



# Academic Predictors of Early Adolescents' Perceived Popularity: The Moderating Effects of Classroom Academic Norm Salience

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In order to extend our understanding of the effect of academic motivations and outcomes on the social status of adolescents in the classroom context, this study examined the predictive role of academic achievement and achievement goals on early adolescents' perceived popularity and the effect of classroom academic norm salience on these relationships. In total, 2,558 adolescents in grade 7 (mean age 12.97 years) in mainland China participated in the study. Hierarchical linear modeling (HLM) was used to examine predictive effects of within-class and between-class predictors on perceived popularity. The results showed that only girls' academic achievement and the performance-approach goals of both genders positively predicted adolescents' perceived popularity. Classroom academic norm salience strengthened the negative role of performance-avoidance goals on perceived popularity, and it seems to undermine gender differences in the effect of mastery goals on perceived popularity. The current study will not only fill the gaps in research on the relationship between academic development and social status, but also reveal the special influence and significance of collective cultures such as Chinese in this field and show a different relationship pattern from those found in previous Western studies.

### **OPEN ACCESS**

#### Edited by:

Mar Lorenzo Moledo, University of Santiago de Compostela, Spain

### Reviewed by:

Panagiota Dimitropoulou, University of Crete, Greece Eva M. Romera, Universidad de Córdoba, Spain

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#### Specialty section:

This article was submitted to Educational Psychology, a section of the journal Frontiers in Education

Received: 24 December 2018 Accepted: 20 May 2019 Published: 21 June 2019

#### Citation

Zhang Y, Ren P, Li X, Liu H and Luo F (2019) Academic Predictors of Early Adolescents' Perceived Popularity: The Moderating Effects of Classroom Academic Norm Salience. Front. Educ. 4:52. doi: 10.3389/feduc.2019.00052 Keywords: perceived popularity, academic achievement, achievement goals, classroom academic norm salience, early adolescents

### INTRODUCTION

Although the acquisition of knowledge is particularly important throughout all of adolescence, many young people show a decline in academic achievement and academic motivations beginning in early adolescence (Crosnoe and Benner, 2015). During this stage, adolescents tend to be highly concerned with their social status in peer groups (LaFontana and Cillessen, 2010), and gaining and maintaining popularity become particularly important developmental goals (Sijtsema et al., 2009). As individuals transition from elementary school to middle school, their peer groups become larger and more diverse, and they need to re-establish social status in the new groups. Meanwhile, middle school students need to put more effort into studying to adjust to challenging courses. However, the pursuit and maintainance of social status seems incompatible with—and sometimes even at the expense of—good academic performance (Mayeux et al., 2008; Troop-Gordon et al., 2011). A number of studies have shown that, from childhood to early adolescence, the relationship between

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academic achievement and perceived popularity changes from one that is positively correlated to one that shows no—or even negative-correlation (e.g., Meijs et al., 2010; Galván et al., 2011; Dijkstra and Gest, 2015). Good academic performance and hard work become less appreciated (Lasane et al., 1999; Juvonen and Cadigan, 2002); instead, poor academic behaviors (such as failing to complete homework) gain approval from peers (Juvonen and Cadigan, 2002). In their pursuit of social status, adolescents change the value they place on school to greater or lesser degrees. It is reasonable to theorize that this change in attitude is likely accompanied by a change in students' intrinsic academic motivations (Juvonen and Murdock, 1993). However, previous studies have focused on the association between academic achievement and perceived popularity (Meijs et al., 2010) and have hardly taken into account the relationship between academic motivations and perceived popularity. Thus, this relationship merits greater attention. While plenty of studies have proven that peer interactions are deeply influenced by cultural context-including peer culture (Fuller-Rowell and Doan, 2010; Veenstra et al., 2018) and sociocultural background (Chen et al., 2003b; Li et al., 2012) few studies have examined the relationship between academic achievement, academic motivation, and perceived popularity within the context of classroom norms. In addition, most studies have been carried out in Western countries, despite research showing that both academic achievement and academic motivation (e.g., achievement goals) have different meanings for adolescents in Eastern and Western cultures (Liem et al., 2008; Li et al., 2012). The first purpose of the current study was to examine the predictive effects of academic achievement and achievement goals on the perceived popularity of early adolescents in collective cultures such as China's. The second purpose was to examine the moderating role of classroom academic norms in order to reveal the unique peer effects and developmental patterns of adolescents in a non-Western context.

### ACADEMIC ACHIEVEMENT, ACHIEVEMENT GOAL, AND PERCEIVED POPULARITY

Perceived popularity is an indicator of a child or adolescent's social status, which reflects the consensus of his or her status, prestige or visibility in the peer group (Cillessen and Rose, 2005). Popular adolescents play a decisive role as leaders, rule makers and decision makers in their peer group, and are observed and emulated; in contrast, unpopular adolescents are subject to others' rejection and bullying and, as a result, face more developmental risks (Cillessen et al., 2011). Cultural values and norms may play roles in the behavioral profiles that define social status (Chen and French, 2008). A comparative study indicated that academic engagement not only was more strongly associated with social status in China (vs. the United States), but it was also a stronger predictor of youth's social status over time in China. This difference was most evident for perceived popularity (vs. likability and admiration) (Zhang et al., 2018).

The relationships between academic factors (both motivations and outcomes) and perceived popularity vary in different cultural

contexts. Some studies conducted in individualism cultures, such as American culture, have found that early adolescents' academic achievement is negatively or not correlated with perceived popularity (Mayeux et al., 2008; Dijkstra and Gest, 2015). However, the correlation is positive in collective cultures, such as Chinese. Comparing with the influence of academic achievement on children in American culture, which is individual-oriented, this influence is more significant in promoting popularity of children in China (Li et al., 2012). It is unclear whether the positive effects of academic achievement among Chinese children persist into early adolescence.

As for motivation of academic achievement, *Achievement goal orientations*, which include mastery goals, performance-approach goals and performance-avoidance goals, are typical indicators of academic motivation (Nicholls, 1984; Dweck and Leggett, 1988; Midgley et al., 2000). Although most research on academic achievement goals are mainly focused on the investigation of academic-related processes and outcomes, different goals may lead to differences in social outcomes because their different perceptions of situation and of others in distinct perceptual-cognitive frameworks (Poortvliet and Darnon, 2010).

Mastery-oriented students engage in tasks that emphasize learning, improving past performance, and acquiring new knowledge and skills. They are also more concerned about selfimprovement rather than impression management and thus develop a self-referenced focus (Poortvliet and Darnon, 2010). Similarly, some researchers believed that mastery goals that are self-reference focused can lead to investments in exchange relationships, endorsement of reciprocity norms, and active efforts to integrate different opinions, and they will get a variety of beneficial outcomes relative to performance goals in social contexts (Poortvliet and Darnon, 2010). Mastery goals were found to be helpful for promoting positive peer relationships (Liem et al., 2008) and prosocial intentions (Barrera and Schuster, 2018), which were also proven to be positively associated with the mutual sharing of difficulties, trust, and adaptive social problemsolving between friends (Levy-Tossman et al., 2007).

Performance-approach goals aim at demonstrating high ability, and performance-avoidance goals indicate attempts to avoid demonstrating low ability. Students with performance goals pay attention to the public demonstration of their selfworth, and thus develop another-referenced focus (Levy et al., 2004; Levy-Tossman et al., 2007; Liem et al., 2008). Studies have indicated that peer relationships might be benefited by mastery goals but would be negatively influenced by performanceavoidance goals. Performance-avoidance goals indicate attempts to avoid demonstrating low ability and were found to be associated with distrust, inconsideration, and tension between friends (Levy-Tossman et al., 2007). Performance-approach goals aim at demonstrating high ability. However, studies on performance-approach goals have produced inconsistent findings. In collective cultures such as Singapore (which is greatly influenced by Chinese collective culture), both performanceapproach and mastery goals were found to be directly associated with positive peer relationships (Liem et al., 2008); while in individualism cultures such as American, only mastery goals (but not performance goals) were found positively related to close friendship self-conceptions (Ben-Eliyahu et al., 2017). Israel is a mixture of both individualism and collectivism (Carmeli, 2001), and research conducted there found that performance-approach goals were negatively related to intimate friendship (Levy-Tossman et al., 2007).

Perceived popularity is not only an indicator of peer relationships but also a power-related factor (Pellegrini et al., 2011), which is different from friendship or peer preference. There might be similarities and distinctions between the relationships of achievement goals and perceived popularity as well as the relationships of achievement goal and friendship or peer preference. Performance-oriented individuals may pay more attention to evaluating if their performance would have value in improving social status and getting more power. Levy et al. (2004) found that performance-oriented students focused on enhancing their own status during peer interactions and thus preferred to help in-group and high-status peers; masteryoriented students, in contrast, did not show this tendency. This finding suggested that teenagers with performance goals may be more actively pursuing social status and change their behaviors according to the clues in peer contexts. The relations between the three goals and popularity are still ambiguous. Previous studies have also found the influence of academic mastery goal orientations on peer relationships have gender differences. Some presented that academic mastery goal orientations predicted course performance and responsible classroom behavior only for girls, whereas for boys, academic mastery goal orientations were positively related to close friendship self-conceptions (Ben-Eliyahu et al., 2017).

Additionally, there are gender differences in the relationship between academic factors and perceived popularity. Good academic performance has been found to have a more negative effect on boys' popularity than girls' (Adler et al., 1992), and boys with high academic achievement are more likely to be victims of bullying (Lehman, 2015). Because adolescents often perceive good performance (or efforts toward good performance) as a feminized characteristic, hard-working boys are more likely to be considered feminine, unsociable, and less socially attractive (Lasane et al., 1999), whereas those who exhibit disengagement with academics tend to be considered masculine and subsequently rewarded with high social status (Czopp et al., 1998). One study showed that, when asked about their academic performance, boys were inclined to deny their good performance or hard efforts, whereas girls tended to admit their actual performance (Zook and Russotti, 2012).

### THE ROLES OF CLASSROOM ACADEMIC NORM SALIENCE

Group norms refer to the attitudes and behaviors that are accepted and recognized by peer groups (Henry et al., 2000). The classroom is the fundamental organizational unit at school where students spend most of their time in their daily life. Group norms in the classroom setting are known as classroom norms whereby students keep regular interactions with peers, share common beliefs and experiences, and build up their own rules and culture. Classroom norms are conceptualized and measured in diverse

ways. Descriptive and injunctive classroom norms are typically measured by aggregating individual-level measures of behaviors and attitudes, respectively, across all individuals within a class, to generate classroom-level indices (Cialdini et al., 1991; Boor-Klip et al., 2017). Norm salience is obtained by calculating the correlation between a certain behavior and its popularity in the class (Henry et al., 2000; Dijkstra and Gest, 2015).

The classroom academic norm salience that was established reflected a group consensus of rewarding students who had certain academic performance with high social status (Dijkstra and Gest, 2015), thus conforming to classroom academic norms leading to a shared identity that provides social and emotional support, behavioral confirmation, and acceptance (Masland and Lease, 2013). High academic norms have been found to strengthen the relations between academic achievement and peer acceptance (Dijkstra and Gest, 2015), leadership (Chen et al., 2003a), and social dominance (Jonkmann et al., 2009). In addition, although the empirical evidence is limited, the process through which students with different goals pursue social status may also be influenced by classroom contexts. Students with mastery goals are self-reference focused (Poortvliet and Darnon, 2010), while students with performance-oriented goals are otherreferenced focused (Levy et al., 2004; Levy-Tossman et al., 2007; Liem et al., 2008). Students with performance goals may be more sensitive than those with mastery goals to the classroom norms. Therefore, it is necessary to explore whether the effects of achievement goals on perceived popularity are moderated by classroom academic norms.

The effect of classroom academic norm salience might vary by gender. Considering that boys care more about their status and competition in a group (Schneider et al., 2005), they might be more sensitive to classroom norms. However, some studies have suggested that because girls are brought up to be obedient, cooperative and particularly concerned with others' evaluation of them, they may be particularly averse to interpersonal rejection due to disobedience to the majority and find it harder to resist the pressure of classroom norms (Rose and Rudolph, 2006). The degree to which the above-mentioned moderating effects of gender vary according to the influence of classroom academic norms is worth exploring.

### THE PRESENT STUDY

Collective cultures emphasize filial devotion, sociability, harmony, and a willingness to compromise personal needs to benefit the social group. Additionally, self-identity is usually considered to be included in the shared group identity. Behaviors such as attitudes and actions toward learning are mainly governed by obligations and a sense of social norms (Triandis and Gelfand, 1998). In the collectivist cultural context of China, students associate their personal successes with others: they work hard for in-group goals (e.g., parents' expectations, teachers' expectations, peer evaluations) and place more emphasis on meeting external, rather than internal, needs in their social lives (Triandis, 2001). This orientation of valuing in-group goals may have two important implications. On the one hand,

performance-approach goals may have positive social adaptive meaning for Chinese adolescents. For example, a study based on a Chinese sample found that the performance-approach goals of Chinese adolescents were directly related to their positive sense of academic efficacy and achievement (Xu and Chen, 2011); however, the effect of these goals on their social status remains unclear. On the other hand, peer group norms may exert a stronger influence on Chinese adolescents, because in the collectivist context, Chinese children place a higher value on interpersonal harmony, cooperation, and interdependence (Forbes et al., 2011). They may pay more attention to the attitudes and behaviors of class peers and be more willing to conform to peer pressure in order to avoid interpersonal rejection.

Chinese culture is profoundly influenced by Confucianism, which attaches great importance to education (Xu, 2011). Thus, a basic principle of Chinese parenting is that children should be encouraged to study hard. Children in China are more willing to meet their parents' academic expectations than their Western counterparts (Chen and Lan, 1998), and, to some extent, hard work is accepted as a family obligation. Therefore, Chinese adolescents and adults share similar attitudes toward learning, and confrontations between Chinese adults and adolescents are not as strong as those in Western cultures. Chinese children value high academic achievement and believe that good grades are beneficial in improving their popularity (Li et al., 2012). However, in Western cultures, early adolescents consider hard work as something valued by adults rather than young persons, and they are less keen than Chinese students to learn in order to gain the social approval of their peers (Chen and Lan, 1998).

Moreover, in many Western countries, classes are flexible, while Chinese middle schools have fixed classes that are larger in size (Li et al., 2012). These distinctive cultural and educational features make class norms more likely to have a greater impact on adolescents' social lives in China, relative to the West. If a Chinese adolescent is embedded in a class with a high academic classroom norm, the combination of the peer culture and the larger sociocultural context—which both value education—might have significant influences on adolescents' development.

The aim of this study was to explore the association between adolescents' academic achievement, achievement goals and perceived popularity in the context of Chinese culture and to examine the moderating effect of classroom academic norms and gender.

In the current study, students in Grade 7 (in the Chinese education system, the first year of middle school is Grade 7) were selected as participants because they were in the new schools and facing challenges in both social status and academic achievement. After collecting data at the end of two semesters, the study assumed that: (1) after controlling for prior popularity, academic achievement would positively predict perceived popularity; (2) the three achievement goals would have different effects on perceived popularity; (3) gender would moderate the relationship between academic achievement or achievement goals and perceived popularity; and (4) classroom academic norm salience would enhance the positive effect of academic achievement on perceived popularity and moderate the effects of achievement goals on perceived popularity. It was

hoped that the current study would not only fill the gaps in research on the relationship between academic development and social status, but also reveal the special influence and significance of Chinese culture in this field and show a different relationship pattern from those found in previous Western studies.

### MATERIALS AND METHODS

### **Participants and Procedure**

The study chose three regions (one urban, one suburban, and one rural) in one large city in central mainland China. Then, using the stratified sampling method, seven schools (two in the urban area, two in the suburban region, and three in the rural village) were selected according to the school scale, region characteristics (urban, suburban, and rural), and school quality level (excellent, average, and poor). A total of 2,601 students in grade 7 from 47 classrooms were assessed at the end of the first and second semesters. The questionnaires were anonymous, and all questionnaires only had ID numbers. Except students and researchers, no one was allowed to have the access to responses. Perceived popularity and other variables were collected at the second semester. Perceived popularity at the first semester was also measured as prior popularity. The average class size was 56.25 (ranging from 45 to 66). After excluding students with missing values, a final sample was 2,558 students in grade 7 (1,337 boys, 1,221 girls; mean age = 12.97 years, SD = 0.62). We obtained institutional approval and students' written informed consent. All parents or legal caregivers also provided written informed consent for the present study.

### Measures

Self-report questionnaires, peer nomination forms, and achievement tests were used to examine the educational and psychological development of students and the relationship between this development and school and individual factors.

### Perceived Popularity (Individual Level)

Perceived popularity was measured through peer nomination forms (Rose and Swenson, 2009). Participants were provided with the names of all students in the class and were asked to nominate up to five classmates who were considered popular ("These are the most popular kids in my class"). Self-nominations were allowed but not included in the analysis. Subsequently, all nominations for "popular" were computed for each student. This score was divided by the number of nominators in the class in order to adjust for differences in class sizes.

### Achievement Goal Orientations (Individual Level)

Achievement goal orientations were measured through a Chinese revised version of the Patterns of Adaptive Learning Survey (PALS) questionnaire (Midgley et al., 2000). Five items assessed mastery goals (e.g., It's important to me that I thoroughly understand my class work.), five items assessed performance-approach goals (e.g., One of my goals is to show others that

class work is easy for me.) and four items assessed performance-avoidance goals (e.g., It's important to me that I don't look stupid in class). All ratings were made on 5-point scales ("1" not important at all, "3" moderately important, "5" very important). The alpha coefficients of the three dimensions ranged from 0.76 to 0.93.

### **Academic Achievement (Individual Level)**

Academic achievement scores in Chinese, math, English, history, biology, geography, and civics were obtained for all participants from school records. These scores were based on final examinations (which were the same in all sample schools). As the alpha coefficient of the scores in seven subjects was 0.925, we summed the scores to form a single index of academic achievement.

### Classroom Academic Norm Salience (Classroom Level)

Norm salience scores, representing the correlation of a particular behavior and peer-nominated popularity, were calculated separately for each class (Henry et al., 2000; Dijkstra and Gest, 2015). Academic norm salience for each class was calculated as the correlation of academic achievements and perceived popularity.

### DATA ANALYSIS METHODS

We first presented the descriptive statistics and correlations, and then conducted hierarchical linear modeling (HLM) analyses using HLM 4.0. (Bryk et al., 1996). HLM is a multilevel random coefficient regression-based technique that permits simultaneous analyses of within-class and between-class sources of variance (Bryk and Raudenbush, 1992). This study was designed to examine both effects. Perceived popularity was the outcome variable; the Level 1 or individual-level predictors were gender, prior popularity, academic achievement, and achievement goals; the Level 2 or classroom-level predictor was classroom academic norm salience.

Because perceived popularity was measured by a limited number of nominations, that was most of students nominate five classmates, the averages of perceived popularity in the different classrooms were very similar. It did not make sense to explore the difference of perceived popularity in different classrooms (Chen et al., 2005). Therefore, this study did not conduct the intercept model and computed the ICC of perceived popularity. We conducted four random slope models that treated the regression slopes of Level 1 predictors as random variables at Level 2, in order to examine whether the impact of predictors varied in the different classrooms and/or was moderated by classroom factors.

Model 0 was a basis model controlling for prior popularity in order to explore the effect of other predictors on perceived popularity more precisely. The intercept and slope of the controller were fixed at Level 2. Model 1 examined the effect of academic achievement and achievement goals on perceived popularity. Gender, academic achievement, mastery goals, performance-approach goals, and performance-avoidance goals were entered into the regression equation at Level 1. The

**TABLE 1** | The difference tests of variables at level 1 for boys and girls.

Variables	Boys		Giı	1s	t	df
	Mean	Std.	Mean	Std.		
Academic achievement	460.876	115.621	501.268	95.145	9.596***	2556
Perceived     popularity	0.055	0.102	0.085	0.145	6.319***	2556
3. Prior popularity	0.047	0.090	0.072	0.132	5.688***	2556
4. Mastery goals	3.948	0.928	4.031	0.869	2.338*	2556
5. Performance- approach goals	2.537	0.861	2.207	0.771	-10.168***	2556
6. Performance- avoidance goals	2.623	0.870	2.388	0.823	-6.980***	2556

\*p< 0.05; \*\*\*p < 0.001.

slopes of predictors were set to be random at Level 2. Because prior popularity was controlled, Model 1 explored the impact of predictors on change in perceived popularity between the first and second semesters. Model 2 examined the interaction of gender and other predictors at Level 1. On the basis of Model 1, the following interactions were entered: academic achievement  $\times$ gender; mastery goals × gender; performance-approach goals × gender; and performance-avoidance goals × gender. The slopes of interactions were also set to be random at Level 2. Model 3 examined cross-level interactions—that is, whether academic norm salience moderated the impact of predictors at Level 1. For any slope of predictors and interactions that was significantly random, academic norm salience was entered into the slope equation at Level 2. Following the methods of an existing study (Dijkstra and Gest, 2015), all variables were converted into zscores before they were input into the models in order to facilitate greater insight into the cross-level interactions; Level 1 predictors were centered by the group mean before they were input into the models. When interactions were significant, further simple slope tests were conducted (Preacher et al., 2006).

#### **RESULTS**

Results are presented in three parts. First, descriptive statistics were reported for key study variables. Second, multilevel regression analysis was used to explore individual- and classroom-level predictors of perceived popularity. Finally, we explored the impact of interactions with simple slope tests.

### **Descriptive Statistics**

Mean and standard deviation of variables for boys and girls before being converted into z-scores are listed in **Table 1**. Independent *t*-tests showed that girls behaved better than boys in achievement, perceived popularity, and mastery goals. Boys pursued more performance-approach and performance-avoidance goals than girls.

TABLE 2 | Correlation coefficients of variables at level 1 and 2.

	1	2	3	4	5	6	7
Academic achievement	1.000						
2. Perceived popularity	0.294***	1.000					
3. Prior popularity	0.305***	0.852**	1.000				
4. Mastery goals	0.270***	0.063**	0.059**	1.000			
5. Performance-approach goals	-0.148***	-0.030 -	-0.042*	0.187***	1.000		
6. Performance-avoidance goals	-0.105*** -	-0.070** -	-0.058**	0.060**	0.533***	1.000	
7. Classroom academic norm salience	0.123	0.301*	0.343*	0.116 -	-0.417**	-0.362*	1.000

 $^*p < 0.05$ ;  $^{**}p < 0.01$ ;  $^{***}p < 0.001$ ; the correlations of class academic norms salience with other variables are all at the class level.

The correlation coefficients between variables were shown in **Table 2**. Almost all the predictors were correlated with perceived popularity significantly. In order to examine the complex impacts of predictors, multilevel regression analysis was conducted and the results are reported in the following text.

### **Multilevel Regression Analyses**

Model 0 revealed that 72.4% of the variance in perceived popularity was explained by prior popularity. This was a strong effect, meaning that perceived popularity was stable throughout the school year.

In Model 1, the proportion of variance explained by academic achievement and achievement goals was 3.2% when prior popularity was controlled; this represented the incremental predictability of perceived popularity.

Model 2 examined the interactions of gender with other predictors at Level 1. The total predictability of interactions at Level 1 was 4.5%. Model 2 showed significant between-class variations in the predictive slopes of performance-avoidance goals, academic achievement, mastery goals  $\times$  gender, and academic achievement  $\times$  gender. Thus, academic norm salience was entered into these slope questions at Level 2 in Model 3.

All the regression coefficients of predictors, interactions at Level 1 and cross-level interactions were reported in Model 3 as the complete model (see **Table 3**). Academic achievement positively predicted perceived popularity ( $\gamma = 0.0555$ , p < 0.05), and perceived popularity was positively predicted by performance-approach goals ( $\gamma = 0.0350$ , p < 0.01) and negatively predicted by performance-avoidance goals ( $\gamma = -0.0610$ , p < 0.001).

The interaction of academic achievement and gender was significant ( $\gamma=-0.0354,\ p<0.05$ ). Cross-level interactions such as academic norm salience × performance-avoidance goals and academic norm salience × mastery goals × gender were significant ( $\gamma=-0.0259,\ p<0.01;\ \gamma=0.0290,\ p<0.001$ ). Other predictors and interactions were not significant.

### **Simple Slope Tests**

In the framework of multilevel analysis, further simple slope tests were carried out for the three significant interactions. As illustrated in **Figure 1**, academic achievement showed a significant positive prediction for perceived popularity in girls (b = 0.093, t = 3.126, p < 0.01), but not boys (b = 0.026, t = 0.818, p > 0.05).

Academic norm salience showed a significant interaction with performance-avoidance goals. Performance-avoidance goals negatively predicted perceived popularity in classes with high academic norm salience scores (b=-0.073, t=-3.454, p<0.001), but this prediction was not significant in classes with low academic norm salience scores (b=-0.014, t=-1.057, p>0.05) (see **Figure 2**). Classroom academic norm salience accounted for 9.6% of the between-class variability in the predictive relationship between performance-avoidance goals and perceived popularity.

Furthermore, classroom academic norm salience explained 4.3% of the between-class variability in the predictive relationship between mastery goals  $\times$  gender and perceived popularity. The results indicated that mastery goals positively predicted perceived popularity for girls ( $b=-0.049,\ t=2.788,\ p<0.01$ ) and negatively predicted perceived popularity for boys ( $b=-0.044,\ t=-2.610,\ p<0.01$ ) in classes with low academic norm salience; and the interaction between gender and mastery goals was not significant in classes with low academic norm salience scores (girls:  $b=-0.010,\ t=-0.473,\ p>0.05$ ; boys:  $b=0.011,\ t=0.512,\ p>0.05$ ) (see **Figure 3**).

#### DISCUSSION

The overall goal of this study was to investigate the associations between academic achievement and achievement goals with perceived popularity in adolescents in a Chinese classroom context. According to the results, the perceived popularity of boys and girls, respectively, was differently influenced by academic achievement and achievement goals; such influences also varied in relation to different classroom academic norms. This study may have been the first to examine the relationship between achievement goals and perceived popularity from the perspective of class academic norms. The findings revealed a moderating effect of classroom academic norms in the context of collective cultures, especially those that are influenced by both collectivism and Confucianism, such as Chinese culture. Chinese Confucianism and collectivism, which reflected the combined effects of proximal and distal culture and highlighted the necessity for follow-up studies in a variety of sociocultural contexts.

### Academic Achievement and Perceived Popularity of Early Adolescent Girls

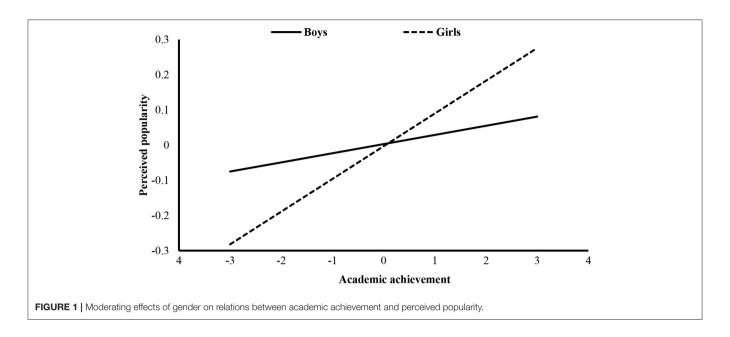
A large number of Western studies have drawn the conclusion that, as children approach early adolescence, the relationship between academic achievement and perceived popularity decreases—or even reverses (Juvonen and Cadigan, 2002; Meijs et al., 2010; Dijkstra and Gest, 2015). However, a comparative

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TABLE 3 | Random effect regression of perceived population on predictors and their interactions at Level 1, cross-level interactions.

	Model 0		Model 1		Mo	del 2	Model 3	
	Fixed effect γ(SE)	Random effect U(χ²)	Fixed effect γ(SE)	Random effect U(χ²)	Fixed effect γ(SE)	Random effect U(χ²)	Fixed effect γ(SE)	Random effect $U(\chi^2)$
Intercept	-0.0000 (0.010)	-	-0.0035 (0.010)	-	-0.009 (0.010)	-	-0.0012 (0.010)	-
Prior popularity	0.8520*** (0.016)	-	0.8371*** (0.017)	-	0.8296*** (0.016)	-	0.8296*** (0.017)	-
Mastery goals			-0.001 (0.01)	0.0007 (49.644)	0.0025 (0.010)	0.0003 (42.317)	0.0013 (0.010)	0.0003 (42.379)
Performance-approach goals			0.0290* (0.012)	0.0004 (44.748)	0.0347** (0.013)	0.0015 (58.442)	0.0350** (0.013)	0.0015 (58.419)
Performance-avoidance goals			-0.0327* (0.013)	0.0019* (65.759)	-0.0344* (0.013)	0.0020* (68.543)	-0.0610*** (0.017)	0.0018* (65.142)
Academic achievement			0.0446*** (0.013)	0.0014 (61.585)	0.0560*** (0.013)	0.0022* (67.024)	0.0555* (0.021)	0.0023* (67.033)
Gender			0.0001 (0.012)	0.0021* (69.328)	0.0018 (0.012)	0.0021 (69.328)	0.0005 (0.011)	0.002 (55.32)
Mastery goals × gender					-0.0260 (0.014)	0.0037* (61.581)	0.0037 (0.017)	0.0035(58.299)
Performance-approach goals × gender					-0.0014 (0.013)	0.0025 (59.981)	-0.0024 (0.013)	0.0026 (59.909)
Performance-avoidance goals × gender					0.0127 (0.010)	0.005 (40.956)	0.0126 (0.010)	0.0005 (40.962)
Academic achievement × gender					-0.0449** (0.014)	0.0046** (67.476)	-0.0354* (0.02)	0.0049* (68.053)
Academic norms Salience × performance-avoidance goals							-0.0259** (0.009)	
Academic norm salience × academic achievement							-0.0003 (0.013)	
Academic norm salience × mastery goals × gender							0.0290*** (0.008)	
Academic norm salience × academic achievement × gender							0.0129 (0.012)	
Within class		0.276		0.267		0.255		0.255

 $<sup>\</sup>gamma$ , the estimations of fixed effect; U, the variance components of random effect. \*p < 0.05; \*\*p < 0.01.



study of Chinese and American children in middle childhood found that Chinese children felt that good academic achievement was important for perceived popularity, and Chinese girls felt this more than boys; while the American girls and boys showed no difference (Li et al., 2012). However, does the stronger positive correlation between academic achievement and perceived popularity in Chinese children last to early adolescence? In this study, academic achievement significantly predicted the perceived popularity of Chinese girls (but not boys) in early adolescence, without the moderation of classroom academic norms. This finding may suggest cross-cultural similarities, as well as differences. First, similar to the trend in Western cultures, the positive effect of academic achievement on perceived popularity in the Chinese context gradually weakened from middle childhood to early adolescence. However, this speculation merits further investigation. Second, similar to Western teenagers, Chinese adolescent boys (compared with girls) tend not to emulate "feminine" behaviors of learning (Czopp et al., 1998; Lasane et al., 1999) in order to prove themselves in their peer group (Zook and Russotti, 2012). A cross-cultural difference was manifested in the relationship of "better learning, better status," which was unique to the Chinese early adolescent girls. This may be attributed to the fact that the Chinese girls were more academically successful than the boys, and traditional Chinese culture advocates that girls act in a pro-social, easygoing, academically and morally excellent manner (Chen et al., 2005). Therefore, even in early adolescence, the girls' academic achievements could still influence their perceived popularity.

### The Effect of Achievement Goals on Perceived Popularity

This study discovered the different effects of two performance goals on early adolescents' perceived popularity. First, performance-approach goals played a positive role in perceived

popularity, which was consistent with the results of a study conducted in Singapore, which showed performance-approach goals to be positively correlated with peer relationships (Liem et al., 2008). These findings may have emerged because performance-approach goals are more acceptable in Chinese culture, and thus Chinese people do not pay an interpersonal cost for choosing them. Moreover, since adolescents with performance goals carefully considered their behaviors with regard to their implications for social status (Levy et al., 2004), such goals were conducive to promoting their social status. The positive effect of performance-approach goals on social status may reflect the fact that, within the Confucian tradition of valuing education, the pursuit of academic success—as a cultural gene—plays a crucial role that extends beyond the academic field, exerting a spillover effect. "Academic excellence" may be an important identity tag and status symbol for Chinese adolescents. Regardless of actual academic achievements, even "pretending" to do well (via performance-approach goals) in school can be conducive to creating an image of oneself as a "good student" among peers and thereby increasing one's social status. However, whether the effect of performance-approach goals on perceived popularity is long-lasting and whether these are good or bad for adolescents' future development remain questions for further study.

Second, performance-avoidance goals were negatively correlated with perceived popularity. This finding was consistent with those of previous studies, which have found performance-avoidance goals to be associated with peer relationships, friendship quality, and a defensive avoidance strategy (Levy et al., 2004; Levy-Tossman et al., 2007; Liem et al., 2008). The present study showed that performance-avoidance goals could disrupt interpersonal relationships and reduce the visibility of individuals in a peer group, thus adversely affecting their social status. Moreover, the study discovered that the extent to which performance-avoidance goals decreased perceived popularity

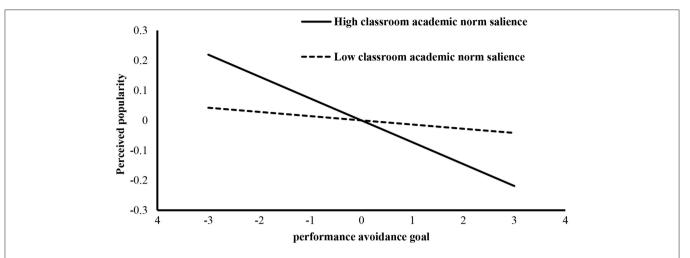
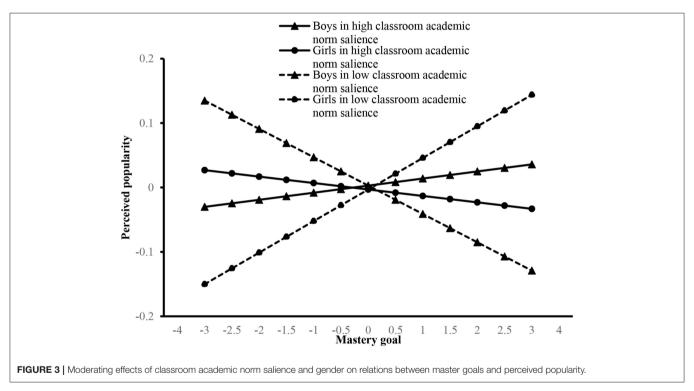


FIGURE 2 | Moderating effects of classroom academic norm salience on relations between performance-avoidance goals and perceived popularity. The high or low academic norm saliences in this, Figure 3 refer to classes that had one standard deviation above or below their mean.



depended on classroom academic norms. With greater classroom academic norm salience, the effect of performance-avoidance goals on perceived popularity became more negative. This might have occurred because students with such goals were concerned with others' evaluations of them, but they tried to escape peer evaluation by way of defensive avoidance (Levy et al., 2004). Regardless of the students' actual academic achievements, the classes with high academic norm salience—relative to those that showed less appreciation of learning—shared a group identity with low tolerance of negative learning attitudes and behaviors. Because avoidance behaviors ran contrary to the classroom norms, they were probably perceived by peers as

demonstrating weakness and incompetence, and thus resulted in lower social status.

## Complex Effects of Mastery Goals, Gender, and Classroom Academic Norm Salience on Perceived Popularity

Previous studies have confirmed that mastery goals are directly correlated with positive peer relationships (Liem et al., 2008) and friendship quality (Levy-Tossman et al., 2007). However, students with mastery goals do not consider peer interactions from the perspective of increasing their social status (Levy et al.,

2004). Self-affirmation theory suggests that when people feel that their self-value is being threatened in a particular field, they seek self-worth in other areas (Steele, 1988). Considering that students who hold mastery goals are self-focused, they gain high self-worth from learning and have no need to turn to other fields; thus, this study assumed that mastery goals would have no effect on academic achievement. However, the results of the study showed that, despite the insignificant main effect of mastery goals on perceived popularity, there were complex interactions between mastery goals and the impact of gender and classroom academic norm salience on perceived popularity. With low classroom academic norm salience, girls' mastery goals positively predicted perceived popularity, while boys' mastery goals negatively predicted perceived popularity. When academic norm salience was high, the interaction of gender and mastery goals with perceived popularity was no longer significant. This finding shows that, although boys with mastery goals may have suffered social costs, according to the current study, this negative impact weakened in classes with high academic norm salience; and for girls, the positive effect of mastery goals on perceived popularity became moderate as classroom academic norm salience increased. Therefore, high levels of classroom academic norms may play a role in narrowing gender differences in the effect of mastery goals on perceived popularity. In classes that appreciate learning, neither boys nor girls with mastery goals experience additional effects on their perceived popularity. Developing classroom academic norms that appreciate learning may be an effective method of cultivating positive learning motivation and reducing the risk of exclusion or bullying by peers, especially for boys.

In addition, since previous studies have found that high academic norms enhance the correlation of academic achievement with peer acceptance (Chen et al., 2003a; Dijkstra and Gest, 2015) and social dominance (Jonkmann et al., 2009), this study assumed that classroom academic norms would enhance the relationship between academic achievement and perceived popularity. This assumption was not confirmed. The reason for this may be that this study accounted for the effects of academic achievement and achievement goals on perceived popularity and tried to better understand the moderating role of classroom academic norms by comparing the above two effects. Academic achievement is influenced by many factors (e.g., previous academic achievement, individual intelligence) and is not easily changed by students' subjective intentions. In contrast, achievement goals seem to be more controllable. When classroom norms exert significant influence on students, it is much easier for them to adjust their achievement goals than to adjust their academic achievement to conform to classroom norms. Therefore, compared with academic achievement, the relationship between achievement goals and perceived popularity may be more easily moderated by classroom academic norms.

### STRENGTHS, LIMITATIONS, AND IMPLICATIONS

The current study tried to shed light on achievement predictors on perceived popularity in early adolescence in the collective cultural context. It also aimed to reveal the significance of academic achievement and performance-approach goals on perceived popularity among Chinese adolescents, as well as the differentiated effects of classroom academic norm salience on the effects of mastery goals and performance-avoidance goals on the perceived popularity of girls and boys, respectively.

The current study has two strengths. First, it examined the relationships between academic motivations and perceived popularity while previous research mainly focused on academic achievement and perceived popularity. Second, the results of this study revealed the unique role of academic-related factors on students' social status in collective cultures.

Several limitations of this study should be noted. First, although this study achieved some findings that contrast with the results of previous Western studies, it did not directly compare Chinese and Western samples. Thus, the findings must be re-examined by a two-sample design for intercultural comparison between China and Western countries. Second, this study only allowed for a limited number of nominations during data collection, and this may have hindered subjects from writing down every person they wanted to nominate due to the large class size (which is typical in China). An unlimited number of nominations might be preferable in future studies of Chinese samples.

The findings of the present study have some implications. They may help us better understand the important roles of two crucial factors—internal individual motivations and external peer groups—in early adolescents' competition for social status. These unique effects of academic achievement, achievement goals, and classroom norms on social status in the collectivist context of China reveal the importance and necessity of multicultural research. Furthermore, the findings suggest it is critical to conduct practical implications for developing the school environment and classroom atmosphere in ways that will be conducive to adolescents' academic development, positive peer status, and harmonious interaction between adolescents' academics as well as their interpersonal relationships.

In conclusion, the present study indicated that girls' academic achievement and performance-approach goals of both genders positively predicted students' perceived popularity. Classroom academic norm salience strengthened the negative role of performance-avoidance goals on perceived popularity and seemed to weaken gender differences of the influence of mastery goals on perceived popularity.

### **ETHICS STATEMENT**

This study was carried out in accordance with the recommendations of Ethics review form studies at the faculty of psychology, BNU with written informed consent from all subjects. All subjects gave written informed consent in accordance with the Declaration of Helsinki. All parents or legal caregivers also provided written informed consents for the present study. The protocol was approved by the Scientific Review Committee, Faculty of Psychology, Beijing Normal University.

### **AUTHOR CONTRIBUTIONS**

FL designed the study, supervised the quality in the process of researching and provided financial support. PR gathered data. YZ analyzed data and wrote the manuscript. XL interpreted data and revised the manuscript. HL analyzed data and revised the manuscript.

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### **FUNDING**

The study was supported by the National Science Foundation for Young Scientists of China (Grant No. 61807005), the China Scholarship Council (CSC), and the Ministry of Education of Humanities and Social Science project (19YJA190011).

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**Conflict of Interest Statement:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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