Examination of the Latent Structure of the Psychological Sense of School Membership Scale

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Abstract

Despite its widespread use, there has been limited examination of the underlying factor structure of the Psychological Sense of School Membership (PSSM) scale. The current study examined the psychometric properties of the PSSM to refine its utility for researchers and practitioners using a sample of 504 Australian high school students. Results from exploratory and confirmatory factor analyses indicated that the PSSM is a multidimensional instrument. Factor analysis procedures identified three factors representing related aspects of students' perceptions of their school membership: *caring relationships, acceptance*, and *rejection*.

Keywords school membership, boding, connectedness, engagement, factor analysis, Australian sample

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Over the past two decades, researchers and educators have come to recognize that high levels of meaningful participation in school reduces involvement in high-risk behaviors and enhances developmental outcomes (Appleton, Christenson, & Furlong, 2008; Centers for Disease Control and Prevention, 2009). Finn (1989) was among the early researchers to suggest that disengagement and withdrawal from school is a developmental process and that students' active participation in school and classroom activities and a concurrent feeling of identification with school can mitigate negative developmental trajectories. Wehlage, Rutter, Smith, Lasko, and Fernandez (1989) further suggested that a student's perception that she or he is a member of school was a central aspect of engagement and the prevention of dropping out. In Wehlege et al.'s model, membership was multidimensional and comprised of attachment, commitment, involvement, and valuing school.

Drawing on this interest in meaningful student participation and linkages with their schools, researchers subsequently conducted studies using various associated constructs that they called: *attachment to school* (Gottfredson, Fink, & Graham, 1994), *school connectedness* (Resnick et al., 1997; Shochet, Dadds, Ham, & Montague, 2006), *school bonding* (Anderman, 2002; Hawkins, Guo, Hill, Battin-Pearson, & Abbott, 2001), and *student engagement* (Appleton, Christenson, Kim, & Reschly, 2006). Libbey (2004) examined this array of related constructs and associated measures, which she observed included items with similar wording. She noted that although there is yet no consensus on which term or elements are most essential to assess, these measures often include item content related to global bonding to school. This latter aspect of school bonding is what Goodenow (1993) set out to measure with the Psychological Sense of School Membership (PSSM) scale, which was developed primarily for use by school mental

health researchers and practitioners. The current article focuses on the PSSM scale and its

psychometric properties in an effort to refine its utility for researchers and practitioners.

Development of the PSSM Scale

Goodenow (1993) created the PSSM scale to measure a construct that she defined as the

"…extent to which students feel personally accepted, respected, included, and supported by

others in the school environment" (p. 80). She generated item content from previous research

that examined students' perceptions of liking school, personal acceptance and inclusion, respect,

and encouragement at school. An initial 28-item scale was administered to 454 students from a

suburban middle school and another 403 students from two ethnically diverse urban junior high

schools. This final analysis eliminated items that negatively impacted internal consistency as

well as those items with low response variance. This produced an 18-item measure (with a 5-

point Likert response scale), but no factor analysis confirmed its dimensionality.

Research Uses of the PSSM

Our examination of published research identified 41 studies that used the PSSM scale.

Fifteen of these investigations used an abbreviated version specific to each study and the other

27 studies employed the full 18-item scale. Table 1 presents a summary of these 26 studies, the

samples they used, and the psychometric properties of the PSSM (contact the authors for a more

detailed table summarizing studies that have used the PSSM scale).

Reliability. In the initial study, Goodenow (1993) expressed the total PSSM score as the

average item response (using a 5-point response scale: 1 = *not at all true* to 5 = *completely true*)

across all 18 items. This is typically how researchers used the total score in subsequent research.

In these studies, Chronbach's alphas were between .78 and .95 across samples of elementary and

secondary school students from diverse backgrounds including African Americans, Chinese,

Hispanic Americans, Israelis, Native Americans, Somali refugees in the USA, and USA European Americans. Hagborg (1994) reports high test-retest reliability (.78) across four weeks. Shochet et al. (2006) found that the PSSM scores were relatively stable across time. As part of a clinical intervention study, Shochet et al. found 12-month test-retest correlations of .56 and .60 for boys and girls, respectively.

Concurrent and predictive validity. Some of the 26 studies that employed all 18 items examined the relations of the PSSM scale with other educational and mental health constructs. As shown in Table 1, moderate to high correlations provide support of the PSSM's concurrent validity. PSSM scores correlate *positively* with school success (Goodenow, 1993; McMahon, Parnes, Keys, & Viola, 2008), expectations for other positive life outcomes (Kia-Keating & Ellis, 2007; Ibanez, Kuperminc, Jurkovic, & Perilla, 2004), lower levels of depression (Shochet et al., 2006), and lower levels of anxiety (McMahon et al., 2008). In contrast, PSSM scores correlate *negatively* with depression (measured using the Children's Depression Inventory; $r = -.67$ to -.74) and scores from the Strength and Difficulties Questionnaire ($r = -.60$ to -.68; Shochet et al., 2006). In addition, there was support for a link between higher PSSM scores and better school attendance (Sanchez, Colon, & Esparza, 2005), academic competence and self-efficacy (Ibanez et al., 2004; Gutman & Midgely, 2000), and grade point average (Booker, 2007; Gutman & Midgely, 2000).

Construct validity. Despite researchers acknowledging that student engagement or connection to school is a nuanced construct (Appleton et al., 2008), there has been limited research examining the underlying factor structure of the PSSM scale. In conducting this literature review, we located only four studies that included a factor analysis of all 18 PSSM items. In the first factor analysis of the PSSM scale, Hagborg (1994) administered the PSSM to

240 USA White middle and high school students, 30 at each grade level for grade 5–12. He

conducted a principal components analysis and found three factors that he called *belonging,*

rejection, and acceptance. The belonging factor accounted for the majority of the shared

variance and had nine items loading above .40. The rejection factor had three items, and the

acceptance factor had four items, but two of these double loaded with the belonging factor.

Hagborg (1994) concluded that PSSM scale had a multidimensional structure, but that the second

and third factors were of limited application due to few items and cross-factor loadings. Based

on this analysis, Hagborg (1998) subsequently used the 11 items that loaded on the belonging

factor (9 items plus the 2 that double loaded on the acceptance factor) as a unidimensional

measure. Our research did not locate any studies that subsequently used this 11-item version.

A second study examined the factor structure of a Chinese translation of the PSSM scale

modified to use a six-point response option (Cheung & Hui, 2003). Drawing on a sample of

youth in Primary Levels 4–6, Cheung and Hui conducted a principal components analysis with

oblique rotation. They found two factors with all 18 items retained and no double loadings. The

first factor — *school belonging* — had 13 items, 11 of which were the same as Hagborg's (1994)

first factor (belonging; recall that two of these items double loaded in Hagborg's third factor).

The second factor — *feelings of rejection* — had five items, three of which were the same as

Hagborg's second factor (rejection). This analysis did not find a third factor. In a related study,

Cheung (2004) conducted principal component analyses of the Chinese version of the PSSM

with another sample of youths at the Primary Level 6. For unexplained reasons, Cheung used

varimax rotation in this analysis for the school belonging and rejection factors separately; hence,

this study did not fully replicate Cheung and Hui's original analysis.

O'Farrell and Morrison (2003) conducted the only factor analysis of the PSSM scale that

included items taken from several other measures used in research about students' social connections with school, which provided information about divergent validity. Their cross-battery analysis of a sample of students in grades 4-6 used maximum likelihood extraction with oblique rotation. When O'Farrell and Morrison included cross-instrument variance, they found that 5 of the 18 PSSM items were retained in what appeared to be a school belonging or bonding factor; the remaining PSSM items cross-loaded with items from other scales.

Purpose of the Current Study

Researchers widely use the PSSM scale (Goodenow's original study is cited by 213 other articles indexed by Google Scholar) as a measure of the broader school bonding/connectedness construct, a known resilience factor for youth (Resnick et al., 1997). The definition of school membership offered by Goodenow (1993) and the content of the PSSM items from a face validity perspective appears to measure multiple related traits; however, researchers use it almost exclusively as a unidimensional scale. The factor analysis of the PSSM scale by Hagborg (1994) identified one primary factor (belonging) and two secondary factors (rejection and acceptance), but Cheung and Hui (2003) reported two factors, and O'Farrell and Morrison (2003) found that only five PSSM items were retained in a unique factor. Given these limited and somewhat inconsistent findings, the current study conducts additional analysis to examine the latent structure of the PSSM scale to evaluate further its viability as an applied research instrument and to evaluate its place within the broader school connectedness/student engagement research genre. We extend previous analyses by first conducting an exploratory factor analysis and then testing the derived solution using confirmatory factor analysis with an independent subsample. Following from previous research, we hypothesize that multiple factors will emerge with support for a primary factor with items related to school social connections.

Method

Participants

The sample used in the current study included 504 students attending high schools in Australia. These students had a mean age of 13.2 years ($SD = 0.5$, range = 12.1–14.3 years). There were more females (55%) than males (45%). English was the primary language spoken in the home for 95% of the students with, with 4% reporting speaking English and another language, and 1.2% another language only. Ninety-four percent of the students were born in Australia and 9% of the students reported they were of Australian Aboriginal or Torres Strait Islander backgrounds. Across the total sample, 62% resided with both parents and 33% resided with parents who were divorced. With respect to socioeconomic context, 73% of fathers and 37% of mothers reported full-time employment. Of the employed fathers, the two most common types of employment were in managerial/ professional (34%) and tradesperson/production positions (38%). Of the employed mothers, 42% were in professional positions and 35% in clerical/sales positions.

We selected two random samples from the total data set. The exploratory factor analysis used study sample 1 ($n = 256$; 55% female; $M_{age} = 13.3$ years, $SD_{age} = 0.5$), and the confirmatory factor analysis used study sample 2 ($n = 248$; 55% female; $M_{age} = 13.2$ years, $SD_{age} = 0.6$). An approximate random split in the SPSS program can explain the minor discrepancy in the two sample sizes.

Measure

As described in the introduction of this article, the PSSM scale (Goodenow, 1993) has good core psychometric characteristics across age levels and sociocultural groups. For the full sample in this study, the alpha derived using all 18 items was .88, which compares favorably

with previous research. The mean item response for the current study's sample was 3.7, which compares with means reported in Goodenow's (1993) original study of 3.9 and 3.8 for two suburban samples and 3.1 for two urban samples. We reverse-coded the negative items (3, 6, 9, 12, & 16) for data analyses (and interpretive purposes).

Procedure

Data collection was part of a pilot trial of a school connectedness intervention involving students from two schools in regional towns in Tasmania ($n = 273$) and two schools in urban New South Wales ($n = 231$) (one intervention and one wait-list control school in each state). School systems in Australia are state-based with a different nomenclature of grades for the same age of students. In Tasmania, the students were in grade 7 and in New South Wales in grade 8 and are high schools in the Australian educational context. All the students in those grades from the 2004 cohort received an invitation to participate in the study. In the wait-list control school in each of the states, the students in the grade of the subsequent cohort also received an invitation to participate in the study. Thus, these data involve four schools from one cohort ($n = 344$ students) and the subsequent cohort from two of these schools ($n = 160$). Letters sent to the parents sought parental consent and student assent. The recruitment rate was 59%. In addition to the PSSM and demographic information, students completed a battery of measures on mental health and school environment. Students completed the measurements during their regularly scheduled class time in class sizes of approximately 30 students. In one sitting of one-hour duration the students completed the measures administered by qualified and accredited mental health professionals who were responsible for coordinating the project in each state.

Data Analysis Strategy

Since the measures used in this study are all categorical, maximum likelihood estimation

can yield inconsistent parameter estimates, biased standard errors, and incorrect chi-square values (Bollen, 1989). Therefore, we used robust weighted least squares estimation, available in Mplus 4.21 (Muthen & Muthen, 2006).

The current factor analyses of the PSSM scale include exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The EFA and CFA used split-half random samples. Previous research did not conclusively identify a factor structure of PSSM either conceptually or statistically, hence EFA first identified plausible models that could explain the relations among the items. EFA results were exploratory in nature; therefore, CFA further examined the factor structure from the EFA to determine if it fit to the other half of the data.

We paid less attention to chi-square due to its sensitivity to sample-size. Several indices evaluated model fit: comparative fit index (CFI; Bentler, 1990), non-normed fit index (NNFI, Bentler & Bonnett, 1980), standardized root-mean-square residual (SRMR), and root-mean-square error of approximation (RMSEA; Steiger & Lind, 1980). The CFI provides a measure of fit, which assesses the improvement in fit of the hypothesized model relative to a null model. CFI is independent of sample size and model complexity. The NNFI, an incremental fit index, is relatively independent of sample size (Marsh, Balla, & McDonald, 1988). Although CFI and NNFI values equal to or greater than .90 represent a well-fitting model (McDonald & Ho, 2002), other statisticians have recommended a revised cutoff value close to .95 (Hu & Bentler, 1999). The SRMR represents the average discrepancy between the observed sample and hypothesized correlation matrices. A SRMR value that is less than .05 a good fit, whereas a value less than .08 is considered an acceptable fit (Hu & Bentler, 1999). The RMSEA was included because it is relatively independent of sample size and takes into account model complexity. The RMSEA measures the discrepancy in the covariance matrices and equals zero if the model provides an

exact fit—a value that is less than .08 suggests an acceptable and a value that is less than .06 suggests a close fit of the model (Browne & Cudeck, 1993).

Results

Factor Structures of the PSSM

EFA. To avoid possible problems due to multicollinearity we examined item correlations. None of the correlation coefficients exceeded .85; so, we retained all 18 items for analysis. The analysis used EFA with oblique rotation with study sample 1 ($n = 256$). Orthogonal rotations are often unwarranted and can yield misleading results; hence, we used oblique rotation (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

The analysis used both statistical and theoretical criteria to determine the number of factors that underlie this set of variables. The eigenvalues (and percentage of variance explained) associated with the first five factors prior to rotation were 6.33 (35.17%), 2.05 (11.36%), 1.29 (7.15%), 1.16 (6.46%), and 0.92 (5.13%). Inspection of the scree plot favors a three-factor solution. To address the question of the true number of factors we used parallel analysis. We generated 500 random permutations of the raw data, an approach that preserves the distributional properties of the original data in the random datasets (O'Connor, 2000). The parallel analysis indentified four components; therefore, we examined three- and four-factor solutions (results not shown but available upon request).

Both three-factor and four-factor solutions were acceptable in terms of RMSEA values (.08 and .06, respectively) and SRMR values (.05 and .04, respectively). However, examination of correlations among factors and the interpretable distinction of item groups favor the parsimonious three-factor solution as recommended by Kline (2005). . Thus, the three-factor solution in this sample provided a reasonable factor structure for the PSSM scale based on

statistical criteria and conceptual considerations. Table 2 shows the coefficients from the factor

pattern matrix. We attempted to interpret the substantive meaning of the items associated with

each of the three factors that emerged from EFA. Six items (i.e., Item nos. 1, 8, 11, 12, 15, 17)

cross-loaded on other factors, their content examined, and deleted to produce interpretable

factors. Based upon examination of the items and the prior theoretical evidence, Factors I, II, and

III were labeled as *caring relationships, acceptance*, and *rejection*.

CFA. Next, CFA validated the previously identified EFA three-factor structure of

PSSM. Three competing models were tested. The *correlated three-factor* model fit the data

well, $\chi^2 = 58.78$, $df = 31$, $p < .05$; CFI = .96; NNFI= .97; RMSEA = .06. However, the

uncorrelated three-factor model, $\chi^2 = 295.13$, $df = 20$, $p < .05$, CFI = .56, NNFI= .52, RMSEA =

.24; and the *hierarchical second-order factor model*, $\chi^2 = 109.52$, $df = 29$, $p < .05$, CFI = .91,

NNFI= .94. RMSEA = .11; had a poor fit to the data. Comparison of fit indices for the three

competing models supported the correlated three-factor model. Table 2 reports the relevant

coefficients from correlated three-factor model. All of the factor loadings are statistically

significant, providing evidence of convergent validity. Correlations among factors were positive

and moderate in magnitude (range = .40–.63). Bagozzi and Yi (1988) suggested that the

guideline for composite reliability for CFA models should be greater than .60. The composite

reliability coefficients of each latent variable meet this threshold—alphas were .73, .72, and .70,

for *caring relationships, acceptance*, and *rejection*, respectively. In fact, all construct reliability

of variable loadings exceed .70, which extracts a total value of variance .50 or more for each

construct. Squared standardized factor loadings provided reliabilities of individual items

(Bollen, 1989). Eight items had reliabilities of .50 or lower, indicating that there was

considerable measurement error in many of the PSSM items (e.g., .46 for "I wish I were in a

different school"). These results highlight the fact that it is critical to correct for measurement error in analyses that use subsets of these PSSM items, by utilizing structural equation modeling or some other methodology.

Discussion

Researchers and practitioners who use the PSSM scale may want to consider several implications of the present study. The results of this study are consistent with previous research (Cheung & Hui, 2003; Hagborg, 1994) that the PSSM measures more than one latent trait, although the answer as to whether it should retain all 18 items in two or three factors requires additional research. Because nearly all previous investigations used the PSSM scale unidimensionally, recognizing that the PSSM scale may measure more than one correlated latent trait will require researchers to consider how to use the PSSM in future research. In fact, the finding that the correlated three-factor model was better than the hierarchical second-order model decreases support for reporting one combined PPSM score. Using the PSSM scale unidimensionally may overlook possible meaningful nuances in data sets. For example, in the only study we indentified that examined PSSM subscales, Cheung (2004) compared two regional samples of Chinese children and found no differences in their reported levels of school belongingness, but significant differences in their reported rejection experiences at school.

The results of the present analysis are consistent with those of the Harborg's (1994) first examination of the structure of the PSSM in that three core components were indentified. Harborg's principal components analysis identified 10 items that loaded above .40 on the first factor, which he labeled "belonging." In the present study, the maximum likelihood EFA, however, found only 3 overlapping items (#s 5, 7, 14), all of which specifically mention positive relationships with teachers. The only other item identified in the first component by the EFA in

this study included item #9, which also specifically mentions relationship with teachers and which loaded .39 on Harborg's first factor. Given the clear content of these items on a student's perception of the quality of their relationship with her or his teacher, it is our view that the first PSSM component is best described as "caring relationships" rather than the broader term of *belonging* used by Harborg (1994). In addition, the relationship focus of the first component in consistent with the attachment element of Wehlages's (1989) school dropout risk model and more recent conceptualizations of school connectedness (Libbey, 2004) and student engagement (Appleton et al., 2008). Finally, the results of this study replicated Harborg's *rejection* factor with 2 of 3 identical items (#s 3 and 6). Although we found a factor with content related to social acceptance at school, it had no overlapping items with all 4 items separating out from Harborg's (1994) first factor.

This study is the first to crossvalidate the PSSM scale using confirmatory factor analysis. The results of CFA analyses revealed that the global fit of the three-factor model is good and discriminant validity high, suggesting that PSSM measures three related latent constructs. However, despite the highly acceptable composite reliability coefficients for the three PSSM factors, many individual items exhibit a moderate amount of measurement error; hence, control of measurement error in future studies is warranted. The findings also offered support for streamlining the PSSM scale by eliminating six items because they loaded on at least two factors. With additional cross-validation, researchers using the English version of the PSSM in their studies may consider the reduced 12-item PSSM scale found in this study, although Cheung and Hui's (2003) retention of all 18 items with a Chinese version warrants further investigation. Such a streamlined version of the PSSM scale would be attractive to researchers and practitioners because it lends itself to efficiently measure its latent traits for theory testing as well

as for periodic evaluation of school-based mental health interventions.

Toward this end, this study supports the use of the PSSM scale as multidimensional instrument, which represent the following components of school membership: perceptions of caring adult relationships, acceptance or belongingness at school, and disrespect or rejection. These three factors capture empirically related but different psychological experiences linked to a wide variety of outcomes for children (see Table 1). Specifically, it appears as though the absence of acceptance is qualitatively different from active rejection, a distinction theoretically supported by research in the area of sociometrics that identified accepted, rejected, and neglected students in schools (e.g., Carlson, Lahey, & Neeper, 1984). Additionally, one major component of school membership as measured by the PSSM scale appears to involve adults (caring relationships), while the two other factors encompass both peers and adults in the school setting (acceptance and rejection). Future studies should examine the subpatterns of belongingness and connection to school associated with increased risk for mental health and school adaptation problems. Among other topics, it would be of interest to examine whether those students who have low scores on the acceptance factor and high scores on the rejection factor are at higher risk for depression and other mental health disorders. A better understanding of such patterns of PSSM scores would aid both researchers' and practitioners' efforts to identify students who might benefit from strategies to bolster their sense of school belongingness.

Study Limitations

A primary limitation of this study is that the sample was associated with participation in a school-based clinical intervention in Australia, which imposes some generalization limits. However, the total score results were similar to what Goodenow (1993) and others (e.g., Lewis, Sullivan, & Bybee, 2006; Newman, Newman, Griffen, O'Connor, & Spas, 2007) have found

with USA students, and appear to be somewhat consistent with research on school membership in China (Cheung, 2004). Despite this limitation, this study contributed to the broader body of research using the PSSM scale and shows that it provides a viable measure within multiple national contexts, a finding supported by the result showing the average scores in this current Australian sample were comparable to those scores reported by students in the USA by Goodenow (1993) and Hagborg (1994). Interestingly, the biggest differences in published studies appear to be between urban and suburban samples (Goodenow, 1993), rather than between gender and ethnic groups. This reinforces the notion that researchers need to expand the examination of psychological measures to diverse populations within and between countries and cultures. Finally, because the sample size is small, we were unable to conduct additional analyses for possible gender or age differences.

Conclusion

Although this paper did not answer the question of what specific traits constitute students' belongingness, bonding, or engagement with school, it does shed some new light on this matter. The objective of fostering connections to school and avoiding disengagement is relevant for all students and all schools (Centers for Disease Control, 2009; McNeely, Nonnemaker, & Blum, 2002). Regardless of grade level, demographic characteristics, or locale, all schools house students who have varying degrees of school belongingness. By attending to and measuring students' levels of belongingness, it is more likely that school mental health professionals could implement interventions at the earliest point possible, which would increase the odds for successful outcomes. We hasten to note that the results of this study address only the latent structure of the PSSM scale itself, which contributes to but does not definitely resolve questions related to researchers' efforts to arrive at a common definition of the yet-unnamed

broader construct that encompasses school belongingness, bonding, engagement, and connectedness. In fact, the poor fit of the hierarchical second-order model in this study further complicates the search for a broader school belongingness construct. To this end, future research may want to expand on the approach taken by O'Farrell and Morrison (2003); that is, an omnibus factor analysis of related instruments with the goal of identifying cross-battery core latent traits. Such an analysis could include instruments purporting to measure school connectedness, engagement, or bonding, and other latent traits that might contribute to a broader understanding of how schools foster resilience in children's lives. That is, school connectedness research might focus less on specific instruments and more on the key constructs or latent traits that advance theory, research, and applied practice.

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Table 1

Summary of Research Studies Using the Full 18-item Version of the Psychological Sense of School Membership Scale (PSSM)

Grade Level	# of Studies	Combined M/F Samples	Ethnicity	Alpha	Correlations with PSSM Total Score		Studies
					Academic	Social-Emotional	
Elementary school (K–5)	4	300/271	Latino/a Caucasian African American Asian Native American	.78–.83	None Reported	None Reported	O'Farrell & Morrison, 2003 Morrison et al., 1998, 2002 Robertson et al., 1998
Middle school and Junior high school (6-8)	9	2330/2341	Caucasian African American Latino/a Asian/Pacific Islander Aboriginal Middle Eastern	.78–.95	Absences (-.30)	Depression (-.36 to -.74) Stress/hassles (-50 to -.91) Reactivity (-.33) Withdrawal (-.32) Anxiety (-.34 to -.40) SDQ (-.68)	Goodenow, 1993 Hagborg, 1994 Isakson & Jarvis, 1999 Kuperminc et al., 2008 Lewis et al., 2006 Newman et al., 2007 Nichols, 2008 Shochet et al., 2006
High school (9–12) and Combined high school and junior high school	14	1244/1329	Latino/a African American Caucasian Native American Asian American Israeli Somali	.79–.90	School acceptance (.71) Academic competence (.48), School expectations (.37) Importance of schooling (.43)	Depression (-.45 to -.50) Anxiety (-.32) Stress (-.23)	Adelabu, 2007 Booker, 2007 Ibanez et al., 2004 Israelashvili, 1997 Jones & Galliher, 2007 Kia-Keating & Ellis, 2007 McGraw et al., 2008 McMahon et al., 2008 Sanchez et al., 2005 Uwah et al., 2008

Note. Not all studies reported cross-instrument correlations, gender information, or Cronbach's alphas, and some articles included 2 to 3 studies, hence there are fewer than 27 citations.

Table 2

Standardized Pattern and Structure Coefficients for Psychological Sense of School Membership (PSSM) Exploratory Factor Analysis (EFA) Three-factor Structure and Confirmatory Factor Analysis (CFA) Three-Factor Solution

PSSM Items	EFA Factors and Coefficient			CFA Factors and Coefficients		
	I	II	III	Caring Relationships	Acceptance	Rejection
1. I fell like a real part of "name of school."	**.45**	.09	**.33**			
2. People here notice when I'm good at something.	.16	**.47**	.05		.55	
3. It is hard for people like me to be accepted here.	-.12	.12	**.56**			.51
4. Other students in this school take my opinions seriously.	.09	**.58**	-.06		.62	
5. Most teachers at this school are interested in me.	**.69**	.24	-.11	.79		
6. Sometimes I don't feel as if I belong here.	-.03	.20	**.52**			.76
7. There's at least one teacher or other adult in this school I can talk to if I have a problem.	**.59**	.08	-.14	.56		
8. People at this school are friendly to me.	.00	**.59**	**.33**			
9. Teachers here are not interested in people like me.	**.52**	-.01	.05	.59		
10. I am included in lots of activities at this school.	.02	**.50**	.05		.51	
11. I am treated with as much respect as other students.	**.35**	.23	**.36**			
12. I feel very different from most other students here.	**-.33**	**.31**	**.59**			
13. I can really be myself at this school.	.08	**.56**	.15		.72	
14. The teachers here respect me.	**.79**	.05	.02	.79		
15. People here know I can do good work.	**.36**	**.42**	-.12			
16. I wish I were in a different school.	.29	-.14	**.68**			.68
17. I feel proud of belonging to "name of school."	**.52**	-.09	**.48**			
18. Other students here like me the way I am.	.04	**.55**	.22		.69	

Note. Coefficients above .30 are in bold type and PSSM numbers are the same as those used in Goodenow's (1993) original study.