

**Table 6**  
**Factor Loadings—15 items**

Item	Practical Skills (ps)	Citizenship (c)	Personal Responsibility (pr)	Interpersonal Skills (ip)
Applying Knowledge to the "Real World" (ps1)	0.658			
Problem Analysis and Critical Thinking (ps2)	0.822			
Workplace Skills (ps3)	0.652			
Organizational Skills (ps4)	0.634			
Connecting Theory with Practice (ps5)	0.718			
Understanding Cultural and Racial Differences (c1)		0.725		
Social Responsibility and Citizenship Skills (c2)		0.815		
Community Involvement (c3)		0.807		
Ability to Make a Difference in the Community (c4)		0.704		
Social Self-Confidence (pr1)			0.713	
Ability to Assume Personal Responsibility (pr2)			0.702	
Being Trusted by Others (pr3)			0.738	
Ability to Work Well with Others (ip1)				0.680
Leadership Skills (ip2)				0.738
Communication Skills (ip3)				0.675

68.5 percent of the total variance. Prior to conducting the CFA, multivariate normality was assessed using the PRELIS procedure. Several items were found to be nonnormal but, due to the large sample size ( $n > 100$ ), the assumption of multivariate normality could be relaxed (Steenkamp and van Trijp 1991).

### Item Purification

In order to purify the 15 scale items, a CFA was run with LISREL 8.54 using the maximum likelihood estimation (MLE) procedure, because Steenkamp and van Trijp (1991) argued that MLE parameter estimates are robust against moderate violations of the assumption of multivariate normality if the sample size is larger than 100. In assessing the standardized residuals, three items were dropped because they consistently showed large standardized residuals (exceeding the cutoff point of  $\pm 2.58$  suggested by Hair et al. 1998) with items on other dimensions without any specific pattern, implying a need for respecification. All of the 12 remaining items on the scale met most of the standard fit requirements for acceptable model fit (goodness-of-fit index [GFI] = 0.92, adjusted goodness-of-fit index [AGFI] = 0.87, confirmatory fit index [CFI] = 0.98, normed fit index [NFI] = 0.97, root mean square error of approximation [RMSEA] = 0.077). The chi-squared was significant ( $\chi^2(48) = 106.19, p < 0.005$ ), however, this was expected due to the large sample size (Marsh, Balla, and McDonald 1988).

### Construct Validation

To test the validity and reliability of the scale, Gerbing and Anderson's (1988) procedure was followed. We first assessed the unidimensionality of the scale items, then convergent and discriminant validities were investigated, and, finally, the scale items' reliabilities were evaluated.

By definition, unidimensionality refers to the existence of a single trait or construct underlying a set of measures (Hattie 1985). To assess unidimensionality, the standardized residuals and overall model fit were investigated. The resultant measurement model represents a relatively good fit with most of the fit indices satisfying the criteria for acceptable model fit as discussed above. The standardized residuals did not show any need for respecification, and, therefore, sufficient unidimensionality was assumed.

The next step in the construct validation process was to assess convergent validity. As suggested by Hair et al. (1998), we investigated factor loadings as indicative of convergent validity among the scale items. All of the remaining 12 items on the scale exceeded the significant loading requirement of 0.4, ranging from 0.69 to 0.91 (see Table 6). We therefore concluded that the scale items had convergent validity.

Next, the discriminant validity of the scale items was evaluated using the average variance extracted (AVE) procedure (Dillon and Goldstein 1984). According to Hair et al. (1998), the variance extracted should exceed 0.50 for a construct. Table 7 indicates that all of the dimensions met

**Table 7**  
**Summary of Statistics and Measurement Results**

Constructs and Items	Mean	Standard Deviation	$\lambda$ (t-value)	AVE	Cronbach's $\alpha$
Practical Skills (ps)				0.59	0.78
ps1	6.28	1.04	0.69		
ps3	6.06	1.15	0.77 (9.89)		
ps4	5.87	1.20	0.83 (10.44)		
Citizenship (c)				0.65	0.80
c1	5.60	1.44	0.78		
c2	5.56	1.33	0.91 (12.62)		
c4	5.44	1.41	0.70 (10.19)		
Personal Responsibility (pr)				0.64	0.84
pr1	5.74	1.29	0.79		
pr2	5.80	1.28	0.86 (13.32)		
pr3	5.64	1.33	0.82 (12.64)		
Interpersonal Skills (ip)				0.68	0.79
ip1	5.97	1.10	0.71		
ip2	6.15	1.10	0.88 (11.66)		
ip3	6.22	1.08	0.82 (11.00)		
Advocacy (advoc)				0.88	0.94
advoc1	5.14	1.45	0.96		
advoc2	4.93	1.41	0.97 (34.22)		
advoc3	5.14	1.50	0.88 (23.01)		

The items in parentheses indicate the order on their respective dimensions.

this requirement as well as the square structural links between these dimensions ( $\phi$ , in LISREL). Therefore, it was concluded that there was evidence of discriminant validity among the four dimensions of the scale.

Finally, coefficient alpha was used to assess the reliability of the scale. Even though it has been widely suggested that a Cronbach's alpha of 0.75 is the cutoff point for demonstration of reliability, Hair et al. (1998) suggest that a threshold value of 0.70 indicates acceptable reliability and values below 0.70 are acceptable if the research is exploratory in nature. As shown in Table 7, the Cronbach's alpha of each of the four dimensions exceeds 0.70, ranging from 0.78 to 0.84, indicating that the SELEB scale was reliable.

### Advocacy

According to the theory of reasoned action (Ajzen 1991), attitudinal constructs are direct determinants of behavioral intentions. If a person holds a positive view or perception

of some activity, it is reasonable to believe that the person will engage in that activity when the opportunity presents itself or he or she will encourage other people to do it for the benefits perceived. In this study, we hypothesized that the nomological construct "advocacy" (a behavioral intention) is positively related to the "perception" of service learning benefits, an attitudinal construct (higher perceptions of the benefits of service learning should lead to a higher probability of advocating service learning activities to others).

Factor loadings of the three items on the "advocacy" dimension indicated convergent validity of the construct (Table 7), and the items explained 89.2 percent of the total variance. Cronbach's alpha was 0.94, indicating that the construct is reliable. Advocacy's AVE was 0.88, indicating the construct has discriminant validity.

### Structural Model

The nomological validity of the perception of service learning benefits construct (PSL) was tested by assessing