



# The role of self-efficacy in mediating the influence of social support on academic resilience among college students

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## ABSTRACT

Academic resilience is an increasingly relevant issue in the digital age, particularly as students face mounting academic demands alongside rapid technological advancement. Students who struggle to adapt to new technologies often experience heightened stress and reduced academic performance. This study investigates the mediating role of self-efficacy in the relationship between social support and academic resilience among university students. Employing a correlational causal design, the study surveyed 424 students from Pasuruan, East Java, selected through stratified random sampling. Data were collected using validated scales measuring perceived social support, self-efficacy, and academic resilience. Path analysis, supported by SPSS 22.0, revealed that self-efficacy significantly mediates the effect of social support on academic resilience (Sobel  $Z = 13.491$ ,  $p < 0.01$ ). The indirect effect of social support through self-efficacy ( $\beta = 0.569$ ) was notably stronger than the direct effect ( $\beta = 0.082$ ), indicating that students' belief in their own abilities plays a more critical role in fostering resilience than external support alone. In essence, students with low self-efficacy may perceive themselves as incapable of overcoming academic challenges, even when supported by others. Conversely, those with high self-efficacy remain confident and persistent, even in the face of limited social support. These findings underscore the importance of strengthening both internal psychological resources and external support systems to enhance student resilience. Institutions should prioritize integrated interventions, combining peer support, counseling, and self-efficacy development, to foster adaptive coping mechanisms and long-term academic success.



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## 1. Introduction

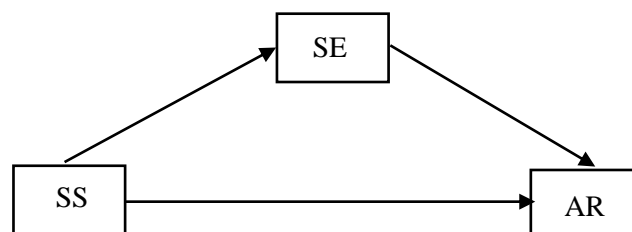
The integration of digital technology in higher education has reshaped learning experiences, presenting both advantages and challenges. While technological advancements facilitate access to resources, excessive social media use can lead to addiction, psychological distress, and academic setbacks [1]–[4]. Digital communication pressures, social comparisons, and high expectations contribute to stress, affecting students' ability to engage effectively with learning materials [5], [6]. Academic resilience, the ability to adapt and thrive despite challenges, becomes crucial in mitigating these negative impacts, enabling students to maintain focus and performance amid technological distractions [7]–[9]. Academic resilience is the ability to face difficulties, and be able to recover from mistakes, as well as adapt to new changes, and this ability is an important part of educational success [10], [11], [12]. Academic resilience includes not only one's ability to persevere in the face of

challenges, but also the ability to utilize existing resources, both individually and socially, and learn from previous experiences [13]; [14]; [15]. Not surprisingly, students with high resilience are better able to manage stress, set realistic goals, and remain motivated to learn [16], [17], and of course, all of this contributes to the well-being and academic success of students. For this reason, the factors that drive academic resilience are interesting to study, because all of these factors help students and educational institutions overcome academic risks [18].

Morales said that research on what affects academic resilience still needs further study related to theoretical and practical aspects [19]. Academic resilience is also influenced by factors, such as self-efficacy [20] and social support [21], [22], [23]. These two factors are important to study further because social support is considered an external protective factor and self-efficacy is considered an internal protective factor of academic resilience. Social support was first described in social psychology and mental health, where [24] introduced an important theory that links social support to psychological well-being. Social support is the help that an individual receives from those around him or her which can be in the form of emotional, informational, or material support and rewards [25] that can be obtained from friends, parents, and other people who are considered important [26].

Social support has a significant impact on reducing academic stress increasing student resilience, and preventing individuals from developing psychopathology and conversely becoming resilient to stress [27]. In addition, social support has a significant influence on the academic resilience of final-year students [28] and there is a significant positive relationship between social support and the educational resilience of migrant students [29], [30]. On the other hand, academic resilience, which is one of the important factors in influencing students' academic success [31] cannot always be explained by social support alone. Other research also shows that academic resilience is related to another psychological factor such as self-efficacy [32]. Bandura's [33] on self-efficacy is an important foundation for understanding that self-efficacy is an individual's belief in his or her ability to overcome certain tasks or challenges. Another expert [34] describes self-efficacy as the belief that an individual is capable of completing a new or challenging task or facing challenges in various aspects of human life. Initially, research on self-efficacy focused on clinical psychology and individual behavior, however in the academic context, this theory is understood as a factor that greatly influences academic motivation and performance.

Furthermore, the results of research from various places found that self-efficacy and subjective happiness are two factors that affect academic resilience [35], where self-efficacy accounts for 25.6% of the academic resilience of dental health program students. While others, finding self-efficacy can increase the academic resilience of graduate students [36]. Furthermore, it was also found that meaningfulness, perseverance, independence, balance, and existential solitude are significant forms of self-efficacy and resilience [37]. Others further assert a positive correlation between academic resilience and students' self-efficacy in school [38]. Lastly, academic self-efficacy significantly predicts academic resilience [39]. This confirms that individuals with high self-efficacy have high academic resilience. Regarding social support and student self-efficacy, it was found significant the influence of social support on students' self-efficacy during online learning, with an effective contribution of 15.2% [40]. Other research shows that individuals who receive little social support tend to have low self-efficacy, and conversely, individuals who receive a lot of social support tend to show high self-efficacy [41], [42], [43], [44]. This shows a significant positive relationship between social support and student self-efficacy.



**Fig. 1.** Research Model

This study examines the mediating role of self-efficacy in the relationship between social support and academic resilience, addressing an overlooked research gap. While direct links between social support and both academic resilience and self-efficacy have been explored, the function of self-efficacy as a bridge between these factors remains underexamined. By introducing a mediation model, this study provides insight into how internal (self-efficacy) and external (social support) factors

interact to shape students' academic resilience in Indonesia. Based on this framework, the study tests the following hypotheses: H1: Self-efficacy mediates the relationship between social support and academic resilience; H2: Social support influences academic resilience; H3: Social support influences self-efficacy; H4: Self-efficacy influences academic resilience. Fig. 1 is the Research Model.

## 2. Method

Cross-sectional survey research with a correlational causal design was carried out to see the relationship between variables. The research sample amounted to 424 students from Pasuruan, East Java, which was selected using *stratified random sampling*. The data collection procedure was carried out by asking participants to fill out a *Google form* containing a social support scale, a self-efficacy scale, and an academic resilience scale as a data collection instrument. Each participant is asked to fill out the form within the specified time. The three research instruments used underwent an adaptation procedure based on Beaton's guidelines [45]. Subsequently, they underwent validity and reliability testing to ensure accuracy and consistency. The academic resilience scale is adapted from the *Academic Resilience Scale* (ARS-30) created by [10].

The scale consists of three aspects (reflecting and seeking adaptive help, perseverance, and negative affective and emotional responses) and 16 items (e.g., I want to give up only, an example for the perseverance factor), and in the form of a scale of 5 Likerts. Reliability with Cronbach- $\alpha$  obtained a coefficient of 0.768. The scale of social support, adapted from the *Multidimensional Scale of Perceived Social Support* (MSPSS) developed by [46] consists of 3 aspects (support of friends, support of family, and support of people who are considered important) and 10 items (e.g., My family helps me, an example for the aspect of family support). The shape of the 7 Likert scale ranges from 1 strongly disagree to 7 strongly disagree. Reliability with Cronbach- $\alpha$  obtained a coefficient of 0.961. The self-efficacy scale is an adaptation of the *General Self-Efficacy Scale* (GSE) developed by [47].

The self-efficacy scale consists of 3 aspects (the ability to overcome problems, confidence in success in tasks, and a strong appreciation of self-ability) and 10 items (e.g., I can always solve difficult problems if I try hard enough, examples for the ability to overcome problems). The instrument is in the form of a scale of 4 Likert models that range from 1 not at all true to 4 completely true. Reliability with Cronbach- $\alpha$  obtained a coefficient of 0.908. The collected data was analyzed using an inferential statistical approach to test the role of self-efficacy in the relationship between social support and academic resilience, using Path Analysis. As a first step, a descriptive test was carried out to describe the characteristics of the sample. Furthermore, classical assumption tests are also carried out to keep the regression results obtained unbiased and can be interpreted correctly. The calculation was done with the help of Software SPSS-22.0.

## 3. Results and Discussion

Before testing the hypothesis, descriptive statistics were presented to describe the research sample by gender, age level, and semester (see Table 1, Table 2, and Table 3). Based on Table 1, Table 2, and Table 3, the research sample was generally female, most were 20-21 years old, and many of the research samples were in semesters 6 and 8. These descriptive statistics provide an overview of the demographic characteristics of the respondents. Understanding these baseline characteristics is important to contextualize the subsequent analyses. The gender, age, and academic semester distributions help clarify the background of the participants prior to hypothesis testing.

**Table 1.** Sample Distribution by Gender

| Sex   | F   | %    |
|-------|-----|------|
| Woman | 301 | 71%  |
| Man   | 123 | 29%  |
| Total | 424 | 100% |

**Table 2.** Sample Distribution for Age Levels

| Age Range     | F   | %    |
|---------------|-----|------|
| 18 - 19 years | 47  | 11%  |
| 20 - 21 years | 181 | 43%  |
| 22 - 23 years | 128 | 30%  |
| ≥ 24 years    | 68  | 16%  |
| Total         | 424 | 100% |

**Table 3.** Sample Distribution for Semester Level

| Semester | Total | Persentase |
|----------|-------|------------|
| II       | 93    | 22%        |
| IV       | 96    | 23%        |
| VI       | 119   | 28%        |
| VIII     | 116   | 27%        |
| Total    | 424   | 100%       |

Before testing the hypothesis, a classical assumption test was carried out to test normality, multicollinearity, and heteroskedasticity. The results of the normality test using Kolmogorov-Smirnov (see Table 4), showed a value of 0.145 and an asymp.sig value of 0.200 > 0.05, which means that the data was well distributed or normal.

**Table 4.** Kolmogorov-Smirnov Normality Test

|                        | Standardized Residual |
|------------------------|-----------------------|
| Test Statistic         | .145                  |
| Asymp. Sig. (2-tailed) | .200 <sup>c,d</sup>   |

a. Test distribution is Normal.

Meanwhile, the results of the multicollinearity test shown in Table 5 were the VIF value of the social support variable was 3.469, and the self-efficacy variable was 4.469, lower than 10.00. The Tolerance value for social support was 0.288, and the self-efficacy value was 0.288, higher than 0.10. This suggests that there are no symptoms of multicollinearity in the regression model.

**Table 5.** Multicollinearity Test

| Model          | Collinearity Statistics |       |
|----------------|-------------------------|-------|
|                | Tolerance               | VIF   |
| 1 Constant     |                         |       |
| Social Support | .288                    | 3.469 |
| Self-Efficacy  | .288                    | 3.469 |

Based on Table 6, the social support variable and the self-efficacy variable, each have a significant value of > 0.05, and that means that in the regression model, there is no heteroskedasticity; thus, the Hypothesis Test can be continued.

**Table 6.** Heteroskedasticity Test

| Model          | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|----------------|-----------------------------|------------|---------------------------|--------|------|
|                | B                           | Std. Error | Beta                      |        |      |
| (Constant)     | 6.406                       | 2.710      |                           | 9.027  | .011 |
| Social Support | -.135                       | .751       | -.524                     | -6.038 | .078 |
| Self-Efficacy  | .128                        | .982       | .368                      | 4.242  | .097 |

### 3.1. Test the Hypotheses

The data in Table 7 show a significant correlation between all variables. The standard error of the variables of academic resilience, social support, and self-efficacy show small values, which means that the data are scattered with relatively little variation and the average estimate of the sample is close to the average population.

**Table 7.** Correlation between Variables and Descriptive Statistics

| Variable                 | SE      | AR      | SS      |
|--------------------------|---------|---------|---------|
| Self-Efficacy (SE)       | 1.00    | 0.736** | 0.844** |
| Academic Resilience (AR) | 0.736** | 1.00    | 0.627** |
| Social Support (SS)      | 0.844** | 0.627** | 1.00    |
| Mean                     | 24.74   | 33.16   | 50.12   |
| Standard Deviation       | 4.857   | 4.754   | 7.350   |
| Error Standards          | 0.236   | 0.231   | 0.357   |

Table 8 shows that the beta coefficient of the mediator variable (self-efficacy = 1.229) is greater than that of the independent variable (social support = 0.082) in influencing the dependent variable. This result indicates that the mediator plays a more dominant role in determining the outcome of the dependent variable compared to the independent variable directly. In other words, the effect of the independent variable on the dependent variable occurs more through the mediator than directly.

**Table 8.** Regression test results: Social Support, Self-Efficacy, and Academic Resilience

| Predictor Variables | Coef. ( $\beta$ ) | Std. Error | t-value | p-value |
|---------------------|-------------------|------------|---------|---------|
| Self-Efficacy       | 1.229             | 0.072      | 17.137  | 0.000   |
| Social Support      | 0.082             | 0.045      | 1.825   | 0.069   |
| Intercept           | 27.245            | 1.678      | 16.232  | 0.000   |

Based on Table 8 and Table 9, the indirect effect through the mediator self-efficacy is 0.569, which is greater than the direct effect of social support on academic resilience, which is only 0.082. This result indicates that self-efficacy strengthens the relationship between independent and dependent variables, making the effect of social support more significant when accounted for through the mediator.

**Table 9.** Results of Path Analysis

| Independent Variable | Mediator Variable | Dependent Variable | Direct Influence | Indirect Influence |
|----------------------|-------------------|--------------------|------------------|--------------------|
| SS (X)               |                   | AR (Y)             | 0.082            |                    |
| SS (X)               | SE (M)            | AR (Y)             |                  | 0.569              |
| Total SS - AR        |                   |                    | 0.651            |                    |

The mediation model image is shown in Fig. 2, displays the mediation model tested in this study. In the diagram, SS is proposed to influence AR both directly and indirectly through SE as a mediating variable. The path coefficients are presented on each arrow, indicating the strength and direction of the relationships. This model serves to clarify the mechanisms by which social support contributes to academic resilience, particularly through the enhancement of self-efficacy.

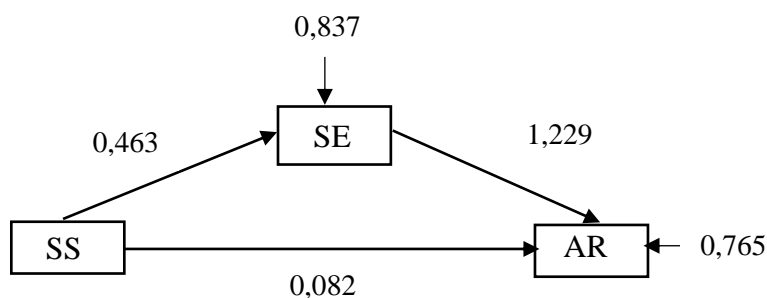
**Fig. 2.** Mediation Model

Table 10 indicates that the effect of self-efficacy in mediating the relationship is considered significant ( $p < 0.05$ ). Additionally, the Z-value of 13.491, which exceeds the critical value of 1.96, further confirms that the indirect effect of social support on academic resilience is significant. Hypothesis Test 1 (H1): Self-efficacy mediates the relationship between social support and academic resilience. Based on Table 8, Table 9, and Table 10, H1 states that Self-efficacy mediates the relationship between social support and academic resilience, --- proven. This mediator function of self-efficacy is proven to be significant, as indicated by  $p$ -value  $< 0.05$ . Additionally, the Z-value = 13.491, which exceeds the critical value of 1.96, confirms that the indirect effect through self-efficacy is considered significant.

**Table 10.** Sobel Test Results

| Variable Relationship | Coef. ( $\beta$ ) | Standard Error (E) | Z value | p-value |
|-----------------------|-------------------|--------------------|---------|---------|
| SS - SE               | 0.463             | 0.021              | 13.491  | 0.000   |
| SE - AR               | 1.229             | 0.072              |         |         |

The results of H1 confirm that social support significantly enhances students' self-efficacy, which in turn strengthens their academic resilience. Furthermore, self-efficacy acts as a crucial mediator in the relationship between social support and academic resilience. As noted by Wang *et al.* [48] and Cassidy [10], individuals who receive greater social support tend to develop higher self-efficacy, which subsequently improves their academic resilience. Specifically, social support from peers directly influences self-efficacy, enabling students to better manage emotional challenges such as frustration, confusion, and despair, ultimately fostering resilience until graduation [49], [50]. Additionally, mediation analysis confirms that self-efficacy plays a pivotal role in linking social support to academic resilience. Social support plays a crucial role in enhancing self-efficacy, boosting students' confidence in overcoming academic challenges. In turn, self-efficacy significantly influences



academic resilience, enabling students to persist and succeed despite difficulties [51]. Thus, self-efficacy serves as a bridge between social support and academic resilience. Without strong self-efficacy, students may struggle to leverage social support effectively in overcoming academic obstacles. Conversely, those with high self-efficacy remain confident in tackling challenges, even with limited social support. The findings of this study confirm that self-efficacy not only responds to social support but also acts as a mediator, reinforcing the connection between social support and academic resilience.

### 3.2. Hypothesis Test 2 (H2): social support influences academic resilience

Table 11 shows that the effect of social support on academic resilience has a coefficient value of 0.651 ( $p < 0.01$ ), which means that there is a direct influence of social support on academic resilience. Thus, H2: social support influences academic resilience, --- proven.

**Table 11.** Regression: Social Support and Academic Resilience

| Predictor Variable | Coef. ( $\beta$ ) | Standard Error (E) | t-value | p-value |
|--------------------|-------------------|--------------------|---------|---------|
| Social Support (X) | 0.651             | 0.039              | 16.543  | 0.000   |
| Intercept          | 26.517            | 2.184              | 12.144  | 0.000   |

Social support has a direct impact on academic resilience, as students who receive greater support tend to be more resilient in facing academic challenges, confirming Hypothesis 2. This aligns with findings by Lopez *et al.* [52] and Cohen & Wills [24], who highlight social support as a buffer against stress, fostering security and acceptance in demanding academic environments. Positive social support enhances students' sense of appreciation and helps them adapt to academic changes and challenges. These findings are consistent with prior research by Efendi *et al.* [28], which demonstrated that social support significantly strengthens the academic resilience of final-year students working on their thesis. Similarly, Syahrinnisa, *et al.*, [53] confirmed its positive impact on academic resilience among graduating students. In essence, greater social support leads to stronger academic resilience.

### 3.3. Hypothesis Test3 (H3): social support influences self-efficacy

Table 12 shows that the direct influence of social support on self-efficacy has a coefficient value of 0.463 ( $p < 0.01$ ), which means that there is an effect of social support on self-efficacy. Thus, H3, which is an effect of social support on self-efficacy, is accepted.

**Table 12.** Regression Results Between Social Support and Self-Efficacy

| Predictor Variable | Coef. ( $\beta$ ) | Standard Error (E) | t-value | p-value |
|--------------------|-------------------|--------------------|---------|---------|
| Social Support     | 0.463             | 0.021              | 22.558  | 0.000   |
| Intercept          | -0.593            | 1.139              | -0.520  | 0.603   |

Social support significantly enhances self-efficacy, confirming Hypothesis 3. Individuals who receive support from friends, family, or colleagues tend to be more confident in overcoming challenges. This finding aligns with Bandura's theory [54], which emphasizes the role of the social environment in shaping self-efficacy. Similarly, Salwani & Cahyawulan [55] identified a strong link between family support and students' self-efficacy. When students feel supported and valued, they are more likely to trust their abilities and effectively navigate academic challenges.

### 3.4. Hypothesis Test 4 (H4): self-efficacy influences academic resilience

Table 13 shows the direct effect of self-efficacy on academic resilience with a coefficient of 1.033 ( $p < 0.01$ ), which means that there is a direct effect of self-efficacy on academic resilience. For this reason, H4 that there is an influence of self-efficacy on academic resilience, accepted.

**Table 13.** Regression Results Between Self-Efficacy and Academic Resilience

| Predictor Variables | Coef. ( $\beta$ ) | Standard Error (E) | t-value | p-value |
|---------------------|-------------------|--------------------|---------|---------|
| Self-Efficacy       | 1.033             | 0.046              | 22.308  | 0,000   |
| Intercept           | 35.138            | 1.246              | 28.206  | 0,000   |

The findings confirm Hypothesis 4, demonstrating that self-efficacy significantly influences academic resilience. This result aligns with previous studies showing that self-efficacy plays a crucial role in fostering academic resilience [37], [56]–[58]. Self-efficacy serves as the foundation for academic resilience, as students with high self-efficacy are more confident in overcoming academic challenges. It also provides psychological reinforcement, helping students stay focused, persistent, and engaged [59]–[61], even in the face of failure. Those with strong self-efficacy are more likely to navigate academic difficulties successfully and remain committed to completing demanding tasks. These findings highlight the importance of integrating self-efficacy development into university

coaching and counseling programs. Strengthening students' belief in their abilities is essential for fostering academic success and emotional resilience. Effective interventions should focus on enhancing students' confidence in completing academic tasks and improving coping strategies for managing stress. However, these efforts are most impactful when paired with positive social support from peers, faculty, and the broader campus environment. Supportive relationships provide encouragement, validation, and a sense of belonging, which further reinforce students' self-efficacy. Universities can implement structured counseling programs that incorporate peer mentoring, resilience-building workshops, and personalized academic coaching. These initiatives not only help students navigate academic challenges but also equip them with the psychological tools needed to overcome frustration, anxiety, and setbacks. By fostering a culture of support and empowerment, institutions can ensure that students develop the confidence and perseverance necessary to thrive in their academic journey.

#### 4. Conclusion

The findings of this study clearly demonstrate that self-efficacy plays a crucial mediating role in the relationship between social support and academic resilience among university students. Social support, both emotional and instrumental, positively influences students' belief in their own abilities (self-efficacy), which in turn significantly enhances their capacity to adapt to academic challenges. While social support alone contributes to academic resilience, its impact becomes significantly stronger when channeled through students' self-efficacy. This means that students who feel supported by peers, family, or significant others but lack confidence in their abilities may still struggle to overcome academic difficulties. In contrast, students with high self-efficacy are more likely to stay motivated, persevere, and succeed, even when social support is limited. The results also confirm that both social support and self-efficacy independently and collectively influence academic resilience, with self-efficacy having the strongest direct impact. These findings highlight the importance of developing holistic strategies in higher education that not only foster supportive environments but also actively build students' confidence and psychological strength. Integrating self-efficacy enhancement programs, peer mentoring, and resilience-based workshops can serve as effective approaches to help students navigate academic pressures, particularly in technology-driven learning contexts. In summary, the interaction between internal factors (such as self-efficacy) and external factors (such as social support) plays a crucial role in fostering academic resilience and ensuring long-term student success.

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#### Declarations

- Author contribution** : EK contributed to the conceptualization, data collection, and writing of the original draft. FDM was responsible for methodology, supervision, and critical revision. IH provided project administration, data analysis, and final manuscript review. NE contributed to literature review, instrument adaptation, and data validation. All authors have read and approved the final manuscript.
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- Conflict of interest** : The authors declare no conflict of interest.
- Additional information** : No additional information is available for this paper.

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