The Role of Academic Hope and Emotion Regulation on Psychological Well-being in Students

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Abstract

Academic pressure experienced by students can impact their psychological well-being. This study aims to examine the influence of academic hope and emotion regulation on psychological well-being in students. This research employs a quantitative approach with a cross-sectional design, involving 152 respondents selected through convenience sampling. All variables were measured using a Likert scale and analyzed using hierarchical multiple regression with R (v4.4.2) and RStudio (v2024.12.0+467). The results indicate that academic hope significantly influences psychological well-being (B = 0.68, p < 0.001). Additionally, emotion regulation also contributes to enhancing students' psychological well-being (B = 0.58, p < 0.001). These findings highlight the crucial role of academic hope and emotion regulation in supporting students' psychological well-being. The implications of this study emphasize the need to strengthen academic hope and emotion regulation within educational settings to optimize students' psychological well-being.

Keywords: *academic hope; emotion regulation; psychological well-being*

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Introduction

Positive psychology is a field that examines factors contributing to individual well-being, including optimism, happiness, psychological well-being, and strength-based decision-making (Huebner et al., 2009). In the educational context, students' psychological well-being plays a crucial role in determining their academic success and personal development (Indreswari et al., 2022; Franzen et al., 2021; Mustafa et al., 2020). Apart from that, Ryff and Singer (2008) define psychological well-being as a condition in which individuals find meaning and purpose in life, effectively manage daily challenges, and maintain positive relationships with others and their environment. This concept goes beyond the mere absence of mental disorders; it encompasses the achievement of one's optimal potential in various aspects of life.

Interviews with several high school students revealed that many experience significant academic pressure. One student stated, "I find it difficult to balance school assignments and my personal life. Sometimes, I feel anxious and lack confidence when facing exams." Meanwhile, another student mentioned, "Support from friends and family has helped me get through tough times at school." These statements indicate that both internal and external factors contribute to students' psychological well-being.

According to Ryff and Singer (2008), there are six primary dimensions that shape students' psychological well-being: self-acceptance, positive relationships with others, personal growth, environmental mastery, autonomy, and purpose in life. Social support, evaluation of life experiences, and locus of control also play roles in determining individual psychological well-being (Ryff & Singer, 2008). In an academic context, students with a high level of psychological well-being tend to exhibit greater resilience against stress and academic pressure.

In addition to psychological well-being, academic hope plays a significant role in students' learning success. Seligman et al. (2005) states that academic hope is a positive outlook on the future that helps individuals overcome depression and academic challenges. Synder (1994) defines academic hope as an individual's belief in their ability to achieve academic goals through careful planning and high motivation. Interviews with students revealed that those with high academic hope tend to be more persistent in pursuing their academic targets. One student remarked, "I always try to find ways to improve my grades, even if I fail an exam." This aligns with the pathways and agency concepts in Snyder's (1994) theory of academic hope, where individuals must have both strategies and motivation to achieve their goals.

Furthermore, emotion regulation plays a role in students' psychological well-being and academic hope. Gross and Thompson (2007) define emotion regulation as a set of processes that enable individuals to manage their emotions. Students who can regulate their emotions effectively tend to cope better with academic pressure. One student shared, "I try to stay calm during exams by practicing breathing techniques and thinking positively." Gross (2002) also emphasizes that effective emotion regulation not only reduces negative emotions but also enhances positive emotions.

Academic hope and psychological well-being

Academic hope plays a crucial role in shaping students' psychological well-being. According to Snyder's Hope Theory (1994), hope consists of two key components: pathways thinking (the ability to generate strategies to achieve goals) and agency thinking (the motivation to use those strategies). Students with high academic hope tend to set clear academic goals, find alternative ways to achieve them, and persist despite obstacles. This proactive mindset contributes to greater psychological well-being by fostering a sense of purpose, self-efficacy, and resilience in overcoming academic challenges (Cobo-Rendón et al., 2020; Johnston & Cassidy, 2020; Hudig et al., 2022; Arslan & Wong, 2023).

Empirical studies have consistently shown a positive correlation between academic hope and well-being. Research by Marques et al. (2017) found that students with higher levels of hope reported greater life satisfaction, emotional stability, and lower levels of academic stress. Additionally, hope serves as a psychological buffer against negative emotions such as anxiety and depression, allowing students to maintain a positive outlook on their academic and personal lives (Rand, 2018; Snyder et al., 2002). Furthermore, hope has been linked to adaptive coping strategies, where students with higher hope are more likely to engage in problem-solving and seek social support, which further enhances their psychological well-being (Siu et al., 2021; Sun et al., 2023). In the educational context, fostering academic hope can lead to long-term psychological benefits. When students believe in their ability to achieve academic success, they experience greater self-determination and intrinsic motivation, which are essential components of well-being (Ryan & Deci, 2017). Thus, interventions aimed at enhancing academic hope—such as goal-setting programs and positive reinforcement strategies—can serve as effective tools to promote students' mental health and overall well-being.

Emotion regulation and psychological well-being

Emotion regulation is a fundamental psychological process that significantly influences an individual's well-being. According to Gross's Process Model of Emotion Regulation (1998, 2015), emotion regulation refers to the ability to monitor, evaluate, and modify emotional reactions to achieve desired outcomes. Effective emotion regulation allows individuals to manage stress, navigate social interactions, and maintain emotional balance, all of which contribute to psychological well-being (Aldao et al., 2010; Gross & John, 2003). Studies have consistently demonstrated that individuals with strong emotion regulation skills experience higher levels of psychological well-being. Research by Saxena et al. (2011) found that individuals who utilize adaptive emotion regulation strategies, such as cognitive reappraisal (reinterpreting a situation to alter its emotional impact) and problem-solving, report greater life satisfaction, reduced anxiety, and lower depressive symptoms. Conversely, maladaptive strategies, such as rumination, suppression, and avoidance, are associated with increased psychological distress and emotional instability (Naragon-Gainey et al., 2017; Aldao & Nolen-Hoeksema, 2012).

Furthermore, emotion regulation plays a crucial role in academic and social settings. Students who can effectively regulate their emotions are better equipped to handle academic pressures, maintain motivation, and engage in positive peer interactions, all of which contribute to overall well-being (Benita et al., 2020; Gross, 2015). Emotion regulation is also linked to resilience, enabling individuals to recover from setbacks and persist in goal-directed behavior despite challenges (Troy & Mauss, 2011). Given its strong association with well-being, interventions that enhance emotion regulation—such as mindfulness training, cognitive behavioral therapy (CBT), and emotional awareness programs—have been widely recommended to support mental health (Linehan, 2015). In the educational context, fostering emotion regulation skills can help students develop healthier coping mechanisms, build stronger social relationships, and maintain psychological stability in the face of academic and personal challenges

The Present Study

By considering the results of empirical interviews and psychological factors that contribute to the dynamics of the relationship, this study aims to examine the influence of academic hope and emotion regulation on students' psychological well-being. By understanding how these factors interact, more effective strategies can be developed to improve students' well-being and academic achievement. Despite the growing body of research on psychological well-being, few studies have specifically explored the combined effects of academic hope and emotion regulation in the student population (Benita et al., 2020; Siu et al., 2021; Sun et al., 2023). While previous research has examined these variables independently, there is a lack of empirical studies that investigate their simultaneous impact on students' psychological well-being, particularly within the educational context (Cobo-Rendón et al., 2020; Johnston & Cassidy, 2020; Hudig et al., 2022). Moreover, most studies have been conducted in Western settings, whereas research on this topic within non-Western or Indonesian cultural contexts remains limited. This study addresses these gaps by integrating academic hope and emotion regulation into a single model and examining their interaction in shaping students' mental well-being. By doing so, this research contributes new insights into the psychological resources that promote student well-being and provides a more comprehensive understanding of how these factors function together in academic settings.

Method

Participant

A total of 152 students from SMAN 9 East Jakarta participated in this study, consisting of 61 male students (40.13%) and 91 female students (59.87%), with ages ranging from 15 to 18 years (M_{age} = 16.27 years, SD_{age} = 0.59). The participants were from classes XI.1 to XI.7 (Table 1). Prior to data collection, informed consent was obtained from all participants. Given that the respondents were minors, parental consent was first sought through official school communication channels, followed by student assent. Participants were informed about the study's objectives, the voluntary nature of their participation, confidentiality of their responses, and their right to withdraw at any time without consequences.

During the study design phase, we found no prior research with a similar assessment; therefore, an a priori power analysis was not conducted. However, after participant recruitment, a sensitivity power analysis was performed using the power analysis tool (*pwrss* package; Bulus, 2023). Based on calculations with an effect size of f = 0.15 (k = 2, α = 0.05, and power β = 0.80; Faul et al., 2007, 2009), the minimum required sample size to detect this effect was 68 respondents. With an empirical sample of 152 respondents, this study had sufficient power to detect larger effects with higher reliability. This study employed a convenience sampling method due to its practical advantages in reaching a sufficient number of participants within a specific educational setting. The selection of SMAN 9 East Jakarta was based on accessibility, willingness of the institution to facilitate research, and the representativeness of students in the target age range. Although this non-random sampling approach limits generalizability, it was appropriate for exploratory research in an educational context where controlled random selection was not feasible.

Empirical Model

Our primary goal was to examine whether psychological well-being is related to academic hope and emotion regulation among high school students. To achieve this, we developed a model in which the dependent variable was psychological well-being, while academic hope and emotion regulation served as independent variables. The following is the regression equation to explain the regression model in this study:

$$\boldsymbol{Psychological\ Well\ Being} = \boldsymbol{\alpha} + \boldsymbol{\beta 1}\ \boldsymbol{x\ Academic\ Hope} + \boldsymbol{\beta 2\ Emotion\ Regulation} \quad (1)$$

Procedures

After providing informed consent, participants were informed that they would be asked questions about their psychological well-being, academic hope, and emotion regulation. All questionnaires were administered through a standardized online survey platform. Participants first provided sociodemographic information (i.e., gender, age, and class), followed by completing measures assessing psychological well-being, academic hope, and emotion regulation. The study took approximately 30 to 45 minutes to complete.

Measurements

All materials were developed in English and then were translated and back-translated into Bahasa Indonesia by two bilingual independent researchers. To ensure the appropriateness of the instrument for the Indonesian context, content validity was assessed using Aiken's V procedure (Aiken, 1985). Five expert raters evaluated the relevance of each item, and items with Aiken's V < 0.80 were considered for removal. However, all items met the threshold, indicating that the instrument demonstrated strong content validity for use in this study. This process ensured that the translated items retained their conceptual meaning while being culturally appropriate for Indonesian students. All scales in this study used a five-point Likert scale (1 = Strongly Disagree

to 5 = Strongly Agree). This format was chosen because it allows for nuanced self-assessment of beliefs and attitudes related to academic aspirations, providing a balance between measurement sensitivity and ease of interpretation.

Academic Hope

A twenty-four-item Likert scale measuring individual academic hope (Synder, 1994) was used in this study (e.g., 'I have a target grade in studying', 'I remain enthusiastic even though my learning target has not been achieved', and 'I did my assignment on time'). This scale has adequate internal consistency and is reliable (α = 0.882; ω = 0.891).

Emotion Regulation

A fourteen-item Likert scale measuring individual emotion regulation (Gross, 2002) was used in this study (e.g., 'I can manage my emotions well', 'I avoid new situations because I'm afraid of change', and 'Even though I'm in a bad mood, it doesn't affect my studying'). This scale has adequate internal consistency and is reliable (α = 0.793; ω = 0.806).

Psychological Well-being

A Likert scale consisting of thirty items measuring individual psychological well-being (Ryff & Singer, 2008) was used in this study (e.g., 'I am proud of all the efforts I have made to achieve this', 'I have the potential to achieve my goals', and 'I often feel dissatisfied with my learning outcomes, despite putting in a lot of effort'). This scale has adequate internal consistency and is reliable (α = 0.889; ω = 0.893).

Data Analysis

Descriptive analyses were conducted to summarize respondents' characteristics and main variables. A one-way ANOVA was performed to examine differences in the main variables based on demographic factors (i.e., gender, age, and class). After that, assumption checks (normality and multicollinearity) including correlation analyses were carried out. Multiple hierarchical regression analyses were then conducted to assess the predictive relationships among variables. To ensure the robustness of the regression model, Monte Carlo simulations and Bayesian estimation were performed. Monte Carlo simulations were used to assess the stability of parameter estimates by generating repeated random sampling, which helps mitigate potential biases due to sampling variability. Meanwhile, Bayesian estimation was chosen for its ability to incorporate prior information and provide more accurate parameter estimates, particularly in cases of small sample sizes or complex models. These methods are particularly relevant in psychological research, where data often exhibit non-normal distributions and measurement uncertainties, making traditional frequentist approaches less reliable. All statistical analyses in this study were conducted using R (v4.4.2, R Core Team, 2024) and RStudio (v2024.12.0+467, RStudio Team, 2024), utilizing various packages. The *readxl* package (Wickham et al., 2023a) was used for importing Excel files, while *jmv* (Selker et al., 2023) facilitated descriptive and inferential analyses, including multiple hierarchical regression. The *lmtest* package (Hothorn et al., 2022) supported regression analysis, and *QuantPsyc* (Fletcher, 2022) was used to compute standardized beta coefficients. Additionally, the *performance* package (Lüdecke et al., 2024) was employed to check regression model assumptions, and *ggcorrplot* (Kassambara & Patil, 2023) was used to visualize correlations among key variables. For data visualization, several packages were utilized, including *ggplot2* (Wickham et al., 2023b), *ggstatsplot* (Patil & Powell, 2024), *dplyr* (Wickham et al., 2023c), *qqplotr* (Almeida et al., 2023), *patchwork* (Pedersen, 2024), *ggpubr* (Kassambara, 2023), and *showtext* (Qiu, 2024) to configure text formatting within plots. Additionally, to perform robustness checks on the

regression model, packages such as *rstan* (Guo et al., 2024), *MASS* (Ripley et al., 2025), *bayesplot* (Gabry et al., 2024), and *loo* (Vehtari et al., 2024) were employed.

Results

The study results indicate that Table 1 presents the respondent demographics and comparisons of the main variables based on gender, age, and class. In terms of gender, the number of female participants (59.87%) was higher than that of male participants (40.13%). The average scores for academic hope, emotion regulation, and psychological well-being showed no significant differences between males and females. Regarding age, the majority of respondents were 16 years old (62.50%), followed by 17 years old (30.26%), 15 years old (5.92%), and 18 years old (1.31%). A significant difference in *academic hope* was found based on age ($F = 32.39$; $p < 0.001$), with 18-year-old respondents having the highest score ($M = 91.50$; $SD = 0.70$), while the other age groups exhibited more varied scores. However, no significant differences were observed in emotion regulation and psychological well-being based on age.

From a class perspective, the distribution of participants was relatively balanced across groups, with class XI.5 having the highest number of respondents (21.71%) and class XI.2 the lowest (14.47%). The average scores for academic hope, emotion regulation, and psychological well-being did not show significant differences between classes. Nevertheless, class XI.1 had the highest psychological well-being score ($M = 111.12$; $SD = 13.46$), while class XI.2 had the lowest ($M = 101.22$; $SD = 13.78$). Overall, these findings suggest that age influences academic hope, whereas gender and class do not show significant differences in the three measured variables.

Table 1
Respondent Descriptive and Comparison of Main Variables (N = 152)

Demographic Data	*N*(%)	Academic Hope		Emotion Regulation		Psychological Well-being	
		M(SD)	*F*	*M*(SD)	*F*	*M*(SD)	*F*
Gender							
Male	61(40.13%)	81.44(9.83)	0.32	43.75(5.87)	1.43	106.80(12.33)	0.15
Female	91(59.87%)	82.37(9.87)		42.47(7.25)		105.98(12.91)	
Age (*M* = 16.27, *SD* = 0.59)							
15 years old	9(5.92%)	83.11(9.31)	32.39***	44.44(6.10)	1.13	108.44(10.63)	0.22
16 years old	95(62.50%)	81.66(9.77)		42.13(6.18)		105.86(12.05)	
17 years old	46(30.26%)	82.06(10.26)		44.58(7.72)		107.19(13.92)	
18 years old	2(1.31%)	91.50(0.70)		40.00(8.48)		98.00(25.45)	
Class							
XI.1	24(15.78%)	81.62(10.98)	0.37	44.37(7.48)	1.78	111.12(13.46)	1.43
XI.2	22(14.47%)	80.36(12.36)		42.09(6.43)		101.22(13.78)	
XI.3	23(15.13%)	80.91(6.84)		40.95(4.42)		105.13(10.23)	
XI.4	25(16.44%)	82.00(8.79)		41.24(6.06)		104.68(11.83)	
XI.5	33(21.71%)	82.75(9.67)		44.75(7.31)		106.72(12.14)	
XI.7	25(16.44%)	83.80(10.31)		43.72(7.45)		106.36(13.37)	

Note: *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. *N*: number of respondents, **%:** percentage, *M*: mean value of each variable based on demographic data groups, *SD*: standard deviation, *F*: omnibus test statistic from ANOVA analysis.

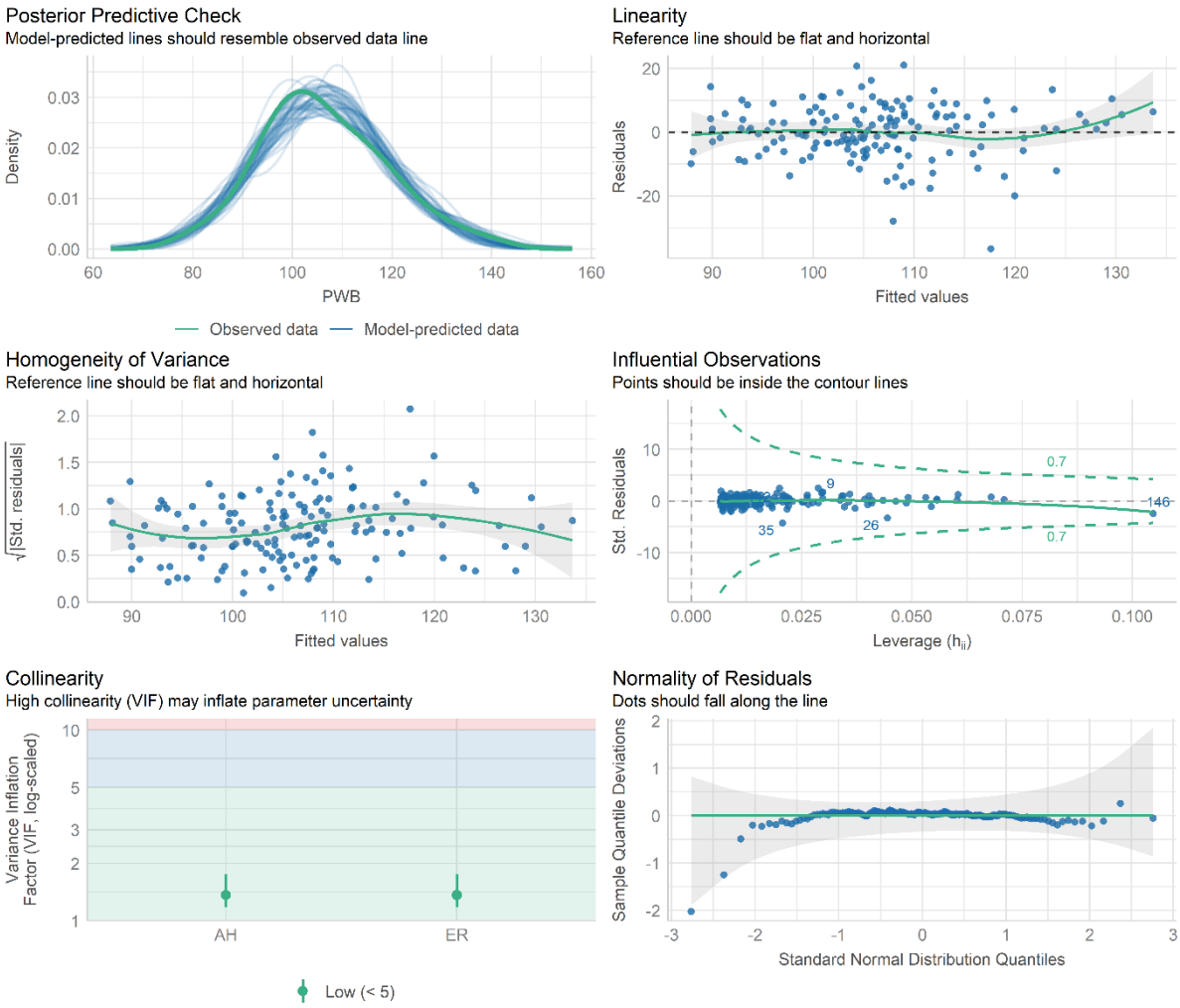

Figure 1. Assumption checks for the regression model

Furthermore, the descriptive analysis of the variables and Pearson correlation results are presented in Table 2. The analysis indicates that the skewness values for all variables fall within the range of -1 to 1 (Hair et al., 2019). Therefore, the data is considered normally distributed. Additionally, the assumption check (Figure 1) shows that the Variance Inflation Factor (VIF) values for the predictor variables are below five (VIF < 5; Hair et al., 2022) or below ten (VIF < 10; Field, 2024), indicating no signs of multicollinearity. As a result, the predictive model testing can be conducted since the assumptions have been met.

Table 2
Descriptive Statistics and Correlations of Main Variables

Variable	Skewness	Kurtosis	M	SD	1	2	3
1. Academic Hope	0.13	-0.13	82.00	9.83	–		
2. Emotion Regulation	0.57	0.91	42.98	6.74	0.51***	–	
3. Psychological Well-being	0.36	-0.03	106.31	12.65	0.68***	0.58***	–

Note: *p < 0.05, **p < 0.01, ***p < 0.001.

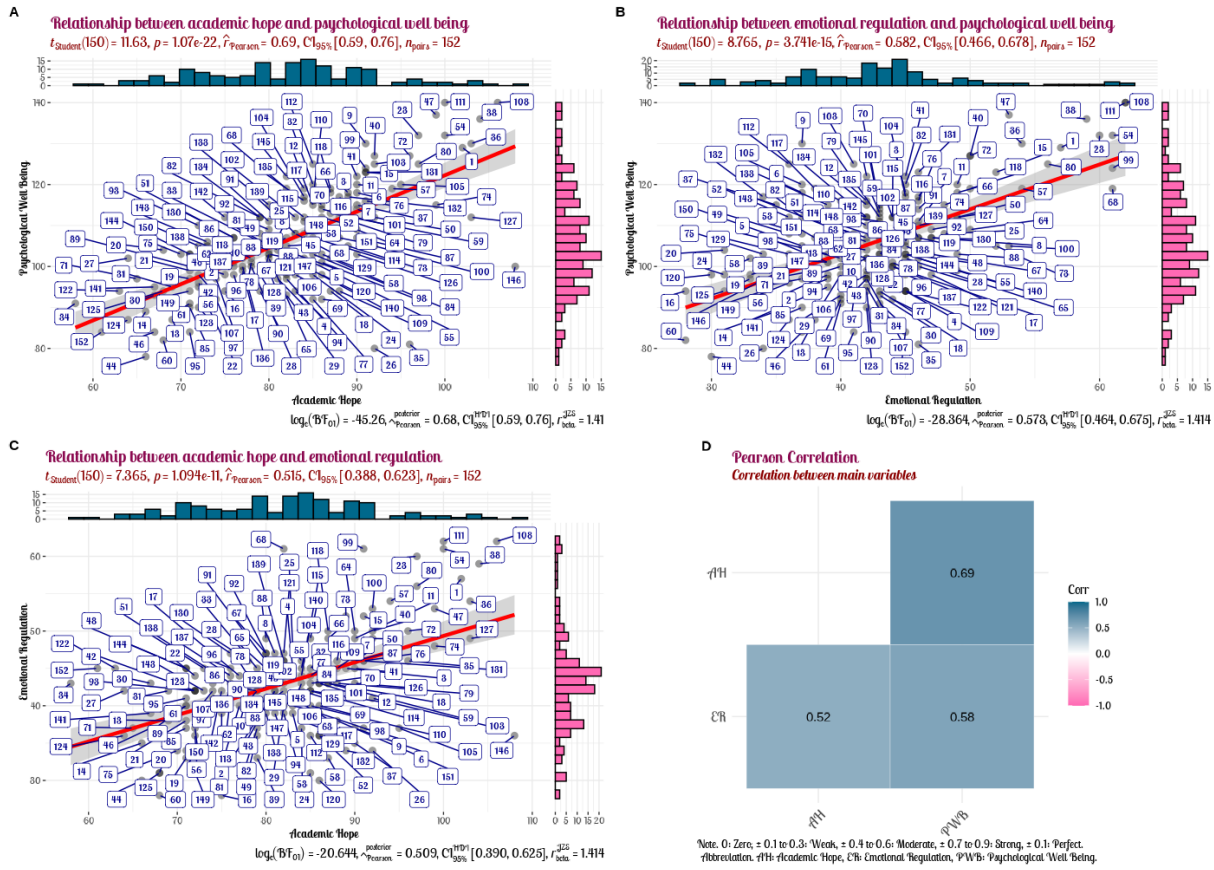

Figure 2. Scatterplot Depicting the Correlation Between Variables

Moreover, the correlation analysis (Table 2; Figure 2) reveals that academic hope is positively and significantly correlated with psychological well-being (r = 0.68, p < 0.001) and emotion regulation (r = 0.51, p < 0.001). Likewise, emotion regulation also exhibits a significant positive correlation with psychological well-being (r = 0.58, p < 0.001). These findings suggest that individuals with higher academic hope tend to have better psychological well-being and stronger emotion regulation skills. Similarly, better emotion regulation is associated with greater psychological well-being. Overall, these results highlight the strong (Dancey & Reidy, 2017; 2020) interconnections among academic hope, emotion regulation, and psychological well-being, emphasizing the crucial role of hope and emotion management in promoting mental well-being.

Table 3
Comparison of Regression Model Fit

Model	R^2	Adj. R^2	BIC	Overall Model Test				Model Comparison				
				F	*df1*	*df2*	*p*	ΔR^2	*F*	*df1*	*df2*	*p*
Model I	0.47	0.47	1119.19	135.32	1	1	< 0.001	–	–	–	–	–
Model II	0.54	0.53	1102.43	89.05	2	1	< 0.001	0.07	22.96	1	149	< 0.001

Note: Adj.R^2: Adjusted R^2, BIC: *Bayesian information criterion*. ΔR^2: Model II (Model II – Model 1).

Table 3 presents a comparison of two regression models predicting the outcome variable. Model I explains 47% of the variance in the dependent variable (R^2 = 0.47), with an adjusted R^2 of 0.47. The Bayesian Information Criterion (BIC) for Model I is 1119.19, and the overall model test indicates a significant effect (F = 135.32, df1 = 1, df2 = 151, p < 0.001), suggesting that the

predictor variable in Model I significantly contributes to explaining the variance in the outcome variable. In contrast, Model II includes an additional predictor, increasing the explained variance to 54% ($R^2 = 0.54$), with an adjusted R^2 of 0.53. The BIC for Model II is 1102.43, which is lower than that of Model I, indicating a better model fit. The overall model test remains significant ($F = 89.05$, $df1 = 2$, $df2 = 150$, $p < 0.001$), reinforcing that the predictors in Model II collectively explain a significant proportion of variance in the outcome variable.

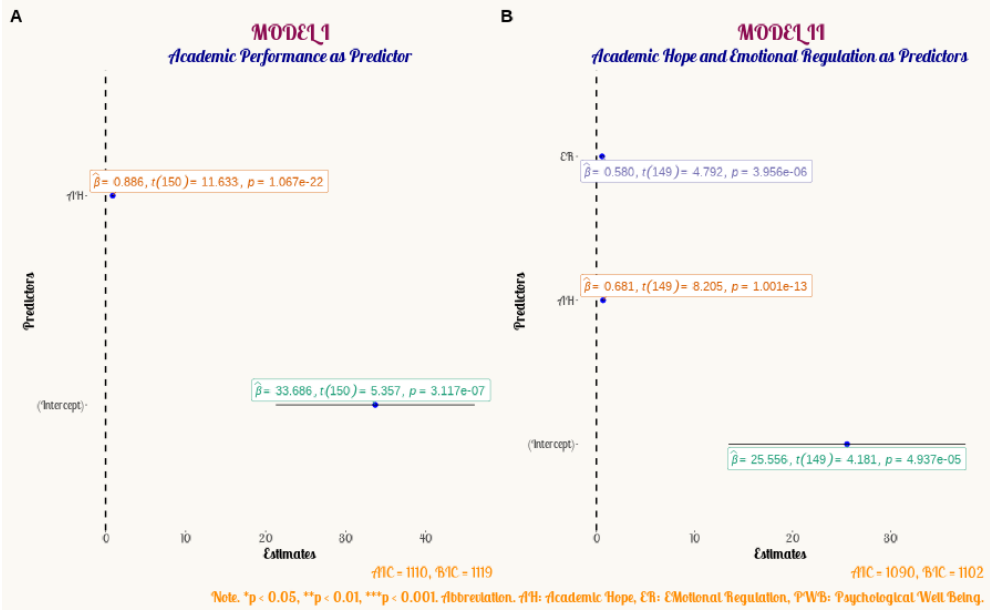

Figure 3. Plot of Multiple Hierarchical Regression Model

In addition, the model comparison analysis (ΔR^2) showed that the addition of the second predictor in Model II resulted in a 7% increase in explained variance ($\Delta R^2 = 0.07$, $F = 22.96$, $df1 = 1$, $df2 = 149$, $p < 0.001$), indicating that the additional predictor significantly improved the model. Therefore, this finding suggests that although Model I already provides strong predictive ability, Model II offers a much better fit by explaining more variance in the outcome variable. The lower BIC (Kline, 2023) in Model II also indicates that it is a more efficient model. Therefore, Model II is a better choice to explain the dependent variable.

After obtaining the regression model that is most capable of explaining the empirical data, the effect test and robustness check are presented in Table 4. The results of the hierarchical regression analysis and robustness test presented in Table 4 show that Model I only considers the effect of academic hope on the dependent variable (Figure 4). The regression results reveal that academic hope has a positive and significant effect on psychological well-being (B = 0.88, SE = 0.07, t = 11.63, p < 0.001). This indicates that every one-unit increase in academic hope is associated with a 0.88-unit increase in the dependent variable. The 90% confidence interval for this effect ranges from 0.75 to 1.01, indicating a fairly precise estimate. In addition, the intercept value of 33.68 (SE = 6.28, t = 5.35, p < 0.001) indicates that when the academic hope value is zero, the predicted value of the dependent variable is at that number. The error variance for Model I was recorded at 84.72, reflecting the amount of variability in the data that is not explained by the model. Meanwhile, the Root Mean Square Error (RMSE) value of 9.14 indicates the average level of error in the model's predictions. Robustness tests of Model I conducted using simulated data showed results that were very consistent with empirical data.

Table 4
Multiple Hierarchical Regression Analyses and Robustness Check

Variable	Empirical Data			Simulated Data		Rhat
	B(SE)	90%CI	*t*	S.Mean(S.SD)	90%PI	
Model I						
Intercept	33.68(6.28)	23.27, 44.09	5.35***	33.68(0.46)	32.92, 34.44	1.00
Academic Hope	0.88(0.07)	0.75, 1.01	11.63***	0.88(0.00)	0.86, 0.89	1.00
Error Var.	84.72	–	–	84.71(1.19)	82.77, 86.68	1.00
RMSE	9.14	–	–	9.20(0.06)	9.09, 9.31	1.00
Model II						
Intercept	25.55(6.11)	15.43, 35.67	4.18***	25.55(0.61)	24.55, 26.56	1.00
Academic Hope	0.68(0.08)	0.54, 0.81	8.20***	0.68(0.00)	0.66, 0.69	1.00
Emotion Regulation	0.58(0.12)	0.37, 0.78	4.79***	0.57(0.00)	0.56, 0.59	1.00
Error Var.	73.89	–	–	73.88(1.03)	72.16, 75.59	1.00
RMSE	8.51	–	–	8.59(0.06)	8.49, 8.69	1.00

Note: *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. B: Unstandardized Estimate, S.Mean: Simulated Mean, SE: Standard Error; S.SD: Simulated Standard Deviation; 90%CI: Confidence Interval; 90%PI: Percentile Interval; Error Var.: Error Variance (see the Mean Square value in the regression analysis), RMSE: Root Mean Square Error, and Rhat: to evaluate the convergence of data obtained from the Bayesian model.

The estimate for Academic Hope in the simulated data is S.Mean = 0.88 with a 90% percentile interval between 0.86 and 0.89, which is almost identical to the results from the empirical data. A Rhat value of 1.00 indicates that the Bayesian model has reached full convergence (Figure 5), meaning that the estimates obtained are stable and reliable. When emotion regulation is entered into the analysis in Model II, the regression results show an increase in the explanation of the psychological well-being variable. Academic hope remains a significant predictor (Hypothesis 1 is accepted), but with a slightly smaller effect compared to Model I (B = 0.68, SE = 0.08, t = 8.20, p < 0.001). The 90% confidence interval for academic hope in Model II ranges from 0.54 to 0.81, indicating that its effect remains substantial despite a slight decrease. In addition, emotion regulation also has a significant effect on psychological well-being (The second hypothesis is accepted), with a B value = 0.58 (SE = 0.12, t = 4.79, p < 0.001). The 90% confidence interval for this variable ranges from 0.37 to 0.78, indicating that better emotion regulation is correlated with an increase in the dependent variable. With the addition of this predictor, the intercept of Model II decreased to 25.55 (SE = 6.11, t = 4.18, p < 0.001), reflecting an increase in the model's explanatory power to the data. The error variance also decreased to 73.89, indicating that this model is more effective in explaining variations in the dependent variable. Another increase is seen from the decrease in the RMSE value to 8.51, indicating that Model II has a lower level of prediction error than Model I.

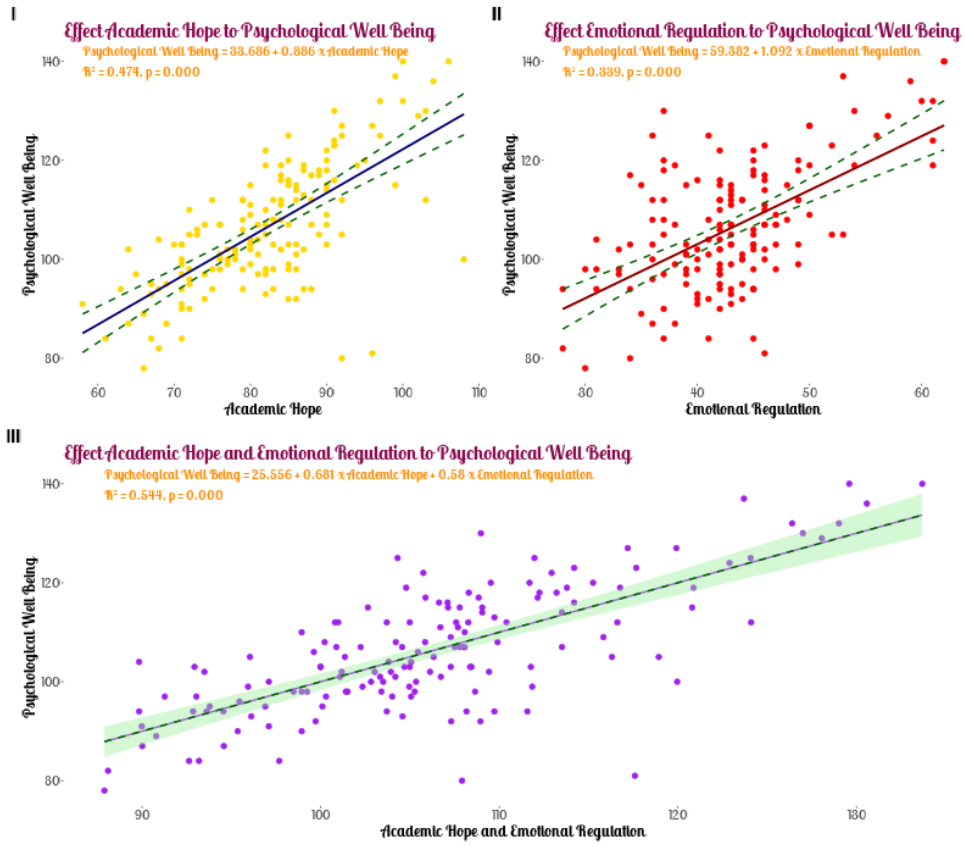

Figure 4. Effect Plot of Regression Model

The robustness test of Model II also shows very stable results. The estimation for academic hope in the simulation data is almost identical to the empirical results, with an S.Mean value = 0.68 (90%PI = 0.66 to 0.69). Likewise, emotion regulation has an S.Mean value = 0.57 with a 90% percentile interval between 0.56 and 0.59, indicating consistency between the empirical results and the simulation results. The Rhat value of 1.00 for all parameters in Model II confirms that the Bayesian model used has achieved good convergence. Based on these results, it can be concluded that Model II is superior to Model I in explaining the relationship between the variables studied. By including emotion regulation as an additional predictor, the model not only increases explanatory power but also reduces error variance and prediction error rates. Therefore, Model II is more recommended because it is more accurate in describing the relationship between academic hope, emotion regulation, and psychological well-being.

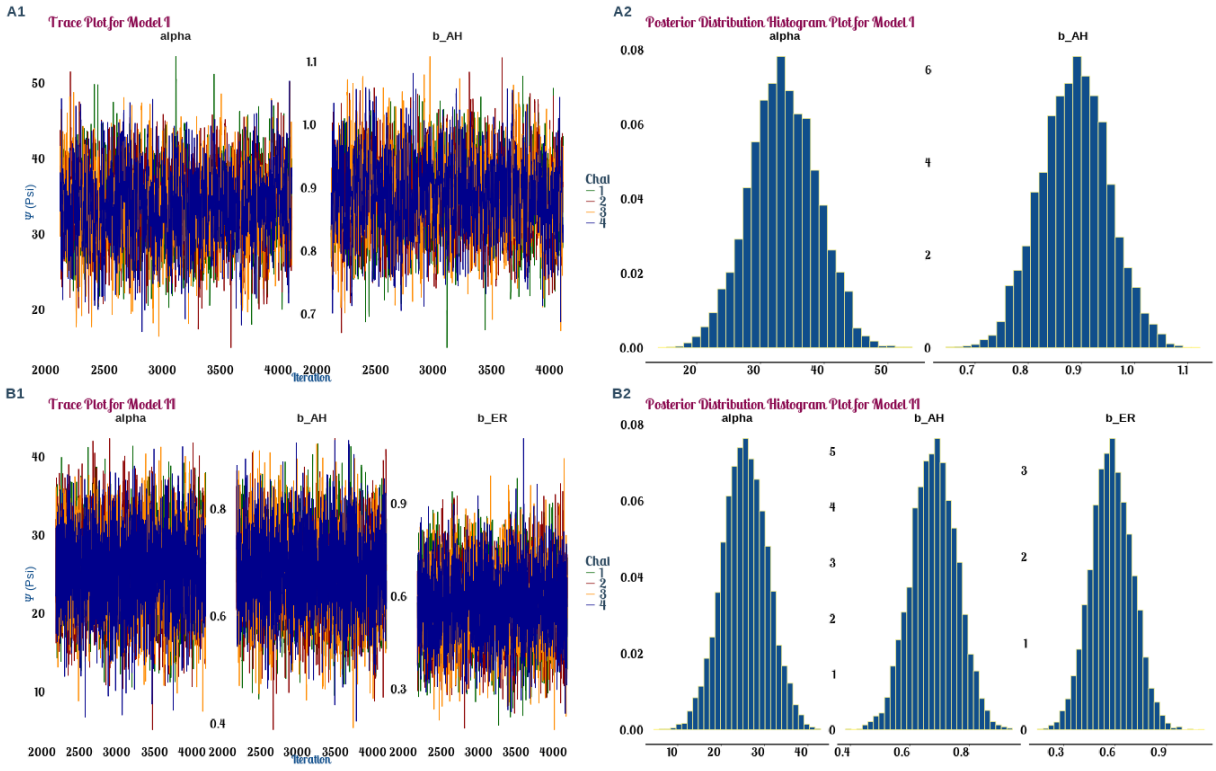

Figure 5. Trace plot and Histogram of Posterior Density for Regression Model Convergence

Finally, Figure 6 presents two scatter plots comparing the relationship between empirical data and simulation data related to psychological well-being. Both plots show the distribution of data points that represent the predicted values of the simulation data against the actual values of the empirical data. The first plot (left) shows a positive and significant correlation between the empirical data and the simulation data ($r = 0.687$, $p < 0.001$, 95%CI = 0.592 to 0.762). This indicates that the relationship between the simulation model predictions and the empirical data is quite strong and statistically significant. The regression line (green) illustrates the pattern of the relationship between the two data, while the red dashed line shows the limits of the prediction interval. Meanwhile, the second plot (right) shows a slightly higher correlation value, namely $r = 0.689$ ($p < 0.001$) with a 95% confidence interval between 0.596 and 0.765. These results indicate that the relationship between simulation data and empirical data remains strong and significant, with a data distribution pattern that is relatively similar to the first plot. Overall, these two results indicate that the simulation model used is able to predict psychological well-being values quite well, although there are some variations. The similarity of correlation in both models indicates that the approach used in the simulation provides consistent results to empirical data.

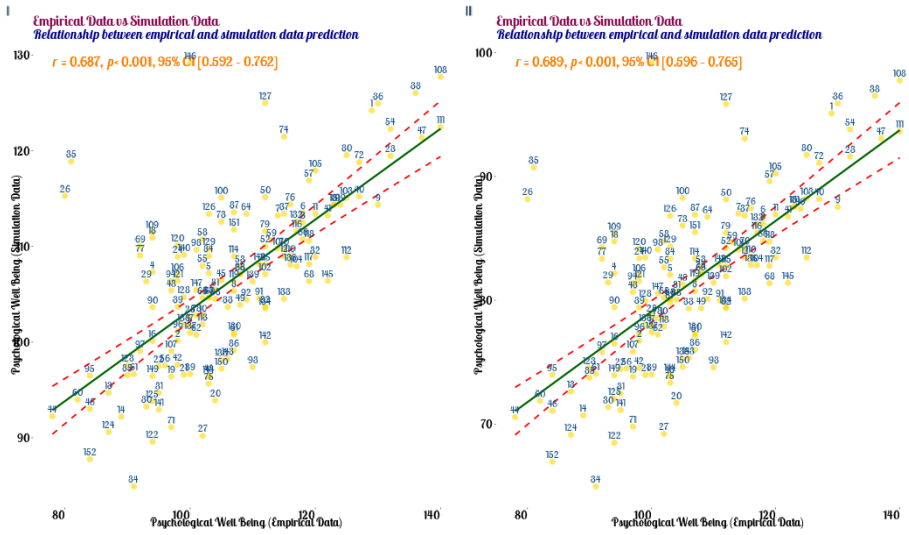

Figure 6. Scatterplot of Correlation Between Empirical and Simulated Regression Models for Robustness Check

Discussion

This study examines the influence of academic hope and emotion regulation on psychological well-being in students. Psychological well-being is an important aspect of students' lives because it contributes to academic achievement, social interactions, and overall mental health (Balashov, 2022; Kovalenko et al., 2020; Umnyashova, 2019; Rüppel et al., 2015). Academic hope, which is students' beliefs and motivations in achieving academic goals, plays an important role in determining their well-being (Naylor et al., 2021; Almroth et al., 2019). Likewise, emotion regulation, which is a person's ability to manage and respond effectively to emotional experiences, is a major factor in influencing psychological well-being (Menefee et al., 2022; Kraiss et al., 2020; Chervonsky & Hunt, 2019; Marroquín et al., 2017).

The results of the analysis showed a significant positive relationship between academic hope and psychological well-being. Students with high levels of academic hope tended to have better psychological well-being, while those with low academic hope showed lower well-being. These findings suggest that students who are optimistic about their academic future are more likely to experience life satisfaction, psychological resilience, and emotional stability. These results are in line with previous studies that found that hope has a positive impact on psychological well-being in students (Cassidy & Boulos, 2023; Cobo-Rendón et al., 2020; Johnston & Cassidy, 2020). The study stated that individuals with higher levels of hope are more likely to conduct self-evaluation and realize their potential, which ultimately improves psychological well-being.

Similarly, the analysis also showed a significant positive relationship between emotion regulation and psychological well-being. Students with good emotion regulation tended to have higher psychological well-being, while those with poor emotion regulation tended to have lower well-being. This finding is consistent with previous research that individuals with better emotion regulation skills are better able to cope with stress, anxiety, and negative emotions, thereby improving their psychological well-being (Karababa, 2023; Judy et al., 2022; Koushkestani et al., 2020). These skills not only help in dealing with daily challenges but also contribute to the development of better social relationships and increased overall life satisfaction (Newman et al., 2021). The development of emotion regulation skills can be done through various means, including

mindfulness training, cognitive behavioral therapy, and strong social support (LeBlanc et al., 2017).

In addition, the ability to regulate emotions effectively can improve students' social relationships and academic performance (Usán Supervía & Quilez Robres, 2021; Jarrell & Lajoie, 2017). Emotion regulation allows individuals to better manage frustration, disappointment, and academic stress, thereby reducing the risk of mental health disorders (Krkovic et al., 2018; Renna et al., 2017; Burić et al., 2016). Students who have strong emotion regulation skills are more likely to experience positive emotions, maintain motivation to learn, and build supportive social relationships. Therefore, strengthening emotion regulation strategies in students can be a protective factor against psychological distress. To test the combined effect of academic hope and emotion regulation, a multiple hierarchical regression analysis was conducted. The results showed a significant positive effect, with a coefficient of determination ($R^2 = 0.544$), which means that academic hope and emotion regulation together explain 54.4% of the variance in psychological well-being. This indicates that both factors play a major role in shaping students' mental well-being. However, there is still 45.6% of the variance that may be influenced by other factors not examined in this study, such as social support, personality, and environmental stress.

These findings emphasize the importance of academic hope and emotion regulation in improving students' psychological well-being. Given their significant impact, interventions aimed at improving academic hope and developing emotion regulation strategies may be beneficial for students' mental health. Educational institutions should consider programs that support the enhancement of academic hope, such as goal-setting training, self-efficacy enhancement, and psychological resilience development. In addition, training in effective emotion regulation techniques, such as mindfulness, cognitive reappraisal, and problem-solving strategies, may further contribute to students' psychological well-being (Lavanya & Manjula, 2017; MacDonald & Baxter, 2017). These programs will not only help students cope with academic challenges but also prepare them to manage stress and distress more effectively in the future.

Furthermore, this study also underlines the importance of parental, lecturer, and social environment involvement in supporting students' psychological well-being (Kibret & Tareke, 2017). Support from the immediate environment can help students build realistic academic expectations and develop better emotion regulation skills. Motivational academic guidance and positive social interactions in the campus environment can strengthen the positive impact of academic expectations and emotion regulation on students' well-being (Sari et al., 2020; Vally et al., 2020). In addition, this study opens up opportunities for further exploration of other factors that may contribute to students' psychological well-being. Future studies could examine the role of additional variables, such as cultural factors, coping strategies, and emotional intelligence, in strengthening the relationship between academic expectations, emotion regulation, and psychological well-being. Furthermore, longitudinal research could help understand how changes in academic expectations and emotion regulation affect students' psychological well-being in the long term.

In conclusion, this study provides empirical evidence of the positive effects of academic hope and emotion regulation on students' psychological well-being. By developing these psychological resources, students can be better prepared to face academic challenges, manage emotional difficulties, and maintain overall mental health. Therefore, it is important for educational institutions to design programs that support the strengthening of academic hope and emotion regulation to improve students' psychological well-being.

Implication

From a practical perspective, these findings highlight the need for targeted interventions within Indonesian educational settings to enhance students' academic hope and emotion regulation. Schools can integrate structured programs focusing on goal-setting skills, academic resilience training, and self-efficacy workshops to improve students' academic hope. Additionally, teachers and school counselors can implement evidence-based emotional regulation strategies, such as mindfulness training, cognitive restructuring exercises, and stress management techniques, to support students in managing academic pressure effectively. By incorporating these approaches into the curriculum and extracurricular activities, schools can play a crucial role in fostering students' psychological well-being and ensuring they are better equipped to navigate academic and emotional challenges.

Furthermore, this study contributes to the existing literature by providing empirical evidence on the combined effects of academic hope and emotion regulation on psychological well-being in Indonesian students. While previous studies have separately examined these constructs, this research offers a novel perspective by demonstrating their joint contribution, accounting for a significant proportion of variance in psychological well-being. Additionally, unlike most Western-based studies, this research provides culturally relevant insights into the psychological mechanisms that influence student well-being in an Indonesian context. These findings suggest that future research should explore additional cultural and contextual factors that may shape students' psychological well-being, further expanding our understanding of how academic motivation and emotional skills interact in diverse educational environments.

Limitation of the study

This study was conducted following scientific procedures; however, several limitations should be acknowledged. First, data collection was carried out using an online questionnaire via Google Forms. This approach was necessary because the school administration did not permit any disruptions to the learning process, preventing the researcher from conducting face-to-face data collection. This method may have led to response biases, as participants completed the questionnaire in uncontrolled environments, potentially affecting their level of attention and accuracy in answering the items. Second, this study only examined academic hope and emotion regulation as independent variables. However, psychological well-being can be influenced by other factors, such as autonomy and social context, which were not considered in this study. Future research could incorporate additional psychological and environmental factors to provide a more comprehensive understanding of the determinants of psychological well-being in students. Third, the use of convenience sampling may limit the generalizability of the findings. The sample consisted of students from a single school in East Jakarta, which may not fully represent the broader population of high school students in Indonesia. Convenience sampling can introduce selection bias, as participants who voluntarily participated may differ systematically from those who did not, potentially leading to an overestimation or underestimation of the relationships found in this study. Future studies should consider using more diverse and representative sampling techniques to enhance the external validity of the findings.

Conclusion

Based on the findings of this study, it can be concluded that academic hope has a significant positive impact on students' well-being. The higher a student's academic hope, the better their overall well-being, and vice versa. Additionally, emotion regulation plays a crucial role in shaping students' mental stability. Those who can effectively manage their emotions tend to experience greater emotional balance compared to those who struggle with regulation. Furthermore, the results indicate that academic hope and emotion regulation collectively contribute to students' well-being. This underscores the importance of fostering academic hope and developing effective

emotion regulation strategies to enhance their overall mental health. From a practical perspective, schools can implement structured programs to enhance academic hope, such as goal-setting workshops, mentoring programs, and positive reinforcement strategies that encourage students to stay motivated in their academic journey. Additionally, integrating emotion regulation training into the school curriculum—through mindfulness exercises, social-emotional learning (SEL) programs, or cognitive-behavioral strategies—can help students develop resilience in managing stress and academic pressures. By incorporating these approaches, educational institutions can play an active role in supporting students' psychological well-being and long-term success.

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Conflict of Interest
The researchers declare that this paper has no conflicts of interest.

Author Contribution
All authors have contributed equally to the study's conceptualization, data interpretation, reviewing, and editing of the manuscript.

Data Availability
Data can be provided upon request to the authors.

Ethical Statement
The study adhered to the guidelines of the Psychology Code of Ethics.

Informed Consent
All participants in this study were provided with a fair and secure opportunity to review and sign the informed consent form, confirming their voluntary participation.

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