

Testing the Validity and Reliability of the Levels of Self-Concept Scale in the Hospitality Industry

Einar Marnburg¹, Zhenpeng Luo^{2*}

¹ Faculty of Social Science, University of Stavanger, Stavanger, N-4036, Norway

² Institute of Tourism, Beijing Union University, Bei Si Huan Dong Lu, No. 99, Chaoyang District, Beijing, 100101, China

*Correspondence: Zhenpeng Luo, Institute of Tourism, Beijing Union University, Bei Si Huan Dong Lu, No. 99, Chaoyang District, Beijing, 100101, China. E-mail: lytzenpeng@buu.edu.cn; Luo_zhenpeng@yahoo.com

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Abstract

Self-concept is a powerful determinant of people attitudes and behaviors, and leaders can profoundly influence subordinates' self-concept, and furthermore, their behaviors and other social processes. As an important theory to management, studies on testing the validity and reliability of the scale of self-concept were limited. The purpose of this study is to evaluate the validity and reliability of an existing popular used instrument of self-concept, which is named LSCS in the context of Chinese culture. An empirical survey was conducted in China's hotel industry, and 585 valid responses were collected. Results showed that the reliability and discriminant validity of LSCS were good, while convergent validity was not ideal. Suggestions on how to improving the convergent validity of LSCS was given in the end.

Keywords: self-concept, validity, reliability, China hotel industry

Abbreviations: LSCS—Levels of Self-Concept Scale

1. Introduction

1.1 Self-Concept and Its Scale

The self-concept is an overarching knowledge structure that includes schemas to help organize one's memory and behavior. It is also a script that helps combine contextual cues with self-consistent goals and behaviors (Brewer & Gardner, 1996; Lord & Brown, 2004; van Knippenberg, Van Knippenberg, De Cremer, & Hogg, 2004). In detail, the self-concept is an individual's opinions, feelings, perceptions, or attitudes that help evaluate or identify his or her self-perception (Sirgy, 1982; Solomon, 1999; Wu & Chan, 2011).

From the multifaceted perspectives of cognitive, personality, and social psychology, Lord and Brown (2004) argued that the self-concept could help individuals know the self, others, and regulate social interactions. Followers' self-concepts determine their behaviors and reactions to leaders. Thus, leaders can profoundly influence subordinates' self-concepts, and further influence follower behaviors and other social processes (Lord, Brown, & Freiberg, 1999). Based on the above reasons, self-concept plays a very important role in the process of leadership and of service delivery in that employee attitudes and behaviors are crucial to customer satisfaction.

To date, the self-concept has not received much attention from researchers and leaders, which may restrict the effects of leadership in the fields of employees' cognitive, affective, and social

process, despite its potential importance in understanding leadership (Lord *et al.*, 1999). Existing studies on self-concept have mostly focused on consumers' perspectives in marketing (Mai, Smith, & Cao, 2009; Wu & Chan, 2011), in students learning, and in health-related problems (Cheong & Johnston, 2013; Chmielewski, Dumont, & Trautwein, 2013; Davis, 2013; Vartanian & Dey, 2013; Zhan & Mei, 2013). However, its application in the field of leadership needs further investigation (Van Knippenberg *et al.*, 2004). The Levels of Self-Concept Scale (LSCS) developed by Selenta and Lord (2002) to measure self-concept is attracting more attention from researchers (Johnson & Lord, 2010; Johnson, Selenta, & Lord, 2006; Lord & Brown, 2004; Van Knippenberg *et al.*, 2004) in the field of leadership theory, while its reliability and validity were not clearly tested, which are important to measure self-concept under different situations.

1.2 Necessity for Testing the Scale

Reliability is an important index for an instrument if it is used at different times under different conditions (e.g., cultures), while validity is crucial if the instrument is used to measure what we actually wish to measure (Cooper & Schindler, 2003; Hair, Black, Babin, & Anderson, 2011). Concepts within an instrument are normally culturally related, whereas significant differences exist in culture between the Western and Eastern worlds (e.g., individualism vs. collectivism) (Hofstede, Pedersen, & Hofstede, 2002). Therefore, culture can affect the validity of an instrument. Researchers have identified differences in instruments based on the same theory between Western and Eastern cultures. For example, differences exist in the instruments of transformational leadership between the Chinese culture and the Western world (Bass, Avolio, & Atwater, 1996; Shi, Chen, & Li, 2005). Simply using existing instruments in a significantly different cultural context may cause unexpected bias. Therefore, it is necessary to examine the validity and reliability of an instrument developed in the Western world within the Eastern cultural context. To this end, the purpose of this study is to test the validity and reliability of the LSCS in general and specifically in the context of Chinese culture, and to apply it in the China's hotel industry if its validity and reliability are acceptable.

1.3 Literature Review

1.3.1 *The Scales of Self-Concept*

The self-concept has three levels (Banaji & Prentice, 1994; House, 1995; Selenta & Lord, 2002): the individual, relational, and collective (Brewer & Gardner, 1996; Lord *et al.*, 1999; Tajfel & Turner, 1985). The individual level involves interpersonal comparisons where one's senses of uniqueness and self-worth are derived from perceived similarities with, and differences from, other individuals (Banaji & Prentice, 1994). This self-concept is especially salient in Western cultures (Hofstede *et al.*, 2002). The relational level of self focuses on mutual benefits, self-worth, and interdependence with others based on the extent to which individuals define themselves in terms of dyadic connections and their roles in relationships with others (Allen & Meyer, 1990; House, 1995). The collective level involves a self-definition that is based on one's social group memberships, where favorable intergroup comparisons give rise to self-worth, and organizational identity is more important (Vroom, 1964). Self-concept at different levels may cause different attitudes and varied behaviors among subordinates; therefore, the multidimensional nature of self-concept elaborates useful information for leaders to influence the thoughts and actions of their subordinates. Operationally, the LSCS (Selenta & Lord, 2002) was developed to measure these three levels of the self-concept.

The LSCS, compared to other scales of self-concept, is of interest of this study for three main reasons. First, it is relevant and important to leadership (Johnson & Lord, 2010; Johnson *et al.*, 2006; Lord & Brown, 2004; Van Knippenberg *et al.*, 2004) than is other scales. Second, various researchers have investigated this scale in terms of leadership (Johnson *et al.*, 2006; Lord *et al.*, 1999; Van Knippenberg *et al.*, 2004); however, few have tested the LSCS in terms of validity and

reliability in the context of Eastern culture even though it is claimed to be a robust scale (Lord & Brown, 2004). Finally, for the potential importance of the self-concept and globalization, it has attracted more attention from researchers on the one hand, while it deserves more study in the field of leadership on the other (Van Knippenberg *et al.*, 2004). Therefore, the test of the validity and reliability of the LSCS is urgent for further studies, especially in the context of Eastern cultures (e.g., Chinese culture).

1.3.2 *Assessing Reliability*

In terms of the instrument, reliability can be assessed with test-retest reliability to ensure the stability of the measurement and ensure stability over time. Another commonly used indicator of reliability is internal consistency (IC), which implies that all the items of the instrument measure the same concept; that is, they come from the same domain (Cooper & Schindler, 2003; Nunnally & Bernstein, 1994). This kind of reliability can be tested using Cronbach's alpha and the Split-half technique for cross-sectional surveys.

Operationally, item-to-total (item to summated instrument score correlation), and item-to-item correlation can be used to test reliability at the item level; furthermore, IC can be calculated to test internal consistency with Cronbach's alpha and the Split-half index if similar questions exist within an instrument. For complex instruments with more than one factor, composite reliability (CR) can be used in conjunction with confirmatory factor analysis (CFA) (Cooper & Schindler, 2003; Hair *et al.*, 2011). For the cross-sectional survey conducted in this study, the IC and CR reliability indices were used to assess the reliability of the LSCS scale. Reliability is a necessary condition to validity (Cooper & Schindler, 2003); therefore, reliability of any instrument should be assessed first for appropriateness to assess validity (Hair *et al.*, 2011).

1.3.3 *Validity Indices*

Validity represents the extent to which an instrument measures the concept of interest accurately (Hair *et al.*, 2011) and is categorized into internal and external validity (Clark-Carter, 2010; Nunnally & Bernstein, 1994). Internal validity, the degree to which a design successfully demonstrates the relationships between dependent and independent variables (Clark-Carter, 2010), can be assessed as *content*, *instrument* (including *convergent* and *discriminant*), and *nomological* validity (Cooper & Schindler, 2003; Hair *et al.*, 2011; Nunnally & Bernstein, 1994). Content validity reflects the extent to which the instrument covers adequate items or questions of the concept. This type of validity can be reached by one designer through a definition of the concept, items and instruments used or through a panel of persons who are professionals at the topic of interest (Cooper & Schindler, 2003). However, these methods are subjective and may cause bias through individual or cultural differences, which leaves room to challenge the content validity of an instrument. For this reason, there are always different instruments for the same theory in different studies.

Instrument validity is the extent to which items in the instrument reflect the latent concept that is supposed to measure accurately (Hair *et al.*, 2011). This type of validity can be assessed using convergent validity, which represents the degree to which items converge or share a high proportion of variance in common, and discriminant validity, which representing the degree to which two conceptually similar concepts are distinct (Hair *et al.*, 2011). Convergent validity of a factor is reached if all standardized loadings of items are significant and higher than 0.5 or 0.7, and variance extracted (AVE) has a factor of 0.5 or greater. Discriminant validity is reached if the AVE estimate for a factor is greater than the squared inter factor correlations associated with that factor. However, researchers should be cautious because significant cross-loadings of items on the factors could indicate problems of discriminant validity (Hair *et al.*, 2011).

Nomological validity reflects whether the instrument represents the hypothesized causal relationships of the model and is assessed as correlations between factors in the model (Hair *et al.*,

2011). This method is not appropriate for a simple instrument of a concept that has no causal relationships, therefore, this type of validity was not tested because the model in this study was not causal related.

External validity refers to the generalizability of the findings of a theory or the robustness of a theory that can be replicated in other conditions, times, or groups (Clark-Carter, 2010). To test the external validity of the LSCS, this researcher conducted a survey in the Eastern cultural context, which is very different from the Western world; therefore, the findings of this study may make significant contributions to the LSCS theory.

2. Method

2.1 Employee Characteristics

Employee demographic information shows that most respondents were from housekeeping (21.9%), food and beverage (20.6%), front office (19.2%), facility and engineering (17.5%), and sales/marketing (14.3%). The average age of respondents was 29 years old. Females accounted for 60.8% and males accounted for 39.2%. Most employees had vocational or high school education (45.6%), while only 17.6% had bachelor degrees, and 1.1% had master degrees. The average monthly income of employees was around US\$220, which ranks the lowest among varied industries based on the latest statistics in China (National Bureau of Statistics of China, 2011).

2.2 Sampling and Procedures

The target population of the study was hotel employees in mainland China. A convenience sampling method was used to select hotels. The researcher selected 43 hotels, 20 from Beijing and 23 from other provinces in mainland China. The hotels selected ranged from two to five stars, including state owned, privately owned, and joint venture properties. Three employees were selected from each department (front office, sales/marketing, food and beverage, concierge, room service, facility and engineering, and human resource) at each hotel to participate in the survey. Based on a 5% confidence interval and 95% confidence level, the minimum sample size should have been 385 (Churchill & Iacobucci, 2007). Considering the rule of 10 (Garson, 2008), the ratio of one measurement item to 10 observations, required by SEM, the minimum sample size should have been 370 for 37 items in this study. Based on previous studies, the average response rate among China's hotel employees is around 50%, with a valid response rate at about 85%. Therefore, the minimum number of questionnaires distributed should have been around 910. A total of 1,000 questionnaires were distributed.

With the strong support of hotel managers, 640 responses were collected for a response rate of 71%. Among 640 returned questionnaires, 326 (51%) were from 20 hotels in Beijing and 314 (49%) were from 23 hotels in other provinces. Of the 640 questionnaires received, 55 were excluded from the study due to incompleteness and 585 were used in the data analysis, which represents a valid response rate of 91.4%.

2.3 Measures

Employees' self-concepts were measured using the LSCS (Selenta & Lord, 2002). The LSCS contains 15 items, each of the three levels of self-concept that contain five items. An example of individual self-concept ($\alpha = 0.73$) is "I feel best about myself when I perform better than others." An example of relational self-concept ($\alpha = 0.79$) is "I value friends who are caring, empathic individuals." An example of collective self-concept ($\alpha = 0.82$) is "When I become involved in a group project, I do my best to ensure its success." Participants rated items using a 5-point Likert-type instrument (from 1-Totally disagree to 5-Totally agree). Items were originally developed in English and then translated into Chinese. The back-translation method (Brislin, 1980)

was used to translate the Chinese version of the questionnaire into English by a bilingual scholar to ensure the content validity. The researcher chose the LSCS from Johnson *et al.*'s (2006) study because the findings of the two studies can be compared.

2.4 Analysis

Descriptive analysis was conducted first to obtain demographic information of employees. The IC, Split-half coefficient, and inter factor correlation were calculated with SPSS software to test the reliability of the factors of the LSCS. An exploratory factor analysis (EFA) was conducted to test the structure of the LSCS, combined with confirmatory factor analysis (CFA) in Lisrel 8.80 based on the theory of methods triangulation that different methods reach the same result (Johnson, 1997). Results of the CFA analysis were also used to obtain standardized loadings of items, AVE values of factors, and CR of the factors to test the validity of the LSCS. Independent sample *t*-test and correlation analyses were conducted to examine self-concept levels and differences in Chinese hotel employees in terms of gender and age.

3. Results

An exploratory factor analysis (EFA) was conducted to test whether common method bias of the data occurred; furthermore, EFA results test whether the factors explored are identical to the existing structure of the LSCS. The sample size of this study reached a ratio of 10 cases for each item, Kaiser-Meyer-Olkin (KMO) was .88, and Bartlett's test of sphericity was significant at the 0.01 significance level. Therefore, the data were qualified to conduct an EFA (Hair *et al.*, 2011; Pallant, 2005).

Table 1. Results of exploratory factor analysis with Varimax rotation

Item	Factor		
	1	2	3
IS1			.690
IS2			.810
IS3			.749
IS4			.649
IS5			.514
RS1		.555	
RS2		.655	
RS3		.785	
RS4		.761	
RS5		.624	
CS1	.686		
CS2	.715		
CS3	.736		
CS4	.723		
CS5	.699		

Note: "IS" stands for individual level self-concept; "RS" stands for relational level self-concept; "CS" stands for collective level self-concept.

Harman's one-factor test was used to analyze the presence of common method bias. All relevant items of the factors were put together as one to conduct an un-rotated factor analysis. If either a single factor emerged or one general factor explained most of the covariance in the independent and

criterion variables, then substantial common method bias was present (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Three factors were identified in the un-rotated factor analysis, which represented no common method bias. With the Varimax rotation (loadings less than 0.4 were suppressed), the same three factors in the LSCS instrument were identified, and the total variance of 54.99% was explained by the three factors (see Table 1), with 19.54%, 18.78%, and 16.67% explained by the three factors, respectively. In conclusion, the data of this study supported the LSCS, and further analysis of the data could be conducted.

3.1 Reliability of the LSCS

Based on theories of reliability, item-item correlation, item-total correlation, Split-half coefficient, Cronbach's alpha, and composite reliability (CR) were calculated. Results showed that Cronbach's alpha values of the three levels of self-concept are all greater than .70, and Split-half coefficients were 0.66 for IS¹, 0.76 for RS, and 0.77 for CS, which indicated good reliability of the three factors. The CR values were 0.73, 0.54, and 0.70, which indicates that IS and CS had good reliabilities, whereas RS had medium reliability (see Table 2). The inter-item correlations were all greater than 0.30, and almost all item-total correlations were greater than 0.50, except for IS1-total (0.48), IS4-total (0.47), and IS5-total (0.38). These findings represent good reliability at the item level (Hair *et al.*, 2011). Therefore, in general, each factor of the LSCS had good reliability in this study.

Table 2. Reliability statistics of the three factors of self-concept

Item	Item-item correlation				Item-total correlation	Split-half coefficient	Cronbach's alpha	CR
IS						.66	.73	.73
IS1	3.19/1.22				.48			
IS2	.50**	2.97/1.12			.60			
IS3	.37**	.49**	2.80/1.13		.54			
IS4	.31**	.39**	.33**	3.48/1.15	.47			
IS5	.21**	.28**	.32**	.31**	3.78/1.06	.38		
RS						.76	.79	.54
RS1	4.01/.86				.53			
RS2	.47**	4.26/.74			.56			
RS3	.42**	.50**	4.26/.79		.64			
RS4	.42**	.47**	.59**	4.29/.70	.65			
RS5	.33**	.30**	.43**	.50**	4.28/.78	.50		
CS						.77	.82	.70
CS1	4.18/.80				.61			
CS2	.59**	4.40/.68			.69			
CS3	.47**	.57**	4.42/.75		.60			
CS4	.49**	.53**	.48**	4.45/.70	.63			
CS5	.37**	.42**	.38**	.46**	4.34/.85	.52		

Note: "***" is significant at the 0.01 significant level (two tailed); "IS" stands for individual level self-concept; "RS" stands for relational level self-concept; "CS" stands for collective level self-concept; values at diagonal are Mean/S.D. of items.

¹ Note: IS = individual level self-concept; RS = relational level self-concept; CS = collective level self-concept.

3.2 Validity of the LSCS

Confirmatory factor analysis (CFA) was conducted given that assumptions were met. The goodness-of-fit indices were very good (see Table 3), which indicated that the LSCS scale fit the data very well and achieved good validity of the model (Byrne, 1998). The AVE values of each factor of the LSCS were calculated using the standardized loadings of the items. All standardized loadings of the items were significant (*t*-values were greater than 1.96; see Table 3). However, some loadings of items in each of the three factors were less than 0.5, leading to low AVE values of the three factors (0.37 for IS, 0.22 for RS, and 0.33 for CS; see Table 4). Considering the modification indices of IS2, IS5, and RS5 (see Table 3) and the large standard deviations of items in IS, poor convergent validities of the factors on the LSCS were identified (Hair *et al.*, 2011).

Table 3. Standardized loading and T values of items

Item	Standardized loading	T values	Modification indices (Decrease in Chi-Square)	
			to RS	to CS
IS				
IS1	.62	14.07		
IS2	.74	16.88	15.3	17.2
IS3	.65	14.71		
IS4	.36	7.63		
IS5	.43	9.25	17.2	16.5
RS				
RS1	.68	15.22		
RS2	.65	14.75		
RS3	.28	5.90		
RS4	.28	6.01		
RS5	.23	4.92		9.5
CS				
CS1	.69	17.00		
CS2	.26	5.68		
CS3	.67	16.26		
CS4	.72	17.83		
CS5	.59	13.96		

Note: “IS” stands for individual level self-concept; “RS” stands for relational level self-concept; “CS” stands for collective level self-concept.

Model fit statistics: *Chi-Square /d.f.* = 156.48/87 ($p < 0.05$); RMSEA = 0.036, 90 Percent Confidence Interval for RMSEA = (0.027; 0.046), P-Value for Test of Close Fit (RMSEA < 0.05) = 0.99; NFI = 0.94; NNFI = 0.97; CFI = 0.97; IFI = 0.97; SRMR = 0.043; GFI = 0.97; AGFI = 0.95.

Table 4. Mean, S.D. of the factors, correlation coefficient between factors, and squared inter factor correlations

Factor	Mean	S.D.	1	2	3
1. Collective-level	4.36	.58	.33	.64	.07
2. Relational-level	4.22	.57	.65**	.22	.13
3. Individual-level	3.25	.78	.25**	.31**	.37

Note: Correlations below the diagonal are between factors; values above the diagonal are squared interfactor correlations; values at diagonal are AVEs of factors; “***” is significant at the 0.01 confidence level (two tailed).

Regarding discriminant validity, only one inter-factor correlation between CS and RS (0.64; see Table 4) was greater than the related AVE values of CS and RS. Other inter-factor correlations were less than the related AVE values of the factors. This finding was in conjunction with the EFA results (see Table 1), which presented a perfect identical factor instrument of the LSCS. It is reasonable to conclude that the discriminant validity of the LSCS was acceptable in this study (Hair *et al.*, 2011).

One last challenge of validity of the LSCS was its content validity, which can be reflected by the coverage of questions of the factors of the LSCS and the expressions of questions that are understood by people with different cultural contexts. Based on content validity, items of IS2, IS5, and RS5 should not be moved to other factors even though there were modifications of the results of the EFA. Large standard deviations of items in factor IS could be reduced by modifying expressions of the questions to communicate clear common concepts for respondents of Chinese employees. For the purpose of improving convergent validity, this researcher suggests adding more questions and modifying items of factors that can be understood clearly by Eastern people.

The validity of the LSCS was tested first by factor analysis through which the distinction among the three self-concept levels as identified. Second, specific item-factor associations, convergent, and discriminant validity of the self-concept were identified with regression analysis in Johnson *et al.* (2006) and Selenta and Lord (2002). This study provided goodness-of-fit indices that support good validity in general, while some problems of the content validity of the LSCS emerged.

In conclusion, the reliability and some validity indices of the LSCS were acceptable, while the convergent validity of factors of the LSCS was not ideal. However, this instrument can be used in research in the Eastern cultural context because it has good reliability and validity (EFA and CFA results). Additionally, it could reach better results if convergent validity can be improved by modifying the content of the factors of the LSCS.

Following the above analysis, further studies on the characteristics of self-concept of Chinese hotel employees were conducted, including cultural, gender, and social influences on self-concept. Related findings are presented below.

3.3 Culture and Self-Concept

Differences in self-concept levels across cultures were also identified (Selenta & Lord, 2002). The results of the one-way analysis of variance (ANOVA) indicated significant differences in the means between IS, RS, and CS for Chinese hotel employees (see Table 4). In detail, Chinese employees had higher mean scores of collective level self-concept and relational level self-concept, while the mean score of individual level self-concept was low. Compared to Johnson *et al.*'s (2006) results, the mean score of the CS was higher in this study ($M = 4.36$) than in the former study ($M = 3.90$). Other differences in mean scores of IS and RS were also identified, which support Selenta and Lord's (2002) finding and the statement that Easterners are more collective oriented than are Westerners (Hofstede *et al.*, 2002).

3.4 Gender and Self-Concept

Previous research also identified a difference in self-concept between genders (Selenta & Lord, 2002); specifically, females place more emphasis on relational self-concept than do male. Therefore, this researcher conducted an independent sample t-test to identify differences in self-concept at each level between male and female employees. Results showed significant differences in RS (0.12) and CS (0.11) between genders, and mean scores of RS and CS for male employees were higher than were those of female employees. This finding is opposite to Selenta and Lord's (2002) results. Furthermore, mean scores of self-concept at the collective and relational levels were all higher than those at the individual level (see Table 5), which indicates that male

employees at hotels in China are more relation and teamwork building oriented than are female employees.

Table 5. Group statistics and independent samples t-test for differences in self-concept between genders

Self-concept	Gender	N	Mean	Std. Deviation	Mean Difference (M-F)	Sig. (2-tailed)
Collective-level	Male(M)	207	4.43	.53	.11	.03
	Female(F)	321	4.32	.61		
Relational-level	Male(M)	206	4.30	.52	.12	.02
	Female(F)	318	4.18	.61		
Individual-level	Male(M)	201	3.33	.75	.12	.08
	Female(F)	316	3.21	.79		

3.5 Social Influence on Self-Concept

Great social changes have occurred in China since the one-child policy enacted in 1979 in mainland China (Tang, 2005). Those born after 1980 (similar to Generation Y in the United States) are becoming the main work force (62.7% in this study) in hotels. Most were the only child in their families and, consequently, may be speculated to be more self-centered than altruistic (Su & Xiao, 2008). The generation gap has become a hot topic of researchers, while differences in attitudes and behaviors between the pre- and post-1980s generations are seldom discussed in mainland China. This study provided insight into the differences of self-concept in China’s hotel industry.

To identify differences in self-concept between pre- and post-1980s employees, independent sample *t*-tests were conducted at the general, individual, relational, and collective levels. Results revealed significant differences in self-concept at the RS, CS, and general levels, whereas no significant difference existed at the IS level (see Table 6). The RS and CS of pre-1980 employees were greater than were those of post-1980 employees. The mean score of pre-1980s was greater than that of post-1980s employees. This finding reflects a significant change as the result of social change in mainland China. This finding should catch great the attention of leaders to focus specially on new generations (post-1980) at work to motivate and influence them more effectively.

Table 6. Independent Sample T-Test for mean differences between levels of self-concept

Profile		Levene’s Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (two tailed)	Mean difference Post1980 - pre1980
Total	equal variances assumed	.039	.843	-2.270	484	.024	-.11 (3.90-4.01)
IS	equal variances assumed	.802	.371	-.936	503	.350	-.07 (3.22-3.29)
RS	equal variances assumed	.125	.724	-2.129	509	.034	-.11 (4.18-4.29)
CS	equal variances assumed	.116	.734	-2.740	514	.006	-.14 (4.30-4.45)

3.6 Socioeconomic, Work Years and Self-Concept

To obtain more knowledge on factors that influence employee self-concept, correlations between levels of self-concept and age, income, and work years in the hotel industry or hotels, weekly work hours, and years with supervisors was conducted. Results showed that age was significantly related to the collective level self-concept, while income was significantly related to the individual self-concept.

Work duration in the hotel industry was significantly related to both individual and collective levels of self-concept, whereas, no significant relationships emerged between the level of self-concept and work duration in a hotel, weekly work hours, or years with a supervisor (see Table 7).

Table 7. Correlations between levels of self-concept and socioeconomic and duration of work

	Age	Income	Years in the hotel industry	Years in the hotel	Years with the supervisor	Average weekly hours
Individual level	.081	.166**	.133**	.051	.074	.001
Relational level	.072	.069	.032	-.026	-.003	.084
Collective level	.093*	.035	.121**	.041	.067	.079

** . Correlation is significant at the 0.01 level (two tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

These results indicated that older employees are more collective oriented than are younger ones. This finding may be due to personality changes caused by the one-child policy in mainland China enacted in 1979. The correlation between duration of work in the hotel industry and the individual and collective levels of self-concept confirmed that relational self-concept is a temporary status, and it might become either of the other two levels of self-concept in the long-term (Lord & Brown, 2004). The correlation between income and individual self-concept may not imply a causal relationship; however, it does suggest a moderating role of income on the individual self-concept.

The small correlation coefficients for all factors indicate that they have very weak influences or moderating effects on employee self-concept. Furthermore, the non-significant relationship between self-concept and years working with supervisors does not imply that supervisors are not important in shaping employees' self-concepts; rather, the leadership styles of supervisors may be the deterrent of employees' self-concepts. Therefore, the moderating roles of the demographic situations of hotel employees in shaping employees' self-concept need more investigation.

4. Discussion

4.1 Summary

This paper tested the reliability and validity of the LSCS based on China's hotel industry. In conclusion, the reliability and some validity indices of the LSCS were acceptable, while the convergent validity of factors of the LSCS were not good. From a general perspective of reliability (such as IC and CR) and validity (such as EFA and CFA results), the LSCS can be used in research in the Eastern cultural context, while better results could be reached by improving convergent validity.

The low convergent validity of the factors was confirmed as a usual problem based on our studies when Western theories are applied in the Eastern cultural context. Content validity may be the cause of this problem because of cultural differences in concepts and understanding. Therefore, it is important to understand the concepts in conjunction with their local cultures and conduct sufficient pilot tests of the instrument to ensure validity to improve the convergent validity of LSCS in future studies.

Based on this scale, related findings on the self-concept of Chinese hotel employees were also analyzed in terms of the relationships between genders, social, income, working experiences, and cultural issues. In summary, Chinese hotel employees are more collective self-concept oriented than are individual oriented, and CS had the highest mean score among the three levels. Gender differences in self-concept were identified in that male employees are more relational and have a collective self-concept compared to female employees. Additionally, significant differences existed in self-concept at the RS and CS levels between the pre- and post-1980 generations, in which RS and CS of pre-1980 employees were greater than that of post-1980 employees.

4.2 Theoretical Contributions

Some important contributions to the theory of self-concept can be summarized as followings: first, the sample in this study were full time employees in the hotel industry rather than part-time students compared to Johnson *et al.*'s (2006) study, which means the findings on LSCS were more trustful for its empirical study, therefore, the findings of this study are more significant to this theory; second, the test of the validity and reliability of LSCS was seldom conducted by researchers, so findings of this study can be valuable for the development of the scale of LSCS; finally, the context of the study can provide important information on the external validity of LSCS due to cultural differences between Eastern and Western world (Clark-Carter, 2010). Therefore, findings of this paper provide strong supports for the application of LSCS in the context of Eastern cultures with some modifications to improve its convergent validity.

4.3 Managerial Implications

With regard to the result that Chinese hotel employees were collective (CS) and relational (RS) oriented. Managers should take advantage of it to build good teamwork of the department to provide excellent services to guests. In detail, to stimulate employees to perform organizational citizenship behaviors such as helping colleagues and guests with extra efforts, and improve inter-team cooperations to provide seamless services of the whole hotel.

Because male employees had higher mean scores of RS and CS than do female employees in hotels in China, managers should do more on the development of level of RS and CS of female employees to influence their attitudes and furthermore, their behaviors effectively. Managers should exercise sound leadership styles such as transformational leadership to change the attitudes of female employees.

Additionally, generational issues are becoming salient concerning attitudes and behaviors, specifically in terms of the pre- and post-1980 generations. The results of this study showed that pre-1980 generations had higher mean scores of RS and CS than did post-1980 generations. This finding indicates a speculation that traditional Chinese culture is facing significant challenges for younger generations. Therefore, it deserves great attention of managers to overcome their drawbacks because leaders can have crucial influences on shaping the level of employees' self-concepts (Lord & Brown, 2004), whereas taking traditional mindsets for granted with younger generations may result in bias or mistakes in management. Managers should influence younger employees on their levels of self-concept by training program and their leadership behaviors on one hand, and they can also set role models of older employees for younger ones on the other.

4.4 Limitations and Future Researches

Although rich information was captured in terms of theory contribution and practical implication, limitations of this study should be pointed out for references of researchers conducting related studies in this field. The first limitation was that the data of this study were from a single field, the hotel industry, which may constrain the representatives of the results. Another limitation was that data were cross-sectional; therefore, test-retest reliability of the factors was not available. Finally, further studies on the convergent validity of factors of the LSCS are needed within the context of Eastern culture, and studies on the topic of self-concept are still needed in the global Context.

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