

Initial Development and Validation of the School Belongingness Scale

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Accepted: 14 August 2016 / Published online: 19 August 2016
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Abstract The purpose of this study was to develop and preliminarily validate a short self-report measure for assessing students' sense of belonging to school using a Turkish sample. Participants were 562 students in one secondary and two high schools in an urban city in Turkey. The results provide adequate psychometric support for recommendation of the School Belongingness Scale's use with two dimensions and 10 items, in order to assess adolescents' school belongingness levels. Findings from confirmatory factor analysis suggest that the two-factor model was replicated. The total SBS score and those of its subscales correlated significantly with measures of school connectedness, joy of learning, educational purpose, academic self-efficacy, and overall subjective well-being. Further, latent variables path model, which preferred the SBS model to predict the latent constructs of life satisfaction and loneliness indicated that school belonging significantly predicted the criterion variables. Taken together, these results suggest that the SBS is a structurally reliable and valid instrument and has sound psychometric properties for assessing school belonging among secondary and high school students.

Keywords School belonging · Acceptance · Exclusion · Adolescence

School has a central role in the daily lives of adolescents. Many adolescents have good relations with others in school settings—especially teachers and peers—and feel like they belong at their schools (Willms 2003). This fundamental psychological need is identified as a sense of belonging in school settings (Osterman 2000). School belonging, a form of belonging, refers to students' subjective perception of being valued and

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supported in their school environment (Goodenow and Grady 1993). It includes a student's feelings that he/she is important and a respected member of his/her school (Booker 2004). This sense is especially based on feelings of being accepted, included, or welcomed in the school environment (Goodenow 1993; Osterman 2000). Considering these explanations, school belonging can be conceptualized as students' perceptions of themselves as meaningful, important, and valuable parts of their respective schools. Research has shown that being accepted, integrated, or valued is associated with positive emotions, including pleasure and fulfillment, whereas being rejected or excluded is related to negative feelings such as nervousness, hopelessness, and loneliness (Osterman 2000). In this regard, school belonging is related to students' well-being (Deci and Ryan 1991; Duru 2007; Goodenow 1993; Goodenow and Grady 1993; Osterman 2000). Moreover, numerous studies have reported that a sense belonging is related to students' positive development and educational outcomes in school settings (Anderman 2003; Deci and Ryan 1991; Finn 1989; Osterman 2000; Sánchez et al. 2005). Many of these studies showed a sense of belonging at school to be a significant predictor of various educational outcomes such as academic achievement, absenteeism, academic motivation, dropping out of school, and goals (Babakhani 2014; Phan 2013; Sánchez et al. 2005). Notably, school belonging is closely associated with students' academic performance (Adelabu 2007; Anderman 2003; Booker 2006; Phan 2013) and academic motivation (Gillen-O'Neel and Fuligni 2003). Students lacking a sense of belonging at school have lower levels of educational purpose, academic efficacy, and academic achievement (Arslan 2016; Osterman 2000). In a longitudinal study, findings demonstrated that there is a relationship between school belonging, motivation, and academic achievement (Gillen-O'Neel and Fuligni 2003). Similarly, Anderman (2003) found that students who perceived their academic tasks as interesting, important, and useful reported a greater sense of belonging at school. Further, students' reports of belonging at the university as well as in high school were significant in either predicting their current academic performance or levels of psychological adjustment (Pittman and Richmond 2007). Considering these findings, we can argue that there is a strong association between a sense of belonging and positive educational outcomes, and psychological adjustment in school settings.

Given that a sense of belonging at school is associated with positive educational outcomes, a lacking sense of belonging at school or exclusion can lead to many negative behavioral, psychological, and social outcomes in school settings. Research has demonstrated an association between lack of school belonging and many emotional and behavioral problems such as depression, violence, loneliness, and alcohol and drug use (Balkis et al. 2005; Bond et al. 2007; Booker 2006; Cemalcilar 2010; Galliher et al. 2004; Hagerty et al. 1996; Osterman 2000; Pittman and Richmond 2007; Rostosky et al. 2003). For example, Balkis et al. (2005) found that school belonging significantly predicted high school students' attitudes toward violence. Napoli, Marsiglia, and Kulis (2003) noticed that school belonging had a buffering effect on adolescents' drug use behaviors. Further, Pittman and Richmond (2007) found that students who have more difficulties with their social surrounding reported less connected to school and experience more internalizing problem behaviors. In addition, Rostosky, Owens, Zimmerman, and Riggle (2003) found that school belonging significantly predicted substance abuse in high school students. Taken together, these results support the notion that school belonging is an important

factor in the positive development and well-being of students in school settings. This sense may serve as a buffer and coping strategy against emotional and behavioral problems. Therefore, sense of belonging is an important construct to measure, as this would enable the implementation of prevention and intervention measures in school settings.

1 Conceptualization of School Belonging

In relation to the concept of school belongingness, Goodenow (1993) stated that “Psychological membership is seen here neither as a purely personal intrapsychic phenomenon nor as entirely the function of the school environment, but rather as arising from the person within a particular school environment” (p. 87). Hagerty et al. (1992) have conceptualized “sense of belonging as the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment” (p. 173). In their study, O’Neill (2009) suggested that a sense of belonging could best be described as a “person’s experience of being valued or important to an external referent” (p. 162) and significant affiliations between persons and their surroundings, including other persons, groups, objects, and organizations (Hagerty et al. 2002). As suggested by previous literature related to school belongingness, the sense of belonging and psychological membership can presumably be best understood in the context of person-environment relations. A sense of belonging at school has been conceptualized on the basis of experiences of valued involvement and fit between a person and the environment. Hagerty et al. (1992) point out that, while valued involvement is related to the experience of feeling valued and accepted, fit is related to the coherence between a person’s characteristics and the environment. In this context, there might be a link between a school’s psychical, social, academic, and financial resources and the academic, developmental, and psychological needs of students. In other words, school resources, including other students, teachers and staff, and the school’s surroundings might serve to meet the academic, psychosocial, and development needs of students. This process facilitates the development of adolescents’ sense of belonging at school. For example, Vaz, Falkmer, Ciccarelli, Passmore, Parsons, Tan, and Falkmer (2015) found that both students’ personal factors and school-based factors were contributors towards belongingness at primary school. A sense of belonging can be maintained to set the context for person-environment interactions and has been conceptualized as a construct related to the self.

School belongingness might be seen as a psychological construct related to the self, which refers to “the center of an individual’s psychological universe” (Kohut 1977, p. 311). Duru (2015) pointed out that an institution such as a family or a school can be seen as one fostering a form of belongingness, and so can an individual, a group, sometimes a collective structure such as a religious or ethnic identity, and a place or territory, based on essential needs. One’s affiliation with the school may help instill comfort and confidence among students within the school’s social context. A sense of belonging at school makes students feel like valued and significant parts of their schools. This feeling is presumably related to the students’ sense of self. In general, the students’ experience of affiliation is associated with more positive attitudes toward the self and others (Osterman 2000). As pointed out by Hagerty et al. (1992), people,

places, and things that are significant, valuable, and important for a person, can be considered part of oneself. In a phenomenological study, Duru and Arslan (2014) reported that the adolescent girls who are running away from home neither felt that their homes were a significant place nor that they were significant members of their families (lack of valued involvement). The majority of the runaway girls reported higher rates of parental rejection (exclusion or lack of belongingness). In addition, these adolescents did not perceive their family surroundings as sustaining their psychological and developmental needs (fit between person and environment). These findings confirm that runaway girls do not have a sense of family belongingness, which is an institutional form of belongingness. We assume that a similar pattern may be apparent in the school context. There is some evidence in literature suggesting a link between belongingness and life satisfaction (Duru 2015; Duru and Arslan 2014), person-environment fit (Duru and Balkis 2015; Goodenow 1993; Goodenow and Grady 1993; Hagerty et al. 1992; Osterman 2000), and academic satisfaction (Duru and Balkis 2015). For example, Duru and Balkis (2015) confirmed that the sense of belongingness mediated the link between person-environment fit and academic satisfaction. In addition, Duru (2015) found that belongingness was positively associated with self-esteem, life satisfaction, positive affect, and social connectedness, and negatively associated with loneliness and negative affect. There is also the literature support for the conceptualization of belongingness as a construct related to the self (Lee and Robbins 1995). The adoption of this conceptualization in our study may render the concept of belongingness in this study distinct from previous theoretical frameworks in literature.

According to Baumeister and Leary (1995), the need to belong is a basic human motivation and many of the problems that an individual experiences are related to the fear of not being accepted by significant others. In similar ways, some counseling and psychotherapy, such as Reality therapy and Adlerian therapy, stress that our happiness and success are mostly related to a sense of belonging. Hagerty et al. (1992) suggest that a belongingness instrument should be a functional tool for screening either the presence or absence of a sense of belonging. A sense of belonging is associated with students' subjective perception of being valued in their school surroundings (Goodenow 1993; Goodenow and Grady 1993). It includes a student's feelings that he/she is an important and respected member of his/her school (Booker 2004). This sense is specifically based on feelings of being accepted, included, or welcomed in the school environment (Osterman 2000). Existing literature also confirms that a sense of belonging includes two essential dimensions, namely, acceptance and either exclusion or the absence of a sense of belonging (Baumeister and Leary 1995; Duru 2015; Hagerty et al. 1992; Malone et al. 2012; Sari 2013). Malone et al. (2012) suggested that "some individuals may report a sense of belonging because they feel included, whereas others may report a sense of belonging because they do not feel excluded (p. 312)". The reviewed literature seemingly indicates that instruments assessing school belongingness mostly contained both negatively and positively worded items (Duru 2015; Goodenow 1993; Osterman 2000). Malone et al. (2012) suggest that equal distribution of negative and positive items may better reflect individual differences. Therefore, this study aimed to develop a brief tool evaluating an accomplished sense of school belonging and the absence of school belongingness in an impartial way.

2 Assessing School Belonging

The most commonly used survey for measuring school belonging in middle and high school settings is the self-report version of the Psychological Sense of School Membership Scale (PSSMS) (Goodenow 1993). At initial publication, Goodenow (1993) did not verify the scale's dimensionality (Ye and Wallace 2014). Abubakar et al. (2015) summarized studies on the factorial structure of PSSMS from 1993 to 2014 and reported mostly different structures ranging from two to three factors. For example, You, Ritchey, Furlong, Shocket, and Boman (2011) found that the PSSMS had three dimensions, including care relations, acceptance, and rejection. In another study, Ye and Wallace (2014) examined the factorial construct of the PSSMS among high school students and found that it had three dimensions. It has also been reported that, although 42 studies have used the PSSMS Scale, none have yet demonstrated the unidimensionality of the PSSMS, and that the use of one total score may not be appropriate (Ye and Wallace 2014; You et al. 2011), except for the study by Abubakar et al. (2015). Sari (2013) examined the factorial construct of the PSSMS with use on Turkish high school students and reported that the scale had two dimensions, including acceptance and rejection. In another study, Alkan (2015) examined the factorial construct of the PSSMS with use on university students and found that the scale had three dimensions, including acceptance by faculty members, acceptance by students, and belonging. Based on the literature review, it can be said that, although the PSSMS has been used in different cultures, countries, and academic settings, the discussion of its factorial construct should continue. In light of the above, there is a need to develop a new brief instrument with clearer factorial construct.

Another instrument that was developed to assess school belonging in secondary school students is the Sense of Belonging to School Scale (SBSS), a 10-item instrument with two sub-dimensions, namely, contentment in school and obedience of school rules (Akar-Vural et al. 2013). In this study, school belonging seems to have been conceptualized in different ways. The SBSS' items are mostly related to school satisfaction and obedience of school rules, which might reflect students' perceptions of the school environment, school adjustment, and attitudes towards the school. Considering the importance of school belonging, as pointed out in the introduction section, there is a need to develop a brief and effective instrument assessing the sense of belonging in school settings, as no other instrument is available in literature.

3 The Purpose of Current Study

Previous studies support the idea that school belonging is an important factor for both the positive academic development and well-being of students in a school setting. In contrast, lack of school belonging can lead to many negative behavioral, psychological, and social outcomes in school settings. Some of the students with higher levels of exclusion, loneliness, and rejection may need psychological help and support as a result of these negative experiences. However, no instrument measures students' subjective sense of belonging at school. Considering the significance of school belonging, there is reportedly a need to develop a reliable and valid brief instrument for assessing the sense of belonging. Moreover, measurement of this construct would enable the

implementation of related prevention and intervention measures in school settings. Therefore, the aim of this study is to develop and preliminarily validate a self-report measure for assessing students' sense of belonging at school. Through its development of the SBS for adolescents and availing it to researchers and counselors, the study will also fill a knowledge gap.

4 Method

4.1 Participants

Participants were 562 students ($Sample_1 = 308$, $Sample_2 = 254$) enrolled in Grades 6–12 (Grades 6–8 = 30.9 % and Grades 9–12 = 69.1 %) in one secondary and two high schools in an urban city, Turkey. First sample was used to conduct exploratory factor analysis, while confirmatory factor analysis was examined using the other. The first sample included 308 students, 52.9 % of whom were female and 47.1 % of whom were male, whose age ranged from 11 to 19 years ($M = 15.331$, $SD = 1.955$). The second sample consisted of 254 students, 53.9 % of whom were female and 46.1 % of whom were male, whose age ranged from 11 to 18 years ($M = 15.139$, $SD = 1.957$). The study instruments were integrated into a paper-pencil survey that was administered in the students' classrooms; the students took approximately 30 min each to complete the measures.

4.2 Measures

School Belongingness Scale In light of previous literature, we presume that school belongingness can be maintained as a function of person-environment interactions and that it has been conceptualized as a construct related to the self. Moreover, the sense of belonging at school may presumably improve, based on the positive and significant experiences of students in the context of person-environment interactions. In line with this understanding, we identified the following four criteria as related to the contents of the SBS and its items: (1) a sense of school belonging should be based on subjective feelings of being a valued and significant part of one's school (Booker 2004; Goodenow 1993; Osterman 2000); (2) items should reflect the relational self in the context of person-environment interactions (Duru and Arslan 2014; Duru and Balkis 2015); (3) items should refer to close relationships with teachers and friends and feelings of being accepted by other people at school (Goodenow 1993; Goodenow and Grady 1993); and (4) the scale should comprise both the achievement and absence of school belonging (Malone et al. 2012).

Given that these criteria, literature support that sense of belonging includes two essential dimensions: acceptance/inclusion and exclusion/rejection (Baumeister and Leary 1995; Goodenow 1993; Malone et al. 2012). Therefore, after reviewing the theoretical and empirical literature, we generated 17 items across these categories, 9 acceptance and 8 exclusion (Clark and Watson 1995, for more on basic principles for scale development). Considering the theoretical structure (presented Introduction) and conceptualization of belongingness (see Baumeister and Leary 1995; Malone et al. 2012), after reversing exclusion's items, total score refers to school belongingness.

Following, the 17-item pool SBS was administered to a group of five experts working in the in the fields of psychological counseling and school psychology, who independently reviewed items structure for conciseness, clarity and developmental appropriateness. Following the experts' feedbacks, several minor revisions were made 5 items to increase clarity. The final draft included 17- items, rating on a 4-point Likert-type scale ($1 = \textit{almost never}$, $2 = \textit{rarely}$, $3 = \textit{sometimes}$, $4 = \textit{almost always}$).

Student Subjective Well-being Questionnaire (SSWQ) The SSWQ is a 16-item, self-report rating scale assessing students' school-specific well-being behaviors and comprises four subscales, including school connectedness, educational purpose, joy of learning, and academic efficacy. The SSWQ's items are answered on a four-point Likert scale ($1 = \textit{Almost never}$, $2 = \textit{Rarely}$, $3 = \textit{Sometimes}$, $4 = \textit{Almost always}$; Renshaw 2015; Renshaw et al. 2015). Renshaw and Arslan (2016) examined the generalization study using a Turkish sample. The results indicated that the SSWQ showed good data–model fit for the measure's higher-order latent structure and a high level of validity with adolescents. The internal reliability of the SSWQ was also adequate, with subscale coefficients (α) ranging from .77 to .82 (Renshaw and Arslan 2016).

Satisfaction with Life Scale (SWLS) The SWLS is a five-item, self-report scale measuring individuals' overall cognitive judgments of life satisfaction. Participants respond to the five items using a seven-point scale ranging from *Strongly agree* to *Strongly disagree* (Diener et al. 1985). Research examining the psychometric properties of the SWLS with a Turkish sample demonstrated that the scale had a high reliability and validity (Durak et al. 2010; Köker 1991). The internal and test-retest reliability of the SWLS was adequate (.76 and .85).

UCLA Loneliness Scale (ULS-8) This instrument includes a self-report measurement including 20 items. It has been widely used in literature to assess individuals' subjective feelings of loneliness (Russell 1996). Yildiz and Duy (2014) investigated the psychometric properties of the short version of the ULS-8 (Hays and DiMatteo 1987) with Turkish adolescents. Findings from the study indicated that the scale had an adequate internal reliability ($\alpha = .74$ and test-retest = .84).

4.3 Data Analysis

Several data analyses were conducted to examine psychometric properties of SBS. First, exploratory factor analysis was performed with the first sample, so as to examine the SBS's factor structure. Observed variable characteristics indicated that the all items of SBS deemed to be relatively normal distributed (skewness $< |1.3|$, kurtosis $< |1|$). Considering the normality results and factors would be inversely correlated, Maximum Likelihood extraction method with Promax (oblique) rotation was considered the most appropriate approach for exploratory factor analysis (Costello and Osborne 2005). We interpreted the results with factor loading $\geq .40$, cross-loading $\geq .32$ (Stevens 2009), and loading on a different factor. Second, confirmatory factor analysis was conducted to examine the measure's latent structure. The common fit indices were interpreted to determine the goodness of data-model fit (χ^2 , root mean square error of approximation

(RMSEA), standardized root mean square residual (SRMR), Tucker Lewis index (TLI), and the comparative fit index (CFI). RMSEA and SRMR scores between .05 and .08 were considered to indicate adequate data-model fit, while values $< .05$ were considered good data-model fit. TLI and CFI scores $> .90$ were considered adequate and those exceeding .95 were considered good data-model fit (Kline 2011). Latent construct reliability was also calculated for latent structures and coefficients (H) $\geq .70$ were considered adequate (Mueller and Hancock 2008). In the final phase of the analyses, convergent validity analyses were performed using criterion variables. First, bivariate correlation analysis was conducted to examine the relationships between the observed SBS scales and criterion variables (school connectedness, joys of learning, educational purpose, academic efficacy, and overall student subjective wellbeing) using conventional standards: .00–.09 = negligible, .10–.29 = small, .30–.49 = moderate, $\geq .50$ = large. Following, a pair of latent variable path analyses (LVPA) was used to examine the predictive power of the first-order measurement model on loneliness and life satisfaction (see Reynolds and Keith 2013). Findings from the LVPA were interpreted using the data–model fit indices described above, standardized path coefficients (β) scores, and squared-multiple correlations (R^2). Findings from R^2 , which refers to accounted variance were interpreted using traditional effect size: 00–.009 = negligible, .01–.059 = small, .06–.139 = medium, $\geq .14$ = large. All the data were analyzed via SPSS version 22 and AMOS version 22.

5 Results

5.1 Structural Validity

Exploratory factor analysis was conducted for factor structure and item selection with the first sample. Findings from initial exploratory factor analysis yielded two factor solution with eigenvalues > 1 , with ranging factor loadings from .32 to .86. After examining the initial results, 7-items were excluded due to factor loadings and cross-loadings (4 items $\leq .40$ and 3 items $\geq .32$). Further exploratory factor analysis indicated that two factor solution, which consist of 10 items accounted for 50 % of the variance, with eigenvalues of 4.43 and 1.58, an adequate sample size (Kaiser-Meyer-Olkin [KMO] = .864), lack of singularity (Bartlett's $\chi^2 = 1234.54$, $df = 45$, $p < .001$), and a suboptimal data–model fit (Goodness-of-Fit Test [GFT] ($\chi^2 = 75.03$, $df = 26$, $p < .001$)). Community scores (h^2) ranged from moderate to large (h^2 range = .33–.73), and all factor loadings on two factors had values exceeding .40, with no cross-loadings. Cross-loadings for all items were negligible (λ range = $-.14$ –.07; see Table 1). Factor loadings were robust, with ranging from .48 to .86. Moreover, descriptive statistics indicated that the items means ranged from 1.55 to 3.18, with standard deviations ranging from .834 to 1.089, and all items had a relatively normal distribution (skewness and kurtosis $< |1|$). Exploratory factor analysis results are presented in Table 1.

Following the exploratory factor analysis, confirmatory factor analysis was performed on the SBS with the second sample, using AMOS version 22. Factor analysis results indicated that the measurement model of the SBS with 10 items was such that the items were indicators of two latent constructs (school acceptance scale and school exclusion scale), provided a good data-model fit ($\chi^2 = 65.389$, $df = 34$, $p = .001$;

Table 1 Exploratory factor analysis results

Scale Items	Factor Loadings (λ)		
	SES	SAS	
I feel that I do not belong this school	.860	.008	
I think that I am not involved in most of the activities at school	.849	.008	
I feel myself excluded in this school	.673	-.021	
In this school, my friends, teachers, and managers usually ignore me	.659	.063	
I have no close/sincere connections with people in this school	.480	-.138	
I can really be myself in this school	.000	.804	
I have close/sincere relationships with my teachers and friends	.073	.702	
I feel that I am accepted by other people at school	-.005	.661	
I see myself as a part of this school	-.097	.656	
I think that people care about me in this school	-.022	.602	
Variance	39.088 %	11.375 %	50.463 %
Eigenvalue	4.425	1.582	

All factor coefficients ($\lambda \geq .40$) are formatted in bold font

SAS school acceptance scale, SES school exclusion scale

SRMR = .046, RMSEA [90 % CI] = .065 [.038–.082], CFI = .97, TLI = .96). Factor loadings (λ) were robust for the second-order factor, ranging from .52 to .85 (see Fig. 1). Latent construct reliability coefficients (H) in the measurement model ranged from .78 to .87. Finally, we calculated observed variable characteristics and internal reliability estimates for the total SBS scale and the two subscales. Findings from observed variable characteristics showed that both scale and its subscales had relatively normally distribution (skewness and kurtosis $< |1|$), and corrected item-total correlation coefficient (r) ranged between moderate and large (r range = .47 to .66). A Cronbach's alpha of .86 was obtained for the SBS. Similarly, the acceptance and exclusion subscales of the SBS demonstrated high internal consistency (.83 and .85, respectively). Taken together, these findings support use of the SBS to measure students' school belonging

5.2 Convergent validity

Findings from observed scale characteristics analyses indicated that the SBS and its scales had a relatively normal distribution (skewness and kurtosis $< |1|$; see Table 2). First, bivariate correlations conducted among the SBS and SSWQ's subscales indicated moderate to large associations, ranging from .42 to .63 (see Table 3). Consistent with expectations, results relating to convergent validity showed an association between higher levels of school belonging and higher levels of school connectedness, joys of learning, educational purpose, academic efficacy, and overall student subjective wellbeing. Further, latent variables path model, which preferred the SBS model to predict the latent constructs of life satisfaction and loneliness, provided a good data-model fit ($\chi^2 = 135.88$, $df = 62$, $p < .001$; RMSEA [90 % CI] = .060 [.046–.074],

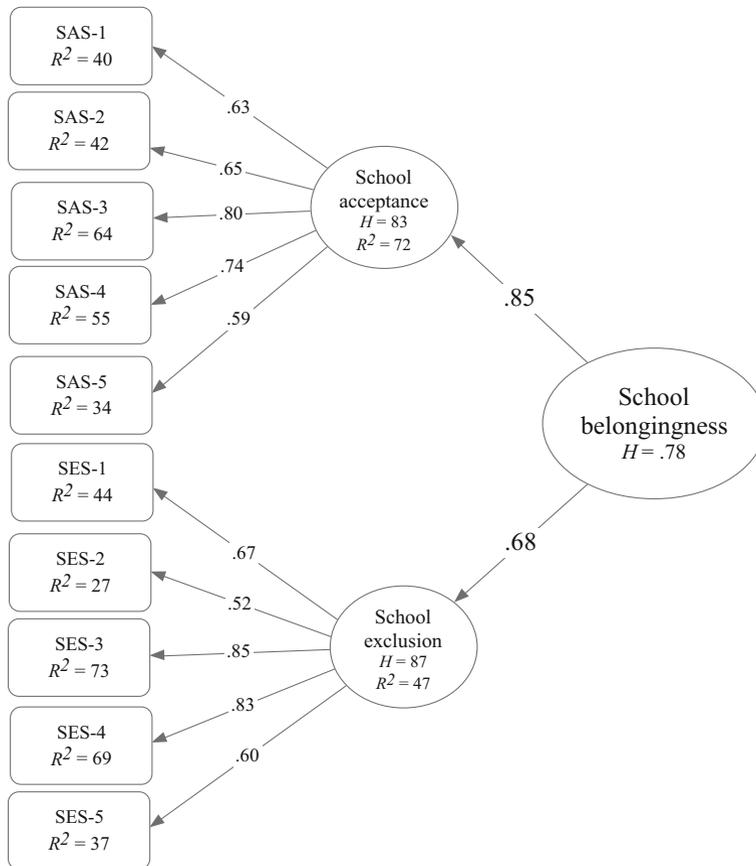


Fig. 1 Second-order CFA measurement model for the SBS. *Note.* Standardized factor loading (λ) significant at the $p < .001$ level. H latent construct reliability coefficient

CFI = .97, TLI = .95). Moreover, findings indicated that school belongingness accounted for approximately 39 % and 19 % of variance in the loneliness and life satisfaction (ULS $\beta = -.63$ and SWLS $\beta = .44$; see Fig. 2).

6 Discussion

The purpose of the current study was to develop and investigate the technical adequacy of a brief self-report measure aimed at assessing students' sense of belonging at school, namely, the School Belongingness Scale or "SBS." To this end, the first purpose of this study was to explore the factor structure of the SBS using exploratory factor analysis, and the other was to confirm the construct reliability and validity of the SBS, using confirmatory factor analysis, with middle and high school students as the study sample. Exploratory factor analysis yielded a two-factor structure for the SBS, including 10 items with factor loadings $\geq .40$. Following these initial analyses, we confirmed the

Table 2 Observed scale characteristics

Scales	Items	Min.	Max.	<i>M</i>	<i>SD</i>	g_1	g_2	α
1. SES	5	5	20	15.477	3.522	-.601	-.354	.83
2. SAS	5	5	20	15.964	3.975	-.853	.005	.85
3. OSBQ	10	13	40	31.441	6.256	-.404	-.678	.86
4. OSWLS	5	5	35	22.983	7.158	-.465	-.186	.84
5. OULS	8	8	28	15.143	4.657	.574	-.309	.83
6. SCS	4	4	16	12.521	3.099	-.764	-.118	.83
7. JLS	4	4	16	12.435	2.904	-.671	-.141	.78
8. EPS	4	4	16	13.254	2.787	-.966	.289	.82
9. AES	4	4	16	12.664	2.685	-.540	-.302	.86
10. OSSWQ	16	16	64	51.259	9.301	-.698	-.028	.92

Min Max minimum and maximum observed scale scores, g_1 Skewness, g_2 Kurtosis, *SES* school exclusion scale, *SAS* school acceptance scale, *OSBS* overall school belongingness scale, *OSWLS* overall satisfaction with life scale, *OULS* overall ucla loneliness scale, *SCS* school connectedness scale, *JLS* joy of learning scale, *EPS* educational purpose scale, *AES* academic efficacy scale, *OSSWQ* overall student subjective Wellbeing questionnaire

previously identified two-factor structure of the SBS, using confirmatory factor analysis, and the findings indicated that the measurement model yielded a good data-model fit to the proposed latent structure, as well as desirable internal and construct reliability. Additionally, we interpreted the convergent validity of the SBS, using correlation analysis with the SSWQ and its subscales. Bivariate correlations indicated a span of moderate to large associations between the SBS

Table 3 Correlations between the SBS, SSWQ^a scales, SWLS, and ULS

Scales	Correlation (<i>r</i>)							
	1.	2.	3.	4.	5.	6.	7.	8.
1. SES	1	-.390	-.755	-.366	-.250	-.295	-.261	-.345
2. SAS	-.390	1	.711	.706	.530	.451	.449	.630
3. OSBQ	-.755	.711	1	.626	.454	.435	.416	.569
4. SCS	-.366	.706	.626	1	.596	.557	.508	.801
5. JLS	-.250	.530	.454	.596	1	.672	.563	.851
6. EPS	-.295	.451	.435	.557	.672	1	.571	.842
7. AES	-.261	.449	.416	.508	.563	.571	1	.792
8. OSSWQ	-.345	.630	.569	.801	.851	.842	.792	1

All correlations significant at the $p \leq .001$ level

SES school exclusion scale, *SAS* school acceptance scale, *OSBS* overall school belongingness scale, *SCS* school connectedness scale, *JLS* joy of learning scale, *EPS* educational purpose scale, *AES* Academic efficacy scale, *OSSWQ* overall student subjective wellbeing questionnaire

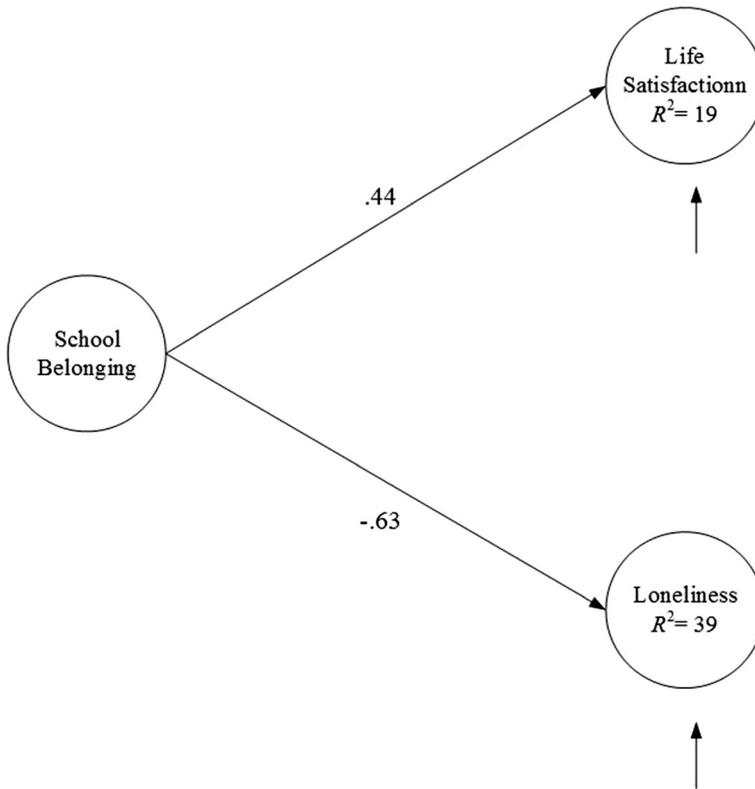


Fig. 2 Path analysis for School Belongingness Scale. All standardized path coefficients significant at the $p < .001$ level

and the OSSWQ's subscales and overall composite scale. The total SBS scale and subscales scores correlated significantly in the expected direction with measures of joys of learning, school connectedness, educational purpose, academic efficacy, and overall subjective wellbeing. Finally findings from latent variables path analysis, which preferred to examine predictive role of SBS on criterion variables indicated that the SBS significantly predicted students' life satisfaction and loneliness. Taken together, these findings suggest that the SBS is a structurally reliable and valid instrument and has satisfactory psychometric properties for the assessment of school belonging among secondary and high school students. In conclusion, the SBS can be used by either researchers or counselors to understand students' levels of school belonging. Sometimes, researchers may use multiple measures, but participants' time may be limited. The SBS can be used as a brief instrument for the purposes for which it is required by either researchers or counselors. Previous studies revealed that a sense of belonging at school is associated with positive educational outcomes (Arslan 2016; Gillen-O'Neel and Fuligni 2003). Lack of belonging at school or exclusion can lead to many negative behavioral, psychological, and social outcomes in school settings (Balkis et al. 2005; Bond et al. 2007; Booker

2006; Osterman 2000; Pittman and Richmond 2007; Rostosky et al. 2003). DeRosier et al. (1994) also warned that students who are rejected in school settings may experience both academic and behavioral problems and may be at risk of dropping out of school (Parker and Asher 1987). In addition, students who report lower levels of acceptance and higher levels of exclusion also may be at a greater risk of poor subjective well-being (You et al. 2011).

The SBS can be used as a screening instrument for identifying problems and acquiring information about students requiring help, due to the of lack of belonging at school or exclusion (Ye and Wallace 2014), who are also at risk of dropping out of school (Parker and Asher 1987). Counselors must assess students' levels of school belonging, to identify those who are at a high risk group of exclusion or of experiencing lack of connectedness (You et al. 2011). They especially need to identify students scoring low on the SBS. Students who experience higher levels of exclusion and lack of belonging can be helped through the design of psycho-education programs targeting improvement of new relations and affiliations with other students. In addition, the SBS can be also used to evaluate the effectiveness of psycho-education programs, and to understand developments in levels of school belonging among students. Alternatively, the SBS can also be a functional instrument through which counselors can evaluate counseling sessions. The SBS may be useful while setting up the counseling process and establishing goals associated with a client's problematic experiences, such as exclusion, loneliness, and lack of social connectedness. Finally, some suggestions for future studies have been provided. Previous studies verify that belonging is related to personality among university students (Malone et al. 2012); a similar pattern might exist among adolescents, too. Higher levels of school belonging may be related to lower levels of neuroticism and higher levels of agreeableness, extroversion, openness to experience, and conscientiousness. Finally, future studies could use the SBS and its subscales to examine the link between individual aspects and a sense of school belonging among adolescents. Specifically, exclusion or lack of belonging at school may negatively affect adolescents' self-esteem and self-worth. Previous studies confirm that belonging is related to self-worth and peer support in school settings (Gagné et al. 2014). School belongingness is thought to be a good indicator of well-being at school, as it is related to a wide range of positive experiences (Baumeister and Leary 1995; Duru 2015; Osterman 2000).

Despite the promising results reviewed above, the current study results should be considered in light of a few limitations. Primarily, the study sample comprised middle and high school students in Turkey, which limits the generalizability of the findings. Therefore, we recommend that future studies examine the psychometric properties of the SBS using different school settings. Furthermore, the data in this study were collected from students from three middle and high schools, and therefore, the findings cannot be generalized to all middle and high school students. Moreover, we suggest that future studies examining psychometric properties of the SBS use sampling techniques such as random sampling, with more diverse student samples in different schools, countries, and cultures. Particularly, further validation of the scale can be investigated using school outcomes, such as academic achievement, school absenteeism, and academic satisfaction.

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