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The Influence of Self-Efficacy, Emotional Intelligence and Learning Motivation on Learning Achievement of Students at Universitas Jambi

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ABSTRACT

This research aimed to analyze the influence of self-efficacy, emotional intelligence, and learning motivation on the academic performance of students in the Faculty of Education and Teacher Training (FKIP) at the Universitas Jambi. The study utilized a quantitative approach and the data collection technique involved distributing and collecting questionnaires (surveys) through Google Forms. The respondents selected for this study were students from FKIP at the Universitas Jambi, with a sample size of 218 respondent from total population of 8,968. The data analysis technique used Partial Least Squares-Structural Equation Modeling (PLS-SEM) to develop a model that describes the relationships between the variables. The results of indicated that, in the first hypothesis, self-efficacy has a P-value of 0.007, indicating a significant influence on academic performance. In the second hypothesis, emotional intelligence has a P-value of 0.008, also showing a significant influence on academic performance. Finally, in the third hypothesis, learning motivation has a P-value of 0.008, suggesting a significant influence on academic performance. Therefore, this research concluded that self-efficacy, emotional intelligence, and learning motivation have a positive and significant impact on students' academic performance. Based on these findings, this research contributed to the understanding that increasing self-efficacy, emotional intelligence, and learning motivation can significantly improve students' academic achievement. Therefore, interventions designed to improve these aspects can be an effective strategy for improving academic performance among students at the Faculty of Education and Teacher Training, Universitas Jambi.

Keywords: *Self-Efficacy, Emotional Intelligence, Learning Motivation*

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INTRODUCTION

Emotional intelligence, self-efficacy, and learning motivation are important components that influence student academic achievement. Emotional intelligence is associated with increased achievement and (Gloria Matthews, 2020; Wang, 2022). Conversely, self-efficacy increases learning outcomes and motivation (Mojavezi & Tamiz, 2012). Research has shown that the use of technology and blended learning approaches, which support emotional intelligence and self-efficacy, improve learning outcomes (Abulibdeh & Hassan, 2011; Fitriyana et al., 2020). To support increased student achievement, educational institutions must incorporate these elements into their educational practices (Doménech-Betoret et al., 2017; Maharani & Purnama, 2023).

Self-efficacy is an individual's belief in his or her ability to succeed in a task or achieve a predetermined goal. Self-efficacy can influence individual behavior and motivation in facing complex or difficult tasks. In an educational context, students' self-efficacy can influence their willingness to learn, the level of persistence, and the effort they make to achieve learning goals (Schunk, 2023). Self-efficacy refers to an individual's belief in his or her own abilities. This includes setting ambitious goals and demonstrating a strong commitment to achieving them. Individuals dedicate significant effort to their tasks and increase their efforts when faced with failure or obstacles. They stay focused on their goals and devise strategies to overcome challenges. Failure is seen as a result of insufficient effort, thereby forming a success-oriented mindset. Individuals face threats and stress with self-confidence, believing that they have the ability to control them (Rafiola et al., 2020). Belief in one's abilities can influence a person's emotions, thought patterns, motivation and social behavior. The stronger a person's self-efficacy, the higher the potential for achievement and ability they have. In stressful situations, individuals tend to focus on personal weaknesses, task difficulties, and the negative consequences of failure. Individuals need a longer time to restore a sense of self-efficacy after experiencing setbacks and failures (Skaalvik, 2020).

Self-efficacy determines how well a person thinks they can face challenges, but emotional intelligence helps manage emotions in those situations, which influences personal and academic success. Understanding how emotional intelligence plays a complementary role is important in this research. Daniel Goleman (2013) stated that emotions refer to typical feelings and thoughts, and are a combination of biological and psychological states and tendencies to act. Emotions are related to physiological changes and different types of thinking. Therefore, emotions are an important factor in human life, because they can be a motivator of behavior by increasing or disrupting human intended behavior. explains that emotional intelligence can be defined as a person's ability to recognize and manage emotions both in themselves and others (Seng et al., 2016). This ability involves the ability to distinguish and use emotional information in the process of thinking and acting. There is a view that emotions can influence a person's intelligence, where one form of intelligence is related to understanding and managing emotions. Emotional intelligence is the ability to understand, feel, and manage emotions with the aim of developing personal growth. In line with, emotional intelligence cannot be obtained immediately, but rather through a learning process and is influenced by the surrounding environment. The environment has a significant role in forming emotional intelligence (Yazon & Ang-Manaig, 2019). Emotional intelligence is strongly influenced by the environment, is not fixed, and can change at any time. Therefore, the environment, especially the role of parents during childhood and the role of teachers at school, has a large influence on the development of emotional intelligence.

Apart from examining self-efficacy and emotional intelligence, this research also examines the realm of learning motivation which can influence student learning achievement. Strong learning motivation is known to improve learning achievement. Motivation to learn includes an understanding of the factors that influence it. One of the main factors is intrinsic motivation, namely the urge to learn that comes from within the individual. Intrinsic motivation arises when individuals feel interested, involved, and feel they have control over the learning process. For example, a strong sense of curiosity, satisfaction in mastering material, or a sense of personal achievement that arises from the learning process. Apart from intrinsic motivation,

there is also extrinsic motivation which comes from external factors such as praise, rewards or punishment. Extrinsic motivation can influence individual learning behavior even though the actual motivation does not come from within them. Although extrinsic motivation can provide initial encouragement, it is important to develop intrinsic motivation that is more lasting and sustainable in learning (Sansone & Harackiewicz, 2000). Motivation in the learning process can be interpreted as a force that encourages students and provides direction to their learning activities, with the aim of achieving the desired results. Motivation involves desires that motivate and direct students' attitudes and behavior in the learning process. Thus, learning motivation is a psychological factor that plays an important role in developing enthusiasm, joy and enthusiasm for learning. Students who have high motivation tend to have a strong enthusiasm for carrying out learning activities (Leal-Soto et al., 2018). learning achievement is the result of changes that a person obtains after following the learning process (Septiani et al., 2021). These changes include overall changes in an individual's attitudes, skills and knowledge. Learning achievement involves understanding the factors that have an influence on it. Learning achievement refers to the academic results or achievements achieved by a student in a series of learning activities. There are various factors that influence learning achievement, including aspects that are internalized within the individual as well as factors that are external (Usman & Relwandani, 2022)

Although many studies have investigated the individual influence of emotional intelligence, self-efficacy, and learning motivation on academic achievement, there is a gap in understanding the simultaneous interaction of these three variables in the Indonesian educational context. Previous studies often only focus on one or two variables without exploring the dynamics of their interaction in the same educational environment. Provides insight into the influence of emotional intelligence and learning motivation in the context of online courses and high schools (Chen & Guo, 2020; Yulika et al., 2019). However, research on this topic is still limited at the university level, especially focusing on prospective teachers. Furthermore, Emphasizes the importance of emotional intelligence and teacher self-efficacy in influencing student motivation and achievement, highlighting the importance of understanding how emotional intelligence, self-efficacy and motivation can impact student academic performance (Mojavezi & Tamiz, 2012; Wang, 2022). in Indonesia, especially at universities in Jambi Province.

Research Novelty This research uses a new methodological approach by utilizing Structural Equation Modeling (SEM), to investigate the combined impact of self-efficacy, emotional intelligence, and learning motivation on learning achievement. Updates in Different Cultural and Educational Contexts: Study by Suhirman et al (2020) explored the relationship between emotional intelligence and learning motivation on student achievement at the secondary school level in Bengkulu. This research adds a new dimension by focusing on university students in Jambi, providing insight into how these factors operate in a higher education context. This research makes an important contribution by taking a comprehensive approach to education. It combines self-efficacy, emotional intelligence, and learning motivation in an educational strategy to improve students' academic achievement. In addition, future research should encourage the use of technology and innovative learning methods that encourage academic and social development, ultimately leading to a more inclusive and adaptable education system in Indonesia.

Theoretical Review

Self-Efficacy

Self-efficacy is an important component in the field of educational psychology, consistently linked to student performance in a variety of disciplines and academic settings. Research shows that students with high self-efficacy beliefs show improved academic performance as a result of increased desire and persistence when faced with difficult tasks. Self-efficacy plays an important role in improving the academic performance of students who have difficulty learning mathematics. Similarly, Olivier et al (2019) argue that self-efficacy is important for actively engaging students and improving their overall academic achievement. Shahzad & Naureen (2017) found a strong correlation between teacher self-efficacy and student academic success, which is in line with the findings of Dinh & Nguyen (2022) regarding the rela. This research is of course based on previous research and tested in a different setting, namely in Jambi province.

Emotional Intelligence

Emotional intelligence (EI) helps students develop in various fields and levels of education. Over the years, research has shown that students with higher levels of emotional intelligence tend to achieve better academic results due to their ability to control stress, interact with others, and remain persistent while studying. Chamundeswari, (2013) found a significant relationship between learning skills (EI) and academic achievement of high school students. Tepi et al (2022) which states that EI has an impact on students' physical learning achievements. In addition Seng et al (2016) found that both EI and parental support contributed to increasing student learning achievement. According to research conducted by (ALmegewly et al., 2022; Seng et al., 2016), there is a positive correlation between emotional intelligence and student academic achievement in various academic contexts, including nursing. (Elmi; 2020) investigated learning skills (EI) in Islamic education and found a strong relationship between academic achievement. On the other hand, Yusri et al (2020) put forward a conceptual framework that emphasizes the influence of not only students' learning skills but also teachers and peers on academic achievement. Zhou et al (2024) provides a thorough analysis that confirms the significant relationship between spiritual intelligence and academic performance. They also emphasize how important sp iritual intelligence is in relation to academic achievement. Alam & Ahmad (2018) explain how educators' emotional intelligence can directly influence students' academic success. This strengthens the impact of EI on educational outcomes (Vijayalatha, 2019). These studies collectively underscore the tertiary context and situation in Jambi province the importance of incorporating emotional intelligence into educational strategies to improve student performance.

Students' Motivation

Motivation is an important part of educational psychology that affects student performance in various contexts. Extensive research shows that motivation and academic performance are linked. Kate & Catherine Eboh (2024) self-motivation is crucial to students' academic success, Isa (2023) also discusses how learning and motivation affect her team's academic performance (Keller et al., 2017).

explains how teacher motivation, combined with pedagogical knowledge, affects student performance and satisfaction, especially in science education. During difficult times like the COVID-19 pandemic, (Pgri et al., 2020; Riany Setyowati et al., 2019; Yuni Pertiwi et al., 2023) are studying the relationship between motivation and performance in English language learning. Additionally, Munawaroh et al (2021) examines the

effects of e-learning on student motivation and performance. Bimaruci Hazrati Havidz & Mujakiah (2023) discuss how learning environment affects student motivation and performance and emphasize contextual factors. Finally, Gusman et al (2021) and Riswanto & Aryani (2017) provide a deskriptif analysis that confirms a positive relationship between student motivation and performance, emphasizing the need for a learning strategy that creates a motivating climate to maximize student performance in various academic disciplines. These studies emphasize the importance of integrating motivation strategy into teaching practice to improve student performance.

Students' Achievement

Significant research shows that psychological and environmental factors influence student achievement, especially learning outcomes. Here, EI and self-efficacy are important. Chamundeswari (2013) & Tepi et al (2022) imply that higher EI helps students manage stress and emotions, thereby improving academic achievement. Hadi & Netrawati (2021) show how EI and family support influence student growth. EI is also important for academic success, especially in the nursing field. The strong relationship between EI and Islamic education. Another factor is self-efficacy, which impacts academic success (ALmegewly et al., 2022; Seng et al., 2016). Self-efficacy increases classroom engagement and academic success, according to Olivier et al (2019) shows instructor self-efficacy increases student achievement. Asakereh & Yousofi (2018a) linked reflective thinking and self-efficacy to EFL students' academic achievement. linked independent learning readiness with motivation and academic achievement (Saeid & Eslaminejad, 2016), while Nasir & Iqbal (2019) estimated teacher training program performance with academic self-efficacy. Al-Abyadh & Abdel Azeem (2022) said that self-management and self-efficacy influence academic success. These studies demonstrate the complexity of student achievement and the need for learning practices that increase emotional intelligence, motivation and self-efficacy to enhance learning.

METHOD

The research uses quantitative methods and a survey approach. Quantitative research examines the relationship of variables (Hirose & Creswell, 2023). These variables can be measured using various tools to obtain research data in the form of numbers for statistical analysis. This research aims to find out how self-efficacy, emotional intelligence, and motivation influence learning achievement in students at the Faculty of Teacher Training and Education, Jambi University In this research, researchers used convenience, which determines respondents based on ease of access and willingness of respondents. Samples are taken from populations that are easy to reach or willing to participate, the consideration for choosing convenience is saving costs, time and limited resources, research data collection uses instruments, data analysis uses quantitative analysis with statistical-based data processing which aims to test hypotheses or conjectures that have been temporarily established.

In this study, researchers used survey techniques by distributing questionnaires to respondents to explain the characteristics of the respondents, opinions, behavior and attitudes. Questionnaires are distributed and collected via Google Form. The data collection process was carried out on 218 respondents. Survey techniques provide an overview of trends in data rather than offering close explanations. Data analysis was carried out by looking at Cronbach alpha in order to see the reality value, the average and standard deviation were used to understand descriptive statistics, the Pearson product moment correlation coefficient was used to relate variables and the T-test for

differences in moderating variables, and partial modeling at least from box structural equation (PLS-SEM) for well influencing factors. And in determining sampling, researchers used the G Power application to analyze the strength of the sample. To assess capacity in this research analysis, G Power was used to determine a small enough size required, and testing implied a total sampling of 218 achieved a power of 0.95 with a population of 8,968. SEM-PLS was used to analyze the data and is based on Smart PLS version 3.2.9 on certain procedures. The first step is to test the measurement model to test the reliability and validity of the construct. The second step provides an assessment of the structural model that tests the direct relationship between exogenous (independent) and endogenous (dependent) variables (Hair, Howard, & Nitzl, 2020a).

The questionnaire instrument prepared in this research is structured into two parts. In the first part of the questionnaire, the researcher asked participants to fill in demographic information, the second part contained statements consisting of 17 of the 4 constructs that the researcher took, consisting of self-efficacy (5 items) from (Schmitz, 2013), emotional intelligence (5 items) from research Sunarti (2019) learning motivation (4 items) and learning achievement (3 items) from Manurung (2017) research, to support institutional or Facilitate adoption of this research, researchers also adopted research from Nurani (2023), each item is measured with a scale Likert always, strongly agree, agree, neutral, disagree and strongly disagree. And the questionnaire as a whole was accepted by the respondents.

RESULT AND DISCUSSION

Description of Research Data

Below the author displays a demographic description of the participants.

Tabel 1. Demographics description of the participants

Variabel	Demographic	Frequency (N-1719)	Percentage	Mean
Age	< 20 (1)	101	46.3	1.5500
	> 20 (2)	117	53.7	
	Total	218	100.0	
Gender	Male (1)	78	35.8	1.6500
	Female (2)	140	64.2	
	Total	218	100.0	
Program of Study	Educational Administration (1)	83	38.1	1.6100
	Others (2)	138	61.9	
	Total	218	100.0	
Generation	2021 (1)	124	56.9	1.4000
	2022 (2)	94	43.1	
	Total	218	100.0	

Table 1 is the descriptive statistical results, where from the demographics we can see that the students are divided based on age, namely: <20 (101/46.3%), >20 (117/53.7%). Then, it is also divided by gender, namely men (78/35.8%) and women (140/64.2%), then Program Studi Administrasi Pendidikan (83/38.1%) and other study

programs (138/61.9%), as well as in the class of 2021 (124/56.9%) and also the class of 2022 (94/43.1%).

Data Analysis

PLS-SEM is used because it has good predictive capabilities, besides that it is used for the data analysis process and proposed hypotheses using Smart PLS software (Hair et al., 2011). This research uses the PLS-SEM technique to develop a model that describes the relationship between variables that influence learning achievement. Researchers see the fact that educational institutions are complex systems, but the changes that occur are influenced by several factors and, therefore, several variables that influence the learning achievement variable. In order to have a good research design in Smart PLS, a valid instrument is used so that the instrument can measure what it should measure. The validity testing process in this research uses convergent validity and discriminant validity methods with the help of Smart PLS 3.2.9. The first step is to enter the raw data in CSV comma delimited excel format. After the raw data is entered, the data analysis stages can be carried out as follows

Table 2 Description of Questionnaire Statistic, loading factor, VIF, AVE dan Cronbach's (Hair, Howard, & Nitzl, 2020b)

Construct	Statement	Mean	Loading	VIF	Ave	Composite reliability	Cronbach's
Self-Efficacy	I am convinced that I am able to successfully learn all relevant subject content even if it is difficult	4.080	0.794	1.593	0.598	0.881	0.838
	I know that I can maintain a positive attitude toward this course even when tensions arise.	4.080	0.750	2.244			
	Even if I get distracted in class, I am confident that I can continue to learn well.	4.060	0.798	2.743			
	I am confident in my ability to learn, even if I am having a bad day	4.120	0.778	2.179			
	I am convinced that I can develop creative ways to cope with the stress that may occur while taking this course	4.270	0.743	1.508			
Emotional Intelligence	Able to recognize emotions	4.080	0.789	1.715	0.577	0.872	0.817
	Able to manage emotions	3.990	0.785	2.126			
	Able to motivate yourself	4.040	0.782	2.020			
	Can recognize other people's emotions	3.830	0.737	1.565			

Construct	Statement	Mean	Loading	VIF	Ave	Composite reliability	Cronbach's
	Can build and maintain a relationship	4.090	0.702	1.371			
Motivation to Learn	Have a target to achieve	4.440	0.728	1.342	0.555	0.833	0.738
	There is appropriate reward	4.230	0.745	1.511			
	There is competition	4.070	0.733	1.380			
	Enjoyable learning process	4.030	0.773	1.413			
Learning Achievement	How do you assess your learning progress during this semester?	4.110	0.862	1.800	0.708	0.879	0.793
	The extent to which you feel satisfied with your current learning achievements	4.000	0.871	1.876			
	In your opinion, does your learning achievement reflect your ability and the effort you put in?	4.160	0.788	1.506			

From the table above, it can be seen that seen from the mean score, the highest mean level (4.4) is on the learning motivation variable, and at the second level, namely on self-efficacy (mean 4.2) and the lowest is on the achievement and emotional intelligence variables (mean 3.8).

Measurement Models Evaluation of Confirmatory Composite Analysis (CCA)

Step 1: Assess indicator loading and its significance. Standardized loadings must have a value of at least 0.708 and the associated t-statistic above ±1.96 to be significant in a two-tailed test at the 5% level (Manley et al., 2021). T-statistics in PLS-SEM are obtained by running a bootstrap procedure (Hair et al., 2012). As an alternative, (Maricuţoiu & Sulea, 2019) introduced the use of confidence intervals with PLS-SEM. Confidence intervals for indicator loadings can be used in a similar way to t-statistics and intervals that do not include zero are statistically significant. The benefit of confidence intervals is that the dichotomous approach of significance testing can be avoided, and authors can consider other methods to identify practically significant indicator loadings when using confidence intervals (Ringle et al 2015). We generated data using SmartPLS 3.2.9 to display loadings of all items. Table 2 and Figure 1 comprehensively summarize the loadings of the 17 items. Emotional intelligence (KE5; 0.702) has the lowest value, while learning achievement has the highest value (PB2; 0.871).

Step 2: Squaring the individual indicator loadings provides a measure of the amount of variance shared between the individual indicator variable and its associated construct. This is referred to as indicator reliability (Sarstedt et al., 2020)

Step 3: The reliability of the construct can be measured in two ways Cronbach's alpha (α) and Composite Reliability (CR). The rule of thumb for both of these reliability criteria is that they must be above 0.70. Because indicators do not have equal reliability, composite reliability, which has weights, is more accurate than Cronbach alpha and therefore CR should be assessed and reported (Hair et al., 2017). It should be noted that internal consistency reliability, including Cronbach's alpha and composite reliability, can be too high. If reliability reaches 0.95 or higher, then the individual items measure the same concept and are therefore redundant. In short, redundancy indicates that indicators measure the same concept and therefore do not capture the diversity necessary to ensure multi-item construct validity (Hair et al., 2019). In table 2, the Cronbach alpha and composite reliability values show values above 0.70 and all constructs have good values. The Cronbach alpha value for the self-efficacy variable (0.838), the emotional intelligence variable (0.817), the learning motivation variable (0.738), and the learning achievement variable (0.793). With composite reliability values for the self-efficacy variable (0.881), the emotional intelligence variable (0.872), the learning motivation variable (0833), and learning achievement (0.879).

Step 4: Convergent validity can be measured by Average Variance Extracted (AVE). AVE is obtained by calculating the average indicator reliability of a construct. This metric measures the average variance shared between a construct and its individual indicators. The criteria for AVE is that the value must be 0.5 (50%) or higher. To determine convergent validity, the principle that measuring variables must have high influence is used (Hair et al., 2017). The convergent validity of each variable with reflective indicators is evaluated using the average variable extracted (AVE). AVE must be at a value of 0.5 or more. An AVE value of 0.5 or more means if the variable can explain 50% or more of the item variable. The PLS-SEM procedure produces AVE values greater than 0.500 (see Table 2). The variable "Learning Motivation" shows the lowest AVE value, namely 0.555, explaining 55% of the variation. On the other hand, "Learning Achievement" obtained the highest AVE of 0.708, which represents 70% of the variation. Therefore, the AVE values support convergent validity.

Step 5: Discriminant validity measures the uniqueness of a construct. Discriminant validity is demonstrated when the variance shared within a construct (AVE) exceeds the variance shared between the constructs. The method that must be used is the heterotrait-monotrait ratio of correlations (HTMT) (Roemer et al., 2021) Researchers can use cut scores such as 0.85 and 0.90 to interpret their HTMT results. Additionally, Sarstedt (2019) recently recommended additional significance testing that includes confidence intervals to better assess HTMT ratios and discriminant validity. All HTMT values in Table 4 get values less than 0.900, indicating significant differences. In the Smart PLS 3.2.9 application, discriminant validity was tested using the cross-loading method, Fornell-Larcker Criterion and Heterotrait-Monotrait (HTMT) (Henseler et al., 2015).

Table 3 Fornell-Larscher Criterion

	Self-Efficacy	Emotional Intelligence	Motivation to Learn	Learning Achievement
Self-Efficacy	0.773			
Emotional Intellogence	0.526	0.760		
Motivation to Learn	0.534	0.496	0.745	

Learning Achievement	0.498	0.511	0.527	0.841

Discriminant validity criteria demonstrated by Fornell-Larcker and its loading and cross-loading criteria. The off-diagonal value shown in table 4 is the relationship between each variable, while the diagonal value is the squared value of the average which shows that the AVE value for the variable is very high compared to the other variables. So, it can be explained that the AVE root has a higher value than the relationship below. In this case, the average square root value for each variable is higher than the value of the relationship between the variable and other variables in the form to be tested, so it can be said that the discriminant validity value is good (Hair et al., 2019a) so it is worthy of research. The results of tests on discriminant validity carried out in this study used the Heterotrait-Monotrait Ratio technique as in table 4 below.

Table 4 Ratio of Heterotrait-Monotrait (HTMT)

	Self-Efficacy	Emotional Intelligence	Motivation to Learn	Learning Achievement
Self-Efficacy	0.773			
Emotional Intelligence	0.526	0.760		
Motivation to Learn	0.534	0.496	0.745	
Learning Achievement	0.498	0.511	0.527	0.841

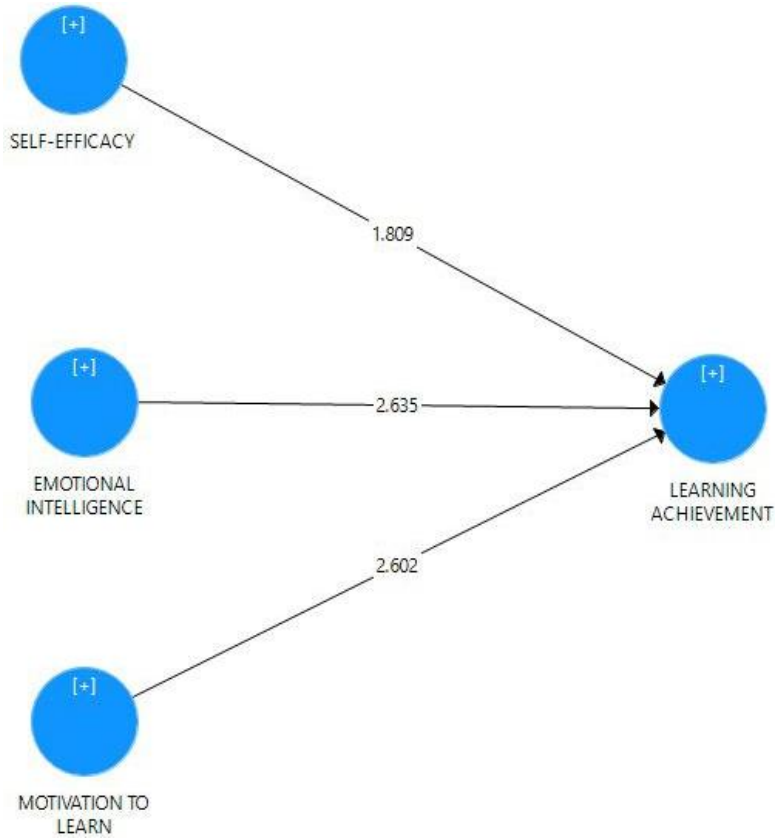
Opinions from experts state that cross-loading and the Fornell-Larcker criteria are less sensitive when evaluating discriminant validity. HTMT is an alternative step that is recommended for evaluating discriminant validity. In this method, a multi-trait and multi-method matrix is used as a basis for carrying out measurements. The HTMT value must be less than 0.9 to ensure discriminant validity between two reflective variables (Hubona et al., 2021). Based on the results of the data in the table above, it is found that the overall value is less than 0.9, so it can be concluded that the research instrument used is valid.

Structural Model Assessment

Step 1: Evaluation of structural model results is very dependent on the concepts and characteristics underlying multiple regression analysis. Therefore, the first step is to evaluate the structural model constructs to determine whether high multicollinearity is a problem. Structural models characterized by high multicollinearity can influence the size of the beta coefficients by increasing or decreasing their values andor changing the signs of the same coefficients. As with indicators on formative constructs, VIF values can be examined, and if they are below 3.0, then multicollinearity is unlikely to be a problem. An alternative approach is to examine bivariate correlations between construct scores. If the bivariate correlation is higher than 0.50, multicollinearity may affect the size and or sign of the path coefficient. When multicollinearity appears to be a problem, the recommended solution is to create higher-level constructs by combining separate constructs into conceptually similar and theoretically supporting lower-level constructs (Sarstedt et al., 2022) In this study, collinearity was measured using the Variance Inflation Factor (VIF) and the results are presented in Table 2 in the data

analysis. The table shows that no VIF value exceeds 5.0, which means multicollinearity is not a problem in this study (Hair, 2021) Thus, based on analysis using VIF, this research shows that there is no multicollinearity problem between the variables used.

Figure 1. Evaluation of Structure Model



Step 2: If multicollinearity is not a problem, the second step is to check the size and significance of the path coefficients. This process allows the researcher to test the hypothesized relationships between the constructs. The path coefficient is a standardized value that can range from +1 to −1, but is rarely close to +1 or −1. This is especially true with complex models that have multiple independent constructs in the structural model. The closer the path coefficient value is to 0, the weaker its ability to predict the dependent (endogenous) construct, and the closer the values are to the absolute value of 1, the stronger its ability to predict the dependent construct.

From the image presented above, there is a hypothetical model that describes the partial influence of each research variable, including self-efficacy, emotional intelligence and learning motivation on learning achievement. To evaluate the structural model, this research data was subjected to a bootstrapping method (500 sub-samples). The structural model for the seven research hypotheses was proven to be significant at the 7% significance level (Table 5).

Table 5. Summary of Hypothesis Testing Result

Hypothesis	Path Coefficient	P Value	
H1: There is an influence of self-efficacy on learning achievement	0,209	0,000	Supported
H2: There is an influence of emotional intelligence on learning achievement	0,259	0,000	Supported
H3: There is an influence of learning motivation on learning achievement	0,257	0,001	Supported

Step 3: As in multiple regression models, the metric most often used to assess structural model predictions is R2. Referred to as the coefficient of determination, it is a measure of the in-sample prediction of all endogenous constructs. This means predictions are a measure of predictive ability only for the data sample used in calculating the results, and R2 should not be inferred to the population (Rigdon, 2016) The minimum R2 value is 0, but it rarely reaches such a low value. As in multiple regression, the more independent variables (constructs) in the structural model, the higher the R2 value, assuming the independent variables are truly related to the dependent variable construct. The maximum R2 value is 1, but such high values are rare. In evaluating the R2 size of a structural model, researchers should review similar studies in relevant empirical research and use those results as a guide, assuming the research contexts are not too different. Finally, some disciplines also examine adjusted R2, which systematically adjusts the R2 value downward based on sample size and number of predicting constructs. As in multiple regression, adjusted R2 is useful when researchers include too many non-significant predictor constructs in the structural model (Howard, et al., 2020) For example, if the R2 value is 0.75, 0.50, and 0.25, it shows that the model has a strong, medium, and weak level of power in explaining the variability of endogenous variables (Hair et al., 2014) provides R2 value criteria of 0.67, 0.33, and 0.19 which can generally be interpreted as strong, medium, and weak levels of strength. In this study, measurements using the coefficient of determination (R2) are shown in Table 6 below. The data in Table 6 shows that learning achievement has a moderate determination test, while academic fatigue has a weak determination test.

Thus, based on the measurement results in this study, the learning achievement variable has a moderate level of strength in explaining its variability, while the academic fatigue variable has a weak level of strength in explaining its variability.

Table 6. R Square.

	R Square	R Square Adjusted
Learning Achievement	0.384	0.368

Step 4: The second measure of the predictive ability of a structural model is the effect size, which provides an estimate of the predictive ability of each independent construct in the model. To calculate this value, each predictor construct is systematically removed from the model (SmartPLS does this automatically) and a new R2 is calculated without that predictor. Next, R2 with predictors in the model is compared with R2 without predictors in the model, and the difference between the two R2 values indicates whether the omitted construct is a meaningful predictor of the dependent construct (Hair et al., 2019b) sizes, referred to as f2, were classified as small,

medium, and large. Values above 0.02 and up to 0.15 are considered to have little effect; values of 0.15 and up to 0.35 are moderately influential; and a value of 0.35 and above is a large influence (Hair, Howard, & Nitzl, 2020a). Effect size is also considered a prediction metric in samples. The f2 value is presented in table 7 below. From the results in table 7, it shows that self-efficacy has little effect on learning achievement. And emotional intelligence and learning motivation have a big influence on learning achievement.

Table 7. Effect Size (F2)

	Self-Efficacy	Emotional Intelligent	Motivation to Learn	Learning Achievement
Self-Efficacy				0.044
Emotional Intelligent				0.072
Motivation to Learn				0.088

Step 5: The third metric used to assess predictions is the Q2 value, also known as blindfolding (Shmueli et al., 2019) Some scholars consider this metric to be an assessment of out-of-sample predictive power, and so far it is. However, this metric is clearly not as strong a model prediction metric as PLSpredict, which is explained in the next step. When interpreting Q2, values greater than zero are meaningful, while values below 0 indicate a lack of predictive relevance. In addition, Q2 values greater than 0.25 and 0.50 represent moderate and large predictive relevance of the PLS-SEM model, respectively. Redundant cross-validation (Q2) or Q-square test was used to evaluate the predictive significance of the model. If the Q2 value > 0, it indicates that the model has accurate prediction capabilities for certain variables. Conversely, if the Q2 value <0, it indicates that the model does not have significant predictive value (Hair, et al., 2020). In this study, measurements using cross-validated redundancy (Q2) are shown in Table 8.

Table 8. Q^2 Square

	RMSE	MAE	Q^2_predict
Learning Achievement	0,847	0,666	0.321 hair

DISCUSSION

Hypothesis 1: The Influence of Self-Efficacy on Learning Achievement, Self-efficacy, which refers to an individual's belief in their ability to achieve goals or overcome challenges, has a significant impact on academic achievement, in the context of Jambi University, especially the Faculty of Teacher Training and Education, several studies supporting this research, including Zheng et al (2021) show that self-efficacy increases academic motivation and self-regulation, which in turn increases academic achievement. Self-efficacy helps students with disabilities achieve superior mathematics results. Olivier et al (2019) found that self-efficacy contributed to classroom engagement and academic achievement. Nasir & Iqbal (2019) confirmed that academic self-efficacy is an important predictor of performance in teacher training programs. Other research conducted by Alhadabi (2021) & Zeinalipour (2022) also shows self-efficacy as the main factor influencing performance in science and various other scientific disciplines. Thus, this research supports the hypothesis which states

that self-efficacy has a significant influence on the academic achievement of students at the Faculty of Teacher Training and Education, Jambi University (β=0.209, p=0.000).

Hypothesis 2: The Effect of Emotional Intelligence on Academic Achievement, Emotional intelligence (EI), namely the ability to recognize, understand and manage one's own and other people's emotions, also has a significant influence on the academic achievement of students at the Faculty of Teacher Training and Education, Jambi University. Chamundeswari (2013) & Tepi et al (2022) found that students with high emotional intelligence (EI) tend to achieve better academic results. Shibila Sabir Sannet Thomas (2020) show that emotional intelligence (EI) and parental social support contribute to increasing student academic achievement. Fayombo (2012) emphasized that Emotional Intelligence (EI) is closely related to academic achievement in Islamic education. Research conducted by Tabash et al (2023) developed a conceptual framework that shows the influence of students' emotional intelligence (EI), teacher EI, and peers' EI on academic achievement. ALmegewly et al (2022) found a correlation between emotional intelligence (EI) and academic performance in nursing students. Baan (2022) & Qamar & Majeed (2020) also support a positive relationship between EI and academic performance. This research supports the hypothesis that emotional intelligence has a significant influence on the academic achievement of Jambi University FKIP students (β=0.259, p=0.000).

Hypothesis 3: The Influence of Learning Motivation on Learning Achievement, Motivation to learn is a crucial factor that influences student academic achievement, including at the Faculty of Teacher Training and Education, Jambi University. Magen-Nagar & Cohen (2017) & Nabizadeh et al., (2019) shows that motivation-mediated learning strategies improve academic achievement. Research conducted by Alzaanin (2023) utilized the motivation and engagement wheel to show the interaction between learning motivation and academic achievement in the context of English as a Foreign Language (EFL). Abdelrahman (2020) & Alamri (2023) found that academic motivation and metacognitive awareness had a positive effect on learning achievement. Munawaroh et al (2022) stated that a problem-based electronic learning approach increases student interest, motivation and achievement. Riswanto & Aryani (2017) and Gusman et al. (2021) confirms that there is a direct correlation between learning motivation and student academic achievement. Motivation in learning mathematics and science contributes to higher achievement (Fiorella et al., 2021; Huang & Wang, 2023). This research supports the hypothesis that learning motivation has a significant influence on the academic achievement of students at the Faculty of Teacher Training and Education, Jambi University (β=0.257, p=0.001).

The influence of self-efficacy, emotional intelligence, and learning motivation on students' academic achievement at FKIP University of Jambi reveals the importance of these three factors in the context of higher education. Self-efficacy, as supported by the research of Zheng et al (2021), indicates that students' confidence in their academic abilities influences their motivation and learning achievement. Emotional intelligence, as discovered by Martínez-Monteagudo et al (2019), indicates that the ability to effectively manage emotions is closely related to better academic achievement. In addition, research conducted by (Zhao et al., 2022) emphasizes the crucial role of social support and supportive learning environments. The study conducted by Magen-Nagar & Cohen (2017) demonstrates that intrinsic motivation and effective learning strategies are crucial for achieving high academic performance. This finding highlights the need for a holistic educational intervention that not only focuses on academic aspects but also on the psychosocial development of students. Within the context of FKIP

Universitas Jambi, this entails developing a program that enhances students' self-efficacy, emotional intelligence, and learning motivation in order to achieve optimal learning outcomes.

Self-efficacy, emotional intelligence, and learning motivation influence academic success at the Faculty of Teacher Training and Education, Jambi University. Higher degrees of these attributes increase academic success. With workshops, seminars, and counseling, students can stay motivated, create academic goals, and manage stress. Although different, this research agrees. Alam & Ahmad (2018) prioritize teachers' emotional intelligence over students' self-confidence. Based on this, Alafgani & Purwandari (2019) researched learning self-regulation, self-efficacy and motivation. Baan & Wang (2022) found that emotional intelligence influenced the outcomes of a discourse analysis course in an emergency online learning context. Asakereh & Yousofi (2018a) focused on reflective thinking and self-efficacy among Iranian EFL students, while this study examined motivation and emotions. Keller et al (2017) examined physics teachers' motivation and understanding of pedagogical topics. This research focuses on students. This research examines motivation and self-efficacy, while Elmi (2020) examines social emotional learning methodology in higher education. Finally, the inhibitory control and mathematical self-efficacy of challenged children, indicating the need for specialist groups.

The program of study should include learning incentive tactics, emotional intelligence, and self-efficacy. Workshops, seminars, and counseling can help students set academic goals, manage stress, and stay motivated. A warm and supportive learning atmosphere is very important. This includes tutoring and emotional support. We must train faculty and staff to understand and address students' emotional and motivational needs. Regular testing and feedback helps students track their academic progress. Positive feedback from professors increases self-esteem and motivates children. Technology Integration: Dynamic and interesting technology-based learning can motivate students. Teamwork and education can benefit from online tools. We need to further study the long-term influence of learning motivation, emotional intelligence, and self-efficacy on academic achievement.

This research is limited by the number of samples and the environment of the Faculty of Teacher Training and Education, Jambi University. Without further research, these conclusions may not apply to higher education or other educational contexts. In this study, the data were self-reported, and the sample the authors selected based on availability may have introduced social desirability and self-evaluation bias. Future research could use better sampling, objective metrics, and self-reporting. Cross-sectional studies limit causal findings. We need longitudinal studies to understand the relationship between academic achievement, emotional intelligence, self-efficacy, and motivation to learn. This research did not consider external factors that could influence academic achievement, such as family history, socioeconomic status, and previous education. Future research should include these variables for a more comprehensive analysis. Research with a larger sample and covering a wider area can be carried out in the future and other variables can also be studied such as cultural perspective, stress, organizational climate and learning engagement.

CONCLUSION

The research results show that self-efficacy has a significant influence on student learning achievement. The higher the level of academic self-efficacy students possess, the greater their learning achievement. Furthermore, emotional intelligence also has a

significant influence on learning achievement. Students who have a high level of emotional intelligence tend to achieve better learning outcomes. Additionally, researchers found that learning motivation significantly influences student learning achievement. Students with high learning motivation tend to achieve better academic results. Overall, the results of this study indicate that self-efficacy, emotional intelligence, and learning motivation significantly influence student learning achievement. These findings indicate the importance of these factors in improving student learning achievement in the context of the research conducted.

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AUTHOR CONTRIBUTION STATEMENT

RH as author and chief researcher, BS as author and corresponding writer, and A. YHP, DD and HAW as author.

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