

Social achievement goals and students' socio-economic status: Cross-cultural validation and gender invariance

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Social motivations of young adolescents are strongly influenced by differing levels of social achievement goals, which in turn are affected by a number of factors. Specifying these factors, especially those effective on achievement, can help improve conditions for learning. A thorough approach would include a generalisable pattern of behaviour to offer global explanations in and out of classroom interactions. This study aimed at assessing the factorial validity and measurement invariance of Social Achievement Goals Scale (SAG) and its perception by students from low and high socio-economic status in an urban setting with a sample of 1643 middle school students. Confirmatory factor analyses and measurement invariance analyses across gender were performed and mean differences between low and moderate high socio-economic status were sought. Proposed factorial structure of the SAG measure was confirmed and measurement invariance results indicated that SAG was measuring the same construct in the same way for female and male students. Male students were found to have slightly stronger social development, social demonstration-approach, and social demonstration-avoid goals than their female counterparts. Moderate-high socio-economic status students had significantly higher social achievement goals than low socio-economic status students.

Introduction

School achievement is closely connected to various social and psychological processes including student expectations of achievement. Motivation behind expectations and pursuit of achievement in learning, both external and internal, clarifies how to approach learners, and knowing about social achievement goals of learners may help students to better direct their learning towards achieving goals, since learners with lower levels of achievement goals would not be able to make the most out of their education.

Among the many factors of motivation for achievement, individual or classroom processes have been shown by Wang, Haertel and Walberg (1990, 1993) to be more influential in student learning than school-level factors. For example, student-teacher interactions, classroom social processes, and student engagement have been shown to influence academic achievement (Reyes, Bracket, Rivers, White & Salovey, 2012). This entails focusing on personal factors and student interactions with their environment.

In terms of key dimensions of experiences in classrooms (Pianta, Belsky, Vandergrift, Houts & Morrison, 2007), there is an emerging consensus that instructional and emotional aspects of the classroom predict gains in achievement (Bransford, Brown & Cocking,

1999; Cameron, Pierce, Banko & Gear, 2005; Eccles & Gootman, 2002; Hamre & Pianta, 2007). One important aspect is achievement goals of students.

Achievement goals

Achievement goals have been defined as competence relevant activities (Maehr, 1989). Goal setting in achievement is influenced by various individual and environmental factors. As Wentzel (1993) indicated, the reasons for achieving academically are explained by the goals pursued in the classroom. In line with this, achievement goal theory proposed mastery and performance approach goal orientations (Dweck & Leggett, 1988). According to achievement goal theory, goals may help experience different things for students (Ames, 1992; Dweck & Leggett, 1988; Pintrich, 2000). Achievement goal theory has helped understand the motivational dynamics of learning (Anderman & Patrick, 2012), and research has found a strong association between achievement goals and learning (Covington, 2000; Harackiewicz, Barron, Tauer, Carter & Elliot, 2000). Individuals have different orientations toward developing or demonstrating social competence and achievement goals are an important element of social motivation (Ryan & Shim, 2006).

The two achievement goals most commonly studied are mastery goals and performance goals, the former linked to educationally adaptive outcomes such as deep learning strategies, persistence and interest, and the latter to maladaptive outcomes (Senko & Harackiewicz, 2005). The achievement goals framework came to include mastery, performance approach and performance avoidance factors in later years (Elliot & Harackiewicz, 1996). The framework was then extended by proposing a four factor model by dividing both mastery and performance goals into approach and avoidance dimensions (Elliot & McGregor, 2001; Witkow & Fuligni, 2007). The model was tested with learners from different cultural contexts for measurement invariance, which confirmed the four factor model (Donnellan, 2008; Murayama, Zhou & Nesbit, 2009; Sun & Hernandez, 2012).

The achievement goal theory framework has been very instrumental in explaining individual variability in academic engagement, motivation, and achievement (Shim & Pinch, 2014). For example, mastery approach goals are positively related to positive educational outcomes (Agbuga, Xiang & McBride, 2015). Poortvliet and Darnon (2010) indicated a complete understanding of the effects of achievement goals requires taking interpersonal effects of achievement goals into account. For example, results of a study by Waxman and Huang (1997) revealed significant differences between effective and ineffective schools on the scales of achievement motivation, academic self-concept, task orientation, and student aspirations.

Social goals

Some research has defined social goals as students' social reasons for desire to achieve academically (Dowson & McInerney, 2001; Urdan & Maehr, 1995), or purposes for engaging in interpersonal relationships with others (Makara & Madjar, 2015). There is a lack of unity about the different types of social goals, the instruments to measure these,

and the differing correlates of these goals (King & Watkins, 2011). For example, King and Watkins (2011) tested the cross-cultural validity of social goals in the Philippines as proposed by Dowson and McInerney (2001), finding that the five-factor model provided the best fit with the factors of status, responsibility, concern, approval and affiliation. On the other hand, studies on social goals show these goals could influence students' cognition, affect, and behaviour in school in different ways (Dowson & McInerney, 2001, 2003).

Apparently, academic achievement is not related just to achievement goals: Social goals are highly relevant to student achievement as well; students place just as much emphasis on social goals as they do on academic goals (Covington, 2000; Dowson & McInerney, 2003; Horst, Finney & Barron, 2007; Ryan & Shim, 2006). A study by Wentzel (1993) suggested that goals other than those directly associated with academic achievement contribute in important ways to students' intellectual accomplishments in school. Just to mention, Ryan and Shim (2008) show social adjustment in middle school is a concern for educators, parents and researchers alike. The goals people hold have strong social effects, because people may work with or against others to attain their goals (Horst, Finney & Barron, 2007; Poortvliet & Darnon, 2010).

Social achievement goals

The value of social environments in achievement is unquestionable, and its association with achievement as a general concept deserves more focus. Achievement goals are important elements of social motivation (Ryan & Shim, 2006). There are relationships between achievement goals and social outcomes, between social goals, academic achievement goals and academic outcomes, and between social achievement goals and social outcomes. Different studies have shown mastery-approach, mastery-avoidance, and friendship-approach goals as positive predictors of instrumental help-seeking, whilst performance-avoidance and friendship-avoidance goals were negative predictors (Roussel, Elliot & Feltman, 2011).

Ryan and Shim extended achievement goal theory into the social domain, showing achievement goals are different in academic and social domains, the latter focusing on approaching, engagement, functioning, and evaluation in social situations (Ryan & Shim, 2006, 2008).

Research suggests three types of social achievement goals: social development, social demonstration-approach, and social demonstration-avoid (Jones & Ford, 2014). A social development goal (DEV) is connected to wanting to improve social relationships, such as strengthening social ties with friends. The second dimension, social demonstration-approach goal (DAP), concentrates on demonstrating social competence, often by getting positive judgments from others and aligning with popularity and aggression (Ryan & Shim, 2008). A social demonstration-avoid goal (DAV) implies hiding social incompetence, often by avoiding negative judgments from others and has connections with negative social relationships (Ryan & Shim, 2006, 2008).

Gender differences in social achievement goals

Gender is one of the most widely researched variables in achievement studies. Some research indicates boys are more likely to achieve at lower levels than girls (Entwisle & Alexander, 1999; Lee & Burkham, 2002; Rouse, Brooks-Gunn & McLanahan, 2005). There are personal differences between boys and girls and few studies have focused on gender differences with respect to social achievement goals. The significant gender-related differences which indicate that female students perceive more positive classroom learning environments than male students (Waxman & Huang, 1997) contradicts several studies which maintain female students are disadvantaged in most elementary, middle, and high school classrooms (McGee Bailey, 1996; Sadker & Sadker, 1994).

Results of longitudinal study of achievement goals by Duchesne, Ratelle and Feng (2014) showed that unlike boys, girls' motivation to succeed was directed more toward developing competence than toward intentions to outperform others or to hide their incompetence. Research findings indicate that female students have a higher level of mastery-avoidance goal orientations in comparison to male students. Studies based on the trichotomous achievement model showed that female students at university level adopted mastery goal orientations more than male students (Akın, 2006; Tutaş, 2011). Middleton and Midgley (1997) found boys held higher performance-approach orientations than girls. Pajares, Britner and Valiante (2000) showed a significant multivariate effect for gender differences in the achievement goals, as well as for the covariate, which was grade point average for writing. Girls reported stronger task goals and weaker performance-approach goals. However, gender made no difference in performance-avoidance goals.

Social achievement goals and socio-economic status

There are different conceptualisations of social class, so that the criteria for deciding the class schemata also vary, resulting in conflicting conclusions (Osborn, 1987). Socio-economic status (SES) has usually been considered, taking into account occupation, educational level and income (Eroglu, Bozgeyikli & Çalışır, 2009; Osborn, 1987). There is ample evidence of the influence of SES on achievement. For example, Oakland, Weschler, Benusan and Stafford (1994) found relationships between achievement motivation and SES, and family income. Similarly, Koutsoulis and Campbell's study (2001) found direct effect of SES on students' educational aspirations. SES affects an assortment of achievement-related variables like cognitive readiness, academic skills and academic adjustment (Kaliski, Finney & Horst, 2005), and there is limited research on achievement goals and SES. In 2005 Kaliski, Finney and Horst (2005) reported the lack of study on the relationship between SES and goal orientation. Their study showed lower income students had mastery-approach goal orientation significantly more than higher income students. Higher income students, on the other hand, had performance-approach goals significantly more than lower income students.

Social achievement goals and academic achievement

Linking academic success to personal goals might play an important role in sustaining or undermining levels of academic performance (Wentzel, 1993) and it is quite natural to

expect some correlation between social achievement goals and academic achievement as it represents motivation to succeed. For example, Slominski, Sameroff, Rosenblum and Kasser (2011) have shown school grades to be a powerful predictor of future success, as measured by education, occupation and income. In a study of social achievement goals and academic achievement of fourth and seventh grades, Jónsdóttir (2012) found performance-avoidance goals to be a stronger predictor of achievement than learning goals. Middleton and Midgley (1997) found academic achievement was negatively correlated with performance-approach and performance-avoid orientations. On the other hand, Midgley, Kaplan and Middleton, (2001) found performance goals tend to be especially harmful for low achievers. It was also found to increase anxiety while decreasing achievement (Daniels, Stupnisky, Pekrun, Haynes, Perry & Newall, 2009).

Measurement invariance of SAG Scale

The *Social Achievement Goals Scale* (SAG) was developed specifically for early adolescents, although some research replicated it at university level (Horst, Finney & Barron, 2007) and elementary level (Mouratidis & Sideridis, 2009; Ryan & Shim, 2008). Social achievement goals are different in adolescents from adults, which are more about psychological well-being self-reports (Elliot, Gable & Mapes, 2006; Horst, et al., 2007; Ryan & Shim, 2006).

Determining social achievement goals is expected to help learners to direct their goals, how to use them positively, and how to help increase their achievement. If SAG are directed well and if the students are helped by determining their SAG, they will be better equipped to fight adversities when planning their course of education.

Jones, Mueller, Royal, Shim and Hart, (2013) studied validation of the SAG scale and results indicate three reasons for engaging in social relationships in school: social development, social demonstration-approach, and social demonstration-avoidance. Confirmatory factor analysis and Rasch analysis supported the presence and a valid measurement of social achievement goals among rural African American adolescents. Reliability estimates showed good internal reliability in all cases of three dimensions, social development ($\alpha = .82$), social-demonstration approach ($\alpha = .89$) and social-demonstration avoidance ($\alpha = .82$) goals.

Despite some research on social goals in cultures other than Western, little is known about the differential effects of social goals in differing cultures (King & Watkins, 2011). Besides, little is known about the relationship between social goals and mastery and performance goals (Pintrich, Marx & Boyle, 1993). Turkish culture has been considered neither collectivist nor individualistic (Goregenli, 1997; Ozdikmenli-Demir & Sayil, 2009).

This study aimed to assess (1) the factorial validity of a Turkish adaptation of the SAG scale; (2) the extent to which SAG measures the same underlying construct when comparing different populations; (3) gender differences in their social achievement goals; and (4) social achievement goal differences with respect to socio-economic status. Our research questions were: To what extent is the Turkish adapted version of SAG a valid

measure of the social achievement goals, is SAG measurement invariant in Turkish culture with respect to gender, where socialisation processes are somewhat different from the original SAG samples, and are there differences in SAG with respect to the socio-economic status (SES) of students?

Method

Participants

The sample of this study consisted of 1643 sixth grade students from Turkish secondary schools, both private and state. Age range is 12 to 14, with students predominantly from 13-year age group. Participants attended 12 different schools with different socio-economic status located in the metropolitan city of Istanbul. The SES scores are generated on the basis of the neighbourhoods where the students live, rather than on self-reported information about the individual students themselves, and are used as a proxy for individual student SES. Schools of 65 students did not fit in classification of low and moderate-high status, and were excluded from SES analysis. Because primary and middle school enrolment is officially dependent on where a student lives, data were collected as part of a guidance program carried out beginning of 2016-2017 educational year with official written permission from the districts concerned. For the research, official permission was received from the governor, and parents were informed by school directors. Data were collected in optical character recognition forms which included student numbers showing grade levels, and as it was voluntary, 268 females (16% of all) and 278 males (17% of all) indicated their gender. Students' ages were appropriate to complete the SAG scale, which was developed with 6th-grade students in the USA. All students were included in confirmatory factor analyses (CFA). However, measurement invariance (MI) analyses across gender were conducted only with students whose gender was known.

Instrument

The SAG scale (Ryan & Shim, 2008) measures individual differences in young adolescents' social achievement goals. The SAG contains 18 items with three factors: social development goals (DEV), social demonstration-approach goals (DAP), and social demonstration-avoid goals (DAV). In their original study, Ryan and Shim (2008) employed exploratory factor analysis (EFA) which indicated a three-factor solution. The theoretical background of this scale mainly relied on the authors' previous work (Ryan & Shim, 2006). Permission to use the scale was received from the developers of the scale via email.

As consistent with the original scale, the SAG scale items in this study are measured on a five-point Likert scale that ranged from, 1 = *not at all true of me (kesinlikle katılmıyorum)* to 5 = *very true of me (kesinlikle katılıyorum)*. The internal consistency values reported by Ryan and Shim (2008) were .87, .89 and .84 for DEV, DAP and DAV factors respectively. Factor correlations ranged from .36 to .57 with the highest being between two demonstration goals.

Participants in this study responded to the Turkish adaptation of the SAG scale. To ensure the comparability of both versions, three professionals were requested to translate the English version into Turkish. After forward translations, a fourth professional was requested to backward translate the Turkish version into English to compare with the original scale. After deciding on the final form, school professionals, native speakers of Turkish, were consulted for comparability.

Procedure

How to fill in the forms was clearly expressed on the forms and staff were informed about the procedure to ensure sound answers. Because the study was carried out in a completely voluntary basis, students were able to withdraw anytime they wanted. Then, the forms were given to the office of the superintendent where there were staff responsible for this research. The superintendent wrote an official letter to principals and counsellors of schools. In each school, the counsellors organised the administration of questionnaire forms by class teachers in each class. All counsellors were informed about the research, and how the students would fill in the forms was explained. After the application process was finished, all forms were returned to superintendent's office. The survey process took three weeks.

Data analyses

Data analyses were conducted in the following order:

1. Checking for univariate outliers and missing cases
2. Testing the factorial structure of the SAG scale
3. Assessing the invariance (equivalence) of the SAG scale across gender
4. Comparing social achievement goals of female and male students
5. Comparing social achievement goals of low and moderate high socio-economic status students.

We used *SPSS 21* (IBM Corporation, released 2013) to screen the data, obtain descriptive statistics and test mean differences. Missing data were imputed by employing an expectation maximisation (EM) algorithm and distribution of scores was inspected visually for detecting outliers. Confirmatory factor analyses (CFA) were carried out for both the whole sample and for each gender group to confirm the proposed three-factor structure of the scale. Since scores on the SAG scale are based on ordinal measures, all models for CFA and invariance analyses were estimated using weighted least squares mean and variance adjusted (WLSMV) estimator with theta parameterisation, which is a robust estimation method for ordinal data (Sass, Schmitt & Marsh, 2014). Following indices and cut-off values were used to test the goodness of model-data fit: the chi-square (χ^2) likelihood ratio test (non-significant), the root mean square error of approximation (RMSEA <.08), Tucker-Lewis index (TLI >.95), comparative fit index (CFI >.95), and the weighted root mean square residual (WRMR values close to 1) (MacCallum, Browne & Sugawara, 1996; Yu, 2002).

Multi-group confirmatory factor analyses (MG-CFA) within means and covariance structure analysis (MACS) were then utilised by gender to test whether the same construct was being measured in the same way, or in other words to see if the SAG scale operates similarly across gender groups. Specifically, configural (same item-factor relationship), metric (invariance factor loadings), and scalar (invariant loadings & thresholds) invariance tests were assessed hierarchically (Vandenberg & Lance, 2000). Metric of the factors was set by fixing the first factor loading (referent item) to 1. Nested model comparisons were made using DIFFTEST option in *Mplus 7* (Muthén & Muthén, 2012), since a conventional chi-square difference test ($\Delta\chi^2$) cannot be used when WLSMV is employed.

Scalar invariance needs to be established for meaningful latent mean comparisons across groups (Schmitt & Kuljanin, 2008). Therefore, after achieving scalar invariance in this study, we compared female and male students' latent mean scores on the SAG scale. As for differences in SAG with respect to SES, data were checked for normality and outliers before an independent samples t test was performed.

Results

Descriptive statistics

Examining the distribution of scores indicated no univariate outliers. The percentage of missing cases ranged from 0.3% to 2.4%, and an expectation-maximisation algorithm was employed to impute missing values. Descriptive statistics, after imputing the missing values, are summarised in Table 1. Skewness and kurtosis values ranged between -1.55 to 0.69 and -1.20 to 1.86 respectively, indicating that student responses were distributed fairly normally. The means and standard deviations of the 18 items ranged from 2.27 to 4.21 and .99 to 1.38 respectively, suggesting that most students responded positively to the scale items.

Confirmatory factor analysis (CFA)

Separate CFAs were carried out to test and confirm the hypothesised factor structure of SAG scale. Establishing a well-fitting baseline model for the whole sample and for each sub-group is essential before conducting further MG-CFA invariance tests. As part of the construct validation, the original factor structure of the SAG scale was also compared with a one-factor model in which all items loaded on a single general factor.

As is evident in Table 2, neither the one-factor nor the three-factor models fit the Turkish sample data sufficiently. Compared to one-factor, the original three-factor model fits better but still not acceptably. To identify the sources of misfit, we first examined modification indices for the regression weights (loadings). Inspection of the modification indices revealed that item DAP-11 ("I try to do things that make me look good to other kids") cross-loaded onto DEV and DAV factors having the two largest modification indices amongst all other items. Further follow-up EFA tests also confirmed the cross-loading of this item as well. Hence, this item was excluded from the scale. Removing this item resulted in significant improvement (Model 3) in fit and left no other large

modification index for item loadings. However, the fit of this model was still not satisfactory. Examining the modification indices for residual covariances suggested relating error terms for items (DAV-13 and DAV-14) and (DAP-8 and DAP-9). Correlating these error terms was theoretically and substantively justifiable because of the similarity in the content and wording of DAV-13 and DAV-14. Also, the words “cool” in item DAP-8 and “popular” in item DAP-9, probably meant the same thing for students in our sample as the word “cool” is not as commonly used in Turkish language compared to English. These modifications significantly improved fit (Model 4).

Table 1: Descriptive statistics for all SAG Scale items

Item	Item	Order	M	SD
DEV-1	I like it when I learn better ways to get along with friends.	1	4.18	1.00
DEV-2	I feel successful when I learn something new about how to get along with other kids.	6	3.74	1.15
DEV-3	I try to figure out what makes a good friend.	8	4.16	.99
DEV-4	One of my goals is that my friendships become even better over time.	10	4.12	1.04
DEV-5	It is important to me to learn more about other kids and what they are like.	14	4.00	1.11
DEV-6	In general, I try to develop my social skills.	16	4.03	1.05
DAP-7	It is important to me that other kids think I am popular.	3	2.83	1.32
DAP-8	It is important to me to have “cool” friends.	5	2.27	1.27
DAP-9	I want to be friends with the “popular” kids.	7	2.65	1.29
DAP-10	It is important to me to be seen as having a lot of friends.	11	3.01	1.36
DAP-11	I try to do things that make me look good to other kids.	15	3.82	1.19
DAP-12	My goal is to show other kids how much everyone likes me.	18	2.89	1.38
DAV-13	I try not to do anything that might make other kids tease me.	2	4.08	1.23
DAV-14	It is important to me that I don't embarrass myself around my friends.	4	3.98	1.28
DAV-15	I try to avoid doing things that make me look foolish to other kids.	9	4.21	1.19
DAV-16	When I am around other kids, I don't want to be made fun of.	12	4.19	1.19
DAV-17	When I am around other kids, I mostly just try not to goof up.	13	4.09	1.29
DAV-18	One of my main goals is to make sure other kids don't say anything bad about me.	17	3.70	1.34

Note. DEV - social development goals; DAP - social demonstration-approach goals; DAV, social demonstration-avoid goals. The order column shows the actual ordering of items in the questionnaire forms.

Table 2: CFA results for Turkish sample

Model	χ^2	df	p	RMSEA (90% CI)	CFI	TLI	WRMR
1. One-factor	7350.14	135	.000	.180 (.177, .184)	.62	.57	5.76
2. Three-factor	3200.09	132	.000	.119 (.115, .123)	.84	.81	3.67
3. Three-factor revised(a)	1803.70	116	.000	.094 (.090, .098)	.91	.89	2.83
4. Three-factor revised(b)	906.79	114	.000	.065 (.061, .069)	.96	.95	1.94

Notes. RMSEA: Root mean square error of approximation; CFI: Comparative fit index; TLI: Tucker-Lewis index; WRMR: Weighted root mean square residual.

(a) DAP-11 removed.

(b) Correlated errors for (DAV-13 and DAV-14) and (DAP-8 and DAP-9).

After establishing a well-fitting baseline model for the whole sample, next we tested the fit of this modified model for the sub-group data. Model data fits for the girls ($\chi^2 = 235.42$, $df = 114$, RMSEA = .06, CFI = .94, TLI = .93, and WRMR = .99) and for the boys ($\chi^2 = 274.98$, $df = 114$, RMSEA = .07, CFI = .95, TLI = .94, and WRMR = 1.10) were acceptable, supporting the three-factor model in the Turkish sample.

Internal consistency reliability estimates and factor correlations for the whole sample are presented in Table 3. Cronbach's alpha values were all above the commonly accepted threshold value of .70, but were lower than the values reported by Ryan and Shim (2008). Factor correlations ranged from .25 to .67.

Table 3: Factor correlations and reliabilities for the whole sample

	DEV	DAP	DAV
Social development goals (DEV)	-		
Social demonstration-approach goals (DAP)	.25	-	
Social demonstration-avoid goals (DAV)	.67	.30	-
Reliability (Cronbach's alpha)	.75	.77	.76

Standardised and unstandardised factor loadings are displayed in Table 4. Standardised factor loadings for the whole sample data ranged from .54 to .77 and they were all significant.

Table 4: Standardised and unstandardised (in parentheses) factor loadings of SAG scale

Items	Whole	Female	Male
DEV-1	.63 (1.00)	.69 (1.00)	.64 (1.00)
DEV-2	.65 (1.05)	.75 (1.18)	.66 (1.05)
DEV-3	.67 (1.13)	.66 (.91)	.66 (1.04)
DEV-4	.65 (1.07)	.63 (.86)	.71 (1.18)
DEV-5	.67 (1.10)	.72 (1.09)	.63 (.97)
DEV-6	.54 (.79)	.52 (.63)	.55 (.78)
DAP-7	.77 (1.00)	.75 (1.00)	.78 (1.00)
DAP-8	.61 (.63)	.63 (.73)	.55 (.52)
DAP-9	.67 (.73)	.61 (.68)	.67 (.71)
DAP-10	.64 (.69)	.62 (.71)	.65 (.67)
DAP-12	.64 (.69)	.66 (.79)	.73 (.86)
DAV-13	.60 (1.00)	.61 (1.00)	.66 (1.00)
DAV-14	.60 (.98)	.65 (1.10)	.61 (.88)
DAV-15	.70 (1.28)	.76 (1.53)	.70 (1.11)
DAV-16	.71 (1.32)	.67 (1.15)	.74 (1.25)
DAV-17	.77 (1.60)	.81 (1.78)	.76 (1.33)
DAV-18	.62 (1.03)	.63 (1.03)	.72 (1.19)

Note. DEV: Social development goals;
DAP: Social demonstration-approach goals;
DAV: Social demonstration-avoid goals.

After confirming the three-factor structure of SAG scale in Turkish sample, in the next step we proceeded with MI analyses across gender.

Measurement invariance analysis (MI)

Configural, metric and scalar invariance tests were assessed sequentially using WLSMV estimator with theta parameterisation. MI results are given in Table 5. As is seen in Table 5, the configural model provided a good fit indicating both female and male students employed the same conceptualisation of the SAG constructs. Results of the metric invariance test (DIFFTEST (14) = 9.31, $p=.81$) showed that factor loadings were equivalent across sub-groups. Having confirmed metric invariance, we then proceeded with the assessment of scalar invariance constraining item thresholds to be equal across groups in addition to other constraints applied at previous steps. Similarly, scalar invariance was also achieved (DIFFTEST (48) = 40.80, $p=.76$) indicating that the latent means on SAG constructs could be compared in a meaningful way between female and male students in Turkish sample. Overall, MG-CFA analyses supported the measurement invariance of the three-factor SAG measure across gender groups in the sample.

Table 5: Measurement invariance results

	χ^2	<i>df</i>	RMSEA (90% CI)	CFI	WRMR	$\Delta\chi^2$ (DIFFTEST)	Δdf	<i>p</i>
Configural	510.62	228	.067 (.060, .075)	.94	1.48	-	-	-
Metric	505.84	242	.063 (.055, .071)	.95	1.50	9.31	14	.81
Scalar	541.11	290	.056 (.049, .064)	.95	1.54	40.80	48	.76

Note. RMSEA: Root mean square error of approximation; CFI: Comparative fit index; WRMR: Weighted root mean square residual.

Latent means were computed for each DEV, DAP and DAV factor to see if female and male students had similar social achievement goals. The results revealed that on average, male students scored .08, .01 and .10 units higher than females on social development, social demonstration-approach, and social demonstration-avoid goals respectively, based on the metric of the referent indicators.

Differences in goals with respect to socio-economic status

Learners from low and moderate high socio-economic status were compared to see if there were differences in means of their social achievement goal scores. Table 6 shows students from low socio-economic groups had significantly lower social development goals ($M=19.7$, $SD=3.79$) than moderate to high SES students ($M=20.73$, $SD=3.45$), $t(1559)=-5.627$, $p < .001$. Similarly, students from low socio-economic status ($M=16.52$, $SD=5.26$) had lower social demonstration-approach goals than students from moderate-high socio-economic status ($M=17.96$, $SD=5.13$), $t(1545)=-5.406$, $p < .001$. As for social demonstration-avoidance goals, students from low socio-economic status had lower means ($M=23.67$, $SD=5.26$) compared to students from moderate high socio-economic status ($M=24.80$, $SD=4.84$), $t(1515)=-4.369$, $p < .001$. Following Cohen's suggestion

(1988) in interpreting the magnitude of effect size, in all three subscales socio-economic status of the students had small effects on their social achievement goals.

Table 6: Differences in achievement goals with respect to socio-economic status

SAG	Low SES			High SES			t	df	p	d
	M	SD	N	M	SD	N				
DEV	19.70	3.79	854	20.73	3.45	707	-5.627	1559	.001	0.285
DAP	16.52	5.26	852	17.96	5.13	695	-5.406	1545	.001	0.275
DAV	23.67	5.26	841	24.80	4.84	694	-4.369	1515*	.001	0.221

* Equal variances not assumed

Discussion

Achievement goals, and specifically social achievement goals serve as predictors and outcomes (Makara, 2013) that need to be taken into account when studying student learning, which is shaped by the learner's goals. However, an important factor to consider in cross cultural research is whether the society is individualistic or collectivist, because achievement may have different meanings in different societies (King & Watkins, 2011). This study adds to the achievement goal literature by focusing on a non-western, non-collectivist, non-individualistic culture in a way to help generalise results from the SAG scale.

As the present study focusing on measurement invariance of the SAG scale in a Turkish context shows, measurements of social achievement goals in different cultures lead to similar results. Results here confirm the presence of three factors of SAG measure in a Turkish sample: social development goals (DEV), social demonstration-approach goals (DAP), and social demonstration-avoid goals (DAV). Multiple-group CFA results supported full scalar invariance (origin of measurement scales identical across groups) indicating that students with the same score on latent constructs obtained the same score with regard to observed variable, ignoring gender. This enables researchers to use the SAG scale confidently to measure female and male students' social achievement goals within a Turkish context. Means comparisons on latent variables across gender showed that male students had slightly higher social development, social demonstration-approach, and social demonstration-avoid goals. Although some studies mention gender at the data collection process, they do not mention any results regarding gender (Agbuga, Xiang & McBride, 2015; Walker, Winn & Lutjens, 2012), which implies that no analyses were made or reported. Studies dealing with gender comparison with respect to social achievement goals are limited though there is much evidence on relationships between achievement goals and gender. Findings about the social demonstration approach in this study are consistent with Makara's (2013) findings about social performance approach. Boys had stronger social demonstration avoidance; avoiding negative judgements. This accords with Mouratidis and Michou (2011) who found that boys tended to report higher levels of negative emotions, but contradicts Else-Quest, Hyde, Goldsmith and Van Hulle (2006) who found that girls are more likely to show inhibitory control. Rahmani (2011) showed boys had significantly higher levels of self-esteem and approach performance than girls,

and there was significant difference between boys and girls regarding the score on the avoidance performance.

This study contributes to the literature by adding empirical evidence of the generalisability of the SAG measure to other cultures, and supporting the use of the scale across gender to measure their social achievement goals.

We have not been able to find studies reporting upon the relationship between SAG and SES. This study shows students from comparatively higher socio-economic status have higher social achievement goals than those from lower socio-economic status. This was true of all three factors, namely social development goals (DEV), social demonstration-approach goals (DAP), and social demonstration-avoid goals. If these goals impact on achievement then, narrowing the gap in socio-economic status would help improve student goals and so improve learning.

Limitations of the study and suggestions for future research

As may be expected, this study has several limitations. Due to the limitations in data collection, data may not be considered representative of the all target population. Even though we sampled from twelve different schools, generalisability of the findings is somewhat limited in that the sample does not include rural learners.

Research has shown that students in the same classroom (or school) may exhibit similar characteristics to each other, compared with students in other classrooms (or schools). Research has also shown that that parents' choice of school for their children may not be a random process. This means that the information gathered from students in the same classroom or school cannot be considered as being fully independent. Therefore, future researchers may want to use multilevel analyses to be able to account for those grouping effects while analysing the complex relationship among SAG, achievement, gender, and SES. The data collected in this study did not allow us to fully test student-level information within classroom-level information.

Future studies using the SAG scale might work on a combination of academic achievement, socio-economic status and sub-cultural factors that may have influences on achievement goals. Knowledge of social achievement goals can direct classroom teachers to support students as regards these goals, which may assist students to have more positive attitudes towards academic achievement. However, there is a need for rigorous research to prove the linear connection between these two. As some studies have shown a relationship between low achievement and performance avoidance goals (Midgley, Kaplan & Middleton, 2001), there is need to see if SES has a confounding effect. Because SES has a lot to do with parents, the relationship between SAG and parenting needs focus as well. Research may be extended to include peer relationships, which could provide insight into how SAG and friendships interact. Apparently, different educational levels show differing social achievement goals, which need to be studied longitudinally. As with all scale studies, replications may include changes in items to extend the scope of the research.

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