12.47	3.77	14.18	4.01	15.03	3.98	13.15	4.52
Sociability (Sy)	12.97	3.56	13.71	3.87	15.15	3.78	15.05	3.58	13.72	4.44
Social Presence (Sp)	15.39	3.34	15.97	3.65	17.16	3.57	17.71	3.65	17.83	4.09
Self-acceptance (Sa)	12.38	3.29	13.10	3.57	14.43	3.37	14.89	3.32	12.55	3.91
Independence (In)	11.91	4.31	13.35	4.05	15.81	3.24	16.67	2.99	12.08	4.16
Empathy (Em)	12.27	2.78	12.11	3.05	13.71	3.17	14.13	3.49	11.60	3.68
Responsibility (Re)	13.03	3.50	14.50	2.98	16.43	2.54	16.98	2.40	15.65	3.90
Social Conformity (So)	16.69	4.60	18.57	4.02	21.30	3.38	21.64	3.37	20.44	4.40
Self-control (Sc)	12.59	4.45	13.43	4.10	16.39	4.48	16.69	4.79	13.96	5.04
Good Impression (Gi)	12.00	3.79	12.28	3.58	15.52	4.16	15.35	4.25	12.10	4.71
Communality (Cm)	15.00	3.59	17.24	2.28	18.50	1.86	18.84	1.65	19.21	2.13
Well-being (Wb)	10.56	3.46	11.76	3.33	14.79	3.01	15.61	3.15	15.12	3.50
Tolerance (To)	7.43	3.66	7.76	3.45	10.72	3.45	12.29	3.39	11.19	4.13
Achievement via Conformance (Ac)	16.77	4.37	18.47	3.86	21.54	3.42	21.47	3.29	19.34	4.70
Achievement via Independence (Ai)	10.85	3.51	11.52	3.35	14.32	3.31	15.89	3.26	13.43	4.72
Conceptual Fluency (Cf)	15.76	4.39	17.15	4.27	20.65	4.01	21.69	3.60	19.02	5.06
Insightfulness (Is)	10.05	2.83	10.57	2.70	12.50	2.66	12.99	2.67	12.28	3.44
Flexibility (Fx)	6.55	3.50	6.27	3.38	7.11	3.28	8.84	4.04	9.44	3.69
Sensitivity (Sn)	13.23	2.80	13.16	3.03	12.35	2.82	12.44	3.30	14.40	3.58
Managerial Potential (Mp)	11.29	3.62	11.75	3.69	15.64	3.76	17.00	3.79	12.69	4.65
Work Orientation (Wo)	11.34	3.65	12.39	3.38	15.94	3.26	16.71	3.06	16.07	3.65
Creative Temperament (Ct)	11.92	3.85	12.40	3.84	13.98	3.73	15.79	4.20	14.74	4.12
Leadership (Lp)	20.78	6.12	22.81	6.15	27.51	5.49	28.17	5.14	22.33	6.54
Amicability (Ami)	13.35	4.23	14.25	4.03	18.52	4.10	18.89	4.17	17.54	4.60
Law Enforcement Orientation (Leo)	15.52	3.30	16.46	3.06	18.79	2.92	18.66	3.18	16.21	3.19
vector 1 (v.1)	7.62	3.98	8.20	3.88	8.22	3.66	8.65	3.61	11.96	4.35
vector 2 (v.2)	14.37	3.25	14.82	2.99	15.29	2.64	14.17	3.10	12.48	3.64
vector 3 (v.3)	9.52	5.40	9.38	4.87	13.56	5.29	16.30	5.61	15.35	6.00

to have higher levels of education and organizational status than general populations.

Standard score means for men and women in each Indian sample are shown in Table 5. The means for the U.S. normative sample are also included for comparison (Gough & Bradley, 2005). However, the standard deviations are not included in this table because the *CPI 260® Manual* does not include standard deviations for men and women.

TABLE 4. CPI 260® SCALE STANDARD SCORE MEANS AND STANDARD DEVIATIONS FOR INDIAN AND U.S. SAMPLES

		U.S. Commercial Sample (N = 4,000)		India General Population Sample (N = 1,108)		India General Population Subsample (n = 671)		India Single Company Sample (N = 2,413)		India Multiple Companies Sample (N = 197)	
CPI 260® Scale Category	CPI 260® Scale	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Dealing With Others	Dominance (Do)	61.10	8.08	51.87	8.15	53.77	8.77	58.41	8.29	58.97	7.69
	Capacity for Status (Cs)	58.65	8.36	48.21	7.62	48.50	8.32	52.28	8.86	54.14	8.79
	Sociability (Sy)	56.41	8.58	48.32	8.01	49.99	8.71	53.23	8.51	52.98	8.05
	Social Presence (Sp)	54.14	9.19	44.05	8.15	45.46	8.92	48.37	8.72	49.70	8.90
	Self-acceptance (Sa)	58.35	8.07	49.56	8.41	51.40	9.15	54.82	8.62	55.99	8.50
	Independence (In)	60.86	7.40	49.58	10.36	53.06	9.71	58.96	7.78	61.02	7.17
	Empathy (Em)	61.88	8.91	51.83	7.55	51.38	8.31	55.75	8.62	56.89	9.50
Self-management	Responsibility (Re)	56.03	7.15	43.30	8.96	47.05	7.62	52.00	6.51	53.42	6.15
	Social Conformity (So)	54.13	7.19	41.49	10.44	45.75	9.13	51.94	7.67	52.73	7.65
	Self-control (Sc)	55.68	8.65	47.29	8.80	48.95	8.13	54.80	8.86	55.40	9.49
	Good Impression (Gi)	57.91	8.62	49.78	8.03	50.37	7.59	57.24	8.82	56.89	9.01
	Communality (Cm)	52.17	8.21	30.28	16.82	40.74	10.70	46.67	8.73	48.25	7.72
	Well-being (Wb)	56.31	7.18	36.95	9.89	40.39	9.53	49.06	8.61	51.40	9.02
	Tolerance (To)	59.96	7.15	40.91	8.85	41.71	8.35	48.86	8.36	52.66	8.21
Motivations and Thinking Style	Achievement via Conformance (Ac)	57.35	6.88	44.54	9.31	48.14	8.22	54.69	7.28	54.54	7.02
	Achievement via Independence (Ai)	60.96	6.84	44.53	7.44	45.95	7.09	51.88	7.02	55.21	6.90
	Conceptual Fluency (Cf)	57.47	7.25	43.55	8.68	46.29	8.45	53.24	7.95	55.29	7.13
Personal Characteristics	Insightfulness (Is)	58.67	7.36	43.52	8.24	45.01	7.87	50.63	7.75	52.07	7.78
	Flexibility (Fx)	54.25	10.48	42.17	9.49	41.41	9.17	43.68	8.89	48.38	10.94
	Sensitivity (Sn)	44.05	8.42	47.07	6.99	46.89	7.58	44.89	7.04	45.09	8.26
Work-Related Measures	Managerial Potential (Mp)	63.71	7.72	47.00	7.79	47.99	7.94	56.35	8.08	59.27	8.15
	Work Orientation (Wo)	56.53	6.89	37.04	9.99	39.93	9.27	49.64	8.92	51.74	8.39
	Creative Temperament (Ct)	57.40	9.73	43.15	9.36	44.31	9.33	48.14	9.06	52.56	10.20
	Leadership (Lp)	61.76	7.54	47.63	9.36	50.74	9.41	57.92	8.39	58.93	7.87
	Amicability (Ami)	56.92	8.18	40.91	9.19	42.87	8.75	52.13	8.90	52.94	9.05
	Law Enforcement Orientation (Leo)	59.33	9.64	47.83	10.33	50.79	9.58	58.06	9.14	57.67	9.94
Higher-Order Measures	vector 1 (v.1)	41.02	8.98	40.02	9.16	41.35	8.93	41.40	8.41	42.39	8.30
	vector 2 (v.2)	53.62	8.46	55.19	8.95	56.44	8.23	57.74	7.26	54.64	8.52
	vector 3 (v.3)	60.05	8.08	40.27	9.02	40.03	8.13	47.01	8.83	51.59	9.37

TABLE 5. CPI 260® SCALE STANDARD SCORE MEANS BY GENDER FOR INDIAN AND U.S. SAMPLES

	India General Population Sample		India General Population Subsample		India Single Company Sample		India Multiple Companies Sample		U.S. Norm Sample	
CPI 260® Scale	Women (*n* = 507)	Men (*n* = 599)	Women (*n* = 285)	Men (*n* = 385)	Women (*n* = 427)	Men (*n* = 1,986)	Women (*n* = 42)	Men (*n* = 151)	Women (*n* = 3,000)	Men (*n* = 3,000)
Dominance (Do)	51.42	52.27	53.82	53.76	58.63	58.36	56.83	59.47	49.48	50.54
Capacity for Status (Cs)	48.01	48.41	48.71	48.39	52.25	52.29	53.61	54.21	50.51	49.47
Sociability (Sy)	47.94	48.67	50.11	49.93	53.90	53.08	51.76	53.28	50.29	49.71
Social Presence (Sp)	43.42	44.59	45.40	45.55	48.16	48.42	49.37	49.64	48.73	51.30
Self-acceptance (Sa)	49.10	49.97	51.33	51.48	55.25	54.72	54.69	56.26	49.92	50.08
Independence (In)	49.09	50.02	52.68	53.34	59.12	58.92	59.87	61.30	48.68	51.32
Empathy (Em)	51.65	52.00	51.59	51.24	56.56	55.57	57.95	56.67	50.62	49.35
Responsibility (Re)	42.78	43.75	46.96	47.09	52.96	51.80	53.58	53.49	52.10	47.90
Social Conformity (So)	41.27	41.69	45.60	45.84	53.23	51.66	52.24	52.92	51.02	48.95
Self-control (Sc)	47.56	47.05	48.93	48.93	55.42	54.67	56.11	55.42	50.89	49.11
Good Impression (Gi)	49.86	49.72	50.51	50.26	58.08	57.06	55.95	57.37	50.36	49.62
Communality (Cm)	27.88	32.31	39.90	41.34	48.42	46.29	49.80	47.74	50.52	49.53
Well-being (Wb)	36.20	37.60	39.66	40.91	49.76	48.91	50.00	51.83	49.46	50.51
Tolerance (To)	41.43	40.47	42.25	41.30	49.77	48.67	53.05	52.63	51.09	48.89
Achievement via Conformance (Ac)	44.20	44.84	48.06	48.20	55.91	54.42	54.45	54.69	51.38	48.62
Achievement via Independence (Ai)	44.57	44.49	46.08	45.85	52.20	51.81	56.71	54.86	50.30	49.68
Conceptual Fluency (Cf)	42.95	44.07	46.11	46.44	54.09	53.05	55.81	55.14	50.30	49.72
Insightfulness (Is)	43.34	43.70	44.77	45.22	51.30	50.49	52.30	52.04	50.00	50.03
Flexibility (Fx)	43.49	41.06	42.16	40.86	43.43	43.73	52.49	47.10	49.67	50.33
Sensitivity (Sn)	48.55	45.83	48.67	45.61	48.08	44.20	50.73	43.47	55.05	44.98
Managerial Potential (Mp)	46.97	47.04	47.88	48.08	56.28	56.36	58.24	59.59	49.98	50.02
Work Orientation (Wo)	36.35	37.63	39.39	40.30	49.51	49.67	50.92	52.11	49.92	50.08
Creative Temperament (Ct)	44.04	42.44	45.13	43.73	48.81	48.00	54.51	51.95	49.90	50.10
Leadership (Lp)	46.99	48.21	50.52	50.93	58.43	57.81	57.07	59.39	49.82	50.17
Amicability (Ami)	40.87	40.96	42.55	43.10	52.21	52.11	51.36	53.47	50.28	49.74
Law Enforcement Orientation (Leo)	47.06	48.48	49.89	51.42	57.82	58.11	53.67	58.79	48.87	51.10
vector 1 (v.1)	40.70	39.43	41.63	41.10	42.18	41.24	45.11	41.79	50.80	49.22
vector 2 (v.2)	53.90	56.28	55.43	57.17	57.74	57.74	52.54	55.31	51.37	48.63
vector 3 (v.3)	41.07	39.60	40.71	39.52	48.28	46.74	54.39	50.94	50.32	49.68

Note: Not all respondents indicated gender.

MEASUREMENT PROPERTIES

Reliability

Reliability refers to consistency of measurement. A measure is said to be reliable when it produces a consistent, although not necessarily identical, result. Internal consistency reliability measures the consistency across items, or whether they measure the same thing. The most commonly used estimator of internal consistency reliability is Cronbach's alpha (Cronbach, 1951). Alphas were calculated for each Indian sample.

The alphas are presented in Table 6, along with those for the U.S. normative sample (Gough & Bradley, 2005) and a U.S. workforce sample (Anderson, 2007). Most of the

TABLE 6. CPI 260® SCALE ALPHAS FOR INDIAN AND U.S. SAMPLES

CPI 260® Scale Category	CPI 260® Scale	U.S. Workforce Sample (*N* = 5,000)	U.S. Norm Sample (*N* = 6,000)	India General Population Sample (*N* = 1,108)	India General Population Subsample (*n* = 671)	India Single Company Sample (*N* = 2,413)	India Multiple Companies Sample (*N* = 197)
		Cronbach's Alpha					
Dealing With Others	Dominance (Do)	.85	.86	.77	.82	.84	.81
	Capacity for Status (Cs)	.69	.74	.53	.62	.67	.67
	Sociability (Sy)	.75	.77	.62	.70	.72	.67
	Social Presence (Sp)	.66	.65	.42	.54	.58	.64
	Self-acceptance (Sa)	.67	.68	.53	.61	.63	.62
	Independence (In)	.70	.75	.76	.75	.68	.64
	Empathy (Em)	.54	.60	.31	.46	.50	.59
Self-management	Responsibility (Re)	.59	.73	.62	.53	.49	.43
	Social Conformity (So)	.58	.73	.70	.62	.59	.61
	Self-control (Sc)	.73	.77	.70	.65	.72	.75
	Good Impression (Gi)	.69	.77	.62	.57	.70	.71
	Communality (Cm)	.28	.55	.70	.39	.28	.14
	Well-being (Wb)	.69	.76	.67	.68	.69	.74
	Tolerance (To)	.71	.78	.71	.70	.71	.69
Motivations and Thinking Style	Achievement via Conformance (Ac)	.61	.76	.68	.61	.61	.57
	Achievement via Independence (Ai)	.67 .	.78	.59	.57	.62	.61
	Conceptual Fluency (Cf)	.69	.78	.69	.69	.70	.61
Personal Characteristics	Insightfulness (Is)	.46	.64	.42	.40	.47	.47
	Flexibility (Fx)	.72	.68	.69	.69	.66	.75
	Sensitivity (Sn)	.57	.54	.20	.36	.30	.48
Work-Related Measures	Managerial Potential (Mp)	.72	.77	.62	.66	.71	.71
	Work Orientation (Wo)	.56	.70	.64	.60	.63	.57
	Creative Temperament (Ct)	.70	.71	.61	.63	.63	.70
	Leadership (Lp)	.83	.85	.81	.83	.83	.80
	Amicability (Ami)	.72	.75	.69	.67	.73	.72
	Law Enforcement Orientation (Leo)	.40	.36	.42	.36	.36	.44
Higher-Order Measures	vector 1 (v.1)	.78	.80	.76	.75	.74	.74
	vector 2 (v.2)	.59	.70	.69	.65	.58	.60
	vector 3 (v.3)	.80	.83	.80	.76	.79	.82

Note: Source for the U.S. normative sample is the *CPI 260® Manual* (Gough & Bradley, 2005).

alphas for each Indian sample are acceptable to good, with some lower alphas on the Communality scale, and are similar to those reported in the *CPI 260® Manual* and found in the U.S. workforce sample. In interpreting these reliabilities for the CPI assessments, however, the following statement from the *CPI™ Manual* should be kept in mind: "In regard to reliability as assessed by the intercorrelation of items within a scale, whereas many tests posit this as a high priority, interitem homogeneity is not a goal on the CPI. The reason for this statement is that 13 of the 20 folk scales are developed by empirical methodology, which bases the selection of items solely on their demonstrated relationships to nontest criteria" (Gough & Bradley, 1996/2002, p. 57). Given this, "moderate heterogeneity among the items in a scale is acceptable and, in fact, to be expected" (Gough & Bradley, 1996/2002, p. 59).

Validity

Validity refers to the accuracy of the inferences that may be made based on the results of an assessment. An instrument is said to be valid when it measures what it has been designed to measure (Ghiselli, Campbell, & Zedeck, 1981; Murphy & Davidshofer, 2005). Validity can be demonstrated using a number of different approaches. Validity of the CPI 260 assessment using each Indian sample is shown by examining the measurement properties of the assessment and comparing them to a standard (here, the results for the U.S. normative sample). In addition, evidence of validity can be shown by analyses that relate the measure (here, scales from the CPI 260 assessment) to other measures and replicating expected patterns of relationships.

One kind of validity is *construct validity,* which shows that an assessment measures a particular theoretical construct. Factor analysis is the most common way of demonstrating construct validity (Thompson & Daniel, 1996). When a measure relates to other measures of similar concepts that it should be related to, and is not related to measures of dissimilar concepts that it should not be related to, evidence of the measure's validity is also established. The former set of relationships is typically termed *convergent validity* and the latter *discriminant validity*. Convergent validity can be demonstrated when a measure is related to other similar measures, observations, or other information that measures the same or a similar concept. In contrast, discriminant validity can be demonstrated when a measure fails to relate to other measures, observations, or information that it should not be related to. Several analyses of construct, convergent, and discriminant validity are reported for the translations of the CPI 260 assessment in each Indian sample. Finally, validity can also be exhibited if an instrument results in similar patterns or profiles of results across the samples in which it is used. Analyses examining the pattern of the CPI scales across hierarchical organizational levels are reported to also demonstrate the validity of the assessment in the Indian culture.

FACTOR ANALYSIS

Principal components factor analyses with varimax rotation were conducted using the folk scales for each Indian sample and a subset of commonly reported special purpose scales, following the approach used by Gough and Bradley (2005). The India multiple companies sample size was too small and therefore not included in the factor analysis. Historically, factor analyses of the CPI assessment have found that a four-factor solution provides the best fit to the factor analysis of the CPI scales. Therefore, the factor analyses limited the results to a four-factor solution. Following prior research for the solution allows for comparisons of the factor structure in the Indian samples and a comparison to the structure found in the U.S. samples. The results, presented in Table 7, show similarity across the Indian samples. The table also includes factor structure of the U.S. commercial sample from the *CPI 260® Manual* (Gough & Bradley, 2005) for comparison purposes.

The *CPI 260® Manual* describes the four factors in the following way. Factor 1 has large loadings on the scales Do, Sy, Sa, and Lp, which are measures of ascendancy, interpersonal involvement, self-assurance, and leadership potential (Gough & Bradley, 2005). In 1972, Megargee termed this factor *interpersonal effectiveness.* The largest loadings on factor 2 are Sc, Gi, Wo, and Ami, which are measures of self-discipline, work ethic, wish to do the expected, and warmth toward others. Gough and Bradley (2005) suggest the term *dependability* for this factor. Factor 3 has large loadings on Ai, Fx, and Ct, which can be called *originality/creativity.* Factor 4 may be termed *interpersonal sensitivity,* and it is marked by a large loading on Sn and a secondary loading on Re. The *CPI 260® Manual* also reports low negative loadings on this factor for In, Wb, and Leo (Gough & Bradley, 2005). All of these patterns in the four factors hold up across the Indian samples with one small exception. There is some divergence in these samples on the low negative loadings on factor 4.

TABLE 7. KAISER NORMAL VARIMAX ROTATED FACTOR LOADINGS FROM PRINCIPAL COMPONENTS FACTOR ANALYSES OF CPI 260® SCALES FOR U.S. COMMERCIAL AND INDIAN SAMPLES

	U.S. Commercial Sample (*N* = 4,000)	India General Population Sample (*N* = 1,108)	India General Population Subsample (*n* = 671)	India Single Company Sample (*N* = 2,413)
CPI 260® Scale		**Factor 1: Interpersonal Effectiveness**		
Dominance (Do)	.92	.79	.90	.91
Capacity for Status (Cs)	.81	.74	.74	.77
Sociability (Sy)	.86	.79	.85	.86
Social Presence (Sp)	.75	.69	.69	.72
Self-acceptance (Sa)	.88	.73	.81	.87
Independence (In)	.76	.52	.71	.76
Empathy (Em)	.63	.65	.57	.61
Responsibility (Re)	.29	.08	.14	.17
Social Conformity (So)	.11	.10	.18	.18
Self-control (Sc)	–.36	–.22	–.25	–.24
Good Impression (Gi)	–.11	.06	.06	.03
Communality (Cm)	.03	.06	.04	.04
Well-being (Wb)	.37	.28	.36	.38
Tolerance (To)	.19	.16	.17	.25
Achievement via Conformance (Ac)	.41	.27	.37	.38
Achievement via Independence (Ai)	.35	.28	.30	.37
Conceptual Fluency (Cf)	.61	.48	.56	.59
Insightfulness (Is)	.36	.30	.34	.42
Flexibility (Fx)	.09	–.05	–.11	.02
Sensitivity (Sn)	–.41	–.63	–.62	–.57
Managerial Potential (Mp)	.52	.48	.57	.52
Work Orientation (Wo)	.16	.19	.21	.22
Creative Temperament (Ct)	.50	.36	.42	.49
Leadership (Lp)	.85	.65	.79	.81
Amicability (Ami)	–.02	.07	.09	.10
Law Enforcement Orientation (Leo)	.10	.32	.45	.35
CPI 260® Scale		**Factor 2: Dependability**		
Dominance (Do)	.12	.17	.11	.18
Capacity for Status (Cs)	.05	.17	.10	.24
Sociability (Sy)	.05	.01	.01	.11
Social Presence (Sp)	–.10	–.22	–.19	–.08
Self-acceptance (Sa)	–.07	–.02	–.10	.03
Independence (In)	.17	.31	.22	.32
Empathy (Em)	.15	.06	.02	.20
Responsibility (Re)	.64	.37	.28	.58
Social Conformity (So)	.64	.51	.49	.65
Self-control (Sc)	.79	.82	.81	.86
Good Impression (Gi)	.80	.88	.88	.85
Communality (Cm)	.40	.04	.00	.25
Well-being (Wb)	.67	.55	.55	.71
Tolerance (To)	.66	.67	.60	.72
Achievement via Conformance (Ac)	.64	.37	.32	.60
Achievement via Independence (Ai)	.44	.48	.36	.53
Conceptual Fluency (Cf)	.47	.39	.32	.53

(cont'd)

TABLE 7. KAISER NORMAL VARIMAX ROTATED FACTOR LOADINGS FROM PRINCIPAL COMPONENTS FACTOR ANALYSES OF CPI 260® SCALES FOR U.S. COMMERCIAL AND INDIAN SAMPLES *CONT'D*

	U.S. Commercial Sample (*N* = 4,000)	India General Population Sample (*N* = 1,108)	India General Population Subsample (*n* = 671)	India Single Company Sample (*N* = 2,413)
CPI 260® Scale		**Factor 2: Dependability *cont'd***		
Insightfulness (Is)	.48	.54	.42	.52
Flexibility (Fx)	–.04	.17	.03	.02
Sensitivity (Sn)	–.07	–.21	–.15	–.08
Managerial Potential (Mp)	.64	.62	.57	.68
Work Orientation (Wo)	.79	.63	.59	.78
Creative Temperament (Ct)	.00	.18	.02	.11
Leadership (Lp)	.38	.33	.28	.45
Amicability (Ami)	.86	.77	.77	.88
Law Enforcement Orientation (Leo)	.45	.46	.39	.49
CPI 260® Scale		**Factor 3: Originality/Creativity**		
Dominance (Do)	–.06	.02	.05	–.02
Capacity for Status (Cs)	.36	.33	.43	.31
Sociability (Sy)	.06	.04	.13	.12
Social Presence (Sp)	.40	.28	.41	.40
Self-acceptance (Sa)	.02	.11	.14	.04
Independence (In)	.17	.22	.16	.09
Empathy (Em)	.45	.24	.43	.42
Responsibility (Re)	.00	.09	.06	.02
Social Conformity (So)	–.21	.09	.03	–.10
Self-control (Sc)	–.10	.08	–.04	–.10
Good Impression (Gi)	–.12	.03	–.01	–.09
Communality (Cm)	–.31	–.11	–.09	–.03
Well-being (Wb)	.15	.18	.22	.17
Tolerance (To)	.51	.56	.62	.45
Achievement via Conformance (Ac)	–.26	–.01	–.02	–.17
Achievement via Independence (Ai)	.65	.61	.68	.54
Conceptual Fluency (Cf)	.33	.27	.37	.25
Insightfulness (Is)	.37	.35	.43	.27
Flexibility (Fx)	.86	.84	.84	.86
Sensitivity (Sn)	.17	.22	.04	.14
Managerial Potential (Mp)	.23	.32	.33	.19
Work Orientation (Wo)	.21	.26	.33	.20
Creative Temperament (Ct)	.74	.77	.76	.72
Leadership (Lp)	–.02	.02	.04	.01
Amicability (Ami)	.20	.26	.29	.18
Law Enforcement Orientation (Leo)	–.55	–.11	–.21	–.40
CPI 260® Scale		**Factor 4: Interpersonal Sensitivity**		
Dominance (Do)	–.16	.43	.25	.09
Capacity for Status (Cs)	.08	.08	.03	.02
Sociability (Sy)	.03	.38	.20	.08
Social Presence (Sp)	–.07	.32	.20	.08
Self-acceptance (Sa)	–.12	.43	.27	.06
Independence (In)	–.28	.59	.41	.05
Empathy (Em)	.10	–.15	–.08	.07

(cont'd)

TABLE 7. KAISER NORMAL VARIMAX ROTATED FACTOR LOADINGS FROM PRINCIPAL COMPONENTS FACTOR ANALYSES OF CPI 260® SCALES FOR U.S. COMMERCIAL AND INDIAN SAMPLES *CONT'D*

	U.S. Commercial Sample (*N* = 4,000)	India General Population Sample (*N* = 1,108)	India General Population Subsample (*n* = 671)	India Single Company Sample (*N* = 2,413)
CPI 260® Scale	**Factor 4: Interpersonal Sensitivity *cont'd***			
Responsibility (Re)	.33	.78	.78	.43
Social Conformity (So)	–.05	.71	.65	.23
Self-control (Sc)	.04	.33	.28	.03
Good Impression (Gi)	–.04	.10	.02	–.05
Communality (Cm)	.23	.87	.85	.83
Well-being (Wb)	–.35	.57	.48	.14
Tolerance (To)	–.07	.11	.11	.03
Achievement via Conformance (Ac)	.30	.75	.69	.35
Achievement via Independence (Ai)	.10	.30	.27	.11
Conceptual Fluency (Cf)	.03	.56	.44	.24
Insightfulness (Is)	–.03	.27	.22	.12
Flexibility (Fx)	.04	–.26	–.27	–.07
Sensitivity (Sn)	.74	.11	.13	.33
Managerial Potential (Mp)	–.12	.20	.10	.03
Work Orientation (Wo)	–.06	.50	.48	.15
Creative Temperament (Ct)	–.02	.15	.04	.04
Leadership (Lp)	–.13	.60	.43	.12
Amicability (Ami)	–.12	.36	.32	.04
Law Enforcement Orientation (Leo)	–.39	.51	.38	.14

Note: Source for U.S. commercial sample factor loadings is the *CPI 260® Manual* (Gough & Bradley, 2005).

FACTOR CONGRUENCE

The comparison of factor structures across samples has long been used in psychological research to determine whether the factor structure of an assessment is the same in two or more different groups (Chan, Ho, Leung, Chan, & Yung, 1999). Factor structure similarity of personality inventories has been studied by many researchers (e.g., Barrett, Petrides, Eysenck, & Eysenck, 1998; De Bruin, Nel, & Comrey, 1997; Noller, Law, & Comrey, 1988; Rodrigues & Comrey, 1974; Stumpf, 1993). Similarity of factors is often evaluated by using the factor congruence coefficient (Burt, 1948; Reise, Waller, & Comrey, 2000; Tucker, 1951; Wrigley & Neuhaus, 1955). To examine precisely the similarity of factor structure of three of the Indian samples separately (the fourth, the India multiple companies sample, is too small for the factor congruence analysis), compared with the U.S. English sample, the Wrigley-Neuhaus (1955) factor similarity coefficient was used.* The U.S. sample used for this analysis was the U.S. commercial sample from the *CPI 260® Manual* (Gough & Bradley, 2005). The results of the factor similarity analysis are shown in Table 8. The table can be read in a manner similar to the way correlation matrices are read, where the diagonal elements (in bold) show the degree of congruence between corresponding factors, and the off-diagonal elements show the degree of similarity between the remaining factors in the analysis. Coefficients of .90 or higher are typically accepted as showing congruence between two factors (Guadagnoli & Velicer, 1991). Others have suggested the minimum range for considering two factors to be equivalent is .70–.90 (Hall & Kaye, 1977).

The average coefficients for each factor are as follows: factor 1 = .98, factor 2 = .98, factor 3 = .90, and factor 4 = .76—suggesting that the factor structure of the U.S. CPI

*This method has been programmed by Andrew Comrey, who kindly permitted us to use his program and who advised us on its proper application.

TABLE 8. COEFFICIENTS OF CONGRUENCE FOR CPI 260® FACTORS IN U.S. AND INDIAN SAMPLES

Indian Sample Factors	U.S. Commercial Sample Factor 1	U.S. Commercial Sample Factor 2	U.S. Commercial Sample Factor 3	U.S. Commercial Sample Factor 4
India general population sample: factor 1	.98			
India general population sample: factor 2	.35	.98		
India general population sample: factor 3	.49	.50	.86	
India general population sample: factor 4	.59	.72	–.06	.67
India general population subsample: factor 1	.98			
India general population subsample: factor 2	.27	.98		
India general population subsample: factor 3	.58	.48	.88	
India general population subsample: factor 4	.49	.71	–.09	.74
India single company sample: factor 1	.99			
India single company sample: factor 2	.42	.99		
India single company sample: factor 3	.47	.28	.95	
India single company sample: factor 4	.30	.46	.01	.86

260 scales are very similar to those of the three Indian samples studied here. Specifically, all Indian samples are nearly identical to the U.S. sample for factors 1 and 2, while factor 3 is also very similar. Factor 4's similarity between the U.S. and India single company samples is quite strong, while not as strong for the other Indian samples.

CORRELATIONS WITH OTHER MEASURES

Convergent validity and discriminant validity are often examined by looking at the pattern of relationships between measures on different instruments. An initial examination of the two was conducted for the CPI 260 assessment using the India general population sample and subsample by examining correlations between CPI 260 folk scales and adjectives checked by respondents on the *Adjective Check List* (ACL; Gough & Heilbrun, 1983). A second analysis of convergent and discriminant validity examined correlations between the CPI 260 folk and special purpose scales with measures of the Big Five personality approach, scored from the ACL.

Adjective Check List

First, a small portion of respondents from the India general population sample also completed the *Adjective Check List*. The ACL consists of 300 different adjectives, such as *intelligent, alert, clear-thinking, poised,* and *noisy,* encompassing a wide variety of behaviors. An additional 69 research adjectives were also included. Respondents were asked to select the ones they believed were self-descriptive, and the results provided descriptions of them (Gough & Heilbrun, 1983). Selected correlations of adjectives from the ACL with CPI 260 scales are shown in Table 9. The correlations are similar to those reported in the *CPI 260® Manual* for the United States (in a sample of 1,356 individuals; Gough & Bradley, 2005). However, the manual reports ACL descriptions given by panels of observers rather than self-report, is as shown here. These correlations are also consistent with what is expected given the content of each of the CPI 260 scales. For example, Dominance measures prosocial dominance, strength of will, and perseverance in pursuing goals. High scores on Dominance are associated with the adjectives *assertive, enterprising,* and *outgoing,* whereas low scores are associated with *cautious, reserved,* and *silent.* Also, Responsibility measures awareness of societal rules and willingness to abide when appropriate. High scores on Responsibility are associated with *capable* and *organized,* whereas low scores are associated with *cold* and *distrustful.* High scores on Leadership, which measures leadership skills, are associated with *energetic* and *enterprising,* whereas low scores are associated with *apathetic* and *awkward.*

TABLE 9. CORRELATIONS OF CPI 260® SCALES WITH KEY ADJECTIVAL SELF-DESCRIPTIONS

CPI 260® Scale and ACL Adjectives		CPI 260® Scale and ACL Adjectives		CPI 260® Scale and ACL Adjectives	
Dominance (Do)		**Capacity for Status (Cs)**		**Sociability (Sy)**	
aggressive	.26	ambitious	.14	energetic	.14
assertive	.26	enterprising	.23	enterprising	.16
energetic	.25	imaginative	.21	outgoing	.22
enterprising	.33	outgoing	.27	sociable	.14
outgoing	.34	versatile	.12	versatile	.13
awkward	–.09	distrustful	–.15	blustery	–.36
cautious	–.14	silent	–.11	cautious	–.10
reserved	–.24	simple	–.09	cruel	–.28
self-punishing	–.32	slow	–.06	reserved	–.12
silent	–.09	unambitious	–.27	unhappy	–.17
Social Presence (Sp)		**Self-acceptance (Sa)**		**Independence (In)**	
adventurous	.21	aggressive	.19	assertive	.11
outgoing	.08	assertive	.24	energetic	.20
pleasure-seeking	.27	energetic	.19	enterprising	.29
sociable	.15	enterprising	.29	independent	.26
versatile	.28	outgoing	.29	resourceful	.08
distrustful	–.12	awkward	–.10	apathetic	–.29
dour	–.15	bitter	–.20	awkward	–.14
rigid	–.13	cautious	–.13	cautious	–.16
unemotional	–.14	reserved	–.10	despondent	–.23
weak	–.09	unambitious	–.21	unassuming	–.08
Empathy (Em)		**Responsibility (Re)**		**Social Conformity (So)**	
adaptable	.11	capable	.25	conventional	.27
confident	.08	clear-thinking	.25	patient	.05
enterprising	.12	organized	.17	reasonable	.25
outgoing	.30	practical	.08	moderate	.09
sociable	.19	responsible	.17	organized	.17
blustery	–.13	cold	–.19	bitter	–.35
cruel	–.13	distractible	–.05	defensive	–.11
irritable	–.13	distrustful	–.25	dissatisfied	–.20
self-seeking	–.26	leisurely	–.09	distrustful	–.21
thankless	–.11	unscrupulous	–.08	individualistic	–.33
Self-control (Sc)		**Good Impression (Gi)**		**Communality (Cm)**	
modest	.07	conventional	.07	capable	.20
patient	.13	good-natured	.14	civilized	.14
peaceable	.05	patient	.16	cooperative	.10
mild	.09	peaceable	.08	fair-minded	.27
modest	.07	stable	.10	reliable	.29
adventurous	–.06	adventurous	–.05	complaining	–.09
impulsive	–.13	impulsive	–.13	dissatisfied	–.26
sarcastic	–.12	mischievous	–.07	reckless	–.09
show-off	–.08	whiny	–.09	spineless	–.09
uninhibited	–.15	witty	–.08	unconventional	–.10

(cont'd)

TABLE 9. CORRELATIONS OF CPI 260® SCALES WITH KEY ADJECTIVAL SELF-DESCRIPTIONS *CONT'D*

CPI 260® Scale and ACL Adjectives		CPI 260® Scale and ACL Adjectives		CPI 260® Scale and ACL Adjectives	
Well-being (Wb)		**Tolerance (To)**		**Achievement via Conformance (Ac)**	
cheerful	.14	clear-thinking	.11	capable	.18
clear-thinking	.27	contented	.25	dependable	.11
energetic	.25	foresighted	.11	organized	.20
enterprising	.35	intelligent	.21	reliable	.24
industrious	.14	optimistic	.09	responsible	.20
awkward	–.14	bitter	–.21	despondent	–.25
defensive	–.20	complaining	–.12	distrustful	–.28
despondent	–.18	defensive	–.09	fearful	–.10
dissatisfied	–.22	dissatisfied	–.24	hasty	–.20
dour	–.27	distrustful	–.12	impatient	–.18
Achievement via Independence (Ai)		**Conceptual Fluency (Cf)**		**Insightfulness (Is)**	
ambitious	.13	alert	.25	alert	.04
capable	.10	clear-thinking	.30	clear-thinking	.12
clear-thinking	.10	industrious	.18	insightful	.25
insightful	.17	intelligent	.24	intelligent	.28
intelligent	.21	versatile	.21	logical	.10
apathetic	–.10	apathetic	–.08	commonplace	–.12
distrustful	–.10	awkward	–.15	despondent	–.33
rigid	–.09	cautious	–.19	dissatisfied	–.17
stolid	–.12	fearful	–.08	distrustful	–.09
unambitious	–.17	silent	–.08	unambitious	–.26
Flexibility (Fx)		**Sensitivity (Sn)**		**Managerial Potential (Mp)**	
complicated	.19	considerate	.18	energetic	.16
efficient	.29	defensive	.06	enterprising	.43
insightful	.11	forgiving	.08	foresighted	.16
inventive	.13	mild	.12	organized	.31
unconventional	.13	silent	.10	poised	.21
autocratic	–.09	adventurous	–.23	apathetic	–.10
conventional	–.21	aggressive	–.14	despondent	–.25
interests narrow	–.22	arrogant	–.11	reserved	–.09
prudish	–.14	forceful	–.19	silent	–.12
steady	–.19	masculine	–.16	unambitious	–.16
Work Orientation (Wo)		**Creative Temperament (Ct)**		**Leadership (Lp)**	
capable	.25	enterprising	.12	assertive	.22
clear-thinking	.23	independent	.27	energetic	.31
reliable	.16	intelligent	.22	enterprising	.43
responsible	.24	inventive	.12	outgoing	.38
tactful	.10	versatile	.17	reasonable	.28
bitter	–.33	conventional	–.18	apathetic	–.13
complaining	–.12	meek	–.07	awkward	–.18
dissatisfied	–.11	mild	–.08	cautious	–.24
irritable	–.30	modest	–.10	reserved	–.15
reckless	–.11	unambitious	–.15	silent	–.12

(cont'd)

TABLE 9. CORRELATIONS OF CPI 260® SCALES WITH KEY ADJECTIVAL SELF-DESCRIPTIONS *CONT'D*

CPI 260® Scale and ACL Adjectives		CPI 260® Scale and ACL Adjectives	
Amicability (Ami)		**Law Enforcement Orientation (Leo)**	
contented	.17	conventional	.17
patient	.09	dependable	.15
peaceable	.20	organized	.20
relaxed	.18	painstaking	.23
wholesome	.16	reasonable	.22
arrogant	–.13	apathetic	–.16
bitter	–.28	artistic	–.34
dissatisfied	–.12	irritable	–.22
headstrong	–.11	unscrupulous	–.14
sarcastic	–.08	vindictive	–.22

Note: Participants in the India general population sample who completed the ACL *n* = 72.

FIVE-FACTOR MODEL DIMENSIONS FROM THE ACL

Researchers have also used the ACL instrument to score the Five-Factor Model of personality (FormyDuval, Williams, Patterson, & Fogle, 1995; John, 1989). John's (1989) method was used here to score the ACL into the five factors, which were then correlated with CPI 260 scales. The results for the portion of the India general population sample who completed the ACL assessment are presented in Table 10. The five factors—Extraversion, Agreeableness, Conscientiousness, Openness, and Neuroticism—correlate with CPI 260 scales in expected ways, and in a manner consistent with previous research.

A Hakstian and Farrell study (2001) showed positive correlations between Openness and several CPI scales, such as Dominance, Capacity for Status, Sociability, Self-acceptance, Empathy, Achievement via Independence, and Creative Temperament. Another study found positive correlations between Extraversion and CPI scales Sociability and Creative Temperament; Agreeableness and Socialization; Conscientiousness and Amicability, Socialization, and Well-being; and Openness and Well-being (Johnson, 2000). Finally, McCrae, Costa, & Piedmont (1993) found positive correlations between Extraversion and CPI scales Dominance, Sociability, and Self-acceptance and a negative correlation with vector 1; positive correlations between Agreeableness and Dominance and Self-control, and a negative correlation with Independence; positive correlations between Conscientiousness and Self-control, Good Impression, and Achievement via Conformance; positive correlations between Openness and Capacity for Status, Social Presence, Empathy, and Independence; and negative correlations between Neuroticism and Independence, Self-control, Good Impression, and Well-being.

In the current analyses, Extraversion was associated with high scores on several scales, including Dominance, Capacity for Status, Sociability, Empathy, and Leadership, and with low scores on Self-control, Sensitivity, and vector 1. Agreeableness was associated with high scores on Sociability and Empathy and with low scores on Sensitivity and vector 1. Conscientiousness was associated with high scores on Dominance, Independence, Responsibility, and Achievement via Conformance and with low scores on Flexibility. Openness was associated with high scores on several CPI 260 scales, including Dominance, Capacity for Status, Sociability, Social Presence, and Self-acceptance, and with low scores on Flexibility, Sensitivity, and vector 1. Finally, Neuroticism was associated with high scores on Sensitivity and with low scores on several scales, including Dominance, Capacity for Status, Independence, Conceptual Fluency, Managerial Potential, Work Orientation, and vector 3. These results support the validity of the CPI 260 assessment and are largely consistent with correlations between the CPI assessment and Five-Factor Model (as measured by the NEO assessment) reported in the *CPI 260® Manual* (Gough & Bradley, 2005) and by researchers (Hakstian & Farrell, 2001; McCrae et al., 1993).

TABLE 10. CORRELATIONS OF CPI 260® SCALES WITH BIG FIVE FACTORS (AS MEASURED BY THE ACL)

	Big Five Factor				
CPI 260® Scale	Extraversion	Agreeableness	Conscientiousness	Openness	Neuroticism
Dominance (Do)	.52	.41	.33	.50	–.26
Capacity for Status (Cs)	.45	.26	.18	.34	–.24
Sociability (Sy)	.44	.27	.11	.33	–.12
Social Presence (Sp)	.32	.21	.10	.35	–.09
Self-acceptance (Sa)	.54	.34	.30	.47	–.23
Independence (In)	.44	.27	.34	.39	–.31
Empathy (Em)	.38	.24	.18	.37	–.13
Responsibility (Re)	.07	.46	.35	.27	–.26
Social Conformity (So)	.00	.43	.45	.25	–.15
Self-control (Sc)	–.09	.20	.25	–.05	–.08
Good Impression (Gi)	–.01	.20	.11	–.03	–.14
Communality (Cm)	–.01	.45	.50	.31	–.14
Well-being (Wb)	.20	.45	.41	.31	–.24
Tolerance (To)	.15	.27	.23	.16	–.25
Achievement via Conformance (Ac)	.12	.44	.44	.35	–.25
Achievement via Independence (Ai)	.12	.21	.22	.16	–.36
Conceptual Fluency (Cf)	.40	.39	.42	.46	–.34
Insightfulness (Is)	.19	.32	.32	.23	–.35
Flexibility (Fx)	.00	–.16	–.28	–.16	–.03
Sensitivity (Sn)	–.31	–.11	–.04	–.18	.17
Managerial Potential (Mp)	.36	.38	.38	.39	–.33
Work Orientation (Wo)	.09	.36	.34	.21	–.30
Creative Temperament (Ct)	.36	.19	.09	.28	–.12
Leadership (Lp)	.52	.48	.47	.54	–.27
Amicability (Ami)	.08	.29	.26	.09	–.17
Law Enforcement Orientation (Leo)	.30	.32	.33	.27	–.25
vector 1 (v.1)	–.40	–.11	–.03	–.32	.18
vector 2 (v.2)	–.01	.27	.35	.27	.03
vector 3 (v.3)	.05	.09	.05	–.01	–.29

Note: Participants in the India general population sample who completed the ACL *n* = 72.

ORGANIZATIONAL LEVEL

Past research has shown a consistent pattern in the CPI profiles of organizational members based on hierarchical level. In the U.S., the pattern shows that higher-level organizational members tend to have higher scores on most of the CPI scales than do lower-level organizational members. Specifically, higher scores among the scales that relate to "drive, determination, and a willingness to make difficult decisions" (Do, In, Mp, and Lp) are usually found among managers (Gough & Bradley, 2005, pp. 65–66). The samples obtained did not allow a detailed examination of organizational level. However, the respondents for each sample were divided into lower-level groups (supervisor and below—includes entry-level, nonsupervisory, and supervisory employees) and higher-level groups (management and above—includes management, executives, and top executives) and the average CPI 260 scale score generated. These results are provided in Table 11 for the India general population

TABLE 11. CPI 260® SCALE STANDARD SCORE MEANS AND STANDARD DEVIATIONS FOR INDIAN SAMPLES BY ORGANIZATIONAL LEVEL

	India General Population Sample				India General Population Subsample			
	Supervisory and Below (*n* = 372)		Management and Above (*n* = 736)		Supervisory and Below (*n* = 223)		Management and Above (*n* = 448)	
CPI 260® Scale	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Dominance (Do)	50.69	7.48	52.46	8.41	51.95	8.14	54.67	8.94
Capacity for Status (Cs)	46.93	7.30	48.85	7.69	46.46	7.81	49.52	8.39
Sociability (Sy)	47.15	7.89	48.91	8.02	48.34	8.45	50.81	8.74
Social Presence (Sp)	42.58	7.48	44.79	8.38	43.35	8.18	46.52	9.09
Self-acceptance (Sa)	48.47	8.24	50.11	8.45	49.92	8.86	52.14	9.21
Independence (In)	48.27	9.33	50.24	10.78	50.64	8.89	54.27	9.89
Empathy (Em)	50.72	7.17	52.40	7.68	49.58	7.60	52.28	8.51
Responsibility (Re)	42.73	8.65	43.59	9.11	46.44	7.24	47.35	7.79
Social Conformity (So)	41.04	9.96	41.72	10.67	45.18	9.08	46.03	9.15
Self-control (Sc)	47.43	8.11	47.21	9.14	48.92	7.88	48.96	8.25
Good Impression (Gi)	49.61	7.64	49.87	8.22	50.11	7.45	50.50	7.67
Communality (Cm)	29.46	16.61	30.69	16.92	40.08	10.45	41.07	10.82
Well-being (Wb)	36.13	9.42	37.37	10.10	39.31	9.23	40.93	9.65
Tolerance (To)	40.19	7.93	41.27	9.26	40.62	7.73	42.25	8.59
Achievement via Conformance (Ac)	43.57	8.58	45.02	9.63	46.83	7.61	48.79	8.45
Achievement via Independence (Ai)	43.50	6.57	45.04	7.80	44.23	6.58	46.81	7.19
Conceptual Fluency (Cf)	41.94	7.59	44.36	9.08	43.69	7.37	47.58	8.66
Insightfulness (Is)	42.51	7.72	44.03	8.46	43.37	7.56	45.83	7.90
Flexibility (Fx)	42.12	9.32	42.19	9.57	40.80	9.08	41.71	9.21
Sensitivity (Sn)	48.30	6.70	46.44	7.06	48.34	7.20	46.18	7.67
Managerial Potential (Mp)	45.93	7.18	47.54	8.03	46.04	7.35	48.96	8.06
Work Orientation (Wo)	35.83	9.19	37.65	10.32	38.37	8.68	40.70	9.46
Creative Temperament (Ct)	41.91	8.84	43.78	9.56	42.01	9.04	45.45	9.28
Leadership (Lp)	46.13	8.64	48.39	9.63	48.61	8.74	51.80	9.56
Amicability (Ami)	39.79	8.07	41.48	9.66	41.38	8.00	43.61	9.01
Law Enforcement Orientation (Leo)	46.70	9.96	48.40	10.48	48.64	9.77	51.86	9.31
vector 1 (v.1)	40.71	8.91	39.67	9.28	42.12	8.98	40.96	8.89
vector 2 (v.2)	54.90	8.80	55.34	9.02	56.19	8.29	56.56	8.21
vector 3 (v.3)	39.77	8.44	40.52	9.29	38.91	7.90	40.58	8.19

sample and subsample. Organizational level information was not available for the India single company or India multiple companies samples. The anticipated pattern of elevated scores was found among the higher-level organizational group for each sample. This replication of the pattern typically found in the United States provides additional validity evidence for the use of the CPI 260 assessment in India.

Correlations between the CPI 260 scales and organizational level (six levels: entry, nonsupervisory, supervisor, management, executive, and top executive) are shown in Table 12 for three Indian samples (the India single company sample is not included because organizational level was not available). These correlations are very similar to those reported in the *CPI 260® Manual,* with some of the highest correlations for the Managerial Potential, Leadership, Independence, and Dominance scales. High scores on these scales "are reliable forecasters of good managerial potential" (Gough & Bradley, 2005, p. 67).

TABLE 12. CORRELATIONS BETWEEN CPI 260® SCALES AND ORGANIZATIONAL LEVEL FOR THREE INDIAN SAMPLES

CPI 260® Scales	India General Population Sample (*N* = 1,108)	India General Population Subsample (*n* = 671)	India Multiple Companies Sample (*N* = 197)
Dominance (Do)	.10	.15	.09
Capacity for Status (Cs)	.10	.17	.18
Sociability (Sy)	.09	.14	.03
Social Presence (Sp)	.10	.15	.06
Self-acceptance (Sa)	.08	.11	.04
Independence (In)	.09	.17	.08
Empathy (Em)	.08	.14	–.09
Responsibility (Re)	.06	.06	.40
Social Conformity (So)	.02	.04	.10
Self-control (Sc)	.01	.03	.12
Good Impression (Gi)	.05	.08	.16
Communality (Cm)	.03	.01	.16
Well-being (Wb)	.06	.09	.19
Tolerance (To)	.07	.13	.11
Achievement via Conformance (Ac)	.07	.11	.27
Achievement via Independence (Ai)	.09	.17	.05
Conceptual Fluency (Cf)	.12	.20	.15
Insightfulness (Is)	.09	.16	.10
Flexibility (Fx)	.01	.06	–.09
Sensitivity (Sn)	–.11	–.13	.08
Managerial Potential (Mp)	.11	.21	.25
Work Orientation (Wo)	.08	.13	.25
Creative Temperament (Ct)	.07	.16	.03
Leadership (Lp)	.11	.15	.14
Amicability (Ami)	.09	.14	.30
Law Enforcement Orientation (Leo)	.06	.12	.02
vector 1 (v.1)	–.06	–.07	–.04
vector 2 (v.2)	.05	.02	.23
vector 3 (v.3)	.04	.11	–.02

CONCLUSION

The adequacy of the CPI 260 assessment for use in India was examined. Using four Indian samples, this study shows that the CPI 260 assessment used in India indicates good measurement properties in terms of the reliability and factor structure of the instrument. In addition, initial validity evidence suggests that the CPI 260 assessment functions in India in a manner similar to that found in the United States. While additional research should be completed using a variety of samples, the results presented here suggest that the CPI 260 assessment can be used in India. The average scores for the India single company and multiple companies samples tended to be more similar to the U.S. commercial sample, which comprises respondents who typically use the CPI instrument—those with higher organizational status and educational attainment. This suggests that Indian employees of organizations with more westernized roots score similarly to U.S. employees. The one area of concern about use of the CPI instrument in India is the lower average scores on some of the scales. The lower average standard scores were more common for the India general population sample and subsample, especially on the Self-management category of scales, including Communality, Well-being, and Tolerance. The purpose of the Communality scale is to measure erratic or random answering on one pole to agreement with "ordinary beliefs and

conventions" on the other pole (Gough & Bradley, 2005, p. 6). This suggests that for Communality in particular, the ordinary beliefs and conventions that are prevalent in Western cultures may not be found in Eastern cultures.

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