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THE BALANCED INVENTORY OF DESIRABLE RESPONDING (BIDR): A FACTOR ANALYSIS [1,2]

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Summary.—A confirmatory factor analysis of the Balanced Inventory of Desirable Responding based on a sample of 683 Chinese undergraduate and graduate students did not support the 2-factor (Paulhus) or 3-factor (Paulhus & Reid) models reported for Canadian samples. A follow-up principal components factor analysis yielded four factors, suggesting that both items on self-deception and impression management were split into enhancement and denial and that the structure of the inventory might vary across nations or cultures.

Since the 1950s, the construct of social desirability bias has provided an area of interest and concern for survey researchers (Leite & Beretvas, 2005). Over the years, a large number of tests have been designed to assess individual differences in social desirability bias (Paulhus, 1984; Li & Bagger, 2007). More recently, the Balanced Inventory of Desirable Responding, which conceptualized social desirability bias as consisting of two different factors called self-deception and impression management (Paulhus, 1984), has been gaining recognition (Li & Bagger, 2007). Later, self-deception involved enhancement (promoting positive qualities) and denial (disavowing negative qualities; Paulhus & Reid, 1991). Previous research has demonstrated the discriminate and convergent validity of the original subscales (Li & Bagger, 2006) as well as adequate reliability of the overall inventory (Li & Bagger, 2007).

Currently the inventory is one of the most widely used social desirability scales (Li & Bagger, 2006, 2007). Unfortunately, until now, neither the 2-factor model (self-deception and impression management) nor the 3-factor model (self-deception enhancement, self-deception denial, and impression management) has been confirmed or tested in nonwestern cultures. However, culture might play an important role in social desirability bias. For instance, Middleton and Jones (2000) found that Eastern students were more likely to deny socially undesirable traits and to admit to socially desirable

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ones than western students. The same effect was reported by Keillor, Owens, and Pettijohn (2001) in a cross-cultural study. And more importantly, culture might threaten the factor invariance given the extreme or acquiescence response style (Cheung & Rensvold, 2000). So additional research needs to be conducted before the social desirability measures can be used with confidence cross-culturally (Randall, Huo, & Pawelk, 1993). The purpose of the current research was to examine the structural generalizability of the Balanced Inventory of Desirable Responding in a Chinese sample.

Method

Participants

Participants were 683 students from three universities in Beijing (311 men, 372 women) who ranged in age from 18 to 30 years (M=21.9, SD= 2.5).

Inventory and Procedure

With the kind permission of D. L. Paulhus, the original English version of the Paulhus 40-item scale (Balanced Inventory of Desirable Responding–6; Paulhus, 1991) was translated into Chinese by the first author, Feng Li, and then back-translated into English by the second author, Yongjuan Li, who held a postdoctoral fellowship at the University of Illinois at Urbana–Champaign. A few words were changed in the final version to make their meanings in Chinese comparable to the original use.

Participants from three institutions completed the inventory in the same order at the beginning or end of a class. No special instruments were given. A small gift was awarded after the completion of the survey. All items were 7-point Likert-type scales using verbal anchors of 1: Strongly disagree and 7: Strongly agree.

Analysis

Confirmatory factor analysis was used to test the 2- and 3-factor models. The "fitness" of the data to the model was evaluated statistically.

Results

First, the fitness of Paulhus's 2-factor (1984) and 3-factor (1991) models were assessed. Following recommendations (Wen, Hau, & Marsh, 2004), seven "goodness of fit" indices were employed to evaluate the models: χ^2, χ^2/df, the Root Mean Square Approximation, the Comparative Fit Index, the Normed Fit Index, the Tucker-Lewis Fit Index, and the Parsimonious Normed Fit Index. As shown in Table 1, neither the 3-factor model nor the 2-factor model fit the data adequately based on the cutoff values.

Since the confirmatory factor analysis did not support either of the two models, the correlations were factor analyzed with principal components ex-

TABLE 1

CONFIRMATORY FACTOR ANALYSIS: 2-FACTOR AND 3-FACTOR MODELS

Model	χ^2	*df*	*p*	χ^2/df	RMSEA	CFI	TLI	NFI	PNFI
2-factor	2575.49	739	< .001	3.49	.060	.81	.80	.72	.70
3-factor	2094.77	737	< .001	2.84	.052	.84	.83	.77	.72

Note.—Statistically significant χ^2 values indicate poor fit to the data. Cutoff values for interpreting good fit for the χ^2/df, CFI, TLI, NFI, PNFI are 2.0, .95, .90, .90, .80, respectively. RMSEA of ≤ .05 is recommended for interpreting a good fit and values between .05 and .08 are interpreted as adequate fit.

traction followed by varimax rotation. Four factors were identified on the base of K1 criterion (i.e., eigenvalues ≥ 1.00), the scree plot, and the factor loadings (Zwick & Velicer, 1986). In Table 2 is a summary of loadings from the factor analysis along with the means and standard deviations for the individual items and item–total correlations (*r*).

TABLE 2

ROTATED FACTOR LOADINGS, ITEM MEANS AND STANDARD DEVIATIONS, AND ITEM-TOTAL CORRELATIONS

Item	Factor Loading				*M*	*SD*	*r*	Item	Factor Loading				*M*	*SD*	*r*
	1	2	3	4					1	2	3	4			
1	.09	**.47**	–.08	–.05	4.64	1.56	.18	21	.10	.25	**.44**	–.15	5.41	1.50	.28
2	–.12	.11	–.01	**.41**	4.96	1.61	.14	22	.37	–.39	.03	–.07	3.85	1.62	.09
3	–.14	.36	.00	–.09	3.49	1.73	.10	23	.21	.06	**.54**	–.06	4.04	1.78	.37
4	–.07	.13	–.19	**.42**	4.34	1.76	.11	24	**.51**	.05	.02	–.10	4.37	1.90	.32
5	–.05	.30	.09	.20	4.16	1.85	.23	25	.24	.10	.35	–.26	4.21	1.85	.28
6	–.06	–.04	–.11	**.55**	3.36	1.70	.13	26	**.60**	–.19	.15	.01	3.04	1.75	.35
7	.07	**.63**	–.01	–.05	4.81	1.69	.28	27	.26	–.17	**.42**	–.13	3.12	1.79	.27
8	.04	–.05	.00	**.48**	4.13	2.00	.19	28	.33	–.35	.09	.14	2.77	1.73	.20
9	–.14	**.49**	–.03	.22	4.52	1.68	.19	29	.33	–.04	**.47**	–.02	3.51	2.04	.40
10	.02	.12	–.07	**.53**	3.87	1.84	.25	30	**.45**	–.21	.08	.04	2.57	1.73	.28
11	–.12	**.62**	.00	.19	4.17	1.76	.26	31	.32	.08	.36	–.15	2.83	2.06	.36
12	.16	.12	–.29	**.41**	3.13	1.67	.21	32	**.53**	–.04	.04	–.12	3.49	2.00	.28
13	–.18	.03	.18	.20	3.48	1.90	.10	33	.04	–.03	**.51**	.09	3.55	1.96	.30
14	–.03	–.11	–.33	.11	3.63	1.83	–.03	34	**.50**	.11	.24	.02	3.74	2.20	.44
15	–.18	**.42**	.10	.31	4.15	1.73	.20	35	.00	.08	**.54**	–.05	4.79	2.02	.27
16	–.28	–.06	–.03	.38	4.90	1.53	.01	36	**.71**	–.04	.14	.00	2.99	1.90	.47
17	.08	**.64**	.11	.24	4.69	1.55	.38	37	.01	–.17	**.56**	.04	4.04	2.20	.28
18	.20	.08	–.17	.29	4.23	1.91	.19	38	**.58**	–.07	.07	.00	2.82	1.96	.37
19	–.08	**.40**	.04	.08	4.61	1.91	.23	39	.06	–.10	**.48**	–.23	4.56	1.80	.21
20	.00	.16	–.07	**.54**	4.48	1.80	.24	40	**.44**	–.20	.07	–.02	3.30	1.72	.22

Note.—Loadings ≥ .40 are in boldface.

The results indicated that both self-deception and impression management items were split into two clusters, enhancement and denial. This solution was different from Paulhus's 3-factor model in which all impression items loaded together (Paulhus & Reid, 1991). Furthermore, Items 3, 5, 13, 14, 16, 18, 22, 25, 28, and 31 were excluded. Table 3 presents the means and intercorrelations of the four new factors.

Table 3 indicates that the correlation between the denial items of self-deception and the items of impression management were significant, but low and negative. The paired-samples t test indicated that the mean score on Impression Management Denial subscale was significantly higher than that on the Enhancement subscale ($t = 18.2$, $p < .00$), from which one may infer that participants use a different response style when responding to different kinds of items.

TABLE 3

Means and Intercorrelations of Factors ($N = 683$)

Measure	No. Items	*M*	*SD*	*r*			
				1	2	3	4
Self-deception Scale							
1. Enhancement	7	31.5	6.9	**.67**			
2. Denial	7	28.1	6.6	.29†	**.59**		
Impression Management Scale							
3. Enhancement	8	26.2	8.6	−.18*	−.12*	**.71**	
4. Denial	8	32.9	7.8	−.05	−.25*	.36†	**.62**

Note.—Alpha reliabilities appear in boldface. $^*p < .05$. $^†p < .01$.

Discussion

Present results indicated that the impression-management factor was split into enhancement and denial for this Chinese sample, and participants' responses to denial items are significantly different from those to enhancement items. These results are different with Paulhus and Reid's one-dimensional finding (1991). A cultural explanation may be possible. It is clear that collectivism is a classic characteristic of Chinese culture (Hofstede, 1980) and is associated with face-saving (Laiwani, Shavitt, & Johnson, 2006), harmony (Bond, Leung, & Wan, 1982), and defensiveness (Ah-Q mentality; Cheung, Leung, Fan, Song, Zhang, & Zhang, 1996). The pursuit of saving face is likely facilitated by those characteristics associated with views of self that are commonly observed in China (Heine & Hamamura, 2007). Participants tend to give honest or even modest answers (the mean score is lower than the conceptual midpoint (Liu, Xiao, & Yang, 2003) to the enhancement items referring to positive content but give more answers of denial to the items referring to negative content given their self-defensive strategy to save face (Trafimow, Armendariz, & Madson, 2004).

These results suggest that the structure of the Balanced Inventory of Desirable Responding might vary in different cultures. Therefore, researchers must be cautious about the application and interpretation of scores on the

Balanced Inventory of Desirable Responding in the absence of evidence for its validity in relevant populations.

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