

Article

Examining the Relationship between Emotional Intelligence, Achievement Motivation, and Self-Efficacy among Pre-Service Teachers in Türkiye

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Abstract: The main goal of this study was to examine the extent to which the demographic characteristics of pre-service teachers (gender, family management style, family educational status, size of the family) predict their emotional intelligence (EI) scores through achievement motivation (AMO) and Self-Efficacy (SE) scores. The study consisted of 326 pre-service teachers (270 females, 56 males) studying in various departments at faculties of education across three universities located in the Eastern and Southeastern Anatolia regions of Türkiye. The findings indicate that the demographic variables (gender, family management style, family size, family educational status) do not significantly explain the EI levels of pre-service teachers. A moderately positive relationship was found between AMO and EI, but it was observed that AMO is not a significant predictor of EI. A high positive relationship was detected between SE and EI; it was observed that SE explained 63% of the variance in EI. We found that there was no significant difference between the AMO, SE, and EI scores of pre-service teachers studying at different grade/class levels. As we continue to investigate these topics, it becomes evident that teacher education may continue promoting not only cognitive development but also emotional and social development.

Keywords: achievement motivation; emotional intelligence; self-efficacy; pre-service teachers



Citation: Atik, U.; Karaman, M.A.; Sari, H.I. Examining the Relationship between Emotional Intelligence, Achievement Motivation, and Self-Efficacy among Pre-Service Teachers in Türkiye. *Educ. Sci.* **2024**, *14*, 526. <https://doi.org/10.3390/educsci14050526>

Academic Editor: Daniel Muijs

Received: 7 February 2024

Revised: 2 May 2024

Accepted: 7 May 2024

Published: 13 May 2024



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1. Understanding Emotional Intelligence, Achievement Motivation, and Self-Efficacy in Pre-Service Teachers

Research [1,2] on educational psychology and teacher development in recent years has revealed that social and psychological factors contribute to the development of teachers and indirectly to the development of students. After the publication of studies on the concept of emotional intelligence (EI), the effect of emotions on the mind has become clearer and understandable [3,4]. Goleman [5] made a distinction between the emotional and intellectual minds. He stated that these seemingly disparate ideas are closely related. In light of this information, the definition of “intelligence” has been revised in recent years, and “emotional intelligence” has been included in this definition. According to Goleman [5], cognitive intelligence and EI are not opposites but different types of intelligence.

The concept of EI, which emphasizes the complexity of intelligence beyond traditional cognitive capacities, has been important and researched for decades. Research has focused on two different EI structures—ability and trait—used to comprehend the scope of trait EI’s application and its validity as a legitimate form of intelligence [6,7]. A variety of emotional self-perceptions and dispositions are included in trait EI, which is frequently assessed using self-report questionnaires [6,8,9]. While trait EI reflects individuals’ perceptions of their emotional capabilities, ability EI assesses an individual’s actual capacity to recognize,

utilize, understand, and manage emotions [7,10]. This distinction highlighted the difficulty of precisely assessing and researching EI in addition to providing evidence that EI was a legitimate form of intelligence.

The current study examined the relationship between self-efficacy, AMO, and EI (particularly focusing on the trait EI feature), acknowledging the critical significance that these components have in an educational setting. The focus on trait EI was chosen due to its relevance to the teaching profession, where interactions with students, classroom management, and general performance are all greatly influenced by an individual's assessment of their EI [11]. To shed light on how the subjective experience of EI affects the motivational and self-regulatory dimensions of future educators, this research integrated findings from studies that have validated the concept of trait emotional intelligence, such as Petrides and Furnham's [9,12] work on the Trait Emotional Intelligence Questionnaire (TEIQue).

Researchers [13–15] investigated the significance of EI from the educators' perspective and stressed the importance of both professional and psychosocial development. Research [14,15] found that teachers' levels of EI had a significant impact on wellness. Morais et al. [14], in their study with female high school teachers, found that those skilled in regulating their emotions reported higher job satisfaction, better support from peers and management, a lower risk of burnout, and a higher positive effect. In another study, Abou Assali and Riskus [13] aimed to understand the impact of teachers' EI on developing positive relationships and academic engagement among students. The authors found that emotionally intelligent teachers were more likely to create an environment advantageous to student achievement and engagement. In this context, it is understood that the EI levels of pre-service teachers affect their teaching and learning skills [16].

We can understand teachers' EI not only in terms of the socio-cultural structure of the society in which they live but also through their demographic characteristics such as gender, educational level, and income. Investigating the relationship between EI and demographic characteristics helps us to understand how individual and socio-cultural factors influence one to manage emotions, empathize with others, and navigate social difficulties. Studies across different cultures and countries [17–21] emphasized the importance of examining the relationship between EI and demographic variables (i.e., gender, income, education level). The literature reported different findings indicating that the EI concept may change from culture to culture. For instance, while Duman et al. [20] found gender differences in EI among pre-service teachers in Türkiye, with females scoring higher than males, Dimitriu et al. [19] reported no significant differences in EI levels based on gender, age, or specialty among their Romanian participants. Such inconsistencies showed the complexity of EI as a construct and its potential predisposition or resistance to demographic variables.

For educational systems and professional environments, understanding if, how, and why demographic characteristics influence EI can help to develop more effective developmental programs aimed at enhancing interpersonal relations, stress management, and overall well-being. For example, Adilogullari's study [17] on teachers suggested that external factors, such as monthly income and postgraduate training, significantly affected EI levels, indicating potential pathways for intervention. In contrast, the findings from Sharma and Siddiqui [21] and Adhikari [18], which highlighted the non-significant impact of several demographic variables on EI, challenged the concept of EI as a dynamically learned skill, suggesting instead a potential tendency that might be more innate than previously thought.

In schools where cognitive achievements of individuals were emphasized, affective domain skills were also considered important [22]. Motivation, a key affective skill, includes any behavior directed toward a goal [23]. In educational settings, it appears as an effort to maintain students' development in the desired direction [13]. The literature included researchers from different cultures who were interested in the concept of AMO [23–25]. Achievement motivation is, in its broadest sense, the effort to be competent in activities requiring effort [23]. The motivation of teachers, who encounter diverse student profiles throughout their professional lives, to succeed is important. The diversity of students can

sometimes challenge the teacher; however, teachers with a high AMO may increase their job satisfaction levels while coping with these challenges [26].

Emotional intelligence and AMO, as distinct psychological constructs, function synergistically to facilitate goal attainment [27], provide social and emotional support [28], and aid in stress management [17,29]. While EI focuses on the ability and trait characteristics of individuals, AMO concentrates on attributes such as drive, persistence, and energy that propel people toward their goals. The literature contains various studies exploring the relationship between EI and AMO among different groups. A study conducted by Murad [28] with university students revealed a statistically significant correlation between EI and self-esteem, as well as AMO. The findings also indicated that self-esteem and AMO could predict EI among the participants. On the other hand, a study by Wurf and Croft-Piggin [30] with pre-service teachers reported no significant relationship between EI and motivation.

Teacher self-efficacy has been a topic of research in recent years. Self-efficacy among teachers has been defined as a teacher's belief in their professional ability to effect desired changes in students' cognitive and emotional success and behaviors [31,32]. The relationship between EI and self-efficacy among pre-service teachers showed that high self-efficacy scores enhanced teacher effectiveness and, by extension, student outcomes. Adeyemo and Chukwudi [33] highlighted the predictive role of EI and teacher efficacy in determining teacher effectiveness, suggesting that developing these competencies could significantly improve teaching quality among pre-service teachers. This idea was supported by Akar and Üstüner [34], who identified self-efficacy as a significant mediator in the relationship between EI and social entrepreneurship traits among pre-service teachers, indicating that self-efficacy not only enhances individual capability but also enriches the social impact of teaching practices.

Teachers face various working conditions across different countries, and the difficulty of these conditions may affect the quality of education that they provide. According to Chan [35], the quality of education given to students improves with the teacher's ability to cope with challenging conditions and take responsibility for the student's success. In this context, teachers with high self-efficacy levels may also contribute to improving the quality of education. Chesnut and Cullen [36] explained the positive correlation between self-efficacy, EI, and commitment to the teaching profession, highlighting how these attributes collectively contributed to a resilient and dedicated teaching workforce. Anwar et al. [37] explored the mechanics of this relationship, revealing that self-efficacy mediated the effect of EI on teacher effectiveness, especially in English as a Second Language contexts. They stated that to support highly effective teaching environments, both EI and self-efficacy need to be developed among pre-service teachers. Similarly, Lilly and Venukapalli [31] discovered a significant positive correlation between EI and self-efficacy among pre-service teachers, emphasizing the concept that these traits were essential in the cultivation of a competent and emotionally intelligent teaching force.

Ali et al. [38] extended this discourse to the influence of teachers' EI on students' ESL proficiency, self-efficacy, and motivation, presenting empirical evidence that emotionally intelligent teachers could significantly raise students' linguistic competence and confidence. Valente et al. [39] further validated these findings by demonstrating that teachers' EI abilities significantly influenced their self-efficacy, which, in turn, enriched the educational environment and student development.

Individuals who are aware of their level of EI and have gained awareness in achievement motivation and self-efficacy can make positive contributions to their students, who see them as role models when they serve as teachers. As a result, they may be able to raise students who have developed emotional intelligence, have internal motivation for success, and are knowledgeable about their self-efficacy perception, thereby contributing to the future of society.

2. The Current Study

Teacher education has been a significant topic for countries' national policies. Teachers leave a mark on the lives of all individuals who have been involved in educational activities. Emotional intelligence positively contributes to teachers' ability to interact with people from different backgrounds in terms of professional requirements, establish healthy relationships, control their emotions effectively, approach problems in a solution-oriented manner, and find happiness in their professional lives [40]. There are many studies [1,41–43] examining the relationship between pre-service teachers and emotional intelligence. However, there is a scarcity of studies investigating the relationship between EI, AMO, and self-efficacy.

This study also focused on demographic characteristics (gender, family management style, family's educational status, size of the family) and their relationship with EI. The dynamics and interactions within these demographic variables can significantly influence the developmental aspects of emotional intelligence, self-efficacy, and achievement motivation among pre-service teachers [1]. Specifically, the size of the family was examined due to its potential impact on the distribution of resources, emotional support, and individual attention, which are critical components in the development of a pre-service teacher's professional competencies and emotional well-being [16].

Furthermore, this study also focused on potential differences across educational stages/class levels (Freshmen, Sophomore, etc.), which was based on the principle that as pre-service teachers advance through their academic journey, they encounter a progressively complex and enriching array of pedagogical theories, practical teaching experiences, and opportunities for personal and professional development. These experiences were posited to significantly impact the cultivation and refinement of their EI, AMO, and perceptions of self-efficacy. Empirical studies, such as those by Bandura [44], underscored the evolution of self-efficacy through mastery experiences and social modeling, which were likely to be more pronounced as students progressed in their education. Furthermore, Parker et al. [45] have delineated how increased exposure to diverse educational settings can enhance emotional intelligence, suggesting a potential for variation across class levels. Investigating these dynamics is important for several reasons: (1) it provides insights into the developmental aspects of these constructs within the context of teacher education, (2) informs targeted interventions and support mechanisms at critical stages of teacher development, and (3) ultimately contributes to the preparation of more effective, emotionally intelligent, and motivated educators.

The main purpose of the current study was to investigate the relationships between EI scores and demographic characteristics (such as gender, family management style, the family's educational status, and the size of the family), AMO, and self-efficacy scores among pre-service teachers studying in different faculties of education in Türkiye. Additionally, this study sought to analyze variations in EI, AMO, and self-efficacy levels based on pre-service teachers' grade levels and majors. In this context, this study sought answers to the following research questions:

1. To what extent do demographic characteristics (gender, family management style, family's educational status, size of the family), AMO, and self-efficacy scores of prospective teachers predict their EI scores?
2. Do prospective teachers studying at different class levels (freshmen, sophomores, etc.) exhibit significant differences in AMO, self-efficacy, and EI scores?
3. Are there significant variations in AMO, self-efficacy, and EI scores among prospective teachers enrolled in different departments?

3. Method

3.1. Procedure and Participants

After obtaining approval from the university ethics board and the provincial directorate of national education, the researchers created an online form and sent the electronic link to the Dean's Offices of the Colleges of Education at three universities located in the East and South regions of Türkiye. There were approximately 3000 registered students

in the colleges at the time of this study. The Dean's Offices forwarded the links to their students. The students were given two weeks to fill out the survey.

The sampling method was convenience sampling, and this study included a total of 326 pre-service teachers, 56 (18%) of whom were male and 270 (82%) were female. The average age of participants was 20.69 with a standard deviation of 2.17. Among the participants, 122 (37%) were studying Primary Education, 77 (24%) Preschool Education, 21 (6%) Science Education, 72 (22%) Social Studies Education, and 34 (10%) Turkish Language Education. When looking at the class levels, 128 (39%) were freshmen, 82 (25%) were sophomores, 70 (22%) were juniors, and 46 (14%) were seniors. From a family management style perspective, 138 (42%) of the participants reported coming from patriarchal families, 162 (50%) from egalitarian families, and 26 (8%) from matriarchal families. In terms of family size, 261 (80%) of the participants belonged to nuclear families, 46 (14%) to extended families, and 19 (6%) to single-parent families. Regarding the education level of the family, 273 (84%) of the participants indicated they were first-generation students (neither parent has a university degree), 49 (15%) were second-generation students (at least one parent has a degree), and 4 (1%) were third-generation students (in addition to the parents, at least one grandparent has a degree).

During the writing of this article, the ChatGPT artificial intelligence program and the AI-supported Grammarly program were used. These programs were utilized to improve the grammar and meaning of sentences and paragraphs produced by the authors. Additionally, whether the statistical information obtained was interpreted correctly by the authors in terms of meaning was controlled using artificial intelligence. All these processes were conducted transparently.

3.2. Measures

3.2.1. Demographic Form

A personal information form was developed asking for the participants' family sociodemographic (family education level, size of the family, family management style) information, class levels, and gender to be used for the purpose of this study. Family management style was categorized based on the predominant decision-making authority within the family, delineated into patriarchal families (where the male head of the household assumes primary decision-making roles), matriarchal families (where the female head of the household, typically the mother, holds principal decision-making authority), and egalitarian families (where decision-making responsibilities are shared equally among adult members, regardless of gender). The family's education level referred to generations. Participants described their family's education level as first generation, meaning that neither of their parents had a college degree; second generation, referring to at least one parent who had a college degree; or third-generation, referring to the fact that in addition to the parents, at least one grandparent who had a college degree. The size of the family included three categories. Nuclear families consist of two parents (a mother and a father) and their biological or adopted children, living together as a single unit. Extended families include not only the parents and their children but also other relatives such as grandparents, aunts, uncles, and cousins living together or nearby, sharing responsibilities and resources. Single-parent families are headed by one parent (either a mother or a father) who is responsible for raising their children alone without the cohabitation of the other parent. Regarding academic variables, "class levels" refer to the academic year of the pre-service teachers within their undergraduate program, segmented into freshmen, sophomores, juniors, and seniors. No identifying information was included.

3.2.2. Trait Emotional Intelligence Questionnaire Short Form

The Trait Emotional Intelligence Scale, developed by Petrides and Furnham [12], was used to determine the emotional intelligence levels of the prospective teachers included in this study. This measurement tool was translated into Turkish by Ulutaş [46]. This measurement is a scale containing 153 items and 15 facets organized under four factors (well-

being, sociability, self-control, and emotionality). The short form (TEIQue-SF), containing 30 items, was used in the current study. It is a seven-point Likert-type measurement tool varying from “Strongly disagree” to “Strongly agree”.

Ulutaş [46] conducted both EFA and CFA to test factor structure. The four factors were substantively identical to the original TEIQue [11]. In the reliability analysis conducted by Ulutaş [46], the Cronbach alpha reliability values for the subscale scores were as follows: the well-being factor was 0.85, the self-control factor was 0.70, the emotionality factor was 0.76, the sociability factor was 0.84, and the reliability score for the total scale score was reported as 0.91. Ulutaş’s [46] study showed that Turkish TEIQue subscale scores were reliable with alpha values above the recommended 0.70 level [47]. In the current study, we found Cronbach alpha reliability values for the subscale scores of 0.73, 0.71, 0.64, 0.76, and 0.88 for wellbeing, self-control, emotionality, sociability, and total scale, respectively.

When the correlations between the factors in the Trait Emotional Intelligence Scale were examined, it varied between 0.41 and 0.69, and a significant relationship was found between the factors. A correlation coefficient greater than 0.70 indicates a high relationship, while a correlation coefficient between 0.70 and 0.30 indicates a moderate relationship. In this context, since the correlation values between all factors were between 0.70 and 0.40, it was determined that there was a moderate positive relationship between these factors.

3.2.3. Achievement Motivation Measure

The Achievement Motivation Scale (AMS), developed by Smith et al. [48], was used to measure the AMO of prospective teachers. The Turkish version’s validity study of the instrument was carried out by Karaman and Smith [49]. The AMO Scale consists of 13 items under two factors. The first factor is cognitive achievement motivation, which measures AMO by considering mental processes. The second factor is behavioral achievement motivation, which measures AMO to the extent that it is reflected in behaviors [48]. The cognitive subscale consists of 9 items, and the Cronbach alpha coefficient was 0.79. The behavioral subscale consists of 4 items, and the Cronbach alpha coefficient was 0.65. The reliability coefficient of the total scores was 0.80. The Cronbach alpha values in the translation study were 0.80 and 0.60 for the cognitive and behavioral subscales, respectively. In the current study, we found Cronbach alpha reliability values for the subscale scores of 0.79 and 0.60 for cognitive achievement and behavioral achievement, respectively. The reliability score for total AMO scores was 0.80. The scale is a five-option Likert-type scale ranging from “Never” to “Always”, and the highest possible score that can be taken from the scale is 52.

3.2.4. General Self-Efficacy Scale

The General Self-Efficacy Scale Turkish Form was used to determine the self-efficacy levels of prospective teachers. The scale was developed by Schwarzer and Jerusalem [50]. The Turkish adaptation study was conducted by Aypay [51] and consists 10 items. The scale is a four-option Likert-type scale ranging from “totally wrong” to “totally correct”, and the highest possible score that can be taken from the scale is 40. In the translation study, the Cronbach alpha value of the global scale was 0.80, and it was 0.88 in our study.

3.3. Data Analysis

In this study aimed at examining the EI, AMO, and self-efficacy levels of prospective teachers, cross-sectional design was used. Before analyzing the data, a normality analysis was performed. Skewness and kurtosis coefficients were calculated to analyze the normal distribution of the data. Accordingly, it was found that the skewness and kurtosis values of all variables were in the range of $[-1.5, 1.5]$, and it was proven that the data were suitable for univariate normal distribution. In the analyses, while EI was used as a dependent variable, demographic information, AMO, and self-efficacy level were used as independent variables. A regression analysis was used to determine to what extent the demographic characteristics (gender, age, family structures), AMO, and self-efficacy scores of prospective

teachers predicted EI scores in the first research question of this study. The required sample was 108 participants with a power of 0.80 and medium level of anticipated effect size (e.g., 0.15) and eight predictors. In the second and third research questions of this study, a multivariate MANOVA analysis was performed to see whether there was a significant difference between the AMO, self-efficacy, and EI scores of prospective teachers studying at different class levels and in different departments. The required sample sizes were 19 and 22 with a power of 0.80 for MANOVA for the second and third research questions, respectively. The significance level in the statistical analyses of the research was accepted as $p < 0.05$, and the results obtained from the analysis were explained in the findings section. The descriptive statistics, along with the number of items in each subscale and Cronbach Alpha values of the measures, are given in Table 1.

Table 1. Descriptive statistics of the studied variables.

Scale	Mean (SD)	Number of Items	Cronbach α
Trait Emotional Intelligence	106.81 (18.55)	30	0.88
<i>Well-being</i>	28.69 (4.85)	6	0.73
<i>Sociability</i>	24.92 (5.54)	6	0.76
<i>Self-control</i>	25.89 (5.64)	6	0.71
<i>Emotionality</i>	29.93 (6.66)	8	0.64
Achievement Motivation	36.48 (8.19)	13	0.80
<i>Cognitive Achievement</i>	26.98 (5.94)	9	0.79
<i>Behavioral Achievement</i>	9.50 (3.21)	4	0.60
General Self-Efficacy	30.66 (5.87)	10	0.88

4. Results

In the current study, emotional intelligence was used as the dependent variable; demographic variables (gender, management style of the family, family size, family education level), AMO, and self-efficacy were used as independent variables. According to the results of the regression model analysis created, the EI scores were significantly predicted by independent variables, $R = 0.63$, $R^2 = 0.49$, $F(1000) = 44.998$, $p < 0.01$ (see Table 2). This indicates that about 49% of the variance in emotional intelligence scores can be explained by the model, which includes these independent variables.

Table 2. Regression results.

Regression Results				
Predictor Variable	B (St. Error)	β	t	p
Family Management				
<i>Patriarchal Family</i>	0.21 (0.13)	0.12	1.56	0.11
<i>Egalitarian Family</i>	−0.04 (0.13)	−0.02	−0.32	0.74
Family Size				
<i>Nuclear Family</i>	0.00 (0.17)	0.00	0.00	0.99
<i>Extended Family</i>	−0.01 (0.15)	−0.00	0.09	0.92
Family Education Level	0.00 (0.09)	0.00	0.02	0.98
Gender	−0.06 (0.09)	−0.02	−0.69	0.49
Achievement Motivation	0.13 (0.07)	0.08	1.92	0.05
Self-Efficacy	1.00 (0.07)	0.63	13.83	0.00 *
$R = 0.63$, $R^2 = 0.49$, $F(1000) = 44,998$ *				

* Significant at the alpha level of 0.05.

Demographic variables (gender, family management style, family size, family education level) did not explain the level of emotional intelligence significantly. A moderate positive relationship was found between AMO and EI scores. However, it was determined that AMO did not significantly predict EI ($p > 0.05$).

As a result of the regression analysis between self-efficacy and EI, a high positive relationship was found. It was determined that self-efficacy significantly explained EI ($\beta = 0.63, p < 0.05$). In this context, self-efficacy makes a big impact. There was no significant difference between the scores related to the total EI level with the class level where the prospective teachers are studying, [$F(1322) = 2.13, p > 0.05$] or the total AMO level [$F(1322) = 2.57, p > 0.05$] and total self-efficacy level [$F(1322) = 0.68, p > 0.05$]. No significant difference was found between the scores related to the total EI level with the department where the prospective teachers are studying [$F(1321) = 2.28, p > 0.05$] or the total AMO level [$F(1321) = 1.25, p > 0.05$].

5. Discussion

The results of the current study revealed both expected and unexpected facets of the relationships between EI, AMO, self-efficacy, and demographic variables, providing a nuanced understanding that enhances the existing literature. Contrary to the expected findings, demographic variables such as gender, family management style, family size, and educational level had no significant direct impact on EI scores among pre-service teachers. The existing literature [17,18,20] had similar findings across different cultures, demonstrating the non-significant relationship between gender, age, and income, among others. Furthermore, this study showed that self-efficacy accounted for a substantial variance in EI (63%), as opposed to AMO, which did not emerge as a significant predictor, underscoring the critical role of self-efficacy in the emotional and psychological states of pre-service teachers.

Non-significant gender differences could signal that other factors, such as personal experiences, educational environment, or parenting, play a more important role in EI development than gender. Furthermore, gender stereotypes about emotional understanding and regulation may not be universal, emphasizing the significance of a personalized and differentiated approach in education and teacher training. This finding is consistent with prior research. For example, Dimitriu et al. [19] found no significant differences in pre-service teachers' EI according to gender, age, or specialty. In another study, Vargas Valencia et al. [52] verified this finding. Vargas Valencia et al. [52] discovered that EI ratings do not differ by gender in their studies with nursing students.

It was also discovered that the EI levels of the teacher candidates who took part in this study did not change significantly based on the family management style and family size variables. These findings are consistent with earlier research. Bakan and Güler [53], for example, discovered no significant difference between EI scores and family management style. Based on this, it is possible to conclude that personality traits, cognitive ability, and personal experiences outside of the home setting all play a part in the development of EI. Furthermore, the evaluation of family management style was based on the participants' subjective perceptions. In other words, it relied on participants' instantaneous replies rather than being measured using psychometric measuring methods. If the family management styles were assessed by considering different factors, participants' perceptions and responses might vary, which could then lead to different results in this study. In terms of family size, EI, unlike cognitive intelligence, is typically acquired and polished by social interactions and experiences throughout life [54]. Furthermore, Karademir et al. [55] discovered that there was no significant difference in the levels of EI of university student candidates taking special talent exams who expressed their family as a nuclear or extended family type.

Consistent with the previous research [27,28], in our study, a moderate positive relationship was found between the AMO levels and EI levels of the teacher candidates participating in this study. However, our findings indicate that while AMO and EI may coexist within an individual, they do not necessarily demonstrate a strong linear relationship. One possible explanation for this lack of prediction is the presence of other mediating variables that influence the relationship between AMO and EI. For instance, individual differences in coping strategies, personality traits, or socio-cultural factors may moderate

the association between these two constructs. To gain a more comprehensive understanding of the relationship between AMO and EI, future research should adopt a multi-method approach that incorporates qualitative and quantitative measures.

Our study reveals a significant positive correlation between EI and self-efficacy, a finding that has been consistently observed in previous research [13,33,34,36]. This correlation suggests that individuals with higher EI tend to exhibit greater belief in their own abilities to achieve desired outcomes. However, it is crucial to delve deeper into understanding the mechanisms underlying this relationship. One possible explanation for the positive correlation might be the role of emotional regulation. Individuals with higher EI are better equipped to recognize and manage their emotions effectively, which may enhance their belief in their ability to overcome challenges and accomplish goals [5]. Moreover, EI may facilitate the development of adaptive coping strategies, such as problem-solving and resilience, which, in turn, contribute to increased self-efficacy [56].

Another important finding worth discussion is the high, positive, and significant relationship between EI and self-efficacy. As the individuals' self-efficacy scores increased, the scores of EI also increased, and similarly, as the level of EI increased, the belief in self-efficacy also increased. In this context, theoretically, it can be understood that a significant positive relationship between EI and self-efficacy emerges. When the literature [57,58] was examined, studies revealing the existence of significant and positive relationships between EI and self-efficacy, supporting the findings obtained, were determined. Furthermore, Akar and Üstüner [34] stated that self-efficacy perception was revealed to have a partial moderating effect on the relationship between social entrepreneurship features and pre-service teachers' EI levels. Pre-service teachers comprehend and are capable of managing their own and others' emotions. As a result, self-efficacy beliefs were positively impacted, and people placed greater faith in their own knowledge, skills, and talents when it came to a certain activity.

According to the findings of the current research, no statistically significant difference was found between EI and class level. It is known that the level of EI can develop with increasing experiences with age [45]. In this context, it is thought-provoking that there is no significant difference according to the class levels. The reason for this finding is thought to be that the ages of the sample participants who the research was conducted on are close to each other and belong to the same generation. Another reason for this difference not to arise may be that teacher candidates at different class levels have similar educational experiences and no special activities to develop EI skills are included in the current education program. To the best of our knowledge and according to the databases that we researched, at the time of conducting the current study, there were no peer-reviewed publications that demonstrated the relationship between EI and college class levels. Therefore, this finding contributes valuable insights to the literature and may encourage researchers to consider this variable in future studies.

According to the findings of the present research, there was no significant difference detected between the EI levels of prospective teachers and the departments in which they were studying. The lack of significant variation is thought to stem from the fact that education faculty students, regardless of the university they attend, undergo similar educational processes due to accreditation issues determined by the Council of Higher Education (YÖK). The majority of the teacher candidates from whom the data were collected are from the same region, which is another factor contributing to the lack of differentiation. Furthermore, the absence of any differences between the department of study and EI is to be expected, as EI appears to be influenced by individual characteristics. In a study conducted by Aykutlu et al. [59] on 80 teacher candidates studying in the fields of mathematics and science education, they reached a conclusion that there was no significant differentiation in the statistical results between the department and EI.

6. Limitations

The current study had limitations in addition to its valuable findings. The gender distribution of the participants was the first of these limitations. The number of female participants was four times higher than the number of male participants. Two main constraints develop in investigations where the gender distribution varies significantly: (a) generalizability and (b) inability to evaluate gender disparities. This imbalance may have hampered our knowledge of gender disparities and our ability to generalize this study's findings to similar groups. Another limitation could be the possible different characteristics of those who did not answer an online tool. This potential limitation, often referred to as non-response bias, stems from the concern that individuals who choose not to participate in a study might differ in significant ways from those who do. Another disadvantage was that the time period in which the data were collected can limit the validity of the data, which is commonly reflected by the cross-sectional design in general. In other words, the results of the participants in this study may vary if using the data that could be collected at another time.

7. Recommendations and Implications

This study's findings considerably contributed to our understanding of the function of self-efficacy and AMO in EI. These findings, however, open new avenues for future research and educational methods. First, future research could investigate how curricula can be developed to help students to build EI and self-efficacy. Based on the findings, including aspects that promote EI growth into the curriculum could provide a more comprehensive approach to teaching. This could include, in addition to traditional educational approaches, interactive activities and conversations aimed at fostering emotional understanding and management.

Another suggestion could be to concurrently observe and examine the EI levels of teachers and students within the classroom setting. By understanding the dynamics in the classroom, educators and researchers could more effectively elucidate the impact of emotional processes on learning and development. For instance, researchers could explore the influence of teachers' EI scores on students' motivation and learning outcomes.

The findings explained a path for educational interventions aimed at supporting self-efficacy to develop EI, thereby fostering a more emotionally intelligent and effective teaching force. The practical implications of these insights are philosophical, suggesting a re-orientation of teacher education programs towards enhancing SE as a tool to increase EI. This approach not only promises to enrich the emotional and social competencies of future educators but also to catalyze a positive ripple effect on student outcomes and classroom dynamics. Theoretically, this study contributes to the ongoing discourse on the relative weight of intrinsic versus extrinsic factors in shaping EI, offering evidence that under-scores the predominance of internal psychological states over demographic determinants. This paradigm shift invites a deeper exploration of how educational systems can nurture the internal landscapes of pre-service teachers to equip them with the emotional and motivational competencies essential for 21st-century educational challenges.

8. Conclusions

The current study represents a step towards gaining more comprehensive knowledge of EI, self-efficacy, and AMO in education. The suggested objectives for future studies aim not just to better investigate these constructs but also to develop effective techniques for improving them in academic environments. As our research on these topics progresses, it becomes increasingly clear that education can promote not just cognitive development but also emotional and social growth.

Author Contributions: Conceptualization, M.A.K. and U.A.; methodology, U.A.; software, H.I.S.; validation, H.I.S. and M.A.K.; formal analysis, M.A.K. and U.A.; investigation, U.A.; data curation, U.A.; writing—original draft preparation, U.A.; writing—review and editing, M.A.K. and

H.I.S.; supervision, M.A.K. and H.I.S. All authors have read and agreed to the published version of the manuscript.

Funding: This study did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee of Kilis 7 Aralik University (protocol code 2020/31 and date of approval: 5 November 2020).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to their containing information that could compromise the privacy of research participants.

Acknowledgments: ChatGPT and Grammarly were used to improve grammar and decrease writing mistakes.

Conflicts of Interest: The authors declare no conflict of interest.

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