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## Adaptation of the Psychological Sense of School Membership Scale to Turkish

By Mediha Sari

*Cukurova University, Turkey*

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# Adaptation of the Psychological Sense of School Membership Scale to Turkish

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**Findings and Results:** The Turkish version of the PSSM was found to be highly reliable and valid. Results revealed that the factorial structure of the Turkish version of the PSSM is consistent with the Chinese version of the scale. Principal components analysis produced two general measures of school belonging; 13 positive items made up a factor (School Belonging, with Cronbach alpha value of 0.84), five negative items (Feeling of Rejection, with Cronbach alpha value of 0.78) made up another factor in the structure. These two factors explained 38.49% of the total variance.

**Conclusions and Recommendations:** This study has demonstrated that the Turkish version of the scale is useful in finding out elementary school students' the psychological sense of school membership. Since school belonging plays a critical role in academic and psychosocial outcomes of schooling, it is clear that further studies are urgently needed in Turkish educational context.

**Keywords:** school belonging, feeling of rejection, psychological sense of school membership (PSSM) scale, factor analysis.

## 1. INTRODUCTION

The concept of belongingness is a broad one, defined variously as belongingness, relatedness, sense of community, sense of school or classroom membership, support, and acceptance (Osterman,

2000). School belonging or school membership has been defined as students' sense of belonging or psychological membership in the school or classroom, that is, the extent to which students feel personally accepted, respected, included, and supported by others – especially teachers and other adults in the school environment (Goodenow, 1993a; Goodenow & Grady, 1993). More than simple perceived liking or warmth, it also involves support and respect for personal autonomy and for the student as an individual (Goodenow, 1993b). Osterman who investigated many research in the field, emphasized the value of belongingness as an extremely important concept. According to Osterman, students who experience acceptance are more highly motivated and engaged in learning and more committed to school.

Finn (1989), in his Participation-Identification Model, emphasized the relationships between students' sense of belonging and their drop out behaviors. This model, explains dropout in terms of participation and identification with school; while identification with school, comprising both a sense of belongingness and valuing school-related outcomes, participation in school activities is also essential in order for positive outcomes, including the students' sense of belonging and valuing school. According to Finn, if students identify with the school and feel themselves as an important part of the school environment, they may become less likely to drop out. Students who feel a sense of belonging to and acceptance in school are more likely to participate in extracurricular activities and attend and actively engage in class (Adelabu, 2007). Uwah, McMahon and Furlow (2008) emphasized the reciprocal relationships between perceptions of school belonging and various educational outcomes. They stated that as students feel themselves to be valued members of the school environment, they may have more confidence in their ability to succeed in academics and, similarly, when students feel more confident and successful, they are more accepted and, subsequently, feel more of a connection to the school.

The need for belonging, social support, and acceptance takes on special prominence during adolescence, particularly during early adolescence when young people prominence consider seriously who they are and wish to be, with whom they belong, and where they intend to invest their energies and stake their futures (Goodenow, 1993a). For many students, the

*Author:* Assoc. Prof. Dr., Cukurova University, Education Faculty, Adana, Turkey. e-mail: msari@cu.edu.tr

beginning of self-reflectiveness and identity exploration will lead to new intellectual interests, more self-regulated learning, and a commitment to education as a path toward the future selves they hope to be (Goodenow, 1993b). In a study on adolescents, Israelashvili's (1997) data showed a significant relationship between students' school membership (and school adjustment) and their future expectations. Also, findings of Adelabu's study (2007) on adolescents indicated positive, significant relationships among academic achievement, future time perspective, school belonging, and school acceptance. In short, a literature review show that, as stated by Anderman (2002), there is a general consensus among researchers in the field that students' sense of belonging is one of the basic psychological needs and that when this need is met, positive outcomes occur.

In summary, as stated by Nichols (2008), the emerging literature on student belonging consistently suggests that the extent to which students perceive they belong in a school setting is related to positive social, psychological, and academic orientations. However, despite of its value, little is known about students' sense of school membership in Turkish educational context. In this study it is aimed that by adapting the PSSM into Turkish, a valid and reliable measurement can be presented for researchers to investigate students' sense of school membership and its relationships with related variables such as motivation, academic achievement, school absenteeism, self-efficacy, future expectations etc.

## II. METHOD

### a) Participants

The sample consisted of 238 students in two elementary schools located in Adana, Turkey. While 86 students (36.1%) were at 6<sup>th</sup> grade, 66 students (27.7%) were at 7<sup>th</sup> grade and 86 students (36.1%) were at 8<sup>th</sup> grade; 114 (47.9%) of them were female and 124 (52.1%) of them were male students. The age range of the students was 11 to 16 years, with a mean of 12.90 years, and a standard deviation of 1.00.

### b) Instrument

Psychological Sense of School Membership (PSSM) scale was developed by Goodenow (1993a) to measure students' perceived sense of belonging to school. This scale was developed for use specifically with early- and mid-adolescent students as a measure of their subjective sense of school membership. The PSSM which assesses the extent to which students feel like an accepted, respected, and valued part of their school context, has been used to assess students' sense of belonging at both the classroom level and at the whole school level (Freeman, Anderman, & Jensen, 2007). PSSM consists of 18 items that are answered on a five-point Likert scale (1 = not at all true to 5 =

completely true). Negatively worded five items are reverse scored and all item values are averaged for a scale score for each student. The PSSM includes items that involve not only perceived liking, personal acceptance, and inclusion (e.g., "Most teachers at this school are interested in me", "I feel like a real part of this school") but also respect and encouragement for participation (e.g., "People here notice when I'm good at something", "Other students in this school take my opinions seriously") (Goodenow & Grady, 1993). Goodenow developed the PSSM scale through testing with both urban and suburban students. Cronbach's alpha internal consistency coefficients were ranging from .77 to .88 for different samples (Goodenow, 1993a). Followed Goodenow's studies, many researchers used the PSSM as a data collection instrument in their studies. For example in the recent studies, Cronbach alpha coefficient was 0.72 in Stevens, Hamman and Olivárez's study (2007); 0.88 in McMahon, Parnes, Keys and Viola's study (2008); 0.81 in Uwah, McMahon and Furlow's study (2008) and it was 0.80 in Nichols's study (2008).

PSSM scale in Goodenow's study consisted of a global factor – the subjective sense of belonging in school, while in some other studies, factor analysis results showed that the 18-item PSSM scale extracted into more than one factor. For example, Hagborg (1994) investigated the psychometric properties of PSSM and tried to extent its use to a high school sample. In the first part of this study, Hagborg conducted a principal-component factor analysis and, results of this analysis showed that the 18 items of the PSSM scale were classified into three different factors - Belonging (13 items), Rejection (3 items), and Acceptance (2 items). Hagborg stated that, the PSSM appears to offer only limited assistance in developing such a multidimensional measure given the small number of items that load on the Rejection and Acceptance factors. In the second part of the study, a unidimensional measure of school membership was created with 11 of the scale's original 18 items - the PSSM-brief. Hagborg (1998a) also examined the psychometric properties of this shortened version of PSSM and found that this unidimensional measure of school membership was demonstrated high internal consistency. Hagborg recommended researchers to work toward scale in order to create a unidimensional measure of school membership consistent with the previously described theoretical writings about school membership. In another study on students with learning disabilities and nondisabled students, Hagborg (1998b) used the 18-items PSSM as a single factor with its total scores.

The PSSM scale was adapted into Chinese by Cheung and Hui (2003). The Chinese version of the 18-item PSSM scale distributed to primary 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> grade students in Hong Kong were extracted into two

factors, known as school belonging (13 out of the 18 items,  $\alpha=.88$ ) and feeling of rejection (5 out of the 18 items,  $\alpha=.71$ ). The two factors explained 44.9% of the total variance (the first factor explained 37.5% and the second factor explained 7.4%). In addition, when the five negative items were changed to positive, the alpha for these 18 items found to be .89. Cheung and Hui stated that when compared to the factor analysis of the English version of the PSSM scale found in Hagborg's study (1994), the factor analysis of the Chinese version was easier to interpret and understand. In another study done by Cheung (2004) on Hong Kong and Shanghai students' psychological sense of school membership, the scale also found to have similar construct validity and reliability values to previous Chinese version. The 13 items of school belonging had an alpha value of .93 and the five items of feeling of rejection had an alpha value of .85 in this study. The five items of feeling of rejection were negative items, and Cheung (2004) stated that when these negative items were changed to positive, the 18 items could be seen as a global factor – subjective sense of belonging in school.

Nichols (2006), used a slightly altered version of the PSSM (the PSSM2, 12 items from the original PSSM were kept and six new ones were added) to make the scale more context-relevant. The PSSM2 also found to be reliable in this study ( $\alpha=.82$ ) and, the 18-item PSSM2 used as a single factor as a whole. Nichols created a composite PSSM2 score for each student by summing their responses over all PSSM2 items that served as a general belongingness indicator in which a higher number meant a higher sense of belonging.

To create the Turkish version of the PSSM scale in this study, first, two experts from the field who were also efficient in English translated the original 18 items of the PSSM scale from English into Turkish. Then, the Turkish form of the scale was handed to the experts to obtain their critics in terms of language (understandability), content, Turkish educational and cultural setting, and measurement and, the items were modified in the light of the their opinions. Then, in order to check the understandability of the Turkish items for students, the scale was administrated to 10 sixth-, 10 seventh- and 10 eight-grade students and, the required modifications were done on the items after this pilot study. Finally, the Turkish items were retranslated into English to verify that the meaning of the items was retained and the last form of the Turkish version of the PSSM was prepared.

### c) Data analyses

In order to determine the construct validity of the PSSM a principal components analysis (PCA) with varimax rotation was conducted using the statistical software SPSS 11.5 for windows. Psychometric evaluation of the PSSM scale and its sub-scales were assessed with the Cronbach alpha internal consistency

coefficient. In addition, t test was applied in order to investigate the possible differences between low-scoring and high-scoring students on the PSSM. The reliability of the scale was also tested with the split-test method.

## III. FINDINGS

The 18 items of the PSSM scale were subjected to principal components analysis (PCA). First, to performing PCA, the suitability of data for factor analysis was assessed. The Kaiser-Meyer-Olkin value was 0.80, and the Bartlett test of sphericity reached statistical significance, supporting the factorability of the correlation matrix ( $X^2 = 603,456$ ,  $df = 153$ ,  $p < 0.001$ ).

Principal components analysis revealed the presence of five components with eigenvalues exceeding one, explaining 28.90%, 9.59%, 7.35%, 6.36% and 5.70% of the variance respectively. However, inspection of the screeplot showed that the breakpoint of the Eigen values clearly appeared on the second component. When the factor loadings on the factor matrix were closely examined, it was also seen that the factors were not representing meaningful clustering. While the fifth component consisted only one item (item 3), the other items distributed irrelatively into other components. Moreover, an investigation of the pattern of loading showed that five items should be eliminated from the scale because of high cross loadings on more than one factor. In addition, despite of the 18 items of the PSSM extracted into three factors in Hagborg's study (1994), Hagborg himself stated the limitations of its multidimensional structure because of the small number of items on two of the three factors and he tried to find a unidimensional measure of school membership. Besides that, Cheung and Hui (2003) emphasized that the two-dimensional Chinese version of the PSSM was easier to interpret and understand. Henceforth, it was decided to retain two components for further investigation of the Turkish version of the PSSM.

To aid in the interpretation of these two components, varimax rotation was performed since the correlations between subscales were below .32 (Tabachnick & Fidell, 1996, p.647). In this analysis, the pattern of loadings examined, looking for items with high loadings on the intended factor and low loadings on the other factors (the gap should be at least .20). Minimum .40 factor loading was used a guideline for considering an item to be part of a factor. The rotated solution revealed a clear presence of two-dimensional structure with Eigen values exceeding one, explaining 28.90% and 9.59% of the variance respectively. These two factors accounted for 38.49 % of the total variance (Table 1).

Table 1 : Factor Solution for the Turkish Version of the PSSM Scale

Item Number	Factor I School Belonging	Factor II Feeling of Rejection	r <sup>a</sup>	t	Mean	SD
1	.65		.56	-6.46*	4.18	.77
2	.63		.56	-7.00*	4.05	1.05
4	.45		.35	-4.15*	3.13	1.13
5	.51		.41	-5.19*	3.57	1.18
7	.55		.38	-3.77*	3.60	1.38
8	.46		.41	-6.17*	3.84	1.08
10	.66		.53	-6.94*	3.43	1.26
11	.64		.55	-6.82*	3.96	1.21
13	.54		.46	-5.96*	3.87	1.11
14	.55		.47	-5.88*	3.90	1.12
15	.65		.58	-7.33*	3.66	1.10
17	.48		.48	-6.61*	4.04	1.19
18	.64	.29	.61	-7.46*	3.90	1.24
3 <sup>b</sup>		.47	.31	-3.37*	3.59	1.23
6 <sup>b</sup>		.58	.46	-6.52*	4.10	1.25
9 <sup>b</sup>		.64	.47	-6.34*	4.29	1.13
12 <sup>b</sup>		.51	.34	-3.09*	3.35	1.38
16 <sup>b</sup>		.75	.53	-6.60*	3.77	1.45
Eigen values	5.20	1.72	Total Scale			
% of variance	28.90	9.59	38.49			
Cronbach Alpha	.84	.78	.84			

Only factor loadings 0.25 or above are shown in the table.

<sup>a</sup> r: Item-total correlations; \*p<.001

Negatively worded items. These items need to be recoded when the total scores of the PSSM is calculated such that a higher score indicates a higher level of psychological sense of school belonging.

The first factor consisted the 13 positive items in the PSSM scale, the second factor consisted the five negative items in the scale. Factor loadings of the items ranged from 0.45 to 0.66 for the first factor and from 0.47 to 0.75 for the second factor. While the Cronbach's alpha internal consistency coefficient for the first factor was .84 and for the second factor was .78; for the full PSSM it was also acceptable, 0.84. The item-total correlations were calculated between items and total scores for the 18-items of the PSSM. These correlations ranged from .31 to .61 for all items. As another evidence for reliability, extreme groups' comparison method by using t-test also performed. In this analysis, participants were ordered according to the scores they obtained from the PSSM. The top 27% and bottom 27% groups were taken and their scores on each item of the test were compared with an independent samples t-test. Results of this comparison showed that the t values are significant at p<0.001 level for all items. The reliability of the PSSM was also tested with the split-test method. The correlation between the two parts of the scale was found as 0.88. While the alpha coefficient for each part was 0.65 and 0.73 respectively, the Gutman split test reliability was found to be 0.87.

While the correlation between School Belonging and Feelings of Rejection sub-scales was -.28, it was .91 between School Belonging sub-scale and total scores of

the PSSM scale and, it was -.50 between Feeling of Rejection sub-scale and total scores of the PSSM scale. All of these correlations were statistically significant at the 0.01 level.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

The main purpose of the present study was to adapt the PSSM scale to the Turkish educational context and to define its factorial structure for Turkish-language use. The Turkish version of the PSSM scale was found to be reliable in this study and the reliability coefficients were consistent with previous research findings.

In adaptation of the PSSM to Turkish, principal components analysis produced two general measures of school belonging. Similar to Chinese version (Cheung & Hui, 2003), while 13 positive items made up a factor (School Belonging, with alpha value of 0.84), five negative items (Feeling of Rejection, with alpha value of 0.78) made up another factor in the structure. The internal consistency for these two factors was acceptable (Büyükoztürk, 2005; Tezbaşaran, 1996), so that these two factors are reliable in measuring two different substantive variables. However, in the related literature, while few researchers used the PSSM with its multiple-factorial structure (Adelabu, 2007; Uwah et al., 2008), many researchers used the scale as a global factor (Booker, 2004; Capps, 2003; Goodenov, 1993a,

1993b; Goodenow & Grady, 1993; Hagborg, 1994, 1998a, 1998b; Israelashvili, 1997; McMahon et al., 2008; Nichols, 2006, 2008; Tao, Long, & Wu, 2008). In this study, the items of the Feeling of Rejection sub-scale were reversed and the Cronbach's alpha internal consistency coefficient was calculated as 0.84 for the scale as a whole. As indicated by Cheung (2004) the five items of feeling of rejection were negative items, and when these negative items were changed to positive, the 18 items could be seen as a global factor. Therefore it can be said that, the PSSM can be used both as a global factor – subjective sense of belonging and as two separate factors – School Belonging and Feeling of Rejection. While a higher score meant a higher sense of belonging for the School Belonging sub-scale and for the PSSM-total scores; a higher score meant a higher sense of rejection for the Feeling of Rejection sub-scale.

An extreme groups' comparison of the top and bottom groups showed that the t values are significant at  $p < 0.001$  level for all items. Results also showed that, the least item-total correlation was .31. Büyüköztürk (2005) stated that if the item-total correlation is .30 and above, it is a good evidence for the discriminant validity. Therefore, in direction of these results, it can be said that, 18 items of the PSSM had an acceptable discriminative power.

This two-factor solution accounted for 38.49% of the total variance. According to Büyüköztürk (2005), it is hard to achieve a high amount of total variance in behavioral sciences and, while 30% and above of explained total variance can be considered as an adequate percentage for a single-factor scale, a higher amount of total variance should be explained in multidimensional scales. Therefore, even though it is not very high, it may be said that the Turkish version of the PSSM accounted for adequate percentage of the total variance. Finally, the findings of this study indicated that the Turkish PSSM scale was a valid and reliable instrument to measure students' sense of school membership in Turkish early adolescents.

In sum, the Turkish version of the PSSM was found to be highly reliable and valid. Results revealed that the factorial structure of the Turkish version of the PSSM is consistent with the Chinese version of the scale. However, this study consisted only a group of elementary schools from 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grades and the generalisability of the results to other subjects of different age may not be possible. The psychometric properties of the scale may differ in different level of education and different regions of Turkey. Future investigators should try to verify the factor structure of the scale for both similar and different samples in Turkey.

A literature review showed that, students' sense of school membership has been widely investigated in other countries. However, although school belonging appears to play a critical role in academic and

psychosocial outcomes no related study can be found in the Turkish educational landscape. Therefore, it is clear that further studies are urgently needed in Turkish educational context.

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