

The Influence of Academic Self-Efficacy and Peers on Economic Academic Achievement: The Role of Learning Motivation as a Mediating Variable

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Abstract

This study is designed to examine the influence of academic self-efficacy and peers on economic academic achievement through learning motivation as a mediating variable in class X students of SMA Negeri 14 Surabaya. This research includes causal associative research with a quantitative approach. A total of 179 research samples were selected using simple random sampling techniques from a total population of 324 students. The research data was obtained from the results of the questionnaire and the Semester-end Summative (SAS) score of the economic odd economic year 2024/2025 which was analyzed using the Partial Least Square Structural Equation Modeling (PLS-SEM) technique assisted by SmartPLS software. The findings of the study indicate that academic self-efficacy and peers have a positive and significant effect directly on economic academic achievement, and indirectly academic self-efficacy and peers have a positive and significant effect on economic academic achievement through learning motivation. These findings confirm the importance of academic self-efficacy and peers in increasing students' learning motivation and economic academic achievement.

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1. INTRODUCTION

In learning, academic achievement is one indicator that can predict the success of the learning process. (Alyahyan & Düşteğör, 2020). Rasmini (2021) also explains that academic achievement reflects the extent to which students have mastered the learning material. Therefore, students' academic success can be seen through their academic achievement. Academic achievement is important because it is not just a grade; it is also a benchmark for understanding and effectiveness of learning (Bhat & Bhardwaj, 2014), is an important thing in preparing for future work (Tentama & Abdillah, 2019), able to increase self-confidence, and avoid negative behavior (Yigermal, 2017). Therefore, given the clear benefits of academic achievement, analyzing the various factors that influence academic achievement is crucial.

According to Baharuddin & Wahyuni (2015), the influence on academic achievement comes from two factors, namely factors that arise from within the individual are called internal factors, while factors that come from the external environment that influence the learning process are called external factors. This approach is in line with social cognitive theory which explains that in understanding individual behavior, it is necessary to combine social and cognitive processes within it. In this theory,

it is explained that the behavior adopted by an individual is the result of the individual's observations of the surrounding environment and how the individual determines the actions taken through a thought process, known as a model triadic reciprocal determinism (Semiun, 2020) Bandura explains that learning occurs through dynamic interactions between cognitive, behavioral, and environmental factors. Therefore, learning becomes complex because students not only imitate behavior but also internalize and evaluate the results (thinking), thus creating continuous feedback. Therefore, it can be concluded that academic achievement is not only seen from the cognitive side, but can also be seen through behavioral changes that will affect the environment around the student. Therefore, academic achievement will be used as a behavioral aspect that will be influenced by academic self-efficacy and learning motivation as personal aspects, and peers as environmental factors.

Bandura (1994) explains that self-efficacy is a strong predictor of behavioral change, where academic self-efficacy is expressed as a student's view of their ability to acquire new skills and master assigned tasks. Students who are confident in their abilities will view challenges in learning as opportunities for progress and development, rather than threats to be avoided. This is because students tend to behave positively in learning (Hanham et al., 2021), practice and try harder (Odedokun et al., 2023), and have a strong memory and determination in learning (Aslam & Ali, 2017). Self-efficacy will help students progress and strive to achieve their goals by maximizing their abilities. Therefore, strong confidence in their abilities will increase students' chances of achieving high academic achievement.

Apart from academic self-efficacy, other important factors in the form of peers can also influence students' academic achievement (Shao et al., 2024). Peers are defined as individuals who are at the same developmental stage, and usually belong to the same environment, such as school or residence. (Veed, 2009). Peers are chosen as an environment that influences academic achievement because during the social and emotional growth period of students, students learn about social skills and search for their identity, and peers play a role in supporting and providing assistance (Selvam, 2017). Besides that, Liu (2023) explains that peer relationships are one of the most important interpersonal relationships for students. This is because, compared to parents and teachers, students have closer relationships with their peers during learning (Yu et al., 2023). When students interact with peers, peers are able to increase their enthusiasm for learning (Kaynak et al., 2023), providing support, opening up space for discussion about lesson material and providing feedback on student actions in learning (Zhou et al., 2023). So this interaction plays an important role in predicting academic achievement.

In determining how individuals act and behave, motivation also plays an important role as an influencing factor (Schunk & DiBenedetto, 2019). Motivation in learning can be defined as the desire of students to gain new understanding and abilities as well as an effort to develop themselves (Raysharie et al., 2022). In learning, motivation will motivate students to take responsibility for the learning they are participating in (El-Adl & Alkharusi, 2020). According to Martin et al. (2022) Learning motivation, as an internal factor, serves as a foundation and guide for students to remain enthusiastic and persistent in the learning process. Learning motivation will make students more focused and able to develop themselves, foster more positive learning behaviors, and encourage students to strive for maximum learning (Kumar, 2017). This is because motivation is better understood as the art of self-control and regulating emotions so that individuals carry out an action,

so that when students have the motivation to learn, students take the initiative to encourage themselves to be involved in learning activities (Sani & Hayati, 2016). Thus, learning motivation also plays an important role in encouraging students to achieve learning success.

Several previous studies have shown that academic self-efficacy, peer relationships, and learning motivation influence academic achievement. However, several studies have also highlighted the lack of any influence between these factors and academic achievement (Carman & Zhang, 2012; Wahyuni & Dahlia, 2020). This inconsistency indicates a research gap that needs to be addressed empirically. In another study, learning motivation was used as a variable linking academic self-efficacy and peer influence to academic achievement (Kaynak et al., 2023; Schunk & Usher, 2019). However, in several studies, there is also research that does not include learning motivation as an intermediary variable in the relationship between academic self-efficacy and academic achievement (Astri & Ain, 2024), or even not finding a mediating path of learning motivation in peer relationships with academic achievement (Rochman et al., 2023). Thus, in this study, inconsistencies related to the direct and indirect influence of these factors on academic achievement will be re-examined.

Based on the background presented and the inconsistencies in previous research results, the researcher intends to re-examine several factors that influence student academic achievement, particularly in economics, to complement previous research. Therefore, this study focuses on an analysis entitled "The Influence of Academic Self-Efficacy and Peers on Economics Academic Achievement: The Role of Learning Motivation as a Mediating Variable."

2. RESEARCH METHODS

This study uses a quantitative approach and falls into the category of causal associative research. In its implementation, the population studied was 324 students from class X of SMA Negeri 14 Surabaya in the 2024/2025 academic year. The number of students who could be used as samples was determined using the Slovin formula, which resulted in a sample of 179 students. The sample was determined using random sampling so that all members of the population have the opportunity to be selected as a research sample. Thus, the sample taken is expected to objectively represent the characteristics of the population.

The primary data processed during the study were collected through Google Forms, where this data relates to respondents' perceptions of academic self-efficacy, peer relationships, and learning motivation, measured using a five-point Likert scale in a questionnaire. The academic self-efficacy questionnaire in this study was adapted from the subscale Morgan-Jinks Student Efficacy Scale (MJSES) by Jinks & Morgan (1999). Next, the peer questionnaire was adapted from the subscale Social Integration in The Class by Van Damme et al. (2002). While the learning motivation questionnaire was adapted from Intrinsic Motivation Scale by Lepper et al. (2005). As for the secondary data of the research, this data is in the form of odd Semester End Summative Scores (SAS) for the economics subject obtained from the economics teacher of class X of SMA Negeri 14 Surabaya.

In the level of data analysis, techniques Partial Least Squares Structural Equation Modeling (PLS-SEM) is applied with the help of software SmartPLS. This analysis stage begins with compiling the research model specifications which include setting outer model and inner model. Next, an evaluation is carried out outer model to test the validity and reliability of the construct and continue

with evaluation inner model to ensure that the relationships between constructs designed based on theory can be predicted well by the data, and can also be used to test research hypotheses (Hair et al., 2014).

3. RESULTS & DISCUSSION

This research uses analytical methods embedded two stage approach, where there are two stages, namely the first test focuses on testing the indicator level to obtain latent variable scores. These scores will then be used in subsequent analysis, namely in the second test, which is conducted to examine the causality between variables and their dimensions or indicators. After completing stage 2, an evaluation of the designed model will be conducted.

A. Evaluation Outer Model Level 1

Objective outer model in measurement, Stage 1 is to see the validity and reliability of the indicators in measuring the construct and obtaining latent variable scores construct indicators of academic self-efficacy and learning motivation. From the measurement results, it can be concluded that all measurement criteria are model-fulfilled.

All indicators have met the measurement criteria convergent validity which include outer loading > 0.7 and all indicator constructs have a value Average Variance Entranced (AVE) > 0.5. The outer loading value can be seen from the results of the model calculations in SmartPLS in the following image.

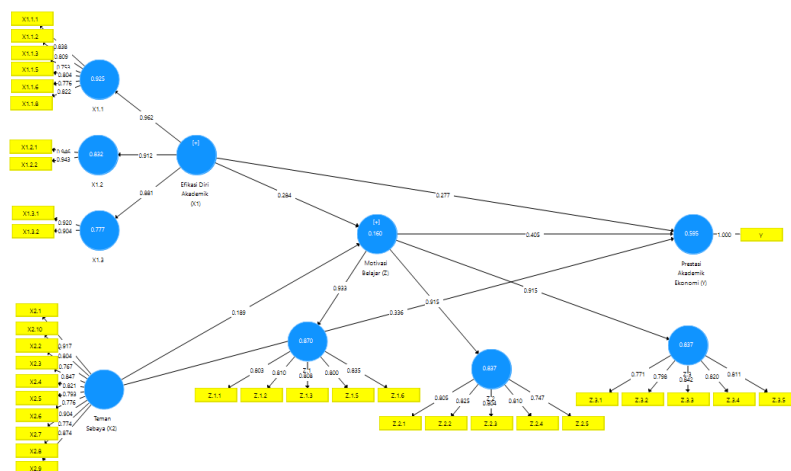


Figure 1. Test Results *Outer Model Level 1*

In measuring discriminant validity, all indicators have also met the measurement criteria, as seen from the Fornell larcker value and cross loading constructs and indicator items measured are greater than the Fornell larcker value and cross loading constructs and other indicator items. This ensures that each measured construct clearly represents a distinct concept and does not overlap with other constructs or indicators.

Reliability testing also obtained results that the measured constructs showed values Cronbach's alpha and composite reliability > 0.7, so that all constructs are proven to be reliable. Once validity and reliability are met, the latent variable score which is generated from construct measurements and then entered into files of previous respondent data and reused in the measurement-outer model furthermore.

B. Evaluation Outer Model Level 2

Objective outer modeling measurement stage II. This is used to see the validity and reliability of the construct and will be used as a basis for assessment in the analysis. Inner model. Based on the measurement results, all measurement criteria are model-fulfilled.

All indicators have met the measurement criteria convergent validity, which include outer loading > 0.7 and all constructs have an AVE value of > 0.5 . The value of outer loading in this evaluation is presented in the following figure.

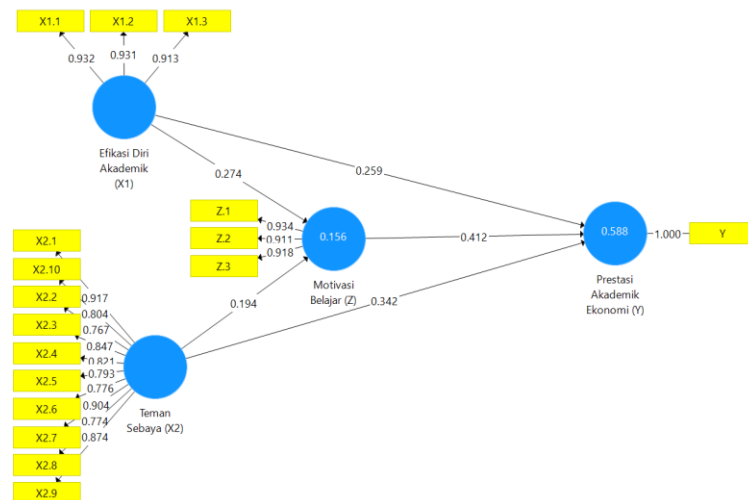


Figure 2. Test Results Outer Model Level 2

Measurement/discriminant validity as seen from the Fornell Larcker value and cross loading has also met the criteria and shown that each construct and indicator is able to measure its own construct and indicator better than other constructs and indicators. All dimension constructs have also met the criteria. Reliability, which includes the value Cronbach's alpha as well as composite reliability construct > 0.7 . Therefore, all indicators and constructs in this study are proven to meet the measurement criteria of Outer model.

C. Evaluation Inner Model

According to Hair et al. (2014), several tests conducted in this stage include collinearity tests, Coefficient of Determination (R^2), Cross validated redundancy (Q^2), Effect Size (F^2), and Path coefficient. The results of the collinearity test using the VIF value indicate that the VIF value of the relationship between variables is < 5.00 . This means that the exogenous variables in the study do not influence each other excessively and each can explain its influence on the endogenous variables independently coefficient of determination seen through R Square adjusted. Table 1 shows that the academic achievement of economics (Y) examined in this study can be determined by academic self-efficacy, peers, and learning motivation by 58.1%, while learning motivation (Z) can be determined by the variables of academic self-efficacy and peers by 14.6%. Furthermore, the test results cross-validated redundancy seen from the Q value Square which shows that the academic achievement variables of economics and peers each have a Q value Square > 0 (zero). This means that the designed research model can predict well.

Table 1. Test Results R Square & Q Square

Variables	R Square	R Square Adjusted	Q Square
Y	0.588	0.581	0.572
X	0.156	0.146	0.124

Source: Data processed by researchers (2025)

Table 2. Test Results F Square & Path Coefficient

Track	F Square	Coefficient	P-Value
Direct Effect	X1 → Y	0,127	0,259
	X1 → Z	0,074	0,274
	Z → Y	0,347	0,412
	X2 → Y	0,229	0,342
	X2 → Z	0,037	0,194
Indirect Effect	X1 → Z → Y	-	0,113
	X2 → Z → Y	-	0,080

Source: Data processed by researchers (2025)

In table 2, the results of the analysis show that effect size (F^2) the relationship between variables is in the small to medium category. Furthermore, to ensure the significance of this influence, a test was carried out Path coefficient using the method bootstrapping. This step is also for hypothesis testing, which shows that each path has a $P\text{-value} < 0.05$ with a value coefficient is positive (approaching +1). This means that each direct and indirect influence in this study rejects H_0 .

H1: There is an Influence of Academic Self-Efficacy on Economic Academic Achievement

Academic self-efficacy has a positive and significant effect on the academic achievement of economics students in grade X of SMA Negeri 14 Surabaya. This means that students who are confident in their academic abilities tend to achieve high academic achievement in economics. Students who are confident in their abilities will practice and strive every day (Aslam & Ali, 2017), view assignments as challenges to be faced, and strive to complete assignments despite facing learning pressure (Luo et al., 2023). In social cognitive theory, strong academic self-efficacy will help students strive to achieve goals and foster commitment to achieving them. Thus, this belief has an impact on academic achievement in economics. However, the findings of this study contradict the opinion of Wahyuni & Dahlia (2020) who stated that high academic self-efficacy does not show any effect on academic achievement.

Based on research findings, self-confidence can be reflected in students' level of confidence in facing learning and completing assignments, understanding the material presented, and optimism in achieving high grades in learning. Therefore, when students believe that they have academic abilities, they tend to be more confident and able to understand the material and economics assignments given. This condition makes students better prepared to face learning difficulties, so that high academic achievement in economics can be achieved. Furthermore, it is also known that teacher support and positive future expectations can influence how students

believe in their abilities, so that support and expectations can strengthen self-efficacy and contribute to students' academic success. Thus, this proves that academic self-efficacy plays a significant role in determining the success of academic achievement in economics.

H2: There is an Influence of Academic Self-Efficacy on Learning Motivation

Academic self-efficacy has a positive and significant effect on the learning motivation of grade X students at SMA Negeri 14 Surabaya. This means that students who are confident in their academic abilities tend to be more motivated to learn. Confidence in one's abilities can motivate students to design learning strategies independently and strive to learn new things (Hidajat et al., 2023), increase activeness and encourage students to commit to learning and be consistent and diligent in the learning process (Astri & Ain, 2024). This confidence encourages students to be more persistent in their efforts and never give up when faced with difficulties, thereby increasing their learning motivation. In social cognitive theory, it is explained that once confidence is formed in an individual, they will then motivate themselves to achieve that goal (Semun, 2020). Therefore, confidence in one's academic abilities has an influence on academic achievement in economics. However, the findings of this study contradict the opinion of Ersanlı (2015) who stated that high academic self-efficacy does not always have a positive influence on increasing students' learning motivation.

Based on research findings, when students are confident in their abilities, their self-confidence and motivation to continue learning can grow. This confidence encourages them to face academic challenges with a positive attitude, increasing their curiosity, and developing their abilities independently in the learning process. Thus, this high level of confidence directly increases students' learning motivation. Furthermore, when students have strong hopes for the future, they are encouraged to study harder because they see the learning process as a crucial step in realizing their dreams and achieving future success. In other words, academic self-efficacy, which encompasses students' confidence in their abilities and positive expectations for the future, will foster learning motivation. Thus, this proves that academic self-efficacy plays a significant role in determining students' learning motivation.

H3: There is an Influence of Learning Motivation on Economic Academic Achievement

Learning motivation has a positive and significant effect on the academic achievement of tenth-grade students in economics at SMA Negeri 14 Surabaya. This means that high student academic achievement in economics is in line with high learning motivation. In learning, students who are motivated to learn tend to be more proactive and easily understand the material (Hafidz et al., 2022). Learning motivation also provides encouragement in facing challenges (Martin et al., 2022), while also serving as a guide and a reason for students to persist in the face of difficulties (Kumar, 2017), thus learning motivation has an influence on academic achievement in economics. Schunk & DiBenedetto (2019) also explained that these results are in line with social cognitive theory, which emphasizes the role of learning motivation not only as a driver for students to initiate action but also as a reason to continue striving to achieve goals. Therefore, learning motivation will increase student effort in learning so that optimal academic achievement in economics can be achieved.

Based on research findings, it is known that when students perceive each task as a challenge to be faced, they will be motivated to complete it. Furthermore, students who are interested in tasks with a higher level of difficulty tend to be able to hone their critical thinking and problem-solving skills, which are essential skills for achieving academic success. An open attitude towards challenges in learning and an interest in difficult tasks strengthen students' intrinsic motivation. Therefore, this intrinsic motivation can drive students' activeness and perseverance in learning, which directly impacts their academic achievement in economics. Thus, this proves that learning motivation plays a significant role in achieving academic achievement in economics.

H4: There is an Influence of Peers on Economic Academic Achievement

Peers have a positive and significant influence on the academic achievement of economics in grade X students of SMA Negeri 14 Surabaya. This means that positive relationships between students and peers will improve their academic achievement in economics. The relationship between students and their peers plays a role in increasing their enthusiasm for learning (Shao et al., 2024), helping students overcome learning difficulties, and creating a conducive learning environment in the classroom (Al Khumaero & Arief, 2017). At school, peers become the closest social environment for students, in this relationship they grow and develop, so that their interactions can influence their academic achievement (Semiun, 2020). Therefore, this relationship provides benefits for both, namely students and peers can share learning resources, help with homework, and prepare for exams together (Shen & French, 2024), so that peers can influence students' academic achievement in economics. However, the findings of this study contradict the study of Carman & Zhang (2012) which found that peers did not show any influence on academic achievement in all subjects.

Based on research findings, student involvement in peer groups in class allows for discussion activities, the exchange of ideas, and mutual assistance in understanding economics lessons. This condition can create a pleasant learning environment. Furthermore, the positive relationship between the two can foster a positive and supportive classroom atmosphere, thereby increasing student focus in learning. This condition contributes to increased student understanding, which ultimately improves student academic achievement. Thus, this proves that peers play a significant role in achieving academic achievement in economics.

H5: There is an Influence of Peers on Learning Motivation

Peers have a positive and significant influence on the learning motivation of grade X students at SMA Negeri 14 Surabaya. This means that students' learning motivation will increase when students are involved in positive relationships with their peers. When a positive relationship is established between the two, a positive learning environment can be fostered, so that it can be used as an effort to help students adapt to school and make students feel supported and accepted (Azzahfa et al., 2024). Peers are also used as a source of information and comparison, where when students assess their academic achievement is lower than their peers, students will try harder to keep up with their peers (Dewi et al., 2024), so that students show higher enthusiasm and motivation in learning. In other words, interactions with peers can generate encouragement and examples of positive behavior that can be imitated by students (Semiun, 2020). Therefore, the

interaction that occurs between the two will determine the level of student motivation in learning. However, the findings of this study contradict the opinion of Feng & Li (2016) who explained that learning motivation is not influenced by peers.

Based on research findings, when students are involved in groups, they feel valued and have the opportunity to contribute, thus fostering a sense of satisfaction and a desire to further enhance their learning efforts. Furthermore, positive relationships between students and their peers also foster a supportive learning environment. These positive relationships foster enthusiasm for overcoming learning challenges, foster curiosity, and foster the development of students' abilities and skills. Therefore, positive social relationships and opportunities for collaboration foster a greater sense of learning because the learning process becomes more meaningful. This demonstrates that peers are an important factor contributing to learning motivation.

H6: There is an Influence of Academic Self-Efficacy on Economic Academic Achievement through Learning Motivation

Academic self-efficacy has a positive and significant effect on academic achievement in economics through the learning motivation of class X students at SMA Negeri 14 Surabaya. This means that when students' confidence in their academic abilities and learning motivation are high, their academic achievement in economics will also be high. Academic self-efficacy is the main determinant of student activity, and confidence in their abilities makes students more motivated to achieve their goals (Semiun, 2020), so that learning motivation will drive students to achieve high academic achievement (Schunk & DiBenedetto, 2019). Confidence in their abilities will make students more enthusiastic, persistent, and diligent in learning, so that this increase in learning motivation then contributes to increased academic achievement (Alogiliy, 2024).

Based on research findings, it is known that students' confidence in their ability to understand economics material and complete assigned tasks can encourage them to overcome learning challenges, increase their curiosity, and develop their skills. Students who are confident in their academic abilities are more confident in learning activities, so this increased learning motivation can encourage active participation in economics learning. This increased learning motivation can then contribute to improving students' academic achievement in economics.

H7: There is an Influence of Peers on Economics Academic Achievement through Learning Motivation

Peers have a positive and significant influence on the academic achievement of economics through the learning motivation of class X students of SMA Negeri 14 Surabaya. This means that students' interactions with their peers will increase their learning motivation, which then contributes to improving their academic achievement in economics. Peers as an environmental aspect will play a role in influencing students' behavior, both positively and negatively (Semiun, 2020). In their interactions, students can imitate existing behaviors, one of which is being motivated to learn (Li et al., 2020). When students are motivated to learn, they will be able to achieve success in learning. Peers can also provide information, support, and motivation that can foster enthusiasm for learning, so that this will then contribute to improving students' academic achievement (Wentzel, 2017).

Based on research findings, it is known that student involvement in study groups in class can strengthen a sense of togetherness and social support that can foster learning motivation. This is because students feel valued and have a sense of responsibility in the learning process. Furthermore, the positive relationship between the two can also create a positive learning environment, thereby increasing student persistence and enthusiasm for learning. The learning motivation that grows from this interaction will foster activeness and consistency in learning, thus impacting student academic achievement. Thus, this has an impact on improving student academic achievement.

4. CONCLUSION

Based on the interpretation of the results, several conclusions were obtained, namely; 1) Academic self-efficacy has a positive and significant effect on economic academic achievement, 2) Academic self-efficacy has a positive and significant effect on learning motivation, 3) Learning motivation has a positive and significant effect on economic academic achievement, 4) Peers have a positive and significant effect on economic academic achievement, 5) Peers have a positive and significant effect on learning motivation, 6) Academic self-efficacy has a positive and significant effect on economic academic achievement through learning motivation, 7) Peers have a positive and significant effect on economic academic achievement through learning motivation. Thus, this study confirms that academic self-efficacy, peers, and learning motivation significantly influence economic academic achievement.

Based on the research findings, it is hoped that teachers can support students in developing confidence in their academic abilities, increasing collaboration and cooperation between students and their peers, while also guiding students to set learning targets and manage their study time well to maintain student motivation. This is done so that academic self-efficacy, peer support, and student learning motivation can be used as an effort to improve students' academic economic achievement.

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