

# The Relationship Between Academic Self-Efficacy and Academic Adaptation: The Mediating Role of Academic Resilience

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## ABSTRACT

**Objective:** The aim of the present study was to examine the mediating role of academic resilience in the relationship between academic self-efficacy and academic adaptation in a group of students from the Islamic Azad University of Qeshm and Bushehr in the academic year 2023-2024.

**Methods and Materials:** In this descriptive-correlational study, the participants were 207 students selected through a multi-stage cluster sampling method, who completed the McIlroy and Bunting's Academic Self-Efficacy Scale, Anderson et al.'s Academic Adaptation Scale, and Samuels' Academic Resilience Scale. The validity and reliability of the research scales were assessed and confirmed using confirmatory factor analysis and Cronbach's alpha coefficient. SPSS version 25 was utilized for descriptive data analysis and correlation matrix among research variables, while AMOS version 24 was employed for hypothesis testing and research model analysis.

**Findings:** The findings indicated that the research model had a good fit with the collected data. Additionally, the results demonstrated a significant direct effect of academic self-efficacy on academic resilience and a significant direct effect of academic resilience on academic adaptation. Moreover, the effect of academic self-efficacy on academic adaptation through the mediation of academic resilience was significant.

**Conclusion:** Overall, the findings of the present study highlight the role of academic self-efficacy and academic resilience in explaining academic adaptation. Based on the findings of this research, it can be concluded that to enhance students' academic adaptation, attention should be given to their academic self-efficacy and academic resilience.

**Keywords:** Academic Adaptation, Academic Resilience, Academic Self-Efficacy

## 1. Introduction

One of the significant experiences in students' academic and social lives is entering university and undergoing higher education. In this new context, students face numerous challenges compared to their school years, including academic assignments, increased independence, less structured academic activities, new academic responsibilities, decisions regarding academic and career matters (Crede & Niehorster, 2012), the expansion of new relationships, and the establishment of new learning patterns (Lanctot & Poulin, 2018). Additionally, most students are separated from their families and hometowns due to university studies, leading to emotional challenges in their new environment. Therefore, it is not surprising that university education is accompanied by developmental, emotional, and environmental pressures. These psychological and emotional issues intensify when students fail to adapt to the university environment, leading to both academic and psychological difficulties (Stirling, 2017). Thus, adaptation is crucial for adjusting to new conditions. The new environment is a significant factor in students' success and adaptation to university (Crede & Niehorster, 2012). University adaptation is a multidimensional construct that indicates how students meet the demands and tasks related to university life (Feldt et al., 2011). Adaptation is described in three domains: academic, social, and emotional (Shomali & Ismail Nia Shirvani, 2019). Academic adaptation refers to the ability to endure impulses to achieve desired goals and is a strong predictor of academic success and progress (Haji Tabar Firouzjaei et al., 2018). Academic adaptation is a process encompassing behavioral and psychological changes (Valka, 2015). It is a significant predictor of academic success (Lubis et al., 2022). Therefore, factors related to academic adaptation have always been of interest to researchers and educational psychologists.

Self-efficacy is one of the influential factors in individuals' adaptation (Lai, 2014; Satıcı et al., 2013). Self-efficacy affects understanding performance, adaptive behaviors, and the selection of environments and conditions that individuals strive to achieve (Strauser et al., 2002). According to Bandura, knowledge, skills, and past achievements are not reliable predictors of future performance; rather, individuals' beliefs about their capabilities in carrying out tasks influence their performance (Yadak, 2017). Self-efficacy reflects the general expectations that a learner forms about their abilities and

believes will bring success. This belief enhances their self-esteem and determination (Yadak, 2017). Individuals' cognitive interpretations of their successes and failures influence their subsequent self-efficacy beliefs. Academic self-efficacy specifically refers to a learner's judgment about their ability to achieve academic success (Moll et al., 2016; Nasrabadi et al., 2023). Self-efficacy, based on Bandura's theory, refers to individuals' beliefs about their competence in successfully performing a task (Doowa, 2023).

On the other hand, resilience is a predictor of adaptive outcomes (Mortazavi & Yarollahi, 2015). Resilience is a process that enables the successful adaptation to threatening conditions (Masten, 2002). Resilience is positive adaptation in response to adverse and challenging conditions (Waller, 2001). Academic resilience is one dimension of resilience within educational and academic settings. Individuals with resilience are more likely to succeed despite social, cultural, and economic hardships (Hwang & Kim, 2023; Ragusa et al., 2023). Resilience is not merely about enduring challenging conditions passively but also about actively and constructively participating in the surrounding environment (Astutik & Firdana, 2023). Resilience is the capacity to return to the original state and successfully adapt despite stress and unfavorable conditions. Resilient individuals have a strong sense of control over their academic situations, and this sense of mastery and belief in achieving desirable outcomes encourages greater effort. Moreover, these individuals are committed to mastering learning content and are less likely to fear failure (Martin & Marsh, 2003; Walters, 2015). Resilience is considered the capacity to cope with challenges, adapt to the environment, and reduce stress in the face of life's difficulties. When faced with life challenges, individuals with low resilience are at risk of depression, stress, anxiety, and interpersonal problems, and they may resort to risky behaviors that lead to poor academic and social adaptation. Resilience is the ability to endure, adapt to, and overcome life crises and challenges (Senobar, 2017; Shomali & Ismail Nia Shirvani, 2019). Furthermore, self-efficacy beliefs influence individuals' thinking, problem-solving approaches, decision-making, coping with stress, and goal selection and achievement, contributing to resilience (Carter et al., 2017). Research has shown a significant relationship between resilience and adaptation (Lukow et al., 2015; Senobar, 2017).

Positive self-efficacy beliefs increase resilience in learners (Cassidy, 2015). Resilience is the ability to effectively adapt to the environment despite exposure to risk factors—negative conditions and situations associated with

adverse outcomes and behavioral problems (Gomes & McLaren, 2006). Research findings have shown a significant positive correlation between academic self-efficacy and resilience, and higher levels of resilience are associated with higher self-efficacy (Mann et al., 2014; Supervía et al., 2022).

It appears that academic resilience can mediate the relationship between academic self-efficacy and academic adaptation. Self-efficacy, according to Bandura's social cognitive theory, is one of the most critical individual variables, referring to the individual's belief in their ability to organize and execute actions that will lead to success and desirable outcomes (Betoret et al., 2017). In other words, self-efficacy is the confidence a person feels about performing a specific activity, which affects their effort and performance level (Bandura, 1982). Individuals with strong self-efficacy beliefs choose tasks that are more challenging. They set bigger goals for themselves, exert more effort, and are more persistent in the face of difficulties (Schwarzer et al., 2005). In contrast, individuals with lower self-efficacy feel helpless in controlling their actions and life events. They believe that any effort they make is futile, and thus, when faced with obstacles, they quickly lose hope if their initial efforts to solve problems are unsuccessful (Kheswa, 2015). Given that individuals who put in more effort likely increase their resilience, self-efficacy may lead to resilience and, through resilience, to adaptation to the environment. Furthermore, self-efficacy affects many aspects of life, such as effort and persistence in facing challenging issues, and in a way, it makes individuals resilient (Shen, 2018). Individuals with higher self-efficacy are more likely to seek appropriate solutions to problems than those with lower self-efficacy, and self-efficacy may lead to increased resilience, followed by improved academic adaptation in students. When individuals engage in a task, their self-efficacy beliefs influence the amount of effort they put in and the duration of that effort during adversity, which, in turn, enhances resilience (Zimmerman & Schunk, 2011). Self-efficacy reflects the general expectations that a learner forms about the task and believes will bring success. This belief increases self-esteem and determination toward the task (Yadak, 2017), and increased self-esteem leads to resilience in the face of problems (Cassidy, 2015). Additionally, Cassidy's (2015) research showed that academic self-efficacy is related to academic resilience, and students with high self-efficacy demonstrate greater academic resilience in the face of academic challenges compared to personal challenges (Cassidy, 2015). Furthermore, research has shown that

academic resilience is a significant positive predictor of academic adaptation, and increased resilience leads to improved academic adaptation (Haktanir et al., 2018). Based on the aforementioned points, the research hypothesis is formulated as follows: Academic self-efficacy increases academic adaptation through enhancing academic resilience.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The method of this research is descriptive and correlational, examining the relationships between the research variables using structural equation modeling. The study population consisted of students from the Islamic Azad University in the cities of Bushehr and Qeshm, who were enrolled in the second semester of the 2023-2024 academic year. Participants were selected using a multi-stage cluster sampling method. After obtaining permission from the university, the Faculty of Humanities was selected from the various faculties of the Islamic Azad University. From the different disciplines, three majors were chosen, and from them, 10 classes were selected. The questionnaires were distributed online in the academic groups formed by the university. The sample size was 213, but after reviewing the data and excluding incomplete questionnaires, 207 questionnaires were included.

### 2.2. Measures

#### 2.2.1. Academic Resilience

The Academic Resilience Scale was developed by Samuels in 2004 to measure the level of academic resilience. This questionnaire consists of 29 items related to academic success, such as temperament, social relationships, and achievement motivation. Participants are asked to rate their level of resilience on a five-point Likert scale ranging from "strongly disagree" to "strongly agree." The Cronbach's alpha coefficients for its subscales (communication skills, future orientation, and problem-oriented orientation) ranged from 0.63 to 0.77 for school students and 0.62 to 0.76 for university students, indicating acceptable reliability for these three factors (Soltani Nejad et al., 2013). In the present study, the fit indices  $X^2/df$ , GFI, CFI, RMSEA, and PCLOSE were 1.99, 0.88, 0.87, 0.05, and 0.08, respectively. The reliability of the questionnaire using Cronbach's alpha method for the subscales of communication skills, future orientation, and problem-oriented orientation was reported

as 0.76, 0.79, 0.78, and the overall Cronbach's alpha was 0.77.

### 2.2.2. Academic Adaptation

This scale was developed by Anderson and colleagues in 2016. Students respond to the items on a five-point Likert scale (from 1 = very little to 5 = very much). Items 2 and 3 are reverse scored, and higher scores indicate higher perceived academic adaptation. Exploratory factor analysis by Anderson et al. (2016) revealed that the academic adaptation scale has a three-factor structure: academic lifestyle (items 1-3), academic success (items 4-6), and academic motivation (items 7-9). Confirmatory factor analysis also indicated that this three-factor structure had a good fit. The reliability of the academic adaptation subscales, including academic lifestyle, academic success, and academic motivation, and the overall score was assessed using Cronbach's alpha coefficient and reported as 0.80, 0.83, 0.79, and 0.86, respectively. The overall reliability using the test-retest method was calculated as 0.84. In a study conducted in Iran by Baharvand et al. (2020) on students, the Cronbach's alpha coefficient findings indicated that item 9 significantly reduced the reliability of the academic motivation subscale and overall reliability. Thus, removing this item significantly increased the reliability of the academic motivation subscale. The reliability was reported as 0.80 for academic adaptation and 0.70, 0.77, and 0.76 for the subscales of academic lifestyle, academic success, and academic motivation, respectively (Baharvand et al., 2019). In the present study, the reliability was reported as 0.73 for academic adaptation and 0.75, 0.77, and 0.78 for the subscales of academic lifestyle, academic success, and academic motivation, respectively, with item 9 being removed due to its negative impact on the reliability of the academic motivation subscale. The fit indices  $X^2/df$ , GFI, CFI, RMSEA, and PCLOSE were 1.54, 0.96, 0.91, 0.05, and 0.46, respectively.

### 2.2.3. Academic Self-Efficacy

This questionnaire was developed by McIlroy and Bunting in 2002 and consists of 10 items. The items are rated on a seven-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7). A higher score on this questionnaire indicates greater academic self-efficacy. Items

5, 6, and 9 are reverse scored. McIlroy and Bunting (2002) reported the reliability of this scale using Cronbach's alpha coefficient as 0.81. In a study by Gholamali Lavasani et al. (2010), the reliability of the scale using Cronbach's alpha was 0.81, and construct validity was assessed using confirmatory factor analysis (Shomali & Ismail Nia Shirvani, 2019). The fit indices in this study  $X^2/df$ , GFI, CFI, RMSEA, and PCLOSE were 1.48, 0.95, 0.95, 0.04, and 0.50, respectively, indicating a good fit for the one-factor model with the data.

### 2.3. Data analysis

Data were analyzed using univariate and multivariate covariance analysis, and the eta coefficient was calculated to determine effect size. The analyses were performed using SPSS version 22.

## 3. Findings and Results

In this section, we first examine the mean, standard deviation, and correlation matrix of the research variables, followed by an evaluation of the structural model of the study. Before testing the conceptual model of the research, issues such as missing data, outliers, and the normality of variables were reviewed.

Although efforts were made to collect complete data from the sample group, there were some missing data in the dataset. For these, the mean values of the variables were used as substitutes.

To examine outliers in the present study, the "Explore" command in SPSS was used. The results showed that there were no outliers in any of the research variables. Therefore, there is no issue for structural equation modeling analysis in this regard.

To assess the normality of the distribution of the observed variables in the present study, skewness and kurtosis indices were used. The results showed that the absolute value of skewness and kurtosis coefficients for the research variables were less than 3 and 10, respectively, indicating that the distribution of all research variables is normal. Overall, the results presented in this section indicate that all the fundamental assumptions for structural equation modeling analysis are met, and therefore, there is no barrier to this analysis. The mean, standard deviation, and correlations between the research variables are presented in Table 1.

**Table 1**

*Mean, Standard Deviation, and Correlation Matrix of the Research Variables*

Variable	Mean	Standard Deviation	1	2	3	4	5	6	7	8	9
1	21.57	3.19	1	-	-	-	-	-	-	-	-
2	35.02	3.89	0.42	1	-	-	-	-	-	-	-
3	34.76	5.33	0.39	0.11	1	-	-	-	-	-	-
4	91.35	6.79	0.40	0.68	0.53	1	-	-	-	-	-
5	10.52	2.16	0.01	0.25	0.12	0.24	1	-	-	-	-
6	9.84	2.04	0.21	0.34	0.15	0.31	0.25	1	-	-	-
7	7.13	1.64	0.33	0.48	0.19	0.28	0.28	0.27	1	-	-
8	27.55	4.20	0.24	0.48	-0.02	0.38	0.75	0.72	0.67	1	-
9	48.07	7.03	0.01	0.12	0.33	0.34	0.20	0.20	0.11	0.17	1

1. Problem-oriented and Positive Thinking, 2. Future Orientation, 3. Communication Skills, 4. Total Academic Resilience, 5. Academic Lifestyle, 6. Academic Success, 7. Academic Motivation, 8. Total Academic Adaptation, 9. Total Academic Self-Efficacy

As the data in Figure 1 and Table 2 indicate, academic self-efficacy has a positive and significant effect on academic resilience ( $P = 0.001$ ,  $\beta = 0.66$ ), and academic resilience also has a positive and significant effect on academic adaptation ( $P = 0.001$ ,  $\beta = 0.91$ ). The direct effect of academic self-efficacy on academic adaptation ( $P = 0.36$ ,  $\beta = 0.31$ ), the indirect effect of academic self-efficacy on academic adaptation via academic resilience (bootstrap method) ( $P = 0.01$ ,  $\beta = 0.41$ ), and the total effect (direct + indirect effect) of academic self-efficacy on academic adaptation via academic resilience ( $P = 0.007$ ,  $\beta = 0.72$ ) are all significant.

In examining the conceptual effect of mediation in structural equation modeling, two fundamental concepts are direct and indirect effects of variables on each other. In a mediation model, if the direct effect of one variable on another is statistically significant but the indirect effect is not, it can be inferred that there is no mediation. If the direct effect of one variable on another is not statistically significant but the indirect effect is, it can be inferred that there is full mediation. If both the direct and indirect effects

are statistically significant, it can be inferred that partial mediation exists. Based on the bootstrap test used for this model and the principles governing mediation in structural equation modeling, it can be generally inferred that in this model, since the direct path is not significant and the indirect path is significant, full mediation exists.

In evaluating the research model, the model fit indices were calculated. The overall model fit index achieved a satisfactory fit. The model fit indices included the Chi-square divided by degrees of freedom ( $X^2/df = 2.46$ ) with a significance level ( $P = 0.02$ ), Goodness of Fit Index (GFI = 0.98), Comparative Fit Index (CFI = 0.99), Root Mean Square Error of Approximation (RMSEA = 0.04), and the P-value for the Test of Close Fit (PCLOSE = 0.54), all of which were satisfactory. In testing the research hypothesis that academic self-efficacy increases academic adaptation through enhancing academic resilience, the research results using the bootstrap test indicated that academic resilience could play a mediating role between academic self-efficacy and academic adaptation. More detailed results are presented in Figure 1 and Table 2.

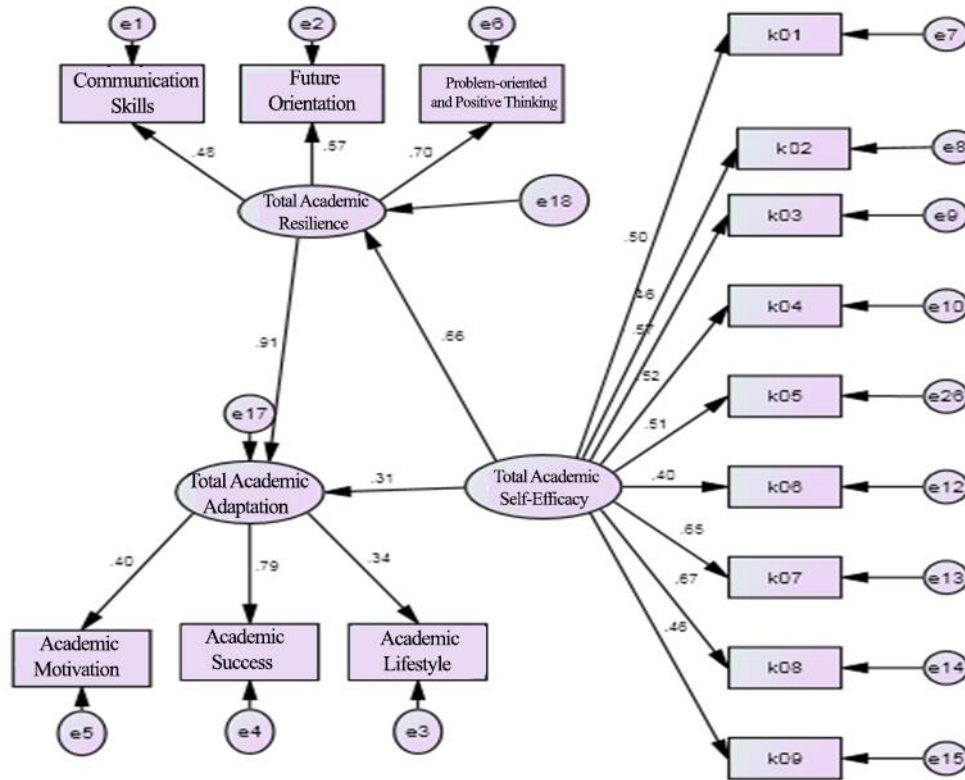
**Table 2**

*Direct, Indirect, and Total Effects of Research Variables*

Path	Direct Effect (P, $\beta$ )	Indirect Effect via Bootstrap (P, $\beta$ )	Total Effect via Bootstrap (P, $\beta$ )
From Academic Self-Efficacy to Academic Resilience	0.001, 0.66	---	0.001, 0.66
From Academic Resilience to Academic Adaptation	0.001, 0.91	---	0.001, 0.91
From Academic Self-Efficacy to Academic Adaptation	0.36, 0.31	0.01, 0.41	0.007, 0.72

Figure 1

Model with Standard Coefficients



#### 4. Discussion and Conclusion

The present study aimed to model the structural equations of academic adaptation based on academic self-efficacy with the mediation of academic resilience. The results showed that academic self-efficacy has a direct effect on academic resilience. This means that academic self-efficacy directly influences resilience, and increasing the level of self-efficacy in students leads to an increase in their resilience. Academic self-efficacy has the ability to predict and explain resilience among students (Kalisch et al., 2015; Keye & Pidgeon, 2013; Moll et al., 2016; Rajan et al., 2017; Victor-Aigboidion et al., 2020). In explaining this finding, it can be said that self-efficacy is one of the factors that positively influences academic resilience; individuals with higher self-efficacy expectations are more likely to seek appropriate solutions to problems than those with lower self-efficacy. On the other hand, a person's belief in their abilities shapes their cognition, attitude, and behavior towards utilizing all capacities for resilience in challenging conditions. Additionally, many other studies have shown that self-efficacy affects behavioral outcomes. High levels of self-

efficacy are associated with a greater ability to cope with risky health behaviors. The belief in one's efficacy serves as a protective factor, increasing resistance to stressors and promoting problem-solving approaches in the face of difficult situations (Shomali & Ismail Nia Shirvani, 2019). Students with higher academic self-efficacy also have higher academic resilience. Students' beliefs in their ability to organize and perform tasks to control academic situations—i.e., academic self-efficacy—impact their tolerance, perseverance, and endurance towards challenging and stressful academic tasks and expectations (Victor-Aigboidion et al., 2020).

Furthermore, academic resilience has a direct and significant effect on academic adaptation. This finding is consistent with the prior research (Haktanir et al., 2018; Lubis et al., 2022; Sadoghi, 2017; Senobar, 2017). In explaining this finding, it can be said that resilience is the process or outcome of successful adaptation to threatening conditions and plays an important role in coping with life's stresses. Resilience is the ability to resist stress and return to natural equilibrium after experiencing stressors (Walters, 2015). Individuals with high resilience have better adaptability than others (Yadak, 2017).

Based on the findings of the research, academic self-efficacy has a positive and significant relationship with academic adaptation through the mediation of academic resilience. These results are consistent with the previous research (Kamel, 2018; Shen, 2018; Torres & Solberg, 2001). Self-efficacy is one of the factors that positively predicts and preserves academic resilience. Positive self-efficacy beliefs increase resilience in learners (Cassidy, 2015), and individuals with high self-efficacy perform better in setting goals, creating strong cognitive mechanisms for acquiring knowledge, handling academic challenges, and resisting difficult conditions, making them more resilient (Stubbs & Maynard, 2017). A person's belief in their ability shapes cognition, attitude, behavior, and performance towards utilizing all capacities for resilience in challenging conditions. Resilience is the ability to resist stress and return to natural equilibrium after experiencing stressors (Walters, 2015). Considering that Bandura identified self-efficacy as a factor that acts as a cognitive mediator and influences individuals' thoughts and feelings, it is not surprising to find that when learners are exposed to negative events, new experiences, or stressful academic situations, high self-efficacy helps them demonstrate higher resilience, allowing them to manage and control these events and situations, thereby protecting themselves from various psychological issues and leading to better adaptation. In educational settings, self-efficacy refers to students' beliefs about their ability to perform assigned academic tasks. Learners with higher self-efficacy exhibit more willingness, effort, and persistence in completing academic tasks and have confidence in their abilities. Conversely, individuals who lack confidence in their abilities may become discouraged in risky situations and are less likely to perform effectively. Such individuals may fear facing challenging issues, and their performance may suffer, leading to a sense of inefficacy and reduced success and performance. Self-efficacy fosters resilience, making individuals more adaptable to their environment and enabling them to confront challenges and problems (Hatlevik et al., 2018). In academic settings, academic self-efficacy leads to academic resilience, which in turn promotes academic adaptation. Therefore, it can be said that by strengthening self-efficacy beliefs, academic adaptation can be facilitated. As students' self-efficacy increases, they become more confident in their ability to complete assigned tasks and responsibilities in an educational setting. Consequently, they demonstrate greater effort and perseverance, and become more optimistic. This leads to a more positive attitude towards the academic

environment, making them more resilient and allowing them to act more adaptively. Beliefs and the ability to adapt to situations reduce academic stress. On the other hand, weak self-efficacy is associated with negative self-evaluation, inability, and feelings of helplessness. These negative cognitions prevent individuals from performing well when facing threatening and stressful situations, leading to lower resilience and adaptability. When learners consider themselves incapable of meeting valued academic expectations, they may become depressed. If they feel unable to cope with new conditions and stressors, they may become anxious. Therefore, it can be expected that individuals with lower self-efficacy will demonstrate less resilience, which in turn results in lower academic adaptation. When learners have a moderate level of psychological adaptation, they have a suitable foundation to demonstrate their abilities, competence, motivation, and ability to express their thoughts and feelings, which promotes their academic success.

## 5. Limitations & Suggestions

Although the overall findings of the present study provide favorable evidence to support the mediating role of academic resilience in the relationship between academic self-efficacy and academic adaptation, and provide valuable insights into the functional characteristics of self-efficacy and resilience in the context of academic adaptation, some limitations of the study may challenge the generalizability of the results. First, considering that the study participants were selected only from among students of humanities disciplines, it is recommended that this research be conducted with students from other disciplines and school students as well. Additionally, the use of self-report tools to measure academic adaptation instead of observing behavior in real-life situations may have led to social desirability bias among participants. Future research should consider using other competencies such as self-regulation, belief in competence, attitudes, and beliefs about academic goals to predict academic adaptation. Finally, student counseling centers should organize educational workshops focused on resilience and self-efficacy beliefs with the aim of enhancing students' academic adaptation.

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## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethical Considerations

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

## Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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## Authors' Contributions

All authors equally contributed in this article.

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