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Adaptation and Preliminary Validation for the Turkish Context of the School Climate and School Identification Measure-Student (TSCASIM-St)

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Adaptation and Preliminary Validation for the Turkish Context of the School Climate and School Identification Measure-Student (TSCASIM-St)

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Article Info	Abstract
<p><i>Article History</i></p> <p>Received: 21 October 2018</p> <p>Accepted: 28 November 2018</p> <hr/> <p><i>Keywords</i></p> <p>School climate School identification High school students Adolescents</p>	<p>The importance of the climate of a school has been shown to be correlated to several key factors in education including youth development, academic achievement, and teacher retention. Lee et al. (2017) developed a dual scale which measures both school climate and school identity simultaneously (SCASIM-St). The purpose of this study is to both adapt for and provide preliminary results on its application in the Turkish context. Data was obtained from 351 high school students. The confirmatory factor analysis showed an acceptable fit ($\chi^2(460, N = 351) = 1306.15, p < .001, RMSEA = .07, CFI = .89, TLI = .88$). Also, the criterion validity studies of TSCASIM-St showed that school climate and identification were positively correlated with grade point average.</p>

Introduction

The concept of school climate is one that has seen a great deal of research and study in the past several decades (Maxwell, Reynolds, Lee, Subasic, & Bromhead, 2017). Significantly, the importance of the climate of a school has been shown to be correlated to a number of key factors in education, as Thapa, Cohen, Guffey, & Higgins-D'Alessandro (2013) note from their review of the literature "Sustained positive school climate is associated with positive child and youth development, effective risk prevention and health promotion efforts, student learning and academic achievement, increased student graduation rates, and teacher retention" (p. 369). The result of this has been an increased focus in both academic literature as well as policy (Petrucci, Borsari, Damásio, & Koller, 2016; U.S. Department of Education, 2014).

The National School Climate Council (USA)(2007, p. 5) defines school climate as being "based on patterns of people's experiences of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures." As such, the concept encapsulates many different facets, making understanding, capturing, and operationalizing a definition both complex and elusive (Maxwell, et al., 2017, Petrucci et al., 2016, Thapa et al., 2013). One of the negative impacts of this is an inconsistent means of measuring school climate, resulting in the use of scales and measures that contain unknown statistical power and thereby limited practical utility. Furthermore, the wide range of scales has resulted in different focuses on the construct as either a single factor or multiple sub-factors (Lee et al., 2017). As such, Lee et al. (2017) note it is "often difficult to differentiate the school climate construct as a predictor and the outcome variables that are associated with it" (p. 92). In other words, is the variable being measured a defining factor of school climate or an outcome of the school climate? A further question related to assessing school climate rests on which actors in the school environment are best suited to provide feedback about the climate. Depending on which group (parents, teachers, administrators, or students for example) is sampled, the results may vary wildly.

However, despite these inconsistencies and limitations, broad sub factors have been noted in the literature across the various scales used to measure it. These are noted by Maxwell et al. (2017) and include a school's emphasis on academic excellence or goal orientation, "the interpersonal relationships within a school, which are judged by their quality and consistency" (p. 2), and the shared understanding of appropriate and expected behavior (Thapa et al., 2013). Moreover, when working to understand the significance of social climate and how it affects the goals of a school, identifying the most malleable aspects of the climate is an essential task in moving from the theoretical, to the practical implementation of effective policies. Original research on student achievement and social climate focused on individual student characteristics (Moos, 1973). However, environmental factors were also noted as having an impact on school outcomes. Significantly, these environmental factors were also more malleable than student characteristics, and thus moved researchers thinking beyond the personal and towards the organizational (Moos & Moos, 1978).

As the literature grew in the corresponding decades to follow Moos' work, questions regarding the construct of school climate as a singular factor began to see both validation and further probing. Several studies emerged that suggested school climate as a construct is too broad and should be studied in its various components; notably the sense of connectedness and belonging to the school (Turner, Reynolds, Lee, Subasic, & Bromhead, 2014, Wilson, 2004). Significantly, the two concepts of school climate and connectedness have been identified by some researchers as separate, but important parts of the school social environment (Bizumic et al., 2009).

The result of all this shows that while school climate as a construct has been shown throughout decades of research to significantly impact school outcomes (academic achievement, motivation, psychological well-being, for example) (Lee et al., 2017; Petrucci et al., 2016; Thapa et al., 2013), a great deal of confusion as to which aspects of the climate are the most effective in achieving the desired outcomes and what the most effective methods of shaping those aspects of climate are, remains inconclusive. Recent studies have begun working to focus and thereby more effectively operationalize the concept of school climate (Lee, et al., 2017; Maxwell, et al., 2017; Reynolds, Lee, Turner, Broomhead, Subasic, 2017; Turner et al., 2014). These studies have shown the importance of identifying the complex relationships that exist among some specific variables often associated with school climate such as "school connectedness, belonging, and student engagement" (Turner et al., 2014, p. 2).

Through these more recent studies, of particular note for the current research, are those that have begun to show the significance of a subject's (staff or student) identification with the school as a mediator for the impact that the school climate can have on positively impacting school outcomes (Reynolds et al., 2017, Turner et al., 2014). School identification is defined as that which "concerns the cognitive and emotional significance of this group [school] for the individual student" (Lee et al., 2017, p. 93). In their recent study on the subject, Reynolds et al. (2017), noted that "school identification added significant explanatory power over more traditionally studied variables in school research such as age, gender, years at school, parental education, socio-economic status, and school climate" (p. 14-15). Additionally, the study noted the need for the construct to be studied in a greater variety of contexts.

The School Climate and School Identification Measure – Student (SCASIM-St)

In order to help clarify the construct of school climate, Lee et al. (2017) developed a dual scale which measures both school climate and school identity simultaneously (SCASIM-St). The scale is founded upon the theoretical framework of social-identity and self-categorization theory (Lee et al., 2017). The researchers' initial development and validation of the scale confirmed its use as a valid and reliable inventory for use with secondary school. However, the validation studies were all conducted in Australia, with the authors indicating the importance of investigating the scale's usefulness in other countries. The current study seeks to continue this line of investigation through adapting the SCASIM-St to the Turkish context.

Turning then to the existing literature on school climate in Turkey, it was seen that most of the studies focused on teachers or administrations' perception (Ayik & Sahir, 2014; Bozdogan & Sagnak, 2011; Gocen & Kaya, 2014; Helvacı & Aydogan, 2011; Kepenekci & Nayir, 2014; Kilinc, 2014; Ozturk, 1995; Senel & Bulunc, 2016; Senturk & Sagnak, 2012; Sezgin & Kilinc, 2011; Yilmaz & Altinkurt, 2013). The number of studies which were focused on the students' perception of school climate are limited and predominantly investigated its effect on specific risk behaviors like bullying (Bayar & Ucanok, 2012; Bugay et al., 2015; Calik et al., 2009; Özdemir et al., 2010; Yildiz & Sumer, 2016). Additionally, only two of these studies (Bayar & Ucanok, 2012; Bugay et al., 2015) were conducted with high school students.

Furthermore, when looking at the scales used to assess school climate from the perspective of high school students, The School Climate Questionnaire (SCQ) - High School Form (Haynes, Emmons, & Comer, 1994) is one that has been recently adapted to the Turkish language and context (Bugay et al., 2015). This scale uses the following six factors in conceptualizing school climate: structure and discipline, parent involvement, the school building, student-student relations, student-teacher relations. Another study by Hanif and Smith (2010) used the School Social Climate Scale, with its three dimensions of perceptions of the school generally, perceptions of teachers, and perceptions of other students. However, neither of these scales investigate the factor of school identity and its interplay with school climate.

Additionally, in the available literature on school climate in Turkey, no published works identify school identity as a dimension or aspect of climate. However, aspects of the current study like student-peer and student-teacher

relations were more commonly investigated. As such, in order to more accurately investigate this dynamic construct, a more robust, reliable measurement tool is needed. Moreover, as cultural studies have noted, Turkey has been characterized as a “vertical collectivist[ic] culture” which emphasizes the importance of hierarchy (Singelis, Triandis, Bhawuk, & Gelfand, 1995; Triandis, & Gelfand, 1998). Investigating how the construct of school identification may be affected by this and the multitude of other cultural and contextual factors as compared to other cultures and contexts will add important depth to both academic and cultural literature. The SCASIM-St appears to fit just such a need and the purpose of this study is to both adapt for and provide preliminary results on its application in the Turkish context.

Method

Study Group

Data was obtained from 351 high school students during the academic year of 2017 - 2018 in a northern city in Turkey. 169 (49.4%) students identified themselves as male, and 173 (50.6%) as female. 122 of the students (35.1%) were in the ninth grade, 120 (34.5%) tenth grade, and 106 (30.5%) eleventh grade. Seven students (2%) self-identified as exhibiting low academic success, 308 (88.5%) average success, and 30 (8.6%) rated themselves in the high academic success range. Three students gave no response. The students' self-reported grade point averages fell between 43% and 98% (mean =69.51).

Data Tools

The School Climate and School Identification Measure-Student (SCASIM-St): As previously noted, this scale was developed by Lee, Reynolds, Subasic, Bromhead, Lin, Marinov and Smithson (2017) and builds on the Moos (1973) framework. Three studies were done in order to assess the SCASIM-St's validity and reliability. Confirmatory factor analysis results confirmed the four factors of school climate and single factor of school identification. Also test - retest analysis, convergent validity, criterion validity analysis indicate that SCACISM-St is an effective measure to assess student school climate and school identification perception. As a result, the SCASIM-St has 38 items measuring school climate ($\alpha = .94$) and 6 items for school identification ($\alpha = .96$).

Demographic Information Form: In order to note the student sex, year in school, and academic performance, the researchers prepared this form for all the subjects to complete.

Data Analysis

A content validity index and confirmatory factor analysis (Kline, 2010; Lynn, 1986) were used to help assess the validity of the Turkish version of the SCASIM-St (TSCASIM-St). To assess the reliability of the instrument, a cronbach alpha internal consistency coefficient was calculated (Şeker, & Gençdoğan, 2006). The margin of error that was accepted for this investigation is 0.05.

Results

Content Validity Index

In order to assess the content validity of the initial translation of the scale, CVI values were computed for each item individually (I-CVI) and for the dimension of the scale (S-CVI) as a whole (Lynn, 1986; Polit & Tatano-Beck, 2006; Polit, Tatano-Beck & Owen, 2007). In this manner, each original and translated item was shared with an expert reviewer. Every translation was rated between 1 and 4, for how relevant the translated items were to the original. The results of the reviewer's ratings were input into an excel worksheet and each item was computed by the I-CVI and the scale as a whole by the S-CVI. Items with an I-CVI score lower than the generally accepted cut-off value of 0.78 (Polit et al. 2007) were rejected. Three items were found to be below the value of .70 and were translated again. The scale as a whole was then found to have an S-CVI score above .90 and was thus within an acceptable range (Lynn, 1986; Polit & Tatano-Beck, 2006). As such, it was accepted.

Confirmatory Factor Analysis

A CFA was used to test the construct validity of the TSCASIM-St. The first model tested one latent factor solution ($X^2(464, N = 351) = 3597.47, p < .001, RMSEA = .14, CFI = .59, TLI = .56$) but it didn't fit. Then the second model (figure 1) with the four factor structure was tested. The second model showed a good model fit ($X^2(457, N = 351) = 1188.36, p < .001, RMSEA = .06, CFI = .91, TLI = .90$). Also the four factors were correlated with one another (.39 - .79).

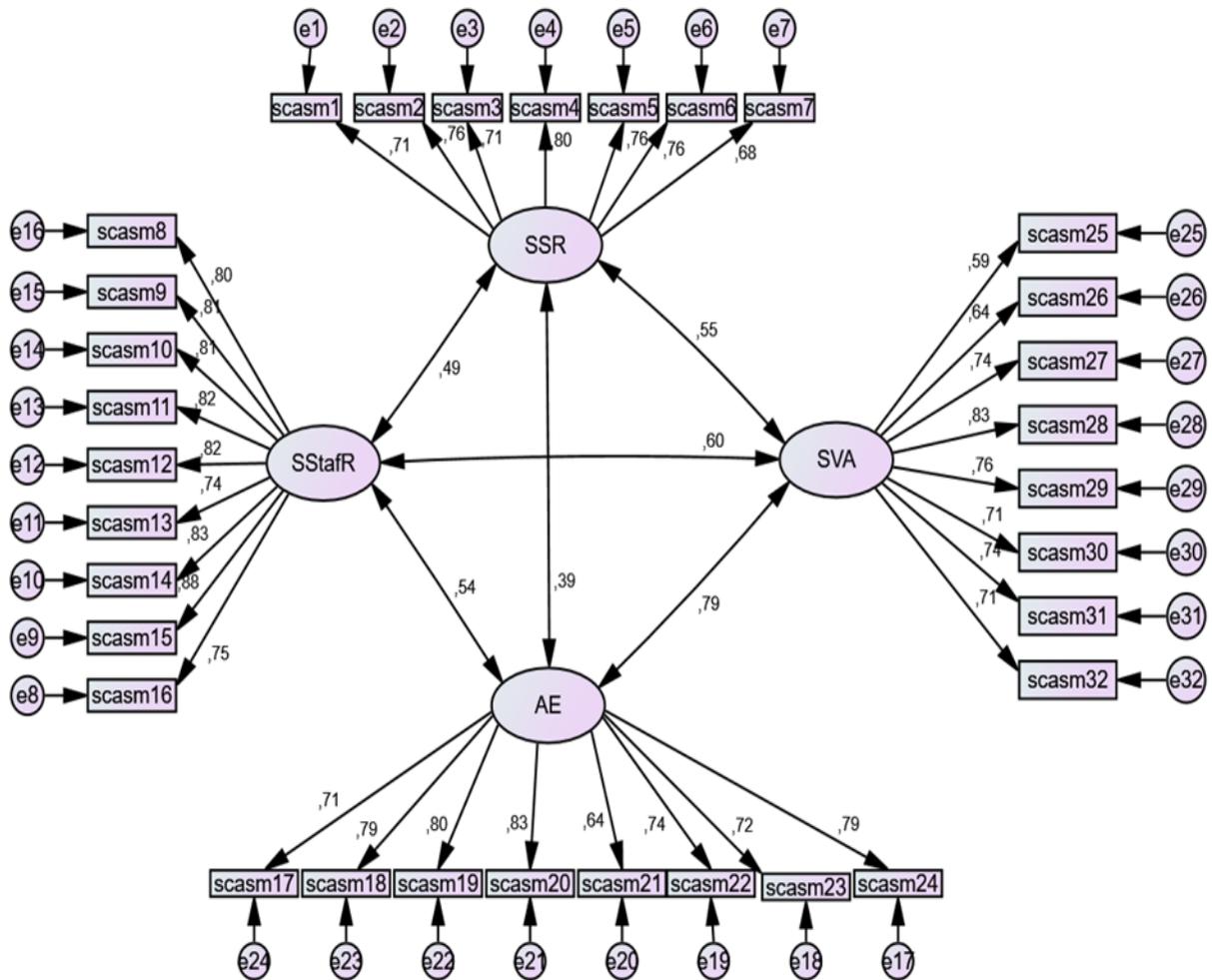


Figure 1: Four factor model of school climate

The third model suggested a second order factor structure in which an overall school climate factor was posited as undergirding all of the first order factors. The data analysis showed an acceptable fit ($X^2(460, N = 351) = 1306.15, p < .001, RMSEA = .07, CFI = .89, TLI = .88$). The school identification indicators also showed acceptable model fit ($X^2(660, N = 351) = 1723.64, p < .001, RMSEA = .06, CFI = .89, TLI = .89$) (see Figure 2).

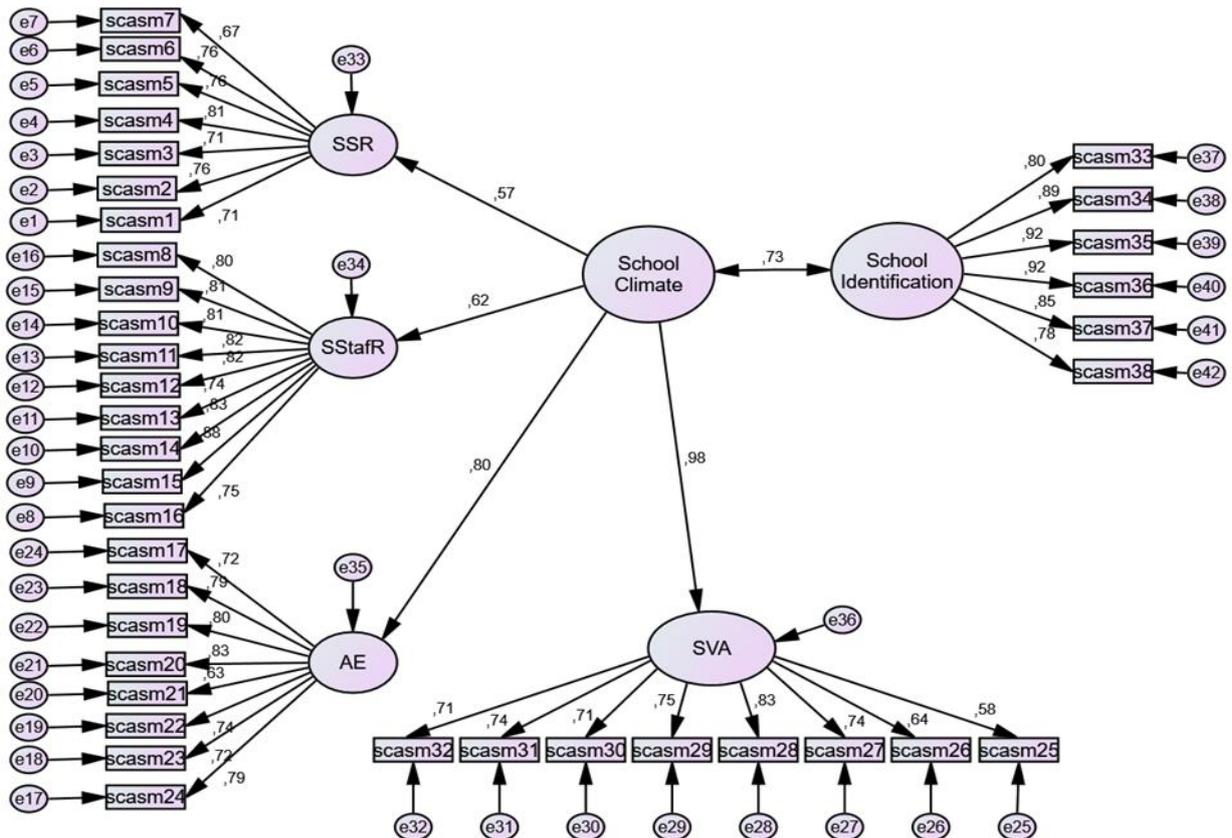


Figure 2: Second-order factor of school climate measure and school identification measure

As shown in the Table 1, the factor loadings of the TSCASIM-St items ranged from .64 to .92. Also in the second order factor analysis factor loadings of SSdR, SSfR, AE, and SVA ranged from .57 to .98.

Table 1. Items and factor loadings for the second order confirmatory factor analysis of the TSCASIM-st

Subscale and Factor items	loadings	Subscale and Factor items	loadings	Subscale and Factor items	loadings
<i>Student - student relationships</i>		<i>Academic emphasis</i>		<i>School climate (2nd order general factor)</i>	
Item 1	.71	Item 17	.71	Student - student relationships	.57
Item 2	.76	Item 18	.79	Student - Staff Relationships	.62
Item 3	.71	Item 19	.80	Academic Emphasis	.80
Item 4	.80	Item 20	.83	Shared Values and Approach	.98
Item 5	.76	Item 21	.64	<i>School identification</i>	
Item 6	.76	Item 22	.74	Item 33	.80
Item 7	.68	Item 23	.72	Item 34	.89
<i>Student - staff relationships</i>		Item 24	.79	Item 35	.92
Item 8	.80	<i>Shared values and approach</i>		Item 36	.92
Item 9	.81	Item 25	.59	Item 37	.85
Item 10	.81	Item 26	.64	Item 38	.78
Item 11	.82	Item 27	.74	School climate and school identification (r)	.73
Item 12	.82	Item 28	.83		
Item 13	.74	Item 29	.76		
Item 14	.83	Item 30	.71		
Item 15	.88	Item 31	.74		
Item 16	.75	Item 32	.71		

Criterion Validity

Pearson correlations were used to examine whether students' school climate perception and school identification were correlated to their grade point average. The student's grade point averages were calculated by using the final grades for all of their courses throughout their high school career. In this way the grade point averages reported in this study reflect their entire high school experience. When examined, Pearson correlation coefficients showed that school climate ($r=.155$, $p<.01$) and school identification ($r=.194$, $p<.01$) are significantly correlated with grade point average.

Reliability of TSCASIM-St

Cronbach alpha coefficient was used to calculate the internal reliability of the TSCASIM-St. Table 2 shows these results for the general school climate, second order factors, and school identification.

Table 2. Cronbach Alpha Coefficient of TSCASIM-St

Factor	Cronbach Alpha
School Climate	.96
Student - student relationship	.90
Student - staff relationship	.95
Academic emphasis	.92
Shared values and approach	.89
School Identification	.94

Discussion

This study examined the psychometric properties of the TSCASIM-St. In general terms, the results showed that the TSCASIM-St is a valid and reliable instrument for assessing adolescent' school climate and school identification. The results of the confirmatory factor analysis revealed that the TSCASIM-St reflected the four-factor model of school climate and the single factor of school identification. Confirmatory factor analysis of the scale initially examined the single factor structure of school climate and found the consistency indices lacking. The original, English, version of the scale yielded similar results, indicating the importance of a multi-factor structure model of school climate. As Moos (1973) noted, the construct of school climate encapsulates relationships, personal growth and system management in schools. Similarly, Thapa et al. (2013) indicated a multi-dimensional construct of school climate as including safety, relationships, teaching and learning, institutional environment, and the school improvement process. Consistent with these and the previously cited works on the topic, the results of this investigation appear to add further gravity to the significance of this nuanced approach to the construct. Furthermore, the four factor structure of the TSCASIM-St scored much higher and internally consistent in this study. These results provide further evidence that, consistent with the existing literature, in the Turkish context specifically, a multi-dimensional structure of school climate, which includes relationships (student-student, student-staff), system management (shared values and approach), and personal growth (academic emphasis) is both fitting and appropriate.

Confirmatory factor analysis looks for a CFI score greater than .90 and RMSEA score lower than .08 in order to be accepted (Hair, Black, Babin & Anderson, 2010; Kline, 2010; MacCallum, Browne, & Sugawara, 1996). However, Rigdon (1996) argued that the RMSEA is better suited than the CFI in the context of confirmatory studies. As such, despite falling below the expected CFI score, the results of this study show that the scale does fall in the acceptable bounds of the RMSEA. Therefore, based on these criteria, the TSCASIM-St is considered an acceptable fit. Moreover, the validation of the scale and structural model in a completely different cultural and geographical context adds greater validation for the original scale and model of school climate.

The criterion validity studies of TSCASIM-St showed that school climate and identification were positively correlated with grade point average which is an indicator of academic achievement. This finding is consistent

with the previously identified studies (Lee, et al., 2017; Maxwell, et al., 2017; Reynolds, et al., 2017; Turner et al., 2014) which found a correlation between positive school climate and school identification with academic achievement. Future studies should look to further investigate this relationship between the variables and further support the criterion validity of this study. However, the implications of this line of research indicates the significance of schools investing in not only creating a positive climate for students, but also in developing ways to foster a greater sense of school identity so as to maximize the effectiveness of the climate.

Further investigation of the results in comparison with other cultural contexts will provide greater depth and nuanced understanding to the role of culture in the constructs of school identification and school climate. Cultural studies into various methodologies of promoting a healthy school identity could greatly advance the utility of this line of investigation on a more global scale. As such future research into this construct should continue to examine both the validity of the scale and model, as well as the impact of cultural factors on the results. In addition to this, future studies into how best to operationalize these findings to best meet the needs of schools and students will add that important, pragmatic, practical utility to these findings.

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