

The Mediating Role of Emotional Intelligence in the Causal Relationship Between Spiritual Intelligence and School Attachment and Academic Achievement Among Lower Secondary School Students

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ABSTRACT

The present study was conducted with the aim of examining the mediating role of emotional intelligence in the causal relationship between spiritual intelligence and school attachment and academic achievement among lower secondary school students. This research is applied in terms of purpose and quantitative, descriptive-survey in terms of method. The participants consisted of 384 lower secondary school students from the city of Tabriz, who were selected using cluster random sampling. The research instruments included the Spiritual Intelligence Questionnaire by Wolman (2011), the Emotional Intelligence Questionnaire by Schering (1998), the Academic Achievement Questionnaire by Pham and Taylor (1994), and the School Attachment Questionnaire by Motton et al. (1993). Data analysis was conducted using structural equation modeling and the Sobel test in SmartPLS version 3.1.1 at a significance level of 0.05. The results indicated that the research model demonstrated a good fit. Spiritual intelligence had a significant effect on school attachment ($t = 5.134, p = 0.001$), academic achievement ($t = 5.289, p = 0.001$), and emotional intelligence ($t = 25.850, p = 0.001$). Emotional intelligence also had a significant effect on school attachment ($t = 6.697, p = 0.001$) and academic achievement ($t = 9.179, p = 0.001$). Furthermore, emotional intelligence played a mediating role in the effect of spiritual intelligence on school attachment ($z = 8.674, p = 0.001$) and academic achievement ($z = 9.715, p = 0.001$). Therefore, students with higher levels of emotional intelligence and spiritual intelligence exhibit stronger attachment to school and achieve higher levels of academic performance.

Keywords: Academic Achievement, School Attachment, Spiritual Intelligence, Emotional Intelligence.

1. Introduction

Academic achievement and students' affective connection to school are among the most central indicators of educational functioning during adolescence, particularly in the lower secondary years when developmental, cognitive, emotional, and social transitions intensify simultaneously. In this period, students are expected not only to meet increasingly complex academic demands, but also to sustain a sense of belonging, security, and commitment within the school environment. School attachment, as a multidimensional construct reflecting students' emotional bond with school, their sense of membership, and the quality of their perceived relationships in the educational setting, has been repeatedly associated with persistence, psychological adjustment, and reduced risk of disengagement. At the same time, academic achievement remains one of the most visible outcomes of educational systems and is shaped by a broad constellation of personal, relational, and contextual factors. Contemporary educational research increasingly argues that students' success cannot be explained exclusively through cognitive ability or instructional exposure; rather, emotional, spiritual, motivational, and relational capacities must also be considered in any comprehensive account of student development (Aslan & Kosir, 2021; Chastnyk et al., 2024; Košir et al., 2023; Krishnan et al., 2022; Page et al., 2021; Sassirekha & Vijayalakshmi, 2022).

Within this broader framework, school attachment has emerged as a particularly important protective factor because it links students' internal psychological experiences with the social ecology of schooling. Students who feel connected to school are more likely to participate actively in classroom life, trust teachers, comply with school norms, persevere when facing academic difficulties, and show lower vulnerability to dropout or alienation. Research has shown that school attachment is shaped by interpersonal relationships, school climate, inclusive practices, and family engagement, indicating that it is both an individual and systemic phenomenon. Teacher-student relationship quality, perceived fairness, emotionally supportive interactions, and constructive home-school relations all contribute to stronger school bonding. Conversely, emotional disconnection, social marginalization, and poor relational experiences can weaken students' commitment to school and undermine academic functioning. Studies on school bonding and connectedness have highlighted that adolescents' emotional experience of school should be

treated as a substantive educational outcome in its own right, not merely as a by-product of performance (Civitillo et al., 2021; Garcia-Rodriguez et al., 2023; Nemati et al., 2023; Page et al., 2021; Rose et al., 2023; Sheykhohreslami et al., 2020).

Parallel to this, academic achievement has been conceptualized in contemporary literature as the product of intertwined cognitive, emotional, motivational, and behavioral processes. Although curriculum quality, teaching methods, parental support, and technological learning environments remain important determinants, students' internal capacities for self-regulation, emotional management, meaning-making, and adaptive engagement increasingly occupy the center of explanatory models. Evidence from interactive instruction, instructional design, and educational analytics suggests that students' progress is optimized when academic demands are matched by supportive internal competencies and emotionally meaningful learning experiences. Studies addressing academic progress in both conventional and technology-mediated learning contexts likewise indicate that student success depends not only on exposure to content, but also on resilient self-management, purposeful engagement, and adaptive coping processes (Chastnyk et al., 2024; Eftekhari et al., 2024; Krishnan et al., 2022; Sassirekha & Vijayalakshmi, 2022; Yosefi nejad & Keramati nojehdeh sadat, 2025).

Among the non-cognitive constructs receiving growing scholarly attention, emotional intelligence has been identified as one of the most influential variables in explaining educational adjustment and performance. Emotional intelligence refers broadly to the ability to perceive, understand, regulate, and use emotions effectively in oneself and in interactions with others. In school settings, emotionally intelligent students are generally better able to manage stress, maintain motivation, interpret interpersonal cues, resolve conflict, and preserve concentration under pressure. Such capacities are directly relevant to both academic achievement and school attachment, because the classroom is not only a cognitive setting but also a social-emotional environment. A large body of work has linked emotional intelligence to better academic outcomes, improved interpersonal functioning, empathy, leadership, life satisfaction, and psychological well-being. Emotional intelligence has also been associated with better communication, stronger teacher and peer relationships, and more adaptive coping in educational contexts, all of which may increase students' sense of belonging to school

(Alizadeh et al., 2025; Donisi et al., 2022; Fathi-Azar et al., 2014; Gallego et al., 2021; Gómez-Leal et al., 2022; Herut et al., 2024; Kamboj & Garg, 2021; Nooreddini et al., 2019; Yaghoobi et al., 2008; Zhou et al., 2024).

The empirical literature on emotional intelligence and achievement provides substantial support for this relationship, though the mechanisms involved are still being refined. Meta-analytic and primary studies have shown that emotionally intelligent students tend to display stronger self-efficacy, more effective emotional control, and greater persistence in the face of difficulty. Emotional intelligence may enhance academic achievement by improving attention, reducing anxiety, supporting social adaptation in school, and facilitating constructive response patterns during evaluation and challenge. Some researchers have gone further by identifying mediating pathways through procrastination, self-regulation, and self-efficacy, suggesting that emotional intelligence operates both directly and indirectly on academic outcomes. This line of evidence is especially important in adolescence, when increased emotional volatility and social sensitivity can interfere with learning unless students possess adequate affective regulation capacities (Alizadeh et al., 2025; Fathi-Azar et al., 2014; Herut et al., 2024; Ramezani Khamsi et al., 2017; Zhou et al., 2024).

At the same time, another construct that has gained visibility in educational and psychological research is spiritual intelligence. Spiritual intelligence is typically understood as a higher-order human capacity related to meaning-making, existential reflection, transcendence, value orientation, and the integration of inner life with behavior. Unlike purely doctrinal or religious observance, spiritual intelligence is often conceptualized as a psychological resource that enables individuals to frame experiences within broader systems of meaning, maintain purpose in adversity, and regulate conduct through value-based awareness. In educational settings, spiritual intelligence has been discussed as a potential resource for strengthening engagement, resilience, ethical responsibility, and constructive identity development. Theoretical reviews and empirical studies suggest that spiritual intelligence may enrich students' academic lives by increasing intentionality, internal coherence, moral sensitivity, and reflective depth, thereby strengthening their participation in educational processes (Abidin & Sirojuddin, 2024; Ma & Wang, 2022; Momtaz & Roozbahani, 2014; Murdiani & Wulandari, 2025; Seifi et al., 2025).

The relevance of spiritual intelligence to education becomes even more apparent when considering that learning is not simply an information-processing activity, but also a process of self-formation. Students who can derive meaning from schooling, connect goals to values, and interpret challenges within a purposeful framework may be better positioned to sustain effort and remain attached to school. Prior scholarship has proposed that spiritual intelligence can foster academic engagement, academic conscience, resilience, and constructive character traits, all of which are educationally consequential. Research has also linked spiritual intelligence with communication competence, performance, and character formation, indicating that its benefits may extend beyond inward reflection to observable social and behavioral outcomes. In adolescence, when questions of identity, belonging, and meaning become especially salient, spiritual intelligence may serve as a stabilizing and motivational resource (Ma & Wang, 2022; Rahmawaty et al., 2021; Rosadi, 2023; Rosadi et al., 2024; Seifi et al., 2025).

Several recent studies have explicitly examined the relationship between spiritual intelligence and student outcomes, including achievement, engagement, and forms of attachment. A systematic review and meta-analysis reported that both emotional intelligence and spiritual intelligence are positively associated with student achievement, reinforcing the view that these variables should be integrated into educational models rather than treated as peripheral factors. Other studies have emphasized that spiritual intelligence can be cultivated through educational practices and familial involvement, suggesting that it is developmentally responsive and pedagogically relevant rather than fixed. Research among students has further indicated associations between spiritual intelligence, religiosity, attachment, and moral dimensions, pointing to its potential role in shaping the quality of students' educational and relational experiences (Abidin & Sirojuddin, 2024; Baratpour & Naderi, 2023; Murdiani & Wulandari, 2025; Poorrezaghali & Naveh, 2022; Zhou et al., 2024).

Despite these promising findings, the link between spiritual intelligence and school attachment remains comparatively underexplored relative to its association with achievement or engagement. Yet conceptually, there are compelling reasons to expect a meaningful connection. School attachment depends in part on students' capacity to experience school as valuable, coherent, and relationally meaningful. Spiritual intelligence may support such experiences by helping students interpret school not merely

as an external obligation, but as a personally significant setting for growth, connection, and purpose. Adolescents with stronger spiritual intelligence may be more likely to interpret relationships empathically, respond constructively to frustration, and maintain commitment to school through value-based self-regulation. Existing evidence on school bonding indicates that psychological resources promoting hope, resilience, and positive relational orientation can strengthen attachment; spiritual intelligence may operate in a similar manner, even if it has not yet been examined sufficiently in this exact configuration (Aslan & Kosir, 2021; Baratpour & Naderi, 2023; Košir et al., 2023; Nemati et al., 2023; Poorrezaghali & Naveh, 2022).

A critical issue, however, is that the effect of spiritual intelligence on educational outcomes may not be entirely direct. One of the most plausible explanatory pathways is emotional intelligence. From a theoretical perspective, spiritual intelligence may enhance the capacity to manage emotions by fostering self-awareness, inner reflection, acceptance, empathy, and meaning-centered coping. Individuals who can interpret life events in a broader existential framework may be less emotionally dysregulated, more thoughtful in interpersonal conduct, and more capable of transforming emotional experiences into adaptive responses. This suggests that spiritual intelligence may contribute to emotional intelligence, which in turn may improve school attachment and academic achievement. Some studies outside the immediate student attachment literature already support such interrelationships, showing that emotional and spiritual intelligence jointly predict performance and character-related outcomes, and that emotional processes mediate broader value-based or spiritually grounded capacities in organizational and educational contexts (Rahmawaty et al., 2021; Rosadi, 2023; Rosadi et al., 2024; Zhou et al., 2024).

The mediating role of emotional intelligence is especially reasonable in the context of adolescence and lower secondary education. Early adolescence is marked by intensifying emotional experiences, social comparison, identity exploration, and heightened sensitivity to peer and teacher feedback. In such a developmental period, even students with strong values or reflective capacities may fail to convert those resources into school adjustment unless they can also regulate affect, sustain motivation, and navigate social relationships effectively. Emotional intelligence may therefore function as the proximal mechanism through which more foundational meaning-based capacities, such as spiritual intelligence, become translated into concrete

educational outcomes. The literature on emotional intelligence supports this possibility by demonstrating its central role in achievement, communication, empathy, social adaptation, and relational functioning, while school attachment research underscores the importance of emotional and relational competencies in sustaining connectedness to school (Civittillo et al., 2021; Donisi et al., 2022; Gallego et al., 2021; Garcia-Rodriguez et al., 2023; Herut et al., 2024).

The present topic is also important from a contextual and applied standpoint. Many educational systems are confronting not only academic underperformance, but also disengagement, reduced belonging, emotional strain, and weakened student connection to schooling. The post-pandemic period and the expansion of digital and social media environments have intensified concerns about student connectedness, moderation, distraction, and the fragility of school-based relationships. Studies on online inclusion and social attachment challenges suggest that adolescents' bonds with educational institutions can be disrupted when emotional and relational needs are insufficiently addressed. Investigating psychological resources that strengthen both achievement and attachment is therefore of high practical value for educators, school counselors, and policymakers (Page et al., 2021; Sheykhohleslami et al., 2020; Susanto & Dwijayanto, 2022).

Another important justification for this study is methodological and empirical. Although prior research has separately examined emotional intelligence, spiritual intelligence, academic achievement, and school attachment, fewer studies have tested these variables together in an integrated causal model, particularly among lower secondary school students. Much of the existing literature focuses on university populations, adult employees, teachers, or broad theoretical associations rather than school-aged adolescents in a developmental period where attachment to school is especially decisive. Some studies emphasize academic performance, others school bonding, and others the independent contributions of emotional or spiritual intelligence, but a more comprehensive model that simultaneously explains how spiritual intelligence may affect both school attachment and academic achievement through emotional intelligence remains insufficiently developed. This gap is particularly notable in local educational contexts where standardized measures are available and where psychological determinants of educational functioning warrant closer examination (Alizadeh et al., 2025; Eftekhari et al., 2024; Momtaz &

Roozbahani, 2014; Nooreddini et al., 2019; Seifi et al., 2025; Yaghoobi et al., 2008).

Furthermore, the selected constructs are conceptually complementary. School attachment reflects students' relational-emotional investment in the educational environment. Academic achievement reflects realized academic functioning. Spiritual intelligence captures meaning-oriented and value-based inner capacities. Emotional intelligence captures affective awareness and regulation in self and others. Together, these constructs provide a multidimensional model of student development that moves beyond fragmented explanations. By testing the mediating role of emotional intelligence, the study can clarify whether spiritual intelligence affects educational outcomes primarily through emotional competencies or whether it exerts additional direct effects. Such clarification has implications for intervention design: if mediation is supported, then strengthening students' spiritual meaning systems alone may be insufficient unless accompanied by explicit emotional skills development; if direct effects also remain significant, then value-based and existential dimensions deserve independent attention in school psychology and educational programming (Košir et al., 2023; Ma & Wang, 2022; Nemati et al., 2023; Ramezani Khamsi et al., 2017; Zhou et al., 2024).

In this regard, the study also contributes to the broader movement in educational psychology toward holistic models of student flourishing. Research on emotional intelligence in leadership, teacher well-being, communication training, and adolescent life satisfaction has repeatedly shown that emotional competencies influence both personal adjustment and institutional functioning. Similarly, work on spiritual intelligence has linked inner values and reflective awareness to empowerment, performance, conscience, and engagement. These streams of evidence suggest that educational effectiveness is strengthened when schools address the emotional, relational, and existential dimensions of development in an integrated way rather than isolating achievement from the psychosocial conditions that make achievement sustainable (Donisi et al., 2022; Gallego et al., 2021; Gómez-Leal et al., 2022; Kamboj & Garg, 2021; Rahmawaty et al., 2021; Rosadi, 2023).

Accordingly, examining these relationships among lower secondary school students in Tabriz is not only theoretically justified but also practically necessary, because it may help identify modifiable psychological capacities that can be supported through counseling, curriculum enrichment, parent involvement, and school climate interventions to

strengthen both students' academic success and their affective bond with school. Therefore, the aim of the present study was to investigate the mediating role of emotional intelligence in the causal relationship between spiritual intelligence and school attachment and academic achievement among lower secondary school students.

2. Methods and Materials

2.1. Study Design and Participants

The present study is applied in terms of purpose, quantitative in terms of data type, and descriptive-survey in terms of data collection method, utilizing standardized questionnaires. The statistical population of the study consisted of lower secondary school students in the city of Tabriz. According to information obtained from the General Office of Education of East Azerbaijan Province, the number of lower secondary school students in Tabriz is extensive, with an approximate population of 76,000 students. Based on the population size and using the Krejcie and Morgan table, a sample size of 384 participants was determined and selected through cluster random sampling. In the sampling process, municipal districts 2, 4, and 6 of Tabriz were initially selected as clusters, and participants were then randomly selected from among lower secondary school students within these districts and included in the study.

2.2. Measures

The data collection method in this study was descriptive-survey. Demographic data were collected using a researcher-made questionnaire consisting of three items related to gender, grade level, and parents' educational attainment. Data related to the main research variables were collected using the following four questionnaires:

The Spiritual Intelligence Questionnaire by Wolman (2011) was used to assess spiritual intelligence. This questionnaire consists of 28 items and seven components, including theology, attention and awareness, extrasensory perception, community, intellectual capacity, spiritual trauma, and spirituality. Responses were recorded using a five-point Likert scale ranging from "never" to "most of the time." The validity and reliability of this instrument were confirmed in the study by Momtaz and Roozbehani (2014), with a reported Cronbach's alpha coefficient of 0.81.

The Emotional Intelligence Questionnaire by Schering (1998) was used to measure emotional intelligence. This instrument includes five subscales: self-motivation, self-

awareness, self-regulation, social awareness (empathy), and social skills, comprising a total of 33 items. All items were rated on a five-point Likert scale. The validity and reliability of this questionnaire were confirmed by Yaghoubi, Farhadi, Ghanbari, and Kakabaraei (2008), with a reported Cronbach’s alpha of 0.85.

The Academic Achievement Questionnaire by Pham and Taylor (1994) was used to collect data on academic achievement. This questionnaire contains 48 items across five dimensions: self-efficacy, emotional influences, planning, lack of outcome control, and motivation. Responses were provided on a five-point Likert scale ranging from “not at all” to “very much.” The validity and reliability of this instrument were confirmed by Eftekhari, Rezaeifard, and Izadi (2024), with a Cronbach’s alpha coefficient of 0.88.

The School Attachment Questionnaire by Motton et al. (1993) consists of three components and 20 items. The components include general relationships, belonging, and specific attachments. Responses were recorded on a five-point Likert scale ranging from “strongly disagree” to “strongly agree.” The validity and reliability of this instrument were confirmed by Nemati, Badri Gargari, Tarfeh, and Mahmoudi (2023), with a reported Cronbach’s alpha of 0.86.

Although all four questionnaires used in this study were standardized and their validity and reliability had been

confirmed in previous research, in the present study, additional measures were taken to ensure instrument validity and reliability. Face and content validity were evaluated by 10 experts, and reliability was assessed using Cronbach’s alpha. The results indicated high reliability, with Cronbach’s alpha coefficients of 0.85 for spiritual intelligence, 0.89 for emotional intelligence, 0.81 for academic achievement, and 0.91 for school attachment.

2.3. Data analysis

In the data analysis phase, descriptive statistical methods and frequency distribution tables were used to describe participants’ general characteristics. Inferential statistical methods, including the Kolmogorov–Smirnov test, were employed to examine the normality of data distribution. Structural equation modeling and the Sobel test were used to analyze relationships among the main research variables. All analyses were conducted using SPSS version 23 and SmartPLS version 3.1.1 at a significance level of 0.05.

3. Findings and Results

At the beginning of the findings section, the descriptive results of the demographic characteristics of the students participating in the present study are presented in Table 1.

Table 1

Descriptive Results of Demographic Characteristics of Participants

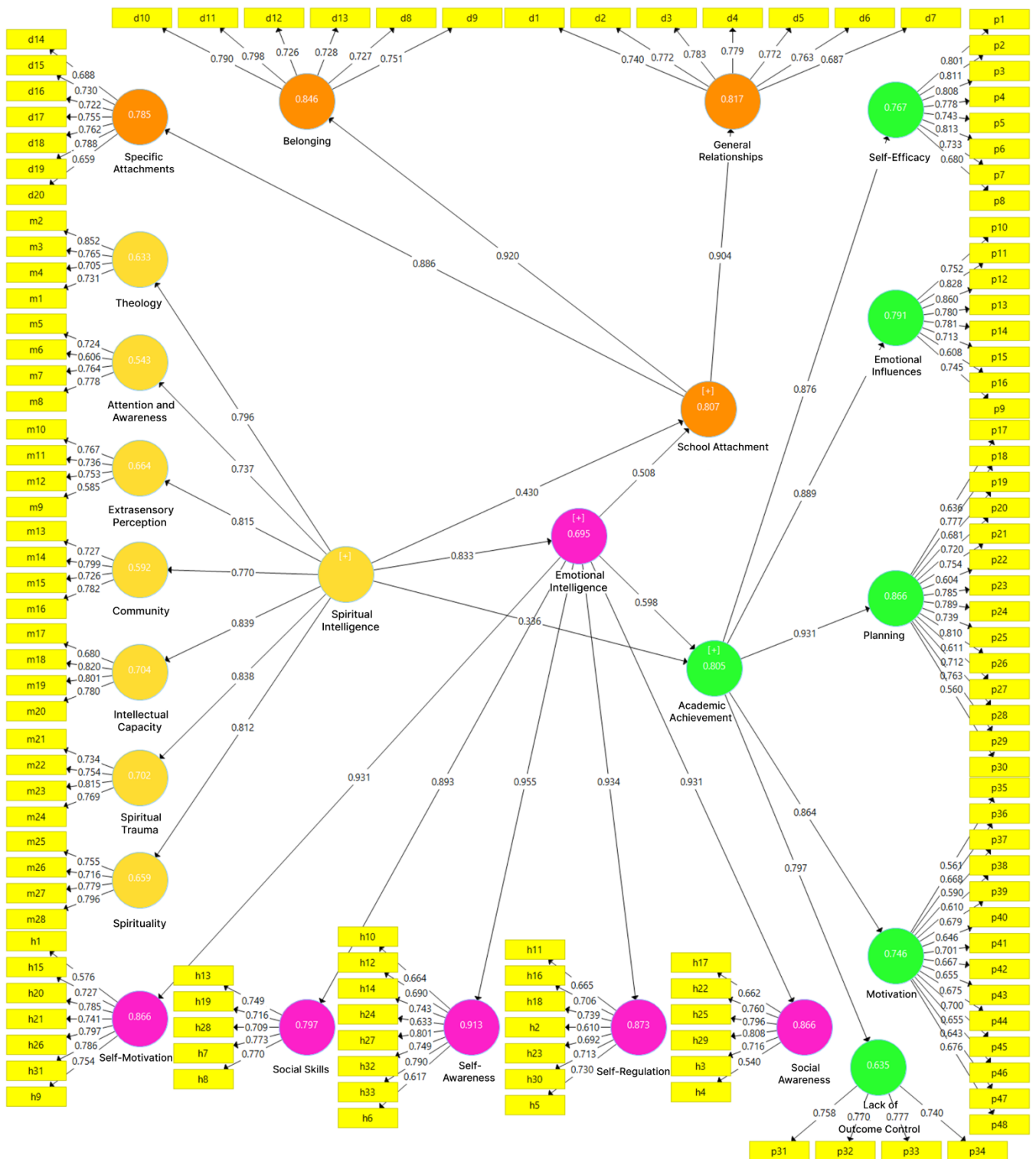
Variables	Category	Frequency	Percentage
Gender	Female	197	51.3
	Male	187	48.7
Grade Level	Seventh	115	29.9
	Eighth	126	32.8
	Ninth	143	37.3
Parents’ Education Level	Diploma or below	105	27.3
	University education	279	72.7

In this section, structural equation modeling (SEM) was employed to analyze the data. Initially, model fit was evaluated using first-order reflective measurement model indices and second-order construct indices. For first-order reflective measurement models, composite reliability, Cronbach’s alpha, factor loadings, convergent validity

(AVE), and the Fornell–Larcker criterion (discriminant validity) were assessed. For second-order constructs, the variance inflation factor (VIF) was used. Figure 1 presents the initial results of factor loadings for all questionnaire items.

Figure 1

Model with Factor Loadings



Based on Figure 1, the initial examination of factor loadings indicated that all items had loadings greater than 0.40. The results for Cronbach’s alpha, composite reliability,

convergent validity (AVE), and variance inflation factor (VIF) are presented in Table 2.

Table 2

Results of Cronbach’s Alpha, Composite Reliability, Convergent Validity (AVE), and VIF

Variables	AVE	VIF	Composite Reliability	Cronbach’s Alpha
Spiritual Intelligence	0.614	1.153	0.934	0.893
Theology	0.587	1.264	0.896	0.857
Attention and Awareness	0.695	1.451	0.968	0.928
Extrasensory Perception	0.753	1.189	0.855	0.803
Community	0.641	1.534	0.851	0.817
Intellectual Capacity	0.639	1.455	0.941	0.906
Spiritual Trauma	0.631	1.671	0.853	0.819
Spirituality	0.685	1.157	0.864	0.807
Emotional Intelligence	0.714	1.644	0.914	0.849
Self-Motivation	0.819	1.585	0.925	0.886
Self-Awareness	0.633	1.415	0.964	0.913
Self-Regulation	0.597	1.654	0.887	0.841
Social Awareness	0.629	1.588	0.815	0.775
Social Skills	0.659	1.965	0.836	0.783
Academic Achievement	0.655	1.756	0.851	0.819
Self-Efficacy	0.844	1.688	0.874	0.822
Emotional Influences	0.716	1.457	0.815	0.776
Planning	0.735	1.153	0.896	0.843
Lack of Outcome Control	0.724	1.355	0.927	0.881
Motivation	0.638	1.274	0.935	0.896
School Attachment	0.649	1.658	0.871	0.842
General Relationships	0.619	1.448	0.807	0.779
Belonging	0.684	1.896	0.911	0.887
Specific Attachments	0.597	1.874	0.835	0.814

According to the results in Table 2, all variables exhibited Cronbach’s alpha and composite reliability values above 0.70, AVE values above 0.50, and VIF values below 5. Therefore, the measurement instruments demonstrated

adequate reliability, convergent validity, and acceptable levels of multicollinearity, and the research model showed a good fit. The results of the Fornell–Larcker matrix for assessing discriminant validity are presented in Table 3.

Table 3

Fornell–Larcker Matrix Results

Variable	Spiritual Intelligence	Emotional Intelligence	School Attachment	Academic Achievement
Spiritual Intelligence	0.924			
Emotional Intelligence	0.746	0.917		
School Attachment	0.557	0.594	0.837	
Academic Achievement	0.513	0.527	0.519	0.784

Based on Table 3, the square root of AVE for all first-order constructs is greater than their inter-construct correlations, indicating adequate discriminant validity and

appropriate model fit. The structural model with path coefficients and t-values is presented in Figure 2, and the corresponding results are summarized in Table 4.

Figure 2

Model with Path Coefficients and t-values

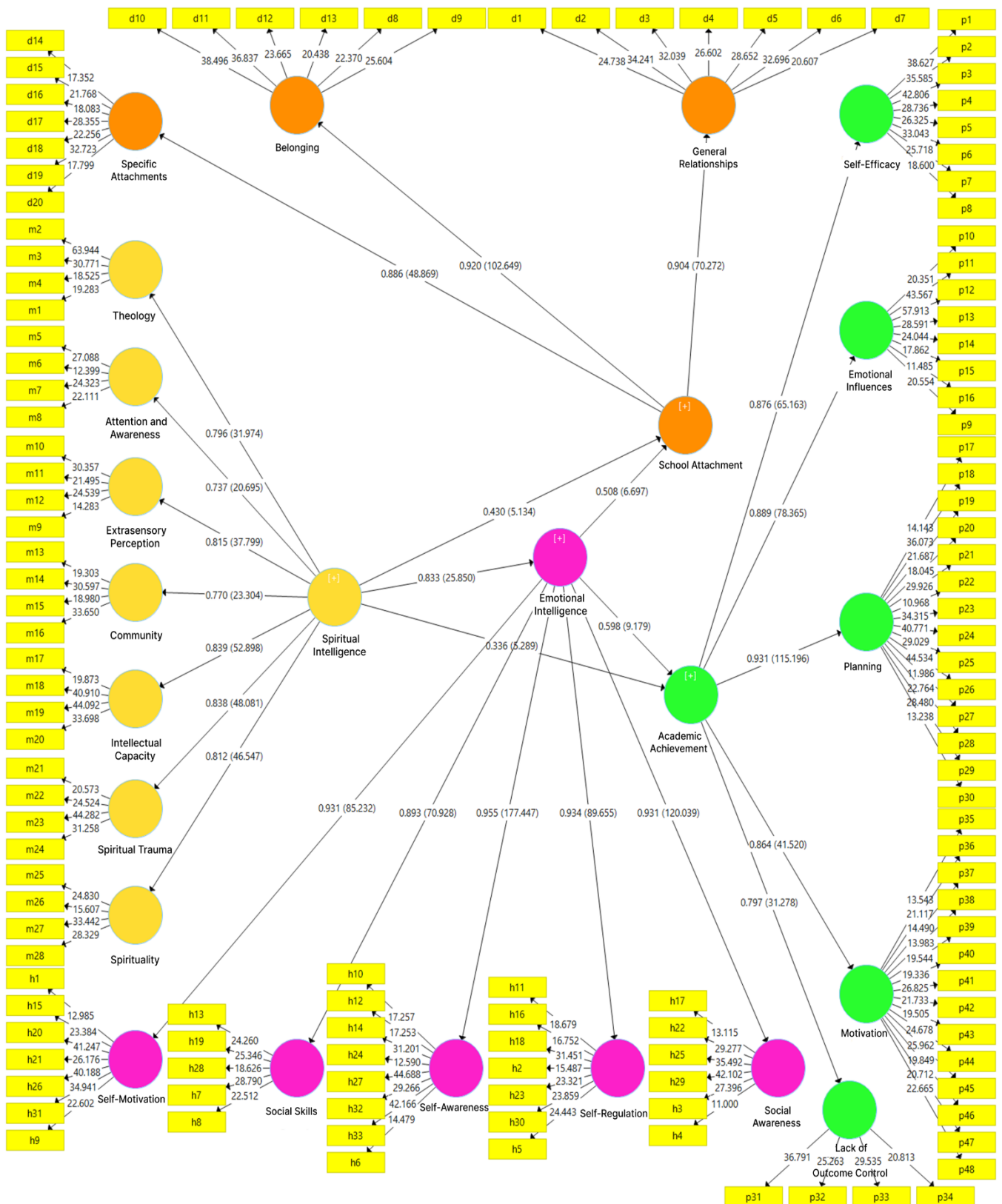


Table 4

Path Coefficients, t-values, and Significance Levels

Path	Path Coefficient	t-value	p-value	Result
Spiritual Intelligence ← Theology	0.796	31.974	0.001	Supported
Spiritual Intelligence ← Attention and Awareness	0.737	20.695	0.001	Supported
Spiritual Intelligence ← Extrasensory Perception	0.815	37.799	0.001	Supported
Spiritual Intelligence ← Community	0.770	23.304	0.001	Supported
Spiritual Intelligence ← Intellectual Capacity	0.839	52.898	0.001	Supported
Spiritual Intelligence ← Spiritual Trauma	0.838	48.081	0.001	Supported
Spiritual Intelligence ← Spirituality	0.812	46.547	0.001	Supported
Spiritual Intelligence → Emotional Intelligence	0.833	25.850	0.001	Supported
Spiritual Intelligence → School Attachment	0.430	5.134	0.001	Supported
Spiritual Intelligence → Academic Achievement	0.336	5.289	0.001	Supported
Emotional Intelligence ← Self-Motivation	0.931	85.232	0.001	Supported
Emotional Intelligence ← Social Skills	0.893	70.928	0.001	Supported
Emotional Intelligence ← Self-Awareness	0.955	177.447	0.001	Supported
Emotional Intelligence ← Self-Regulation	0.934	89.655	0.001	Supported
Emotional Intelligence ← Social Awareness	0.931	120.039	0.001	Supported
Emotional Intelligence → School Attachment	0.508	6.697	0.001	Supported
Emotional Intelligence → Academic Achievement	0.598	9.179	0.001	Supported
School Attachment ← General Relationships	0.904	70.272	0.001	Supported
School Attachment ← Belonging	0.920	102.649	0.001	Supported
School Attachment ← Specific Attachments	0.886	48.869	0.001	Supported
Academic Achievement ← Self-Efficacy	0.876	65.163	0.001	Supported
Academic Achievement ← Emotional Influences	0.889	78.365	0.001	Supported
Academic Achievement ← Planning	0.931	115.196	0.001	Supported
Academic Achievement ← Motivation	0.864	41.520	0.001	Supported
Academic Achievement ← Lack of Outcome Control	0.797	31.278	0.001	Supported

Based on Table 4 and Figures 2 and 3, all t-values exceeded 1.96 and all p-values were less than 0.05, indicating that the model is well-fitted and all hypothesized paths are supported. The results showed that spiritual intelligence had a significant effect on school attachment ($t = 5.134, p = 0.001$), academic achievement ($t = 5.289, p = 0.001$), and emotional intelligence ($t = 25.850, p = 0.001$) among lower secondary school students in Tabriz. Emotional intelligence also had a significant effect on school attachment ($t = 6.697, p = 0.001$) and academic achievement ($t = 9.179, p = 0.001$).

To examine the mediating role of emotional intelligence in the relationship between spiritual intelligence and both

school attachment and academic achievement, the Sobel test was used according to the following formula:

$$t = (a \times b) / \sqrt{[(b^2 \times Sa^2) + (a^2 \times Sb^2)]}$$

In this formula, a represents the path coefficient between the independent variable and the mediator, b represents the path coefficient between the mediator and the dependent variable, Sa is the standard error of the relationship between the independent variable and the mediator, and Sb is the standard error of the relationship between the mediator and the dependent variable. The results of the Sobel test are presented in Table 5.

Table 5

Sobel Test Results

Path	Sobel Statistic	Standard Error	p-value
Spiritual Intelligence → Emotional Intelligence → School Attachment	8.674	0.048	0.001
Spiritual Intelligence → Emotional Intelligence → Academic Achievement	9.715	0.051	0.001

The results in Table 5 indicate that emotional intelligence plays a significant mediating role in the effect of spiritual

intelligence on school attachment ($z = 8.674, p = 0.001$) and academic achievement ($z = 9.715, p = 0.001$) among lower secondary school students in Tabriz.

4. Discussion

The findings of the present study demonstrated that the proposed structural model exhibited an acceptable fit and that all hypothesized paths were statistically significant. Specifically, spiritual intelligence was found to have a significant direct effect on school attachment, academic achievement, and emotional intelligence among lower secondary school students. In addition, emotional intelligence had a significant effect on both school attachment and academic achievement. Most importantly, the results of the Sobel test confirmed that emotional intelligence played a mediating role in the relationship between spiritual intelligence and both school attachment and academic achievement. These findings collectively indicate that students with higher levels of spiritual intelligence tend to develop stronger emotional competencies, which in turn enhance their academic functioning and their emotional bonding with the school environment. The pattern of results supports a multidimensional understanding of student development in which cognitive, emotional, and existential capacities are interconnected rather than independent.

The significant direct effect of spiritual intelligence on academic achievement is consistent with theoretical and empirical perspectives emphasizing the role of meaning-making and value-oriented cognition in educational engagement. Spiritual intelligence enables individuals to interpret academic experiences within a broader framework of purpose and coherence, thereby increasing persistence, motivation, and resilience in the face of challenges. Previous research has suggested that students who possess higher levels of spiritual intelligence are more likely to demonstrate academic conscientiousness, engagement, and sustained effort, all of which contribute to improved academic outcomes (Ma & Wang, 2022; Seifi et al., 2025). Moreover, meta-analytic evidence has confirmed a positive association between spiritual intelligence and student achievement, indicating that this construct plays a nontrivial role in academic success across different contexts (Zhou et al., 2024). The present findings extend this body of research by providing empirical support within the context of lower secondary education and by situating spiritual intelligence within a broader causal model.

The observed relationship between spiritual intelligence and school attachment also provides important insights into the affective dimensions of schooling. Students who are capable of deriving meaning from their experiences and who possess a coherent system of values are more likely to perceive school as a meaningful and supportive environment. This perception can foster a stronger sense of belonging, commitment, and emotional investment in school activities. Prior studies have indicated that constructs related to spirituality, religiosity, and moral intelligence are associated with forms of attachment and relational bonding, suggesting that internal value systems contribute to how individuals relate to social institutions (Baratpour & Naderi, 2023; Poorrezagholi & Naveh, 2022). In line with these findings, the present study suggests that spiritual intelligence may serve as a psychological foundation that strengthens students' attachment to school by enhancing their capacity to form meaningful connections and interpret their educational experiences positively.

The results also revealed a strong and significant relationship between spiritual intelligence and emotional intelligence, indicating that students with higher spiritual intelligence tend to exhibit greater emotional awareness, regulation, and interpersonal sensitivity. This finding aligns with theoretical perspectives that conceptualize spiritual intelligence as a higher-order integrative capacity that encompasses emotional self-awareness and empathy. Empirical studies have shown that spiritual and emotional intelligences are closely interrelated and may jointly contribute to performance, communication, and personal development outcomes (Rahmawaty et al., 2021; Rosadi et al., 2024). Additionally, educational research has highlighted that environments emphasizing values, reflection, and inner development can enhance both spiritual and emotional competencies among students (Abidin & Sirojuddin, 2024; Murdiani & Wulandari, 2025). Therefore, the current findings support the notion that spiritual intelligence may act as an antecedent to emotional intelligence, reinforcing its importance in developmental and educational contexts.

The significant effect of emotional intelligence on academic achievement observed in this study is consistent with a substantial body of literature indicating that emotional competencies are critical for effective learning. Students who can regulate their emotions, manage stress, and maintain motivation are better equipped to engage with academic tasks and persist through difficulties. Previous studies, including meta-analyses, have demonstrated that

emotional intelligence is positively associated with academic performance across various educational levels (Fathi-Azar et al., 2014; Zhou et al., 2024). More recent empirical research has also confirmed that emotional intelligence predicts academic success by enhancing self-efficacy, reducing anxiety, and facilitating adaptive coping strategies (Alizadeh et al., 2025; Herut et al., 2024). Furthermore, studies examining mediating mechanisms have identified self-regulation and procrastination as pathways through which emotional intelligence influences academic outcomes (Ramezani Khamsi et al., 2017). The present findings corroborate these conclusions and underscore the central role of emotional intelligence in students' academic functioning.

Similarly, the positive effect of emotional intelligence on school attachment highlights the importance of emotional competencies in fostering students' sense of belonging and connection to school. Emotional intelligence facilitates effective interpersonal interactions, empathy, and communication, all of which are essential for building positive relationships with teachers and peers. Research on school attachment has consistently emphasized the role of relational and emotional factors, including teacher-student relationships and school climate, in shaping students' attachment to school (Civitillo et al., 2021; Garcia-Rodriguez et al., 2023). Additionally, studies have shown that emotional intelligence is associated with life satisfaction, peer attachment, and social adjustment, which are closely related to school bonding (Gallego et al., 2021). The present findings therefore reinforce the idea that emotional intelligence is a key determinant of students' emotional integration into the school environment.

One of the most important contributions of this study is the confirmation of the mediating role of emotional intelligence in the relationship between spiritual intelligence and both school attachment and academic achievement. This finding provides empirical support for the theoretical proposition that spiritual intelligence influences educational outcomes indirectly through emotional processes. In other words, while spiritual intelligence may provide a foundation of meaning and values, its effects on academic and relational outcomes are realized through the development of emotional competencies. This is consistent with research suggesting that emotional intelligence serves as a mechanism linking broader psychological capacities to performance and relational outcomes (Rahmawaty et al., 2021; Rosadi, 2023). The mediating effect observed in the present study also aligns with findings indicating that emotional intelligence

plays an intermediary role in various educational and psychological relationships, thereby functioning as a key process variable.

From a developmental perspective, the mediating role of emotional intelligence is particularly meaningful in the context of adolescence. During this stage, students experience heightened emotional sensitivity and social complexity, which can influence their academic engagement and attachment to school. Even when students possess strong internal values or a sense of purpose, their ability to translate these resources into adaptive behavior depends on their emotional regulation and interpersonal skills. The findings of this study suggest that emotional intelligence may serve as a bridge between internal meaning systems (spiritual intelligence) and external outcomes (academic achievement and school attachment). This interpretation is supported by research indicating that emotional competencies are essential for managing the challenges of adolescence and for maintaining positive educational trajectories (Donisi et al., 2022; Gómez-Leal et al., 2022).

5. Conclusion

The results of this study have implications for understanding the broader educational context. In recent years, concerns about student disengagement, reduced school connectedness, and emotional difficulties have become increasingly prominent. Research conducted during and after the COVID-19 pandemic has highlighted the importance of fostering school connectedness and emotional support, particularly for students with diverse learning needs (Page et al., 2021). Additionally, the growing influence of digital environments and social media has introduced new challenges to students' attachment to school and their capacity for sustained academic engagement (Susanto & Dwijayanto, 2022). The present findings suggest that enhancing students' spiritual and emotional intelligences may be a viable strategy for addressing these challenges by strengthening both their internal resources and their relational connections to school.

Furthermore, the findings contribute to the emerging literature on holistic education, which emphasizes the integration of cognitive, emotional, and spiritual dimensions of development. Educational approaches that focus solely on academic content may overlook the psychological and relational factors that underpin effective learning. In contrast, models that incorporate emotional and spiritual development recognize the importance of fostering well-

rounded individuals who are capable of meaningful engagement with both academic and social environments. Previous research has demonstrated that emotional intelligence is associated with leadership, well-being, and effective communication, while spiritual intelligence is linked to empowerment, character development, and purposeful engagement (Gómez-Leal et al., 2022; Kamboj & Garg, 2021; Momtaz & Roozbahani, 2014). The present study integrates these perspectives by demonstrating how these constructs interact to influence key educational outcomes.

Despite its contributions, the present study has several limitations that should be considered when interpreting the findings. First, the study employed a cross-sectional design, which limits the ability to draw causal inferences about the relationships among the variables. Although structural equation modeling provides a robust framework for examining complex relationships, longitudinal or experimental designs would be necessary to establish causality more definitively. Second, the use of self-report questionnaires may introduce response biases, such as social desirability or common method variance, which could affect the accuracy of the data. Third, the study was conducted within a specific cultural and geographical context (students in Tabriz), which may limit the generalizability of the findings to other populations or educational settings. Finally, although the model included key psychological variables, other potentially influential factors such as socioeconomic status, teacher characteristics, and school resources were not examined and could be considered in future research.

Future research should aim to address these limitations by employing longitudinal and experimental designs to examine the causal relationships among spiritual intelligence, emotional intelligence, school attachment, and academic achievement over time. Additionally, researchers could explore the role of contextual variables, such as family environment, school climate, and cultural factors, in moderating these relationships. It would also be valuable to investigate other potential mediators and moderators, such as self-efficacy, resilience, and motivation, to develop a more comprehensive understanding of the mechanisms underlying students' academic and relational outcomes. Comparative studies across different regions and educational systems could further enhance the generalizability of the findings. Finally, qualitative approaches could provide deeper insights into students' lived experiences of spirituality, emotion, and school attachment.

From a practical perspective, the findings of this study highlight the importance of integrating emotional and spiritual development into educational practices. Schools and educators should consider implementing programs and interventions aimed at enhancing students' emotional intelligence, such as training in emotion regulation, empathy, and communication skills. At the same time, educational approaches that promote reflection, meaning-making, and value-based learning may contribute to the development of spiritual intelligence. Teachers and school counselors can play a critical role in creating supportive and inclusive environments that foster students' sense of belonging and engagement. By addressing both the emotional and spiritual dimensions of student development, educational systems can promote not only academic success but also the overall well-being and resilience of students.

Authors' Contributions

Authors equally contributed to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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