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RELATIONSHIP BETWEEN ACADEMIC ACHIEVEMENT INDEX TOWARD SELF-OBSERVATION AND SELF-JUDGMENT FACTOR SCORES

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ABSTRACT
Student academic achievement is one indicator in assessing the success of the educational process in higher education. Academic achievement is influenced not only by intellectual ability but also by various psychological factors related to students' self-regulation skills in managing the learning process. One component of self-regulation suspected to be related to academic success is self-observation and self-judgment. However, research specifically examining the relationship between these two constructs and student academic achievement is still limited. Therefore, this study aims to analyze the relationship between student academic achievement and self-observation and self-judgment factor scores. This study uses a quantitative approach with data obtained from students through a questionnaire instrument. The study population was third-semester students at four universities in Lampung Province, with the sampling technique used being cluster random sampling. Prior to the relationship analysis, the self-observation and self-judgment variables were tested using Confirmatory Factor Analysis (CFA). After the model was declared valid and fit by CFA, factor scores were calculated for each respondent. Next, the analysis of the relationship between self-observation and self-judgment factor scores and the Cumulative Grade Point Average (GPA) was conducted using robust regression. The results of the study showed that self-observation had a positive relationship with GPA, while self-judgment showed a negative relationship with GPA. However, both variables did not show a statistically significant effect on GPA. This finding indicates that although self-observation and self-judgment are important parts of self-regulation mechanisms, their contribution to GPA has not been proven significant in this study. This study provides an empirical overview of the relationship between psychological factors in the learning process and students' academic achievement.
Keywords: academic achievement; confirmatory factor analysis; factor scores; self-judgment; self-observation

ABSTRAK
Prestasi akademik mahasiswa merupakan salah satu indikator dalam menilai keberhasilan proses pendidikan di perguruan tinggi. Pencapaian prestasi akademik tidak hanya dipengaruhi oleh kemampuan intelektual, tetapi juga oleh berbagai faktor psikologis yang berkaitan dengan kemampuan regulasi diri mahasiswa dalam mengelola proses belajar. Salah satu komponen regulasi diri yang diduga memiliki hubungan dengan keberhasilan akademik adalah kemampuan self-observation *dan self-judgment. Namun demikian, penelitian yang secara khusus mengkaji hubungan kedua konstruk dengan prestasi akademik mahasiswa masih terbatas. Oleh karena itu, penelitian ini bertujuan untuk menganalisis hubungan prestasi akademik mahasiswa dengan skor faktor* self-

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observation *dan self-judgment. Penelitian ini menggunakan pendekatan kuantitatif dengan data yang diperoleh dari mahasiswa melalui instrumen angket. Populasi penelitian ini adalah mahasiswa semester III pada empat perguruan tinggi di Provinsi Lampung, dengan teknik sampling yang digunakan adalah cluster random sampling. Sebelum dilakukan analisis hubungan, variabel* self-observation *dan* self-judgment *diuji menggunakan* Confirmatory Factor Analysis (CFA). *Setelah model dinyatakan valid dan fit dengan CFA, maka dapat dihitung skor faktor untuk setiap responden. Selanjutnya, analisis hubungan antar skor faktor* self-observation *dan* self-judgment *terhadap Indeks Prestasi Kumulatif (IPK) dilakukan menggunakan regresi robust. Hasil penelitian menunjukkan bahwa* self-observation *memiliki hubungan positif terhadap IPK, sedangkan* self-judgment *menunjukkan hubungan negatif terhadap IPK. Namun, kedua variabel tidak menunjukkan pengaruh yang signifikan secara statistik terhadap IPK. Temuan ini mengindikasikan bahwa meskipun kemampuan* self-observation *dan* self-judgment *merupakan bagian penting dari mekanisme regulasi diri, kontribusi terhadap IPK dalam penelitian ini belum terbukti secara signifikan. Penelitian ini memberikan gambaran empiris mengenai hubungan antara faktor psikologis dalam proses belajar dengan capaian akademik mahasiswa.*

***Kata kunci**:* confirmatory factor analysis*; prestasi akademik;* self-judgment; self-oservation*; skor faktor*

Introduction

Student academic achievement is an important indicator in assessing the success of the educational process at university (Nalim & Pramesti, 2020). Achieving good academic achievement is not only determined by the intellectual abilities of students but is also influenced by various psychological factors related to the individual's ability to manage the learning process (Lourenço et al., 2025). One of the important aspects that plays a role in academic success is the ability to self-regulate (Aydan & Capa-Aydin, 2025). In the context of self-regulation, there are two important components that play a role in the learning process, namely self-observation and self-judgment. (Zimmerman, 1989; Panadero et al., 2019).

Self-observation is defined as the ability of individuals to monitor and pay attention to their own behavior, thoughts, emotions, and the results of their actions consciously and reflectively (Rani et al., 2011; Bedesem et al., 2024). Self-observation is not just about seeing, but also recording and assessing internal and external experiences for behavioral improvement which can be assessed on dimensions such as quality, level, quantity, and authenticity (Hofman et al., 2009; Van Den Bosch & Taris, 2018). Sustained motivation depends on students believing that if they change their behavior, they will experience better outcomes, valuing those outcomes, and feeling that they can change the behavior (Schunk, 1990; Murharyana et al., 2024).

In addition to the ability to monitor and pay attention to behavior, the self-regulation process also involves the ability to evaluate behavior and performance. In this case, self-judgment is an evaluative process in which individuals assess themselves based on personal and social standards, which can be positive (rewarding and motivating) or negative (leading to excessive self-criticism), depending on the balance between self-understanding and the evaluation standards used (Thai, 2022). The evaluation process is greatly influenced by the standards used to assess an individual's success in achieving certain goals (Klein & Wright, 1994; Yasa et al., 2019). In the context of learning in higher education, the ability to

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carry out proportional self-evaluation can help understand the level of learning achievement that has been obtained and determine the necessary improvement strategies (Man & Vadudeva Panicker, 2025). Self-observation allows students to monitor their learning behavior, understand their strengths and weaknesses, and identify learning strategies that need improvement (Torres et al., 2024). Students who have good self-observation skills tend to be better able to control the learning process, monitor learning progress, and adjust the learning strategies they use (Duivenvoorden et al., 2021). This ability enables students to learn in a more focused and effective manner, thus potentially increasing academic achievement as reflected in the grade-point average (GPA).

The ability to conduct self-observation and self-evaluation is becoming increasingly important for students who are in an environment that demands a high level of learning independence (Singh & Diefes-Dux, 2023). Students are required to be able to manage their learning process independently, adapt to academic demands, and develop effective learning strategies. This ability to adapt is a crucial factor influencing student success in achieving academic achievement (Nahak et al., 2023). In this case, students who are able to monitor their learning behavior and evaluate themselves reflectively tend to be more able to improve their learning strategies and thus have the potential to achieve better academic achievement (Dignath et al., 2023). Students who have proportional self-judgment are able to carry out objective self-evaluations in identifying deficiencies in the learning process and determining the necessary corrective steps (Man & Vadudeva Panicker, 2025). Proper self-evaluation can increase learning motivation, improve learning strategies, and encourage students to achieve high academic standards (Pandero et al., 2017).

Extensive research has been conducted on factors influencing student academic achievement, particularly GPA. Most studies have focused on learning motivation (Intan Permatasari et al., 2023; Chandra et al., 2022), self-efficacy (Nurina & Aliah, 2022), or self-regulated (Juandi et al., 2025; Maulidiah et al., 2025; Maulidiyah et al., 2024). In addition, several studies also examined demographic and social factors, such as gender, marital status, school major, parental support, working or unemployed status, and active in organizations (TL et al., 2017; Sari & Rafsanjani, 2020; Utami et al., 2020). However, research that specifically examines the role of self-observation and self-judgment as part of the self-regulated mechanism in relation to student academic achievement is still relatively limited.

In fact, self-observation and self-judgment are important components of the self-regulation process, helping individuals monitor, evaluate, and adjust their learning behavior to achieve academic goals. The limited research examining these two constructs has resulted in a lack of adequate empirical evidence regarding the role of self-observation and self-judgment in influencing student academic achievement. Furthermore, several previous studies have not comprehensively tested the construct validity of self-observation and self-judgment before analyzing their relationship to academic achievement. This situation may imply a weak basis for measuring the psychological constructs used in the analysis of their relationship with GPA.

The novelty of this research lies in (1) this research integrates studies on self-observation and self-judgment as two important components in the self-regulation

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mechanism that play a role in determining students' learning success.; (2) this study uses Confirmatory Factor Analysis (CFA) to validate the self-observation and self-judgment constructs before analyzing their influence on GPA. This approach allows researchers to obtain more accurate factor scores in representing the constructs being studied.; (3) this study links psychological variables in the learning process with objective indicators of academic achievement through GPA, thus providing an empirical picture of the contribution of self-observation and self-judgment factors to students' academic success; and (4) this research contributes to the development of applied statistical studies in the field of education, particularly in the analysis of psychological constructs and their relationship to students' academic achievement.

Thus, some research gaps that need to be studied further are regarding (1) most previous studies have placed more emphasis on self-efficacy or self-regulation variables in general, while studies that specifically examine self-observation and self-judgment as stand-alone constructs are still relatively limited; (2) many studies only examine the relationship between variables using simple statistical analysis without first testing the construct validity of the variables studied; (3) research examining the relationship between self-observation, self-judgment, and student academic achievement in the context of higher education in Indonesia is still limited; and (4) methodological approaches that combine construct analysis using CFA with analysis of relationships between variables are still rarely carried out in research.

Based on this description, this study aims to analyze the constructs of self-observation and self-judgment and examine the influence of these two variables on students' GPAs. By using an appropriate statistical analysis approach, this study is expected to provide an empirical contribution to understanding the role of self-observation and self-judgment skills in academic success in higher education..

Research Methods

Types and Approaches of Research

This study employed a quantitative approach with an explanatory research design. The quantitative approach was used to empirically test the relationships and influences between self-observation, self-judgment, and GPA variables using statistical analysis. This study also utilized CFA results to validate the constructs of the self-observation and self-judgment variables based on theoretically established indicators.

Population and Sample

The population in this study was all students of the Faculty of Teacher Training and Education (FKIP) at Universitas Muhammadiyah Pringsewu, Universitas Muhammadiyah Metro, Universitas Muhammadiyah Kotabumi, and Universitas Muhammadiyah Lampung. The sampling technique used cluster random sampling. This technique was chosen because the study population is spread across several groups or clusters that naturally form within a university environment, such as classes. Using this technique, sampling is not done directly from individuals, but rather through random selection of class groups that represent the study population. The sample size was determined by considering the adequacy of the number of respondents for the statistical analysis to be used in the study. Next, class groups from the four universities were randomly selected using a lottery

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technique. In the process carried out on the population, 11 class groups were selected, with all students in the selected class groups serving as research respondents, resulting in a required sample size of 272 students..

Research Variables

This research involves three main variables, namely: (1) self-observation, the individual's ability to observe and monitor behavior, learning processes, and individual achievements; (2) self-judgment, the individual's ability to evaluate and assess performance or learning behavior that has been carried out; and (3) GPA, an indicator of academic achievement.

Data Collection Techniques

Research data was collected through several techniques, namely questionnaires, used to measure self-observation and self-judgment variables, and documentation was used to obtain student GPA data.

Instrument Validity and Reliability Test

Before conducting the main analysis, the research instrument needs to be tested first through a construct validity test using CFA to ensure that the indicators used truly represent the self-observation and self-judgment constructs, as well as a reliability test using Cronbach's Alpha to determine the internal consistency of the instrument.

Research Hypothesis

The hypothesis in this study can be formulated as follows:

(1) H_1: Self-observation has a positive effect on students' academic achievement as measured by GPA
(2) H_2: Self-judgment has a positive influence on students' academic achievement as measured by GPA
(3) H_3: Self-observation and self-judgment simultaneously have a positive influence on students' academic achievement as measured by GPA

Data Analysis Techniques

Data analysis is carried out in several stages:

(1) Descriptive analysis
This analysis is to obtain an overview of the characteristics of respondent data and the distribution of scores for each variable.
(2) CFA
CFA is obtained to test the suitability of the measurement model, confirm the indicators that form the constructs of self-observation, self-judgment, and produce factor scores that will be used in the further analysis stage.
(3) Robust regression analysis
After obtaining factor score data for the self-observation and self-judgment constructs, a robust regression analysis was performed. In general, the regression model can be written as follows:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_2 + \cdots + \beta_k X_{ki} + \varepsilon_i$$

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where:
Y_i : dependent variable
X_{ki} : independent variables
β_1 : regression parameters
ε_i : error or residual
In robust regression, parameter estimation is done by minimizing the function:

$$\sum_{i=1}^{n} \rho \varepsilon_i$$

where:
ρ : robust function that reduces the influence of large residuals

Results and Discussion

Validity and Reliability Testing

The results of the content validity, item validity, and reliability tests for the self-observation instrument are presented in Table 1.

Table 1. Recapitulation of Aiken Index, Item Validity, and Self-observation Reliability

Aiken Validity Index Results	
Aiken's Value	Information
0.75	Acceptable (valid)
Item Validity	
Number of valid items	Invalid number of items
11	3
Reliability Test Results	
Cronbach's alpha value	Decision
0.82	Reliable

Based on the results of the self-observation instrument trial presented in Table 1. it is known that the Aiken's V value reached 0.75, which indicates that all statement items were deemed acceptable (valid) in terms of content (content validity) by experts, because they met the criteria for suitability between the indicators and the constructs being measured. Furthermore, the results of the item validity test showed that of the total items tested, there were 11 valid items and 3 invalid items, so that the valid items were declared suitable for use in collecting primary research data. In addition, the results of the reliability test with a Cronbach's Alpha coefficient of 0.82 indicated that the instrument had a very high level of internal consistency.

The results of the content validity, item validity, and reliability tests of the self-judgment instrument are stated in Table 2.

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Table 2. Recapitulation of Aiken Index, Item Validity, and Self-judgment Reliability

Aiken Validity Index Results	
Aiken's value	Information
0.75	Acceptable (valid)
Item Validity	
Number of valid items	Invalid number of items
15	11
Reliability Test Results	
Cronbach's alpha value	Decision
0.799	Reliable

Based on the results of the self-judgment instrument trial presented in Table 2. it is known that the Aiken's V value reached 0.75, which indicates that all statement items were deemed acceptable (valid) in terms of content (content validity) by experts, because they met the criteria for suitability between the indicators and the constructs being measured. Furthermore, the results of the item validity test showed that of the total items tested, there were 15 valid items and 11 invalid items, so that the valid items were declared suitable for use in collecting primary research data. In addition, the results of the reliability test with a Cronbach's Alpha coefficient of 0.799 indicated that the instrument had a very high level of internal consistency.

CFA

Statistically, the factor loading value indicates how strong the relationship is between an indicator (question item) and a latent factor (self-observation). Self-observation is constructed based on three aspects: frequency, duration, and intensity. The following are the results of Self-observation Loading Value Acquisition presented in Table 3.

Table 3. Self-observation Loading Value Acquisition

Factor	**Item**	**Loading**
1	$X_{1\text{-}SO}$	1**
	$X_{2\text{-}SO}$	1.094**
2	$X_{3\text{-}SO}$	1**
3	$X_{4\text{-}SO}$	1**
	$X_{5\text{-}SO}$	1.568**
	$X_{6\text{-}SO}$	1.465**
	$X_{7\text{-}SO}$	1.717**
	$X_{8\text{-}SO}$	1.577**
	$X_{9\text{-}SO}$	1.557**
	$X_{10\text{-}SO}$	1.448**

Noted:
**p<0.01

Based on Table 3. the results show that the loading value obtained is ≥ 0.7, so it can be stated that the contribution or relationship between each item and self-observation is classified as very strong and ideal. And all loading factors are

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statistically significant with p < 0.001, meaning all indicators can significantly measure the construct.

These three components are interrelated, where (1) frequency without intensity can result in shallow observation; (2) long duration without intensive focus can be less effective; and (3) deep integration of frequency, duration, and intensity will result in in-depth self-observation practices and impact one's self-development (Ie et al., 2023).

Self-judgment is constructed based on four aspects, namely self-knowledge, self-acceptance, self-control, and satisfaction. Loading factor self-judgment presented in Table 4.

Table 4. Self-judgment Loading Value Acquisition

Factor	Item	Loading
1	$X_{1\text{-SJ}}$	1**
	$X_{2\text{-SJ}}$	1.126**
	$X_{3\text{-SJ}}$	1.931**
2	$X_{4\text{-SJ}}$	1**
	$X_{5\text{-SJ}}$	0.713**
	$X_{6\text{-SJ}}$	0.895**
	$X_{7\text{-SJ}}$	0.959**
3	$X_{8\text{-SJ}}$	1**
4	$X_{9\text{-SJ}}$	1**
	$X_{10\text{-SJ}}$	1.162**
	$X_{11\text{-SJ}}$	1.045**
	$X_{12\text{-SJ}}$	0.710**

Noted:
**p<0.01

The results in Table 4. indicate that the loading values obtained were ≥0.7, indicating that the contribution or relationship between each item and self-judgment was very strong and ideal. Furthermore, all loading factors were statistically significant with p<0.001, meaning all indicators significantly measured the construct.

After obtaining the loading values for each indicator item, the next step was to determine the goodness of fit of the self-observation. The following are the results of self-observation of the suitability of the model presented in Table 5.

Table 5. Goodness of fit self-observation

Evaluation	Value	Information
Degrees of freedom	33	-
Ratio Chi-square (χ^2)/df	3.898	Marginal fit
Comparative Fit Index (CFI)	0.912	Enough
Tucker-Lewis Index (TLI)	0.880	Enough
Root Mean Square Error of Approximation (RMSEA)	0.058	Acceptable fit
RMSEA CI (90%)	0.085-0.122	Reasonable
Standardized Root Mean Residual (SRMR)	0.058	Enough

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The results shown in Table 5 indicate that the Chi-square (χ^2)/df ratio is above 3.0, which is categorized as marginal fit. The comparative fit index (CFI) and Tucker-Lewis Index (TLI) values are in the range of 0.880, indicating a fairly good model fit. The RMSEA value of 0.058 is included in the acceptable fit category with a confidence interval (CI 90%) that is still within reasonable limits. In addition, the SRMR value below 0.08 indicates a good model fit. Next is the acquisition of goodness of fit self-judgment presented in Table 6.

Table 6. Goodness of fit self-judgment

Evaluation	Value	Information
Degrees of freedom	49	-
Ratio Chi-square (χ^2)/df	4,211	Marginal fit
Comparative Fit Index (CFI)	0,836	Enough
Tucker-Lewis Index (TLI)	0,779	Enough
Root Mean Square Error of Approximation (RMSEA)	0,109	Poor fit
RMSEA CI (90%)	0,094 – 0,124	Reasonable
Standardized Root Mean Residual (SRMR)	0,074	Enough

The results shown in Table 6. indicate that the Chi-square (χ^2)/df ratio is above 3.0, categorizing it as a marginal fit. The comparative fit index (CFI) and Tucker-Lewis Index (TLI) are around 0.779, indicating a fairly good model fit. The RMSEA value of 0.109 falls into the poor fit category, with a confidence interval (90% CI) still within reasonable limits. Furthermore, the SRMR value is below 0.08, indicating a good model fit.

Thus, the results in Tables 5 and 6 indicate that the self-observation and self-judgment measurement models have an adequate and stable level of fit. Therefore, it can be concluded that the factor structure of the self-observation and self-judgment models is consistent and suitable for further analysis.

The next step is to obtain the self-observation factor scores, as shown in Figure 1.

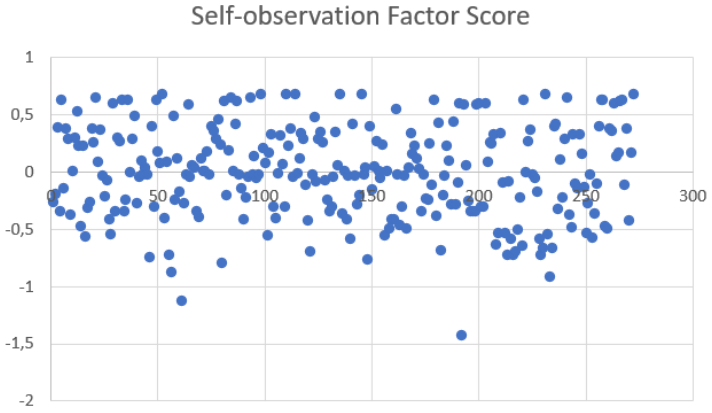

Figure 1. Self-observation factor scores

Figure 1. shows the factor scores from the CFA results, with scores ranging from -2.5 to +1, with most concentrated between -1 and +1. These scores indicate whether respondents are above or below average in the self-observation aspect. The

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scores are fairly evenly distributed across the respondent population, with most hovering around the midpoint (0). This indicates that most students tend to have self-observation factor scores close to the population average.

Next, the self-judgment factor score values are shown in Figure 2, as follows::

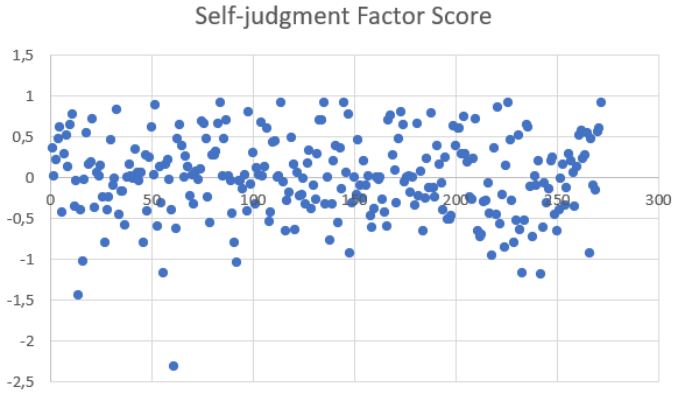

Figure 2. Self-judgment factor score

Figure 2. shows the factor scores from the CFA results, with scores ranging from -2.5 to +1, with most concentrated between -1 and +1. These scores indicate whether respondents are above or below average in terms of self-judgment. The scores are fairly evenly distributed across the respondent population, but most are around the midpoint (0). This indicates that most students tend to have self-judgment factor scores close to the population average.

Robust Regression

The data scores for the self-observation, self-judgment, and GPA factors were then tested for data normality using the Shapiro-Wilk normality test with the assistance of R software, and the following results were obtained in Table 7.

Table 7. Normality Test Results

Number	Variables	p-value	Results ($\alpha = 0.05$)	Decision	Conclusion
1	self-observation	0.0004446	0.0004446 < 0.05	Reject H_0	Data is not normally distributed
2	self-judgment	0.0002261	0.0002261 < 0.05	Reject H_0	Data is not normally distributed
3	IPK	4.467×10^{-11}	$4.467\times10^{-11} < 0.05$	Reject H_0	Data is not normally distributed

Based on Table 7. the results of the normality test shown in the table, the p-values for the three variables analyzed self-observation, self-judgment, and GPA were all less than the significance level used, which was α = 0.05. The self-observation variable had a p-value of 0.0004446, the self-judgment variable 0.0002261, and the GPA variable 4.467×10^{-11}.

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Because all p-values were less than 0.05, the decision was made to reject the null hypothesis (H_0), which stated that the data were normally distributed. Therefore, it can be concluded that the data for these three variables were not normally distributed.

The results of this normality test indicate that the normality assumption was not met. Therefore, further analysis requires the use of a more robust analysis method, such as robust regression, to ensure the validity and reliability of the analysis results. The results obtained using robust regression with software R following Table 8.

Table 8. Robust Regression Results

No	Regression Model	Interpretation	t-value	Results ($\alpha = 0,05$)	Decision	Conclusion
1	$GPA = 3{,}6758 + 0{,}0265(SO)$	If the self-observation value increases by one unit, the GPA is estimated to increase by 0.0265	1.0297	1.0297 < 1.96	Accept H_0	Not significant
2	$GPA = 3.6763 - 0.0102(SJ)$	If the self-judgment value increases by one unit, the GPA is estimated to decrease by 0.0102	-0.4788	-0.4788 < 1.96	Accept H_0	Not significant
3	$GPA = 3.6759 + 0.0458(SO) - 0.0294(SJ)$	If the self-observation score increases by one unit, the GPA is estimated to increase by 0.0458, and if the self-judgment score increases by one unit, the GPA is estimated to decrease by 0.0294	1.5158	1.5158 < 1.96	Accept H_0	Not significant

Based on Table 4. the robust regression analysis shows that the self-observation variable has a coefficient of 0.0265, indicating a positive relationship with student academic achievement, as measured by GPA. However, the t-value of 1.0297 indicates that this effect is not statistically significant at the 5% level. Therefore, the hypothesis that self-observation has a positive effect on student GPA

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cannot be empirically supported in this study.

Furthermore, a similar finding is demonstrated by the robust regression analysis, which shows that the self-judgment variable has a coefficient of -0.0102, indicating a negative relationship with student academic achievement, as measured by GPA. However, the t-value of -0.4788 indicates that this effect is not statistically significant at the 5% level. Therefore, the hypothesis that self-judgment has a positive effect on student GPA cannot be empirically supported in this study.

Furthermore, the correlation between self-observation and self-judgment and GPA showed that the self-observation variable had a coefficient of 0.0458, indicating a positive relationship with student academic achievement. Meanwhile, the self-judgment variable had a coefficient of -0.0294, indicating a negative relationship with GPA. However, the t-values for both variables were 1.5158 and -1.1774, respectively, indicating that the influence was not statistically significant at the 5% significance level. This indicates that self-observation and self-judgment in this study did not significantly contribute to student academic achievement.

Implication

Student academic achievement is a crucial indicator for assessing the success of higher education (Dangaiso & Tsvere, 2025). Based on the robust regression analysis conducted in this study, self-observation has a coefficient of 0.0265 on student academic achievement, as measured by GPA. This result indicates that the better a student's ability to observe their behavior and learning process, the higher their academic achievement tends to be. This finding aligns with the concept of self-observation proposed by Yan et al. (2024) and Bedesem et al. (2024), who state that an individual's ability to reflectively monitor their behavior, thoughts, and learning experiences can help them understand their own condition and improve strategies used to achieve specific goals.

However, the test statistic (t=1.0297) indicates that the relationship is not statistically significant at the 5% level. This indicates that although self-observation tends to have a positive relationship with GPA, this variable does not make a strong enough contribution to explaining the variation in student GPA in this study. These findings indicate that students' ability to conduct self-observation does not necessarily directly impact academic achievement. It is likely that this ability is supported by other factors, such as learning motivation, effective study strategies, and good time management skills, which can have a greater impact on student academic achievement.

Furthermore, the analysis also shows that the self-judgment variable has a negative coefficient of -0.0102 on student GPA. This negative coefficient indicates a tendency for a negative relationship between self-judgment and student GPA. However, the test statistic (t=-0.4788) indicates that this relationship is also not statistically significant at the 5% level. These results indicate that students' ability to conduct self-evaluation has not been empirically proven to have a significant impact on GPA.

Self-judgment is an evaluation process in which individuals assess themselves based on certain standards, both personal and social (Thai, 2022). This evaluation process is strongly influenced by the standards used to assess an individual's success in achieving specific goals (Jia et al., 2024). In the context of

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higher education, the ability to conduct self-evaluation appropriately can help students understand their level of learning achievement and determine necessary improvement strategies (Concina, 2022). However, if self-evaluation is excessive or overly critical of oneself, it can actually cause psychological stress, which can lead to decreased learning motivation (Liang & Mao, 2025). This situation may explain why in this study, self-judgment tended to have a negative relationship with students' GPA.

When both variables were analyzed simultaneously, robust regression results indicated that self-observation had a positive relationship with GPA, while self-judgment had a negative relationship with GPA. However, the test statistics for both variables, 1.5158 and -1.1774, respectively, indicated that the effects were not statistically significant at the 5% level. This finding indicates that students' self-observation and self-judgment abilities in this study did not significantly contribute to explaining variations in student academic achievement.

The results of this study indicate that self-observation and self-judgment are important components of self-regulation mechanisms, but their contribution to GPA has not yet shown a statistically significant effect. These results indicate that students' abilities to conduct self-observation and self-judgment play a greater role in regulating the learning process, such as monitoring learning progress, recognizing errors, and improving learning strategies, than directly influencing the final learning outcomes reflected in GPA (Yan et al., 2023; Yan, 2020). This is consistent with several previous studies that have shown that self-regulatory variables often have a stronger relationship with the quality of the learning process, such as learning engagement, learning strategies, and academic persistence, compared to cumulative learning outcome indicators (Tomas & Poroto, 2023).

Based on these findings, there are several recommendations for educational practitioners to consider. First, universities can develop learning programs that explicitly train students' self-reflection skills, such as through self-assessment activities or reflective journals during the learning process. These activities can help students improve their self-observation and self-judgment skills in monitoring and evaluating their learning process. Second, lecturers can encourage the use of learning strategies oriented towards developing self-regulation, for example through project-based learning, problem-based learning, or providing formative feedback that allows students to reflect on their learning progress. In this way, students' self-regulation skills can develop more systematically and sustainably.

For future researchers, this study opens up opportunities to further examine the relationship between self-regulation components and a broader range of indicators of learning success. Future research could consider other variables that could potentially mediate or moderate the relationship between self-observation, self-judgment, and academic achievement, such as learning motivation, self-efficacy, learning strategies, academic engagement, and a supportive learning environment. Furthermore, indicators of learning success are not limited to GPA, but can also include other indicators such as critical thinking skills, successful completion of academic assignments, or achievement of specific competencies that more comprehensively represent students' learning processes.

This study also has several limitations that require consideration. One major limitation is the use of GPA as the sole indicator of academic achievement. GPA is an

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aggregate and cumulative measure, so it does not always accurately reflect the dynamics of students' learning processes in the short term. Therefore, self-observation and self-judgment skills, which are related to the process of reflection and self-evaluation, may not have been fully reflected in the variation in students' GPA scores in this study. This condition may explain why these two variables did not contribute significantly to explaining the variation in student academic achievement in this study.

Theoretically, the findings of this study also relate to the self-regulation theoretical framework proposed by Albert Bandura (D. H. Schunk & DiBenedetto, 2020), which emphasizes that the self-regulation process involves the stages of self-observation, self-evaluation, and self-reaction. Within this framework, self-observation plays a role in helping individuals monitor their behavior and learning progress, while self-judgment serves as an evaluation process against standards or goals to be achieved. These two components serve more as internal mechanisms that guide an individual's learning process, so their impact on academic outcomes is often indirect. Therefore, the results of this study provide empirical support for the theoretical view that self-regulation is more strongly related to the learning process than to the final learning outcomes.

The scientific contribution of this study lies in examining the relationship between self-observation and self-judgment and student academic achievement through a construct analysis approach using CFA before analyzing the relationship with GPA. This approach provides a stronger measurement basis for the psychological constructs used in the study, resulting in more methodologically reliable results. Furthermore, this study enriches the literature on psychological factors related to student academic achievement, particularly in the context of higher education in Indonesia. It also provides an empirical basis for further research to develop a more comprehensive analytical model regarding the role of self-regulation in student academic success.

Conclusion and Suggestion

The results of the study indicate that self-observation has a positive relationship with students' GPA, while self-judgment tends to have a negative relationship. However, neither variable has a statistically significant effect on GPA at the 5% significance level. This suggests that students' ability to conduct self-observation and self-evaluation does not directly explain variations in academic achievement as measured by GPA. These findings indicate that self-observation and self-judgment play a greater role in regulating students' learning processes, such as monitoring progress and improving learning strategies, than in directly influencing final learning outcomes. Furthermore, using GPA as the sole indicator of academic achievement has limitations in fully describing the dynamics of students' learning processes.

Universities and lecturers are advised to develop learning methods that encourage students' self-reflection, such as through self-assessment, reflective journals, and formative feedback. Future researchers are advised to examine the relationship between self-regulation and academic achievement using a wider range of learning success indicators and considering other variables such as learning motivation, self-efficacy, learning strategies, and academic engagement to gain a

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more comprehensive understanding of the factors influencing student academic success.

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