MAR Neurology, Neurosurgery & Psychology (2025) 9:6

Research Article

Developing a Causal Model of Academic Aspirations Based on Social Interest with the Mediating Role of Academic Motivation in High School Students of Zanjan.

Yousef Ghasemi[1*], Maedeh Kimiyaghalam[2]

1. Ph.D in Educational Psychology, Department of Psychology and Counselling, Farhangian University, P.O. Box 14665-889, Tehran, Iran.
2. M.A. in General Psychology, Allameh Tabataba'i University, Tehran, Iran.

[*]**Correspondence to:** Yousef Ghasemi, Ph.D in Educational Psychology, Department of Psychology and Counselling, Farhangian University, P.O. Box 14665-889, Tehran, Iran.

Received: 14 October 2025

Published: 01 November 2025

Abstract

The present study aimed to develop a causal model of academic aspirations based on social interest with the mediating role of academic motivation in high school students of Zanjan. The research method was cross-sectional and correlational. The statistical population included all second-grade high school students in Zanjan during the 2021–2022 academic year, from which a sample of 530 students was selected using the cluster random sampling method. The study utilized the Academic Aspirations Scale (Hosseini et al., 2014), the Social Interest Scale (Sahami, 2011), and the Academic Motivation Scale (Harter, 1981). Data were analyzed using SPSS-V23 and PLS software, and structural equation modeling (SEM) was employed to test the research hypotheses. The findings indicated that the proposed model had a good fit. The results demonstrated that the direct effect of social interest on academic motivation and academic aspirations in high school students was significant ($p < 0.05$). Additionally, the direct effect of academic motivation on academic aspirations was significant ($p < 0.05$). These findings highlight the importance of considering these variables in designing preventive interventions and more effective treatments, providing valuable insights for researchers and practitioners.

Keywords: *Academic Aspirations, Social Interest, Academic Motivation.*

Introduction

In today's educational system, schools serve as the primary source of knowledge acquisition, talent development, and insight enhancement, particularly for students. This has garnered the attention of policymakers, mental health specialists, and counselors (Loon, Lupo, & Nicola, 2022). Given this, students, as the fundamental assets of schools, are of significant concern to school administrators, with greater emphasis placed on those at higher educational levels, necessitating increased attention and investment (Lee, Kim, Han, Lee, & Chia, 2019). The issue of academic success or failure is one of the primary concerns of any educational system. Various factors contribute to students' academic achievement, including environmental factors such as family, teachers, and peers, as well as individual factors like learner perception, level of engagement, and sense of control (Yoo, Reho, & Lee, 2022). Academic performance is a key developmental task for adolescents worldwide. Among the critical factors influencing education are issues related to students' emotional and social well-being, including their academic aspirations (Won & Shin, 2019). Aspirations define an individual's

personality structure, as one's life is essentially a collection of their goals and dreams (Chiu & Su, 2022). Adolescents act according to their aspirations, and the level of their academic aspirations plays a crucial role in their academic success. Academic aspirations do not form in isolation but rather emerge within the individual's social and cognitive development process (Widelland, Tominin, Tapola, & Korhonen, 2020). They represent a student's conscious effort to become aware of their skills, inclinations, values, opportunities, limitations, choices, and achievements (Gutman & Schoon, 2018). Additionally, academic aspirations involve recognizing one's personal and academic goals and devising a plan to achieve them (Cabral, Schroeder, Armstrong, Ayadi, Gurel, et al., 2018). These aspirations reflect an evolving trajectory that encompasses needs, incentives, and personal ambitions related to career and activities that society perceives as leading to financial and social rewards (Ying, 2022). According to Kornell, Shukla, and Kunold (2016), academic aspirations manifest as structured patterns of talents, capacities, motivations, attitudes, and perceived values that guide and stabilize an individual's progress through years of experience and feedback from the real world. In this context, social interest in adolescents has driven notable developments and impactful research across various behavioral science domains, particularly studies on students' academic challenges (Bai, 2019). Adler considered social interest as a key indicator of psychological well-being in adolescents and adults, defining it as an innate tendency to cooperate with others in achieving personal and social goals (Fang & Webster, 2018). Social interest manifests through behaviors such as helping others, sharing responsibilities, politeness, adaptability, cooperation, and compassion, as well as emotions like belongingness, empathy, trust in others, and optimism (Lukena, Vallejo, & Jääva, 2018). Conversely, a lack of social interest is reflected in egocentricity, excessive need for validation, isolation, and a strong desire for control (Khabaz, Alizadeh, Delavar, Soghra Ebrahimi, Rostami, & Behjati, 2015). Furthermore, numerous empirical studies over the past two decades have examined the positive impact of social interest on academic success in students (Goldsmith, Darity, & Vuim, 2018).

Students with academic motivation develop the drive necessary to complete academic tasks successfully, achieve their goals, and attain a level of competence that ultimately leads to learning and academic success (Khaleghkhah & Najafi, 2018). Academic motivation is categorized into extrinsic and intrinsic motivation. Extrinsic motivation involves striving for external rewards such as high grades and incentives; however, excessive reliance on this type of motivation can have negative consequences. In contrast, intrinsic motivation is driven by internal needs and a student's learned self-beliefs, playing a crucial role in learning and yielding numerous positive outcomes (Titrik, Setin, Kaymak, & Kasiksi, 2018). Similarly, McBrain and Savage (2021) found that students with higher academic motivation engage more actively in learning activities, complete more assignments, and ultimately achieve greater success.

Research on academic aspirations, as a key determinant of students' ability to overcome academic challenges and barriers, remains in its early stages. Moreover, the levels of social interest, academic motivation, and academic aspirations among students in Iranian schools remain relatively low. Therefore, identifying factors that enhance students' academic aspirations should be a primary focus of research. Given the importance of academic aspirations and their impact on performance—particularly in educational settings and students' future success—examining predictors and influential factors can provide insights into addressing students' motivational challenges in academic environments.

Based on the above considerations, this study aims to address the following research question:

Does social interest influence academic aspirations through the mediating role of academic motivation in high school students?

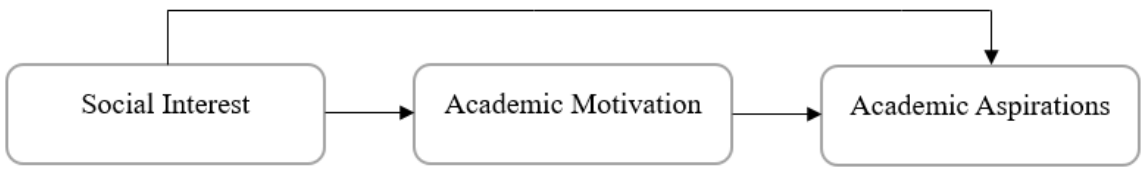

Figure 1. Conceptual Model of the Study

Method

The present study employed a descriptive-correlational research design based on structural equation modeling (SEM) for data collection and analysis. The statistical population included all male and female second-grade high school students in Zanjan during the 2021–2022 academic year. Regarding sample size in correlational research using SEM, various perspectives exist; however, researchers agree that SEM, like factor analysis, requires a large sample size (Tabachnick & Fidell, 2001). Boomsma (1983, as cited in Tabachnick & Fidell, 2001) suggested that a sample size of approximately 200 participants is sufficient for model fit. Moreover, based on the expected effect size, distribution of measured variables, and statistical power, a minimum of 10 participants per estimated parameter is deemed necessary, provided that the effect size is large and variables follow a normal distribution (Tabachnick & Fidell, 2001). Therefore, considering the number of estimated parameters in the model, the minimum required sample size was 350 students, but accounting for potential attrition, a final sample of 530 students was selected.

A multi-stage cluster random sampling method was applied. First, two districts (Districts 1 and 2) in Zanjan were randomly selected. Then, two schools were randomly chosen from each district. Finally, four classes

were randomly selected from each school, and the questionnaires were distributed among the students in those classes.

Due to the health conditions during the COVID-19 pandemic, the researcher utilized online student groups (created for virtual learning purposes) to distribute electronic questionnaires. Before distributing the questionnaires, the researcher explained the study's objectives to the students. Additionally, confidentiality of all student information was strictly maintained.

Research Instruments

1. Academic Aspirations Scale (Hosseini et al., 2014)

The Academic Aspirations Scale, developed by Hosseini et al. (2014), consists of 15 items measuring academic aspirations, categorized into three latent factors: Background factors (socioeconomic status, gender, age), Environmental factors (teachers, parental encouragement, school climate), Personal factors (attitudes toward school, peer influence, self-perception). This scale is rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Prior to testing the structural model, an exploratory factor analysis (EFA) was conducted to confirm the construct validity of the scale. The analysis of factor loadings for the latent variables revealed that background factors ranged from 0.20 to 0.77, personal factors ranged from 0.20 to 0.62, and environmental factors ranged from 0.46 to 0.62. All factor loadings were statistically significant at $p < 0.01$, confirming the strong construct validity of the measurement model. Furthermore, the reliability of the scale was assessed using Cronbach's alpha, demonstrating acceptable internal consistency across different dimensions. The reliability coefficients were 0.79 for background factors, 0.82 for personal factors, and 0.75 for environmental factors, while the overall academic aspirations scale exhibited a high reliability of 0.89. These findings indicate that the instrument provides consistent and reliable measurements of the examined constructs (Hosseini et al., 2014).

2. Social Interest Scale (Sahami, 2011)

The Social Interest Scale, developed by Sahami (2011), was designed based on various conceptual definitions and theories. The 27-item scale is rated on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) and consists of four dimensions: Concern for others' well-being (8 items), Empathy (6 items), Social interaction (6 items), Self-oriented well-being (7 items; reverse scored). Construct validity was assessed using EFA. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.89, and Bartlett's test of sphericity was significant ($\chi^2 = 4999$, $p < 0.001$), confirming the appropriateness of factor analysis. The four identified factors explained 41.58% of the total variance. Reliability, assessed via Cronbach's alpha, was above 0.70 for all subscales, confirming acceptable internal consistency.

3. Academic Motivation Scale (Harter, 1981)

The Academic Motivation Scale, developed by Harter (1981), is one of the few motivation measures applicable to elementary and secondary school students. The original scale consists of 33 items designed to measure students' motivation in educational settings. Harter's scale was revised in 1981 and adapted into a 5-point Likert scale (1 = Never, 5 = Almost Always). Unlike its original format (which used forced-choice dichotomous responses between intrinsic and extrinsic motivation), the revised version measures these motivations separately. Reliability of the subscales, as reported by Harter (1981) using Richardson's Kuder-Richardson Formula 20, ranged from 0.54 to 0.84. Test-retest reliability over a 9-month period ranged from 0.48 to 0.63, and over 5 months, from 0.58 to 0.76. The validity and reliability of this scale were also confirmed in Bahrani & Latifian's (2009) study on Iranian high school students.

Data were analyzed using SPSS-V23 and PLS software. Structural equation modeling (SEM) was employed to test the research hypotheses and evaluate the proposed model.

Findings

Table 1 presents the minimum, maximum, mean, and standard deviation of the research variables.

Table 1. Descriptive Statistics of Research Variables

Variable	Min	Max	Mean	Standard Deviation
Academic Aspirations	18	75	59.577	9.289
Concern for Others' Well-being	8	40	28.419	6.859
Empathy	7	30	21.823	5.374
Social Interaction	11	30	23.555	4.808
Self-Oriented Well-being (Divergent)	7	35	16.526	5.532
Social Interest	50	135	90.323	15.097

The mean and standard deviation of academic aspirations indicate that students' academic aspirations are at a desirable level based on the scoring method of the measurement tool. Similarly, students' social interest is at a moderate to high level based on the scoring method.

Table 2. Spearman Correlation Matrix Among Research Variables

Variable	1	2	3
1. Social Interest	1		
2. Academic Motivation	0.32 **	1	

3. Academic Aspirations	0.36 **	0.19 **	1

Note: $p < 0.01$ (**) | $p < 0.05$ () | n = 530

The Spearman correlation coefficients in Table 2 indicate that there is a significant and positive relationship between social interest, academic motivation, and academic aspirations in students ($p < 0.01$). In the following section, the fitted model is presented in two forms: standardized coefficients and bootstrapping (T-values). Additionally, each research hypothesis is examined in detail. This structural model is illustrated in Figure 2.

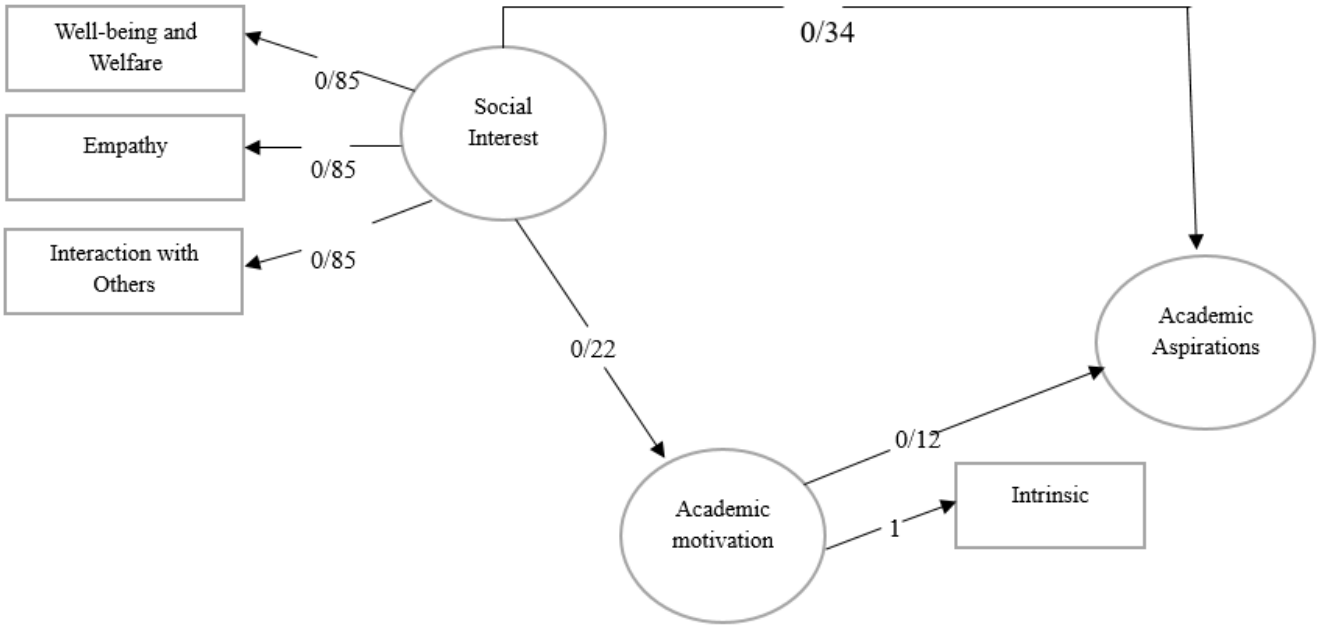

Figure 2. Fitted Model in the Standardized Coefficients State

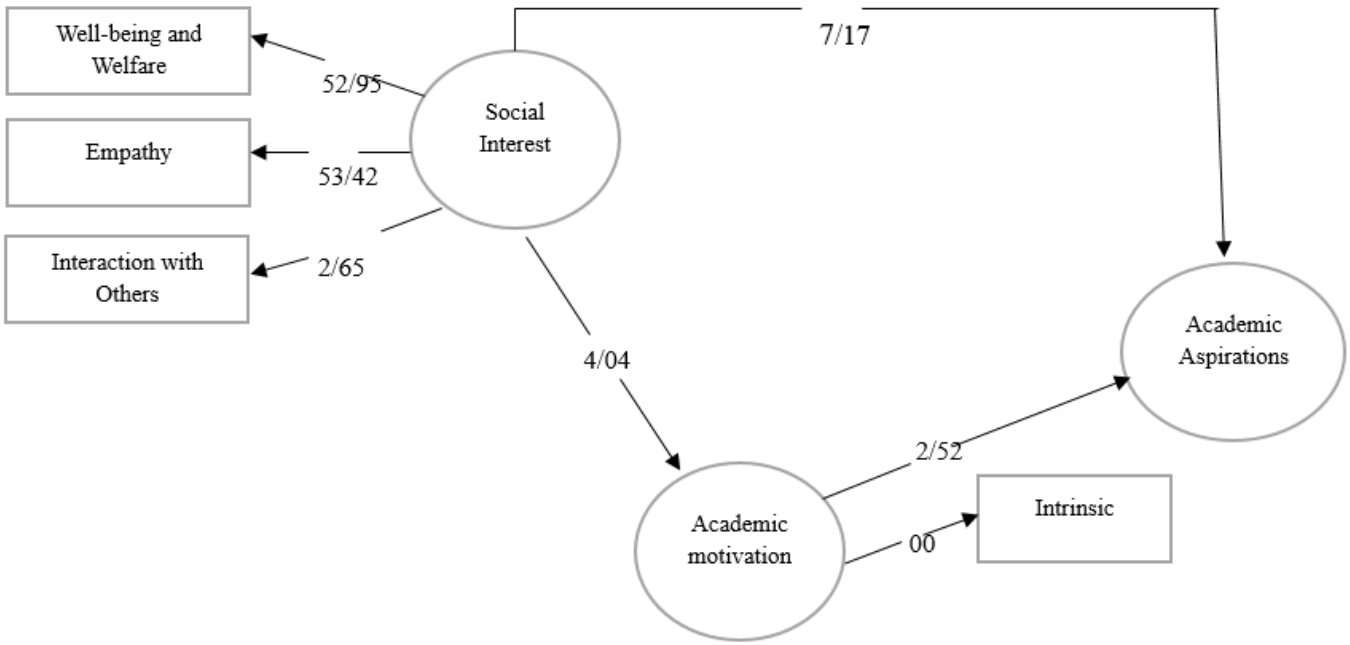

Figure 3. Fitted Model in the T-Values State

Table 3. Beta Coefficients and Bootstrapping (T-values) for Direct and Indirect Effects

Path	β	T	P
Direct Effects			
Academic Motivation → Academic Aspirations	0.123	2.52	0.012
Social Interest → Academic Aspirations	0.339	7.175	0.001
Social Interest → Academic Motivation	0.222	4.038	0.001
Indirect Effects			
Social Interest → Academic Motivation → Academic Aspirations	0.027	2.28	0.023

As shown in Table 3, seven direct paths and two indirect paths were statistically significant.

Table 4. Direct Effect of Social Interest on Academic Motivation in High School Students of Zanjan

Direct Effect	β	T	P
Social Interest → Academic Motivation	0.222	4.038	0.001

As presented in Table 4, the direct effect of social interest on academic motivation in high school students was statistically significant ($p < 0.05$). This finding suggests that social interest positively predicts the variance in academic motivation and academic aspirations. Therefore, the null hypothesis is rejected, and the research

hypothesis is confirmed.

Table 5. Direct Effect of Social Interest on Academic Aspirations in High School Students of Zanjan

Direct Effect	β	T	P
Social Interest → Academic Aspirations	0.339	7.175	0.001

As shown in Table 5, the direct effect of social interest on academic aspirations was statistically significant ($p < 0.05$). This indicates that social interest positively predicts academic aspirations in high school students. Therefore, the null hypothesis is rejected, and the research hypothesis is confirmed.

Table 6. Direct Effect of Academic Motivation on Academic Aspirations in High School Students of Zanjan

Direct Effect	β	T	P
Academic Motivation → Academic Aspirations	0.123	2.52	0.012

As presented in Table 6, the direct effect of academic motivation on academic aspirations was statistically significant ($p < 0.05$). This finding suggests that academic motivation positively predicts academic aspirations. Therefore, the null hypothesis is rejected, and the research hypothesis is confirmed.

Table 7. Indirect Effect of Social Interest on Academic Aspirations Through Academic Motivation in High School Students of Zanjan

Indirect Effect	β	T	P
Social Interest → Academic Motivation → Academic Aspirations	0.027	2.28	0.023

As shown in Table 7, the indirect effect of social interest on academic aspirations through academic motivation was statistically significant ($p < 0.05$). This suggests that academic motivation plays a mediating role in the relationship between social interest and academic aspirations. Therefore, the null hypothesis is rejected, and the research hypothesis is confirmed.

Discussion and Conclusion

The present study aimed to develop a causal model of academic aspirations based on social interest, with the mediating role of academic motivation among high school students in Zanjan. The findings demonstrated that social interest positively influences academic motivation, suggesting that students with higher levels of social interest are more likely to be academically motivated. These results align with prior research conducted by

Fathi (2021), Moeini Kia & Bakhshandeh Pilehroud (2021), and Barabari & Arvin (2021), supporting the notion that social engagement plays a crucial role in shaping students' motivation for learning. From a theoretical perspective, the study supports Adler's (1999) social interest theory, which emphasizes the role of social belonging and cooperation in personal development. According to Adler, social interest is an innate drive that facilitates personal growth and societal contribution. Individuals with higher social interest tend to exhibit stronger academic motivation, as their sense of community and cooperation enhances their willingness to engage in learning processes (Ansbacher, 1986). The findings of this study reinforce the notion that early social interactions and group participation play a fundamental role in shaping students' academic aspirations. Additionally, the results confirm that academic motivation serves as a crucial determinant of academic aspirations, indicating that students with higher motivation levels are more likely to establish and pursue ambitious academic goals. This finding is in line with self-determination theory (Deci & Ryan, 2000), which suggests that individuals with intrinsic motivation are more likely to persist in academic endeavors, demonstrating greater resilience and higher levels of engagement in their learning environment. The results of this study have significant educational implications for policymakers, school administrators, and educators. To foster academic aspirations, interventions should focus on enhancing students' social interest and academic motivation through various strategies: 1. Promoting Collaborative Learning Environments :Encouraging group activities and peer interactions can strengthen students' sense of belonging, thereby increasing their motivation to achieve academic success. Creating a supportive classroom environment that emphasizes teamwork and cooperation can enhance students' engagement and willingness to strive for higher academic achievements. 2. Developing Student Mentorship and Counseling Programs: Providing structured support from teachers and counselors can help students set realistic academic goals and sustain motivation. Mentorship programs that pair students with successful peers or professionals can provide them with role models, guidance, and motivation to pursue their academic aspirations. 3. Incorporating Motivational Strategies in the Curriculum :Implementing instructional methods that emphasize self-efficacy, autonomy, and goal-setting can enhance students' intrinsic motivation. Designing coursework that allows for student choice and personal interest exploration can improve engagement and encourage long-term educational goals. 4. Engaging Parents and Communities :Parental support and community engagement play a crucial role in reinforcing students' academic aspirations and overall educational success. Schools should actively involve parents in students' academic progress through regular communication, workshops, and involvement in school activities to create a collaborative educational environment. While the study provides valuable insights, several limitations must be acknowledged: Self-Reported Data Bias :This study relied on self-reported measures, which may introduce response bias and limit the generalizability of the findings. Future research should incorporate objective

academic performance data or teacher evaluations to validate students' responses. Cross-Sectional Design : The cross-sectional nature of the study restricts the ability to establish causal relationships between the examined variables. Future research should employ longitudinal methods to assess changes in academic aspirations over time and better understand how social interest and motivation evolve. Sample Representation: Since this study was conducted in Zanjan, the findings may not be fully generalizable to broader student populations. Future studies should consider larger and more diverse samples to improve the external validity of the results. Exploring Additional Mediators :While social interest and academic motivation were found to influence academic aspirations, other psychological and environmental factors may also play a role. Future research should explore additional mediators such as self-efficacy, school climate, teacher support, and peer influence to provide a more comprehensive understanding of students' academic development.

This study highlights the significant role of social interest and academic motivation in shaping students' academic aspirations. The findings emphasize the importance of fostering social connectedness and intrinsic motivation to enhance students' long-term educational success.

By recognizing the interconnectedness of social, motivational, and academic variables, this study contributes to the broader field of educational psychology and offers practical insights for improving students' learning experiences and academic trajectories. Future research should continue to explore additional psychological and environmental factors that contribute to academic aspirations, ultimately guiding the development of effective educational interventions.

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