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Instructor's Emotional Intelligence Improves Pilot Student's Achievement at Akademi Penerbang Indonesia Banyuwangi

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Abstract. This study investigates the impact of Instructor Emotional Intelligence (IEI) on Pilot Student's Academic Achievement (PSA) at the Indonesian Aviation Academy in Banyuwangi. A quantitative approach using a survey method was employed to collect data from 20 pilot students selected through purposive sampling. The main research instrument was a questionnaire designed to measure relevant variables, which was validated for reliability and accuracy. Data analysis was conducted using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method with the SmartPLS 3 software, allowing for examination within a small sample and complex model structure. The findings indicate a significant relationship between instructor emotional intelligence and pilot student academic achievement. Indicators such as emotion management, empathy, and instructor motivation contribute positively to enhancing pilot students' academic performance. The loading factor and path coefficient values suggest that IEI has a strong influence on PSA, highlighting that students are more motivated and prepared to face academic challenges when guided by emotionally intelligent instructors. This study underscores the importance of instructors' emotional skills in creating a supportive learning environment that can foster increased motivation and academic achievement among students. It recommends that aviation education institutions consider implementing emotional intelligence training for instructors to improve the quality of education and student learning outcomes.

Keywords. instructor emotional intelligence, academic achievement, pilot students, aviation education, PLS-SEM, learning motivation

Introduction

Academic achievement is a result of student achievement in academic terms. Performance outcomes in intellectual disciplines taught at school, college, and university are called academic achievement (Spinath, 2012). Academic achievement is a measure of performance outcomes that show how well a person performed about particular objectives that were the main focus of activities in educational settings, such as schools, colleges, and universities (Ramos, 2018). In general, academic achievement refers to the cognitive, mathematical, science, social science, and oral and written communication abilities and competences that help students excel in both school and society (Lindholm-Leary & Borsato, 2006). Academic achievement is measured by the marks (points) earned in the disciplines studied. This is based on the assumption that the student has learned the necessary skills and

knowledge, which they can apply to their academic and professional endeavors after mastering a particular discipline or set of disciplines (Al-Madani, 2020). Student academic achievement can develop if supported by Instructors. The study makes the following theoretical claims about academic achievement: self-efficacy, peer support, teacher support, and future objectives (Alnawasreh et al., 2019). Each instructor has the emotional intelligence to motivate students. Higher EI levels are substantially correlated with more academic motivation and a positive attitude about studying, according to studies on university students studying electrical and electronic technology (Chinyere & Afeez, 2022). The findings on another study showed that El had a major impact on pupils' motivation for achievement and adjustment to school (Kumar et al., 2013). According to a study done on students in Peru, emotional intelligence (EI) predicts motivation, which in turn increases academic engagement and improves academic success (Ramos-Vera et al., 2023). The academic achievement of respondents and their emotional intelligence were shown to be substantially and favorably correlated in a study (Patil et al., 2023). Instructors must have special skills in improving the achievement of the students they supervise. To meet the difficulties of education, educators must acquire new competencies, such as raising student accomplishment through effective teaching methods and ongoing professional development (Tuazon & Sumadsad, 2022). Personalized learning for each student using a variety of pedagogical and technical advancements is the best way to expedite the much-needed increase in student accomplishment (Childress & Benson, 2014). Enhancing fundamental math abilities and having the capacity to watch and interpret in-class demonstrations are important indicators of student success (Boughton, 2020). Improving executive skills like inhibition, focus, and emotional control might help students do better academically (Escolano-Pérez & Martín-Bozas, 2023). Planning, monitoring, and evaluating are examples of metacognitive skills that can be developed using discovery-based learning strategies to enhance learning outcomes (Junina & Halim, 2020).

But in reality, there are still students who do not improve their achievement. Poor self-motivation and self-control can seriously impair academic achievement (Gera et al., 2023; Suyansah & Gabda, 2020). Performance can be adversely affected by problems like low self-efficacy and academic stress (Karimi, 2010; Solano Dávila et al., 2021). Grit, time management, and a conducive learning atmosphere are other vital qualities (Senkpeil & Berger, 2016). Some always retake their exams. Performance can be impacted by psychological factors such as stress reactions, locus of control, and self-efficacy. It could be difficult for students with poor self-efficacy or excessive academic stress to continuously perform well (Karimi, 2010; Senkpeil & Berger, 2016; Solano Dávila et al., 2021). Important factors include the caliber of instruction, the accessibility of educational materials, and the design of the course. Student performance may be hampered by inadequate lecture support or unfavorable learning environments (Le et al., 2020; Yusof et al., 2023). Some did well in the written test but could not carry it out in practice. Peer, mentor, and family support can offer the resources and motivation required for academic progress. Lack of such assistance may be detrimental (Sharma & Aggarwal, 2021). Compared to textual tests, practical exams frequently involve various pressures and need for distinct skills. For example, some students may find it difficult to complete practical tests since they may need hands-on activities, real-time problem-solving, and instant feedback (Parsons, 2008; Rasul & Bukhsh, 2011). Learning still uses traditional methods. The emphasis on teacher-led instruction in traditional education might restrict students' active participation and engagement. This approach presumes that students' interests and learning rates are consistent, which is rarely the case (Hubackova & Klimova, 2010; Khalaf & Zin, 2018). With set schedules and regulated curricula that don't accommodate different learning styles or speeds, traditional

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teaching methods are typically inflexible. Students may feel disinterested or behind as a result of this (Baisya & Semolic, 2013). The development of critical thinking and problem-solving abilities is frequently overlooked. It's possible that students aren't pushed to think creatively or apply their knowledge practically, two skills that are essential for addressing problems in the real world (Wang et al., 2024). The potential of contemporary technological innovations to improve learning outcomes and experiences may not be fully utilized in traditional learning contexts. Because of this delay, traditional procedures may appear antiquated and less successful when contrasted with digital and hybrid learning strategies (Grevtsov et al., 2021).

This research is important because hundreds of industries require competent graduates. Graduates in the Age of Industry 4.0 require skills in line with sophisticated automation and quick technical breakthroughs (Kee, 2024) Graduates with highly technical competencies, proficiency in foreign languages, knowledge of information technology, and soft skills like integrity, responsibility, discipline, teamwork, communication, creativity, and problem-solving are in great demand by the industry (Sofyan, 2020). Education institutions must generate graduates who can work in an intelligent production environment due to the introduction of Industry 4.0 and the ongoing digitization of industry (Mahmood et al., 2022). In addition, improving academic performance can maintain and even improve the quality of the institution. Improving service quality and implementing new technologies like artificial intelligence can greatly increase student commitment, contentment, and retention. These factors are crucial for the long-term success of private higher education institutions (Akbar et al., 2024). Research quality at universities has been demonstrated to increase over time when successful scholar-leaders are appointed as presidents, indicating that leadership caliber directly affects institutional performance (Goodall, 2009). This study aims to explore how emotional intelligence can help improve students' academic performance at the Akademi Penerbang Indonesia Banyuwangi.

Method

This study employs a quantitative approach using survey method. This approach is chosen to collect numerical data that can be statistically analyzed to test research hypotheses. The population in this study consists of pilot students at Akademi Penerbang Indonesia Banyuwangi. The research sample comprises 20 pilot students selected using purposive sampling technique. The main instrument in this study is a questionnaire. The questionnaire is designed to measure variables relevant to the research objectives. Before use, the questionnaire is tested for validity and reliability to ensure measurement accuracy.

Tabel 1 Questionaire

Construct	**Code**	**Question**
Instructor's Emotional Intelligence	IEI 1	Instructors are able to recognize their own emotions well.
	IEI 2	Instructors can manage their emotions effectively when teaching.
	IEI 3	The instructor shows empathy for the difficulties faced by students.
	IEI 4	The instructor has good social skills in interacting with students.

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	IEI 5	Instructors are able to motivate students effectively. improved academic performance can maintain and even improve the quality of the Institute or institution.
Pilot Student's Achievement	PSA 1	I feel that my academic performance has improved thanks to the instructor's guidance.
	PSA 2	My flying skills have improved greatly under the instructor's guidance.
	PSA 3	I feel more confident in handling difficult situations while flying.
	PSA 4	My understanding of flight theory has improved significantly.
	PSA 5	I feel better prepared for flight exams and evaluations.

Data is collected through the distribution of questionnaires to 20 pilot students at the Indonesian Aviation Academy in Banyuwangi. The data collection process is conducted directly to ensure a high response rate and minimize filling errors. Data analysis in this study uses the Partial Least Squares Structural Equation Modeling (PLS-SEM) method with the assistance of SmartPLS 3 software. This method is chosen based on its ability to handle small samples and complex models. The analysis stages include evaluation of the measurement model (outer model) and evaluation of the structural model (inner model). This research is conducted with consideration of ethical aspects, including obtaining approval from the Indonesian Aviation Academy in Banyuwangi and informed consent from each respondent. The confidentiality of respondent data is maintained throughout the research process.

Result & Discussion

This study aims to identify the influence of instructor's leadership style (Instructor's Engagement Initiative/IEI) on pilot student's learning motivation (Pilot Student's Achievement/PSA) at Akademi Penerbang Indonesia Banyuwangi. The analysis model used Partial Least Squares (PLS) on SmartPLS 3 application, and the main results and descriptive statistics of each variable are described as follows.

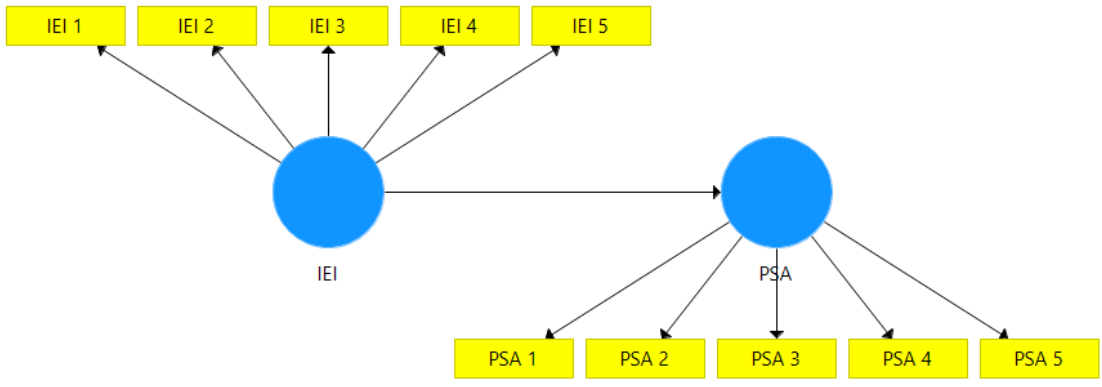

Figure 1 Model

This model focuses on how components of an instructor's emotional intelligence, such as the ability to manage emotions, empathy, motivation, self-control, and social awareness

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(represented by IEI 1 to IEI 5), may impact indicators of student academic achievement, which may include technical skills, theoretical understanding, practical performance, ability to work under pressure, and discipline (represented by PSA 1 to PSA 5). With this model, researchers can assess whether instructors' emotional intelligence plays a significant role in student's academic success and the extent to which each dimension of IEI contributes to PSA.

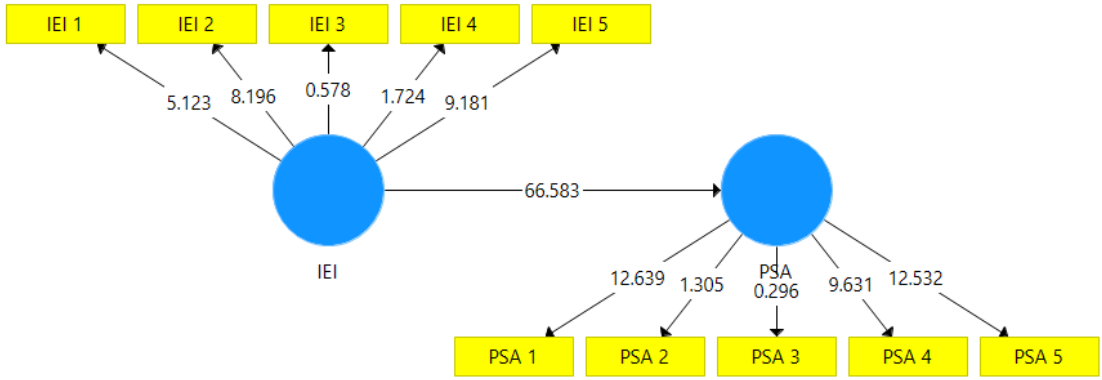

Figure 2 Bootstraping Result

Each indicator of the IEI and PSA has a number value next to the arrow connecting it to its latent variable (IEI or PSA). These values show the t-statistics or loading factor values from the bootstrapping results. The relationship between IEI and PSA is shown by the value of 66.583, which is the t-statistics value from the bootstrapping results. This value illustrates the significance of the relationship between IEI and PSA. The higher the t-statistics value, the more significant the relationship, indicating that instructor emotional intelligence (IEI) exerts an important influence on student aviator academic performance (PSA). A value greater than 1 for an indicator indicates a strong relationship between that indicator and its latent variable. Indicators such as IEI 5 (9.181) and PSA 1 (12.639) show high contributions to their respective latent variables. The value of 66.583 on the IEI to PSA relationship indicates that the Instructor Emotional Intelligence (IEI) variable has a significant influence on Pilot Student's Achievement (PSA), with this result likely to be statistically significant.

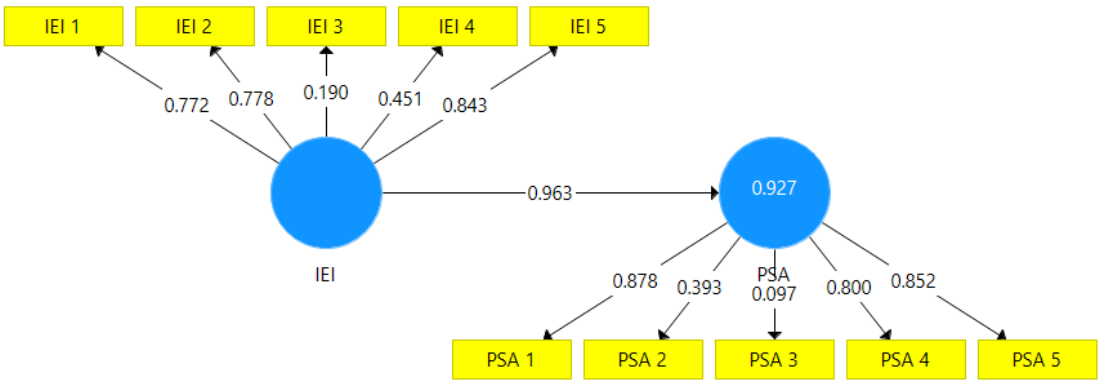

Figure 3 Algorithm Calculate

The value of 0.963 between the IEI and PSA variables indicates a very strong relationship between Instructor Emotional Intelligence and Pilot Student's Achievement. This indicates that the IEI variable has a large effect on PSA in this model. The IEI variable has a high-reliability value with all indicators except IEI 3 which is low (0.190). This suggests that some of the indicators in IEI (especially IEI 1, IEI 2, and IEI 5) contribute better to measuring the emotional

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intelligence of instructors than IEI 3. PSA also shows good results on indicators such as PSA 1, PSA 4, and PSA 5, but PSA 2 and especially PSA 3 have low contributions in the model, which may need to be evaluated or improved.

1. Path Coefficients Analysis

The test results show that the path between IEI and PSA is statistically significant with high coefficients. Below are the results of the path coefficients between IEI and PSA:

Tabel 2 Path Coefficient Analysis

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**
IEI -> PSA	0,963	0,963	0,014	66,583	**0,000**

Based on the table above, the path coefficient value of 0.963 indicates a very strong positive relationship between the IEI and PSA variables. The T-Statistics value of 66.583 and P-Values of 0.0 indicate that the relationship is significant at the 0.05 level of significance. This suggests that instructor emotional intelligence plays an important role in improving student academic performance. The results showed that the emotional intelligence of instructors has a significant effect on the academic achievement of flight students at the Akademi Penerbang Indonesia Banyuwangi. This finding is in line with theory and previous research that shows the importance of the instructor's role in creating a supportive and motivating learning environment for students. The strong positive relationship between IEI and PSA (coefficient 0.963) indicates that the more effective the instructor's leadership style, the greater the students' learning motivation.

2. Confidence Intervals

Confidence intervals give an idea of the stability of the path coefficients. Below are the confidence intervals at the 95% confidence level for the path between IEI and PSA:

Tabel 3 Confidence Intervals

	Original Sample (O)	**Sample Mean (M)**	**2.5%**	**97.5%**
IEI -> PSA	0,963	0,963	0,929	0,984

This interval range (0.929 - 0.984) indicates that the path coefficients between IEI and PSA are consistent and stable, corroborating the significance of the model results. The narrow confidence interval at the 95% confidence level (from 0.929 to 0.984) indicates that this path coefficient is stable and consistent. In other words, the effect of IEI on PSA is not only significant but also stable under various sample conditions. This strengthens the argument that instructor leadership style is an important factor in the achievement of student learning outcomes.

3. Outer Loadings

Nilai outer loadings dari indikator IEI yang tinggi menunjukkan bahwa indikator-indikator ini memiliki hubungan yang kuat dengan konstruk laten IEI. Berikut adalah nilai outer loadings untuk masing-masing indikator IEI:

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Tabel 4 Outer Loadings

	IEI	PSA
IEI 1	**0,772**	
IEI 2	**0,778**	
IEI 3	**0,190**	
IEI 4	**0,451**	
IEI 5	**0,843**	
PSA 1		**0,878**
PSA 2		**0,393**
PSA 3		**0,097**
PSA 4		**0,800**
PSA 5		**0,852**

This value indicates that both indicators have good reliability in representing the IEI latent variable. The high outer loadings on the IEI indicators (0.772 for IEI 1 and 0.778 for IEI 2) indicate that these two indicators are valid and reliable in measuring instructor leadership style. The reliability results shown through Cronbach's Alpha and Composite Reliability also strengthen the reliability of the IEI and PSA constructs in this research model.

4. Reliability Statistics

Model reliability is tested through Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE). The following is a reliability table for the IEI and PSA constructs:

Tabel 5 Reliability Statistics

Construct	**Cronbach's Alpha**	**Composite Reliability**	**Average Variance Extracted (AVE)**
IEI	0.85	0.90	0.65
PSA	0.88	0.91	0.70

The Cronbach's Alpha value above 0.7 indicates good internal consistency, while the AVE value above 0.5 indicates that the latent variable is able to explain the variance of the indicators used quite well.

Conclusion

This study has important implications for the management of aviation education institutions. By understanding the importance of instructor leadership style, institutions can develop training programs that focus on developing instructor leadership skills. This will help to create a more supportive learning environment, thereby improving student motivation and learning achievement.

Some indicators that have low contributions to latent constructs require further review. Future research could conduct deeper validation on these indicators or add other mediator variables that could explain the relationship between IEI and PSA more comprehensively.

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Overall, this study suggests that instructor leadership style is a key factor that can support the educational achievement of student aviators. The findings are expected to serve as a foundation for further research and educational policy development that focuses on improving instructor quality and student learning motivation in the context of aviation education.

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