

Research Article

Cite this article: Martono, S., Prajanti, S. D. W., Purwanta, E., & Dwiningrum, S. I. A. (2025). The Role of Mental Toughness and Positive Psychological Capital in the Effect of Perceived Social Support on Student Resilience. *Educational Process: International Journal*, 16, e2025277.
<https://doi.org/10.22521/edupij.2025.16.277>

Received April 7, 2025

Accepted April 30, 2025

Published Online June 25, 2025

Keywords: Student resilience, perceived social support, positive psychological capital, mental toughness

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The Role of Mental Toughness and Positive Psychological Capital in the Effect of Perceived Social Support on Student Resilience

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Abstract

Background/purpose. The aim of this research is to examine whether an indirect effect exists between perceived social support and student resilience. Perceived social support has been identified as a significant factor that directly contributes to the development of student resilience. Although perceived social support is a psychological construct, the mechanisms influencing student resilience remain unclear. Grounded in Self-Regulation and Psychological Capital theories, this study explores the indirect effect of perceived social support on student resilience through mental toughness and positive psychological capital.

Materials/methods. A quantitative approach with a causal research design was applied. The sampling technique utilized was purposive sampling, resulting in a total of 289 participants. The respondents are from a public university in Indonesia. Data were collected through a structured questionnaire and analyzed using Partial Least Squares Structural Equation Modeling (SEM-PLS).

Results. The findings reveal that perceived social support significantly influences both mental toughness and positive psychological capital. However, no direct relationship was found between perceived social support and student resilience. The study provides evidence that mental toughness and positive psychological capital fully mediate the effect of perceived social support on student resilience. The findings clarify previously unclear psychological mechanisms by highlighting the mediating roles of mental toughness and psychological capital and demonstrate that Psychological Capital Theory can be effectively complemented by Self-Regulation Theory.

Conclusion. To strengthen student resilience, educators and institutions can enhance mental toughness, foster a supportive environment, and reinforce support systems such as Counseling and Psychological Services.

1. Introduction

Student resilience is widely regarded as a critical factor in determining academic success in higher education. It reflects the capacity of students to confront academic challenges and persist in the face of adversity throughout the learning process. Resilience signifies the ability to manage academic pressure and recover from setbacks encountered during learning. Students who exhibit resilience are more likely to endure in high-pressure situations, maintain learning motivation, and continue striving toward academic goals despite encountering obstacles. This capacity for resilience indicates the presence of self-regulation, which encompasses emotional control, goal-setting, and the implementation of effective learning strategies. Previous studies have consistently linked student resilience with reduced stress and anxiety, as well as enhanced mindfulness (Alyoubi et al., 2021), well-being (Chang et al., 2022; Ropret et al., 2023), and academic performance (Chisholm-Burns et al., 2021; Ononye et al., 2022). Thus, student resilience can be understood as an outcome of the learning process that results in learners who are psychologically robust and capable of withstanding academic difficulties.

Perceived social support has frequently been associated with student resilience in prior research. It refers to the support perceived by students during the learning process. Perceived social support plays a crucial role in shaping students' psychological conditions (Bilgin & Taş, 2018), fostering a sense of being supported throughout academic activities. This form of support promotes psychological security by assuring students that others are available to assist with academic challenges. A socially supportive environment contributes to emotional stability and a sense of safety (Zhou & Lin, 2016). When students experience academic stress or failure, perceived social support is often manifested through seeking help, engaging in discussions, and exploring alternative problem-solving strategies (Mai et al., 2021). Support perceived from teachers and peers encourages perseverance and sustained motivation when academic obstacles arise (Hui et al., 2023). Such support originates from various sources, including parents, peers, instructors, and other educational stakeholders, all of whom contribute to the success of the learning experience (Kalaitzaki et al., 2021).

Previous research has consistently demonstrated that perceived social support plays a significant direct role in shaping student resilience (He et al., 2022; Litwic-Kaminska et al., 2023; Mai et al., 2021). However, perceived social support is not presumed to influence resilience in a straightforward manner. Psychological mechanisms are believed to mediate this relationship, implying the existence of intermediary factors that operate within the process of developing resilience. Hou et al. (2024) provided evidence that perceived social support does not exert a direct influence on student resilience but instead operates through the role of coping style. Despite numerous findings on the association between perceived social support and resilience, limited attention has been given to explaining the underlying psychological mechanisms. This gap in understanding is particularly important, as a comprehensive perspective on human functioning requires an in-depth examination of psychological processes. Clarification is still needed regarding how perceived social support contributes to the development of student resilience.

Existing studies have indicated that self-efficacy, or a sense of confidence in one's abilities, plays a pivotal role in fostering student resilience (Cassidy, 2015; Sabouripour et al., 2021). Furthermore, Li et al. (2023) found that self-efficacy is derived from psychological attributes, specifically mental toughness. Although limited research has directly explored the link between mental toughness and student resilience, mental toughness is considered a psychological mechanism that contributes to resilience (Eryilmaz et al., 2023).

The novelty of this study lies in its examination of indirect psychological mechanisms underlying the development of student resilience. This research explores the roles of mental toughness and positive psychological capital as mediating psychological constructs. Previous studies have primarily

focused on direct effects, such as the work by Hou et al. (2024), yet psychological mechanisms require explanation through indirect pathways. The current study is grounded in the Psychological Capital Theory, which posits that a person's positive mental state can be enhanced through various psychological capacities (Fu & Weng, 2022; Li et al., 2021), as originally introduced by Luthans et al., (2007). However, this theory tends to emphasize external factors influencing individuals without elaborating on the internal psychological mechanisms at play. Therefore, additional theoretical support is provided through the self-regulation theory, which suggests that students with self-regulatory abilities are capable of actively managing their thoughts, emotions, and behaviors (Kritikou & Giovazolias, 2022; Pachón-Basallo et al., 2021). The urgency of this study stems from the need to better understand psychological factors that strengthen student resilience. Current understandings of resilience often overlook the inner psychological dynamics that are not outwardly observable but play a critical role in students' adaptability. A deeper exploration of the indirect relationship between perceived social support and student resilience offers valuable insights for stakeholders to reinforce psychological dimensions, which can be translated into supportive policies and adaptive educational environments.

2. Literature Review

2.1. Mental Toughness

Mental toughness is characterized by emotional control, confidence, commitment, and the motivation to recover from failure (Gerber et al., 2013). Students with a high level of mental toughness are typically more resilient when facing academic pressure and possess stronger psychological endurance in managing stress and academic failure (Anthony et al., 2020). The development of mental toughness involves cultivating a resilient mindset through cognitive and emotional strategies, including self-regulation, positive reframing, and problem-focused coping (Emesi et al., 2024). Students who exhibit mental toughness tend to remain composed in the face of academic challenges, maintain focus on goal attainment, and implement effective problem-solving strategies (Li et al., 2020). Gradual exposure to challenging experiences is also essential in strengthening mental toughness, which further equips students with the mental resilience required to handle academic difficulties.

H1: Mental toughness positively influences student resilience.

2.2. Perceived social support

Perceived social support fosters a positive environment that encourages optimism in navigating academic activities. The positive atmosphere generated through social interactions is often associated with positive psychological capital. This construct refers to a set of positive psychological resources, including self-efficacy (confidence in task completion), hope (perseverance toward goals), optimism (a positive outlook on future outcomes), and resilience (the ability to bounce back from adversity) (Luthans et al., 2006). Positive psychological capital (PsyCap) enhances individual well-being and facilitates the management of both academic and personal challenges. Individuals with high PsyCap are generally capable of regulating emotions, sustaining motivation, and developing strategies to effectively manage academic stress and pressure (Jiang et al., 2023). For students, PsyCap serves as a protective factor that reinforces resilience in the face of academic demands (Xu & Choi, 2023).

H2: Perceived social support positively influences mental toughness.

H3: Perceived social support positively influences positive psychological capital.

H4: Perceived social support positively influences student resilience.

H5: Perceived social support indirectly influences student resilience through mental toughness.

H6: Perceived social support indirectly influences student resilience through positive psychological capital.

2.3. Positive Psychological Capital

Positive psychological capital enhances students' confidence in tackling difficult tasks and encourages a focus on solutions when confronting challenges. It also enables students to recover from failure, learn from mistakes, and persist in achieving academic goals (Sood & Puri, 2023). Furthermore, research indicates that students with high levels of positive psychological capital are more likely to develop a resilient mindset, experience lower stress levels, and demonstrate greater adaptability within educational settings (Jeong & Jung, 2018). Perceived social support contributes to strengthening psychological capital by providing a sense of security, increasing motivation, and fostering the belief that academic obstacles can be overcome with support from others (Varga et al., 2020).

H7: Positive psychological capital positively influences student resilience.

3. Methodology

3.1. Research Design

This study employed a quantitative approach aimed at testing hypotheses using numerical data. A quantitative approach allows for data collection from a larger sample size, enabling broader generalization of the findings (Check & Schutt, 2017). The research design is causal, focusing on examining cause-and-effect relationships among the studied variables.

3.2. Participants

The participants of this study were undergraduate students enrolled in public universities in Indonesia. The sample was selected using probability sampling with a purposive sampling approach, as not all students could be included as participants due to specific eligibility criteria. The criteria for participation included students who had completed at least their fifth semester and had not taken any academic leave. In the context of Indonesian public universities, the ideal duration for undergraduate study typically ranges between 7 to 8 semesters. Therefore, students in their fifth semester were considered to have adequate exposure to the academic environment and were assumed to have demonstrated a certain level of resilience. Using a confidence level of 95%, a margin of error of 5%, and a population proportion of 20%, the required sample size was calculated to be 289 respondents.

3.3. Data Collection

Data were collected through a questionnaire specifically designed to measure the study variables. The questionnaire utilized a five-point Likert scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree"). All items were adapted from previously validated instruments. The questionnaire was distributed online to ensure wider accessibility across various public universities in Indonesia. A screening question was included to ensure that only respondents who met the specified criteria were able to complete the survey.

3.4. Research Instruments

This study involved four variables, each measured using indicators adapted from prior research. The instrument for Perceived Social Support was adopted from Vaux et al. (1986), assessing students' perceptions of support from their surrounding environment. Mental toughness was measured using indicators from McGeown et al. (2018), while Positive Psychological Capital was measured using the scale developed by Xu & Choi (2023). Student Resilience was measured using items adapted from

Mueller (2023). Each questionnaire item reflected specific indicators developed and validated in previous studies.

3.5. Data Analysis

The data collected were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The analysis was conducted through the assessment of both the outer model and the inner model in accordance with the research objectives. A margin of error of 5% was applied, with statistical significance determined by a t-value threshold of 1.96 and a p-value less than 0.05.

4. Results

This study tested both the outer and inner models using Partial Least Squares Structural Equation Modeling (PLS-SEM). The outer model was assessed to evaluate the validity, reliability, and the relationships between latent variables and their indicators. The assessment began with tests of convergent and discriminant validity, as well as internal consistency reliability. The results of the validity tests are presented in Table 1.

Table 1. Validity and Reliability Test Result

Variable	Indicator	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Mental Toughness	MT1	0.935	0.952	0.963	0.84
	MT2	0.888			
	MT3	0.941			
	MT4	0.893			
	MT5	0.926			
Positive Psychological Capital	PPC1	0.947	0.963	0.967	0.896
	PPC2	0.957			
	PPC3	0.955			
	PPC4	0.933			
Perceived Social Support	PSS1	0.956	0.942	0.973	0.899
	PSS2	0.928			
	PSS3	0.956			
Student Resilience	SR1	0.962	0.966	0.974	0.883
	SR2	0.968			
	SR3	0.842			
	SR4	0.973			
	SR5	0.947			

The loading factor values for all indicators in this study's variables, as shown in Table 1, are ≥ 0.70 . This indicates that the indicators used in this study are valid, meaning they appropriately measure the intended latent constructs. Additionally, Table 1 presents Cronbach's Alpha and

Composite Reliability, which are used to assess the internal consistency reliability of the constructs. The acceptable threshold for reliability is ≥ 0.70 . As shown in Table 1, all variables meet this requirement, indicating that they are reliable. The Average Variance Extracted (AVE) is also used to evaluate convergent validity, and the results demonstrate that all variables meet the required threshold of ≥ 0.50 . Furthermore, this study examines the coefficient of determination (R^2), which measures the extent to which the independent variables explain variance in the dependent variable within the regression model. The R^2 values are interpreted as follows: $R^2 < 0.25$ indicates a weak effect, $0.25 \leq R^2 < 0.50$ indicates a moderate effect, $0.50 \leq R^2 < 0.75$ indicates a substantial effect, and $R^2 \geq 0.75$ indicates a very strong effect. A higher R^2 reflects stronger explanatory power of the model. The results of the coefficient of determination analysis are presented in Table 2.

Table 2. coefficient of determination

Variable	R Square	R Square Adjusted
Mental Toughness	0.798	0.796
Positive Psychological Capital	0.903	0.902
Student Resilience	0.911	0.908

Table 2 shows that all variables have a coefficient of determination (R^2) value of ≥ 0.75 , indicating that the variables possess very strong predictive power. This suggests that most of the variance in the dependent variable is explained by the independent variables within the model. Following this, the analysis continued with an assessment of model fit, which evaluates how well the proposed research model aligns with the observed empirical data. This study utilizes the Standardized Root Mean Square Residual (SRMR) and the Normed Fit Index (NFI) as key indicators of model fit. An SRMR value of ≤ 0.08 indicates a good fit between the model and the data, while an NFI value of ≥ 0.90 demonstrates that the proposed model provides a better fit compared to a null or baseline model. The results of the model fit assessment are summarized in Table 3.

Table 3. Model Fit Result

Measurement	Saturated Model	Estimated Model
SRMR	0.045	0.048
d_ ULS	0.307	0.36
d_ G	0.892	0.95
Chi-Square	600.121	616.027
NFI	0.902	0.907

Based on Table 3, the SRMR result meets the cut-off value criterion with a value of ≤ 0.08 , and the NFI also satisfies the required threshold with a value of ≥ 0.90 . These findings indicate that the research model demonstrates an acceptable level of model fit. Furthermore, the study proceeds with an analysis of the inner model, which evaluates the relationships among variables within the structural model and assesses the strength and direction of the influence exerted by the independent variables on the dependent variables. The results of the inner model testing are presented in Tables 4 and 5, as well as illustrated in Figure 1.

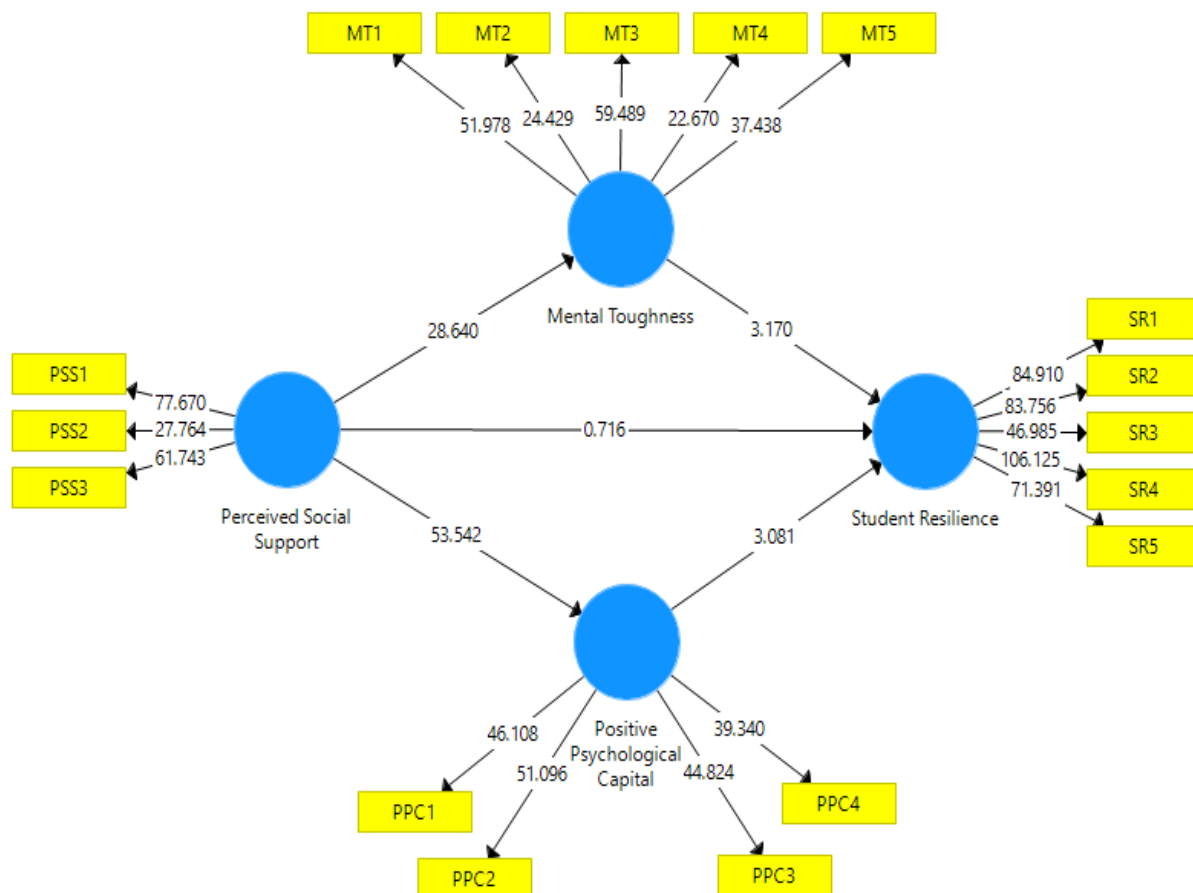


Figure 1. The Research Result

Table 4. Direct Effect Result

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Mental toughness → Student Resilience	0.442	0.453	0.139	3.17	0.002
Perceived Social Support → Mental Toughness	0.893	0.894	0.031	28.64	0.000
Perceived Social Support → Positive Psychological Capital	0.95	0.949	0.018	53.542	0.000
Perceived Social Support → Student Resilience	0.141	0.145	0.197	0.716	0.474
Positive Psychological Capital → Student Resilience	0.399	0.385	0.129	3.081	0.002

Table 5. Indirect Effect Result

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Perceived Social Support → Positive Psychological Capital → Student Resilience	0.379	0.365	0.125	3.027	0.003
Perceived Social Support → Mental Toughness → Student Resilience	0.395	0.405	0.127	3.11	0.002

The results presented in Table 4 show the direct effects among variables. The effect of perceived social support on mental toughness is significant and supported ($t = 28.640$, sig. 0.000), as is the effect of perceived social support on positive psychological capital ($t = 53.542$, sig. 0.000). However, the direct effect of perceived social support on student resilience is not supported ($t = 0.716$, sig. 0.474). In contrast, both mental toughness ($t = 3.170$, sig. 0.002) and positive psychological capital ($t = 3.081$, sig. 0.002) significantly influence student resilience. Furthermore, as shown in Table 5, the indirect effects are also significant: perceived social support affects student resilience through positive psychological capital ($t = 3.027$, sig. 0.003) and through mental toughness ($t = 3.110$, sig. 0.002). These findings suggest that mental toughness and positive psychological capital fully mediate the relationship between perceived social support and student resilience. Thus, the study highlights an alternative explanation—perceived social support does not exert a direct influence on student resilience; rather, its impact is channeled through internal psychological mechanisms, namely mental toughness and positive psychological capital.

5. Discussion

The findings of this study indicate that perceived social support has a positive effect on mental toughness. This suggests that support from family, peers, and the surrounding environment plays a crucial role in shaping students' mental toughness. This result aligns with previous research, which demonstrated that perceived social support—particularly from family—positively influences the level of mental toughness among university students (Yildiz et al., 2022). It highlights the importance of family as a key component in building students' mental strength. In addition to family, previous studies have also found that support from parents, classmates, and teachers positively impacts mental health through the development of mental toughness (Soylu et al., 2022). The surrounding environment contributes significantly to the formation of students' mental readiness to face academic challenges at the university level. Further supporting evidence shows that perceived social support positively influences college students' mental toughness (Li et al., 2023). High levels of perceived family support serve as the strongest protective factor for undergraduate students in managing stress during difficult times (Aziz et al., 2023). When students possess strong mental toughness, they are better equipped to overcome challenges effectively, thereby achieving their learning goals. Social support from family and friends has also been found to significantly reduce depressive symptoms and enhance the quality of life among university students (Alsubaie et al., 2019).

This study also confirms that mental toughness has a significant positive effect on student resilience. This finding implies that students with higher mental strength are more likely to demonstrate resilience in coping with academic difficulties and are better prepared to confront and resolve problems. Prior studies have emphasized that mental toughness can mitigate the relationship between high stress and depressive symptoms (Gerber et al., 2013). In a subsequent study, Gerber et al. (2013) further discovered that high levels of mental toughness are associated with greater resilience to stress, predicting lower depressive symptoms and higher life satisfaction. Naden et al. (2023) also found that components of mental toughness moderately to strongly predict psychological

well-being among undergraduate students, regardless of gender. Additionally, previous research supports these findings by showing that mental toughness is positively correlated with academic success in undergraduate students (Stock et al., 2018). The Mental Toughness Scale (MTS) is a valid and reliable instrument for assessing mental toughness in university students and identifies three major components: sense of personal competence, problem-solving skills, and social competence (Anthony et al., 2020). Stock et al. (2018) further noted that mental toughness—particularly the "control of life" aspect—is significantly associated with improved academic performance, attendance, and classroom behavior. Mental toughness has also been found to be a stronger predictor of happiness than resilience, self-efficacy, and grit, making it a valuable construct for identifying individuals at risk of poor well-being. These results collectively reinforce that perceived social support influences student resilience indirectly through mental toughness.

The findings of this study demonstrate that perceived social support has a positive influence on positive psychological capital. This underscores the critical role of a supportive environment in fostering student resilience throughout the learning process. These findings are supported by previous research showing that the mental health of higher education students is enhanced through perceived social support. The development of positive psychological capital has important implications for students' life satisfaction, suggesting that perceived social support plays a vital role in strengthening students' capacity to achieve their academic goals. Li and Qin (2020) emphasized that fostering psychological capital through perceived social support can promote post-stress growth. Similarly, Ding et al. (2024) found that perceived social support helps reduce stress levels by facilitating the development of psychological capital. Wilson et al. (2020) revealed that perceived social support improves psychological well-being by enhancing mindfulness, self-compassion, and savoring, which in turn leads to increased happiness and reduced negative outcomes. Perceived social support has also been shown to positively impact psychological resilience (Hou et al., 2024). Furthermore, perceived social support partially mediates the relationship between self-identity and psychological capital in college students (Stamp et al., 2015). In addition, Emadpoor et al. (2016) found that perceived social support positively influences psychological well-being and academic motivation in female high school students, with academic motivation serving as a mediating variable.

This study also confirms that positive psychological capital significantly influences student resilience. These findings highlight the importance of students' psychological strengths in developing resilience when facing academic challenges. Prior studies support these findings, such as Selvaraj & Bhat (2018), who emphasized that developing positive psychological strengths—including hope, efficacy, resilience, and optimism—significantly enhances positive mental health among college students. Positive psychological capital also plays a role in mitigating stress and academic burdens (Yu et al., 2019). Martínez et al. (2019) further demonstrated that positive psychological capital is correlated with academic engagement and satisfaction. Psychological capital also buffers the negative effects of stress on students' well-being, reducing adverse outcomes while promoting positive psychological outcomes. In team settings, psychological capital profiles have been shown to positively influence internal learning processes (Geremias et al., 2022).

Interestingly, the results of this study reveal that perceived social support does not directly influence student resilience. This finding contrasts with previous research by Liu & Cao (2022) and Mai et al. (2021), which reported a direct positive relationship. However, the present study confirms that perceived social support indirectly influences student resilience through mediating variables, specifically mental toughness and positive psychological capital. This aligns with Hou et al. (2024), who found that perceived social support influences psychological resilience via positive coping styles. Thus, the current findings provide strong empirical evidence that perceived social support does not directly shape student resilience; rather, it does so through the development of mental toughness and positive psychological capital.

6. Conclusion

This study aims to extend the existing body of knowledge by addressing a gap in understanding the psychological mechanisms underlying the relationship between perceived social support and student resilience. While previous research has often associated perceived social support with a direct impact on student resilience, the psychological processes mediating this relationship have remained insufficiently explored. The findings of this study demonstrate that perceived social support does not directly influence student resilience. Instead, it exerts an indirect effect through the mediating roles of positive psychological capital and mental toughness. Both variables are found to fully mediate the relationship, indicating that when students receive adequate social support, it enhances their psychological capital and mental strength, which fosters resilience.

7. Suggestion

These findings provide important implications for institutions such as Counseling and Psychological Services, emphasizing the need to cultivate a supportive and psychologically nurturing environment to strengthen students' resilience.

Declarations

Author Contributions. S.M Conceptualization, Investigation, Writing - Original Draft, Supervision; S.D.W.P Methodology, Validation, Writing - Original Draft; E.P Investigation, Writing - Review & Editing; S.I.A.D Project administration, Writing - Review & Editing

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

Funding. This research is part of the Riset Kolaborasi LPTK Indonesia (RKLI) funded by DPA LPPM Universitas Negeri Semarang in 2025, under Grant Number DPA 139.032.693449/2025.01, based on the Research Assignment Agreement for the Implementation of DPA LPPM UNNES-funded Research 2025, with Agreement Number 22.25.4/UN37/PPK.11/2025.

Ethical Approval. –

Data Availability Statement. The data is available upon request by contacting the corresponding author.

Acknowledgements. The authors would like to express their gratitude to Universitas Negeri Semarang and Riset Kolaborasi LPTK Indonesia for supporting this research

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