Indonesian Journal of Economic Education

Journal homepage: https://ejournal.upi.edu/index.php/IJEE

**Indonesian Journal of Economic Education (IJEE)**
e-ISSN 2615-5060 p-ISSN 2615-5001
Vol 1 (1) (2024) 62-82
Doi:

# The Influence of Teacher Competence and Students' Prior Knowledge on Learning Motivation and Its Implications for Students' Learning Outcomes in Economics

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## ABSTRACT

This study investigates the influence of teacher competence and students' prior knowledge on learning motivation and economics learning outcomes among senior high school students in Bandung City. Motivated by consistently low academic performance in economics, the study hypothesizes that teacher competence, prior knowledge, and learning motivation positively affect student outcomes. Using a survey method, data were collected from 363 students of grade XI social studies across four representative public high schools, drawn from a population of 3,907 students in 27 schools. Path analysis was employed for data analysis. Results show that both teacher competence and students' prior knowledge significantly and directly affect learning outcomes, while learning motivation has no direct effect. Teacher competence influences learning motivation, but prior knowledge does not. Furthermore, learning motivation does not mediate the effects of teacher competence or prior knowledge on learning outcomes. These findings underscore the importance of strengthening teacher competence and academic readiness to improve student achievement in economics.



OPEN ACCESS

**Article History:**
Submitted 01 October 2023
First Revised 15 November 2023
Accepted 05 December 2023
First Available online 10 December 2023
Publication Date 29 February 2024

**Keyword:**
Academic Achievement,
Learning Motivation,
Learning Outcomes,
Student's Prior Knowledge,
Teacher's Competence.

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## INTRODUCTION

### Background of the Study

One of the most persistent educational issues that continues to receive international attention and has remained a widely discussed topic over the past few decades is students' academic achievement. Research has shown that students are often concerned about their academic performance. This anxiety typically arises due to various learning challenges and academic demands, including managing study time, fear of failure in examinations, and unsatisfactory grades (Callimaci et al., 2023).

Learning outcomes represent the results of the interaction between teaching and learning activities. From the teacher's perspective, the process of teaching culminates in the evaluation of learning outcomes. Meanwhile, from the student's side, learning outcomes signify the conclusion and peak of the learning process (Guo et al., 2020). High academic achievement is the aspiration of all stakeholders, students, parents, and schools alike. However, the fact that many students fail to meet the minimum learning standards in economics indicates that the teaching and learning process has not been fully effective.

This issue of low academic achievement in economics is also evident in public senior high schools (SMAN) across Bandung City, West Java Province. The following table presents the average scores of the National Examination (UN) in the Economics subject from 2012 to 2016 among public high schools in Bandung.

**Table 1.** *Average National Examination Scores in Economics (2012–2016) of Public Senior High Schools in Bandung City*

| No | School Name | 2012 | 2013 | 2014 | 2015 | 2016 | Average (2012–2016) |
|---|---|---|---|---|---|---|---|
| 1 | SMAN 1 Bandung | 8.92 | 5.97 | 6.08 | 6.21 | 5.91 | 6.62 |
| 2 | SMAN 2 Bandung | 8.90 | 5.89 | 6.33 | 6.84 | 5.73 | 6.74 |
| 3 | SMAN 3 Bandung | 8.36 | 6.57 | 6.27 | 6.81 | 6.43 | 6.89 |
| 4 | SMAN 4 Bandung | 8.89 | 5.57 | 5.21 | 6.00 | 5.75 | 6.28 |
| 5 | SMAN 5 Bandung | 8.92 | 5.93 | 6.70 | 6.43 | 5.46 | 6.69 |
| 6 | SMAN 6 Bandung | 7.36 | 5.72 | 6.00 | 5.84 | 4.97 | 5.98 |
| 7 | SMAN 7 Bandung | 8.77 | 5.60 | 6.05 | 5.97 | 5.91 | 6.46 |
| 8 | SMAN 8 Bandung | 8.74 | 6.01 | 6.80 | 6.15 | 6.99 | 6.94 |
| 9 | SMAN 9 Bandung | 8.64 | 5.82 | 5.38 | 6.08 | 5.20 | 6.22 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10 | SMAN 10 Bandung | 8.85 | 5.85 | 6.82 | 6.12 | 6.15 | 6.76 |
| 11 | SMAN 11 Bandung | 8.28 | 5.88 | 5.93 | 6.25 | 6.87 | 6.64 |
| 12 | SMAN 12 Bandung | 8.63 | 5.58 | 5.24 | 5.90 | 5.61 | 6.19 |
| 13 | SMAN 13 Bandung | 8.79 | 5.67 | 5.05 | 6.02 | 5.40 | 6.19 |
| 14 | SMAN 14 Bandung | 8.76 | 5.34 | 5.71 | 6.11 | 5.77 | 6.34 |
| 15 | SMAN 15 Bandung | 8.85 | 6.01 | 5.53 | 6.29 | 4.68 | 6.27 |
| 16 | SMAN 16 Bandung | 8.47 | 5.61 | 6.61 | 6.04 | 5.84 | 6.51 |
| 17 | SMAN 17 Bandung | 8.73 | 5.86 | 5.78 | 5.91 | 6.34 | 6.52 |
| 18 | SMAN 18 Bandung | 8.91 | 5.78 | 5.31 | 6.02 | 6.25 | 6.45 |
| 19 | SMAN 19 Bandung | 8.27 | 5.60 | 5.32 | 5.96 | 5.53 | 6.14 |
| 20 | SMAN 20 Bandung | 7.83 | 6.03 | 5.04 | 5.98 | 4.57 | 5.89 |
| 21 | SMAN 21 Bandung | 8.88 | 5.98 | 6.72 | 6.11 | 6.42 | 6.82 |
| 22 | SMAN 22 Bandung | 8.88 | 5.98 | 6.83 | 5.94 | 4.36 | 6.40 |
| 23 | SMAN 23 Bandung | 8.59 | 6.00 | 6.78 | 6.04 | 6.22 | 6.73 |
| 24 | SMAN 24 Bandung | 8.39 | 5.92 | 6.94 | 6.07 | 5.19 | 6.50 |
| 25 | SMAN 25 Bandung | 8.68 | 5.85 | 6.68 | 6.02 | 5.77 | 6.60 |
| 26 | SMAN 26 Bandung | 7.95 | 6.09 | 6.30 | 6.14 | 6.20 | 6.54 |
| 27 | SMAN 27 Bandung | 6.39 | 5.71 | 4.79 | 5.75 | 5.42 | 5.61 |
| | **Avarage** | **8.50** | **5.84** | **6.00** | **6.11** | **5.74** | **6.44** |

The data show fluctuating average scores in Economics among the 27 public senior high schools in Bandung. In 2012, the average score was 8.50. However, this dropped significantly to 5.84 in 2013, with minor fluctuations in subsequent years, reaching only 5.74 in 2016. The average score across all years from 2012 to 2016 was 6.44. If such a downward trend continues, it could lead to deteriorating student outcomes and failure to achieve the goals of education. This in turn would affect students' access to higher education, future career opportunities, social status, and overall well-being (Crawford et al., 2016). Therefore, this issue is of critical importance and must be addressed as a central concern in the field of education.

This study adopts Gagne's theory of learning outcomes, which posits that learning involves a set of cognitive processes that transform environmental stimuli through information processing into new capabilities. According to Gagne, learning is influenced by three essential components: external conditions, internal conditions, and learning outcomes (Chua et al., 2021).

This study focuses on two independent variables that are believed to influence student learning outcomes: teacher competence (an external factor) and students' prior knowledge (an internal factor). These two variables are expected to directly or indirectly affect students' learning outcomes, mediated by one intervening variable: learning motivation. The assumption is that teacher competence and students' prior knowledge significantly influence motivation, which in turn affects learning outcomes.

The variable of teacher competence is grounded in Rogers' theory, which emphasizes the crucial role of teachers in the success of the teaching process (Blömeke et al., 2022). Among the various factors influencing students' academic achievement, the teacher remains the most dominant. Teachers are seen as the most influential in-school factor in enhancing student achievement, as they engage directly with learners during classroom instruction (Tao et al., 2022).

In addition to teacher competence, prior knowledge is another key internal factor influencing learning outcomes. This is supported by Simonsmeier et al. (2021) research, which found significant differences in learning outcomes between students with high prior knowledge and those with low prior knowledge.

The prior knowledge variable is linked to Gagne's information processing theory, which describes learning as a process whereby information is received, processed, and then stored and retrieved from memory. Learning occurs through interaction between internal and external conditions of the learner (Honey et al., 2017). This theory explains how mental events transform input stimuli into output responses, resulting in measurable learning outcomes.

The intervening variable in this study, learning motivation, is guided by the convergence theory of individual development, which states that individual growth is determined by both internal and external factors. According to William Stern in Wang et al. (2021), educational outcomes result from the interaction between one's innate traits and environmental influences. Motivation plays a vital role in determining how much a student will learn or how effectively they absorb presented information. Motivated students tend to engage in higher-order cognitive processes, leading to better absorption and retention of material. Prior studies support the existence of a positive relationship between motivation and academic achievement (Vu et al., 2024).

Furthermore, teacher competence and prior knowledge are both factors that can influence student motivation. Bureau et al. (2021) assert that both internal and external factors affect student motivation. Previous studies have confirmed the significant effect of teacher competence on student motivation (Keller et al., 2017). Similarly, Song et al. (2016) also found differences in learning motivation between students with high and low prior knowledge, indicating a strong link between prior knowledge and motivation.

**Teacher Competence**

According to Fauth et al. (2019), teacher competence in teaching is a multidimensional construct that comprises several interrelated domains essential for effective instructional practice. These domains not only reflect the ability of teachers to deliver content but also encompass broader attributes that influence the overall quality of education and student development. Teacher competence is not limited to the mastery of subject matter; rather, it involves a combination of knowledge, skills, attitudes, and behaviors that enable teachers to facilitate meaningful learning experiences.

The dimensions of teacher competence are generally categorized into four main areas: pedagogical competence, personal competence, social competence, and professional competence.

1. **Pedagogical competence** refers to a teacher's ability to design and implement instructional strategies that align with students' developmental stages, learning styles, and curriculum standards. This includes planning lessons, selecting appropriate teaching methods, assessing learning outcomes, and adapting instruction based on student feedback. Teachers with strong pedagogical competence can create engaging, inclusive, and effective learning environments that foster critical thinking and active participation.

2. **Personal competence** encompasses individual characteristics such as self-confidence, emotional stability, ethical behavior, and a growth-oriented mindset. These traits influence how teachers manage stress, build relationships with students, and respond to challenges in the classroom. A teacher with high personal competence serves as a role model, exhibiting integrity, resilience, and a commitment to continuous self-improvement.

3. **Social competence** involves the ability to communicate effectively, collaborate with colleagues, empathize with students, and build positive relationships with stakeholders in the educational community. Socially competent teachers can foster a supportive classroom climate, resolve conflicts constructively, and engage parents and community members in the educational process. This competence is

especially important in diverse classrooms, where cultural sensitivity and interpersonal skills are critical to student success.

4. **Professional competence** refers to a teacher's mastery of subject matter, awareness of current educational trends, adherence to professional standards, and involvement in ongoing professional development. It includes the capacity to reflect on practice, use data to inform instruction, and contribute to the school community through leadership and innovation. Professional competence ensures that teachers remain current, relevant, and effective in a rapidly evolving educational landscape.

Taken together, these dimensions reflect the holistic nature of teacher competence. Effective teaching arises not from a single attribute but from the integration of knowledge, skills, and dispositions across these four areas. As education systems increasingly demand higher standards of teaching quality, developing these competencies becomes essential—not only for individual teacher success but also for improving student outcomes and advancing educational equity.

**Prior Knowledge**

Brod (2021) defines *prior knowledge* as the accumulated body of knowledge and experiences that individuals acquire throughout their lives and bring with them into new learning situations. This body of knowledge is not limited to formal education but also includes informal learning, personal experiences, cultural background, and everyday interactions. Prior knowledge functions as a cognitive framework that enables learners to interpret, organize, and make sense of new information. It serves as a foundational reference point, influencing how learners attend to instructional content, how they integrate new ideas with existing mental models, and how effectively they apply what they have learned to problem-solving tasks.

In educational settings, prior knowledge is particularly crucial because it determines the ease or difficulty with which a student can grasp new material. When students possess relevant prior knowledge, they are more likely to demonstrate higher comprehension, retain information for longer periods, and engage more deeply with the subject matter. Conversely, insufficient or inaccurate prior knowledge can lead to misconceptions, superficial learning, or cognitive overload, especially in complex subjects like economics.

Moreover, the role of prior knowledge becomes even more significant in constructivist learning environments, where students are expected to build meaning through active engagement with content. In such contexts, prior knowledge acts as the scaffolding upon which new learning is constructed, making it an essential

component in instructional design, curriculum development, and assessment strategies.

**Learning Motivation**

Morris et al. (2022) distinguish between two fundamental types of motivation that influence student learning: *intrinsic* and *extrinsic motivation*. Intrinsic motivation refers to the internal drive that propels an individual to engage in learning activities purely out of personal interest, curiosity, or the inherent satisfaction derived from the task itself. Students who are intrinsically motivated often pursue knowledge for its own sake, find pleasure in problem-solving, and exhibit greater persistence even in the absence of external rewards or recognition. This form of motivation tends to foster deeper cognitive engagement and long-term academic success because it aligns closely with self-determined learning goals and personal values.

In contrast, extrinsic motivation arises from factors external to the individual and is typically driven by the anticipation of rewards or the avoidance of negative consequences. Such motivation may manifest through compliance with suggestions, responses to encouragement, or reactions to pressure and coercion exerted by parents, teachers, or peers. While extrinsic motivation can effectively prompt students to complete tasks or achieve short-term goals, it may not necessarily sustain engagement or promote meaningful understanding, especially if the learning content is not perceived as relevant or valuable by the learner.

Building on this, Gumasing et al. (2023) highlight a broader range of variables that influence students' learning motivation. These include not only internal elements such as aspirations, self-confidence, and individual capacities, but also external factors like physical and emotional conditions, the quality of the learning environment, and the presence of dynamic instructional elements that capture interest and maintain focus. Crucially, the role of the teacher remains central in shaping learning motivation. Through their instructional strategies, feedback methods, classroom management, and interpersonal interactions, teachers can either enhance or inhibit students' desire to learn.

Taken together, these perspectives underscore the multifaceted nature of learning motivation. It is not simply a psychological trait residing within the learner, but a dynamic construct shaped by personal, interpersonal, and contextual influences. Understanding the interplay between intrinsic and extrinsic drivers—as well as the broader conditions that support or hinder motivation—is essential for designing effective educational interventions that not only boost performance but also nurture a lifelong love of learning.

## Learning Outcomes

Guo et al. (2020) define *learning outcomes* as the concrete abilities or competencies that students acquire as a result of participating in structured educational activities. These outcomes are not limited to knowledge acquisition alone but encompass a broad range of skills, attitudes, and behaviors that emerge from the learning process. Learning outcomes serve as indicators of the effectiveness of instruction and curriculum design, helping educators to evaluate whether the intended educational goals have been achieved.

In a similar vein, KGoss (2022) emphasizes that learning outcomes are *measurable results* of the educational process, typically verified through formal assessments. These evaluations may take various forms, such as written examinations, oral presentations, portfolios, or performance-based tasks, depending on the nature of the subject matter and the objectives of the learning program. The measurability of outcomes ensures accountability in education and provides empirical evidence for student progress, instructional impact, and curriculum relevance.

Furthermore, Sun et al. (2017) highlight the multifactorial nature of learning outcomes, suggesting that they are shaped through a series of interrelated processes. These processes are influenced by both *internal* and *external factors*. Internal factors include the learner's physiological condition, cognitive capabilities such as intelligence and memory, personal interests, and intrinsic motivation. External factors, on the other hand, encompass the quality of the physical learning environment, the availability and accessibility of educational resources, social interactions within the classroom, and the broader socio-cultural context in which learning takes place. The interaction between these variables ultimately determines the extent and quality of what students learn.

Together, these perspectives illustrate that learning outcomes are not static end-products but dynamic reflections of a complex interplay between the learner, the instructional approach, and the educational context. As such, educators and policymakers must recognize that enhancing learning outcomes requires a comprehensive strategy one that integrates well-designed assessments, responsive pedagogy, supportive environments, and attention to both the cognitive and affective dimensions of student development.

## Hypotheses

This study seeks to investigate the relationships among teacher competence, students' prior knowledge, learning motivation, and academic achievement in

economics at the senior high school level. Based on the theoretical framework and the objectives of the study, the following hypotheses are formulated:

1. There is a positive and statistically significant influence of teacher competence and students' prior knowledge on their learning motivation.
   This hypothesis posits that both the professional and pedagogical capabilities of teachers, as well as the foundational academic knowledge that students bring into the classroom, contribute meaningfully to the development of students' motivation to learn. It suggests that when students are taught by competent teachers and already possess sufficient prerequisite knowledge, they are more likely to feel confident, interested, and engaged in the learning process.

2. There is a positive and statistically significant influence of teacher competence, students' prior knowledge, and learning motivation on students' academic achievement in economics.
   This second hypothesis asserts that these three factors teacher competence, prior knowledge, and learning motivation jointly and individually affect students' performance in economics. It assumes that academic achievement is not solely the result of cognitive input but is shaped by the instructional quality, the preparedness of students, and the degree to which they are motivated to learn.

These hypotheses serve as the basis for the structural model tested in this study, providing a foundation for understanding how instructional and learner-related variables interact to shape educational outcomes in the field of economics.

## METHODS

This research was conducted in public senior high schools (SMA Negeri) across Bandung City, Indonesia. The unit of analysis in this study was the students enrolled in these institutions. The primary objective of this research was to investigate the influence of teacher competence and students' prior knowledge on students' learning motivation and how these variables subsequently impact their academic achievement in economics. To address this aim, the study employed a quantitative approach with a descriptive and verificative design. This methodological framework is considered suitable for uncovering causal relationships between variables, particularly when testing hypotheses derived from theoretical frameworks.

The study focused on three categories of variables. The independent variables consisted of teacher competence and students' prior knowledge. Teacher competence was operationalized through four key dimensions: pedagogical, personality, social, and professional competence, following the national standards for teacher performance and competence. Students' prior knowledge was measured based on their performance on midterm examinations in economics, reflecting their mastery

of foundational content. The dependent variable was the students' final achievement in economics, as indicated by their end-of-semester examination scores. In addition to these, an intervening variable students' learning motivation, was included to examine its mediating role in the relationship between the independent and dependent variables.

A survey method was employed to collect data from a large and diverse student population, which is a common approach in educational research. The population for this study comprised all eleventh-grade students majoring in social sciences (IPS) from public high schools in Bandung City. According to data obtained from the local education authority, the total number of students fitting this criterion was 3,907, distributed across 27 schools. To ensure representativeness and feasibility, the researchers employed a simple random sampling technique. As a result, a sample of 363 students was selected, coming from four public senior high schools that were randomly chosen.

Data collection in this study was conducted using two primary instruments. First, a structured questionnaire was developed and distributed to gather information on students' perceptions of teacher competence and their levels of learning motivation. The questionnaire items were arranged using a five-point Likert scale, ranging from strongly disagree to strongly agree. The instrument was designed based on existing validated scales and adjusted to suit the local educational context. Second, the students' midterm and final examination scores in economics were obtained from school records. These scores served as indicators of prior knowledge and academic achievement, respectively.

To test the proposed hypotheses, inferential statistical analysis was conducted using path analysis. Path analysis is a technique that allows for the examination of complex causal relationships, particularly when one or more mediating variables are involved. In this study, the model tested the direct and indirect effects of teacher competence and prior knowledge on learning outcomes, with learning motivation acting as a mediating variable. The analytical procedure was carried out using software for structural equation modeling.

Before performing path analysis, several assumption tests were undertaken to ensure the validity of the data. The normality of the data distribution was assessed through skewness and kurtosis values, supported by visual inspection using histograms. The presence of multivariate outliers was examined using Mahalanobis distance, which identifies extreme values that might distort statistical estimates. Additionally, multicollinearity among the independent variables was assessed using the determinant of the sample covariance matrix and supported by examining

variance inflation factors (VIF). These diagnostic tests are critical for maintaining the robustness and accuracy of regression-based models.

The validity and reliability of the questionnaire were also carefully evaluated. Content validity was ensured through consultation with experts in educational measurement and economics education. A pilot test was conducted with a smaller group of students to identify any ambiguities or issues in the questionnaire items. Construct validity was assessed through exploratory factor analysis (EFA), while reliability was examined using Cronbach's Alpha. All scales used in the study demonstrated satisfactory reliability coefficients, exceeding the minimum standard of 0.70, indicating strong internal consistency and measurement stability over time.

By integrating robust data collection procedures with comprehensive statistical analysis, this research provides a reliable and valid methodological foundation for examining how teacher competence and students' prior knowledge, either directly or indirectly through learning motivation, contribute to students' academic performance in economics. The findings from this study are expected to offer practical insights for educators, school administrators, and policymakers concerned with improving educational quality and student achievement outcomes in Indonesian high schools.

## RESULT

The hypothesis testing in this study yielded several important findings regarding the relationships among teacher competence, students' prior knowledge, learning motivation, and learning outcomes. The statistical analysis was carried out using path analysis with the aid of AMOS software, and the estimated parameters are summarized in the following table:

**Table 2.** *Summary of Parameter Estimates*

| Model | Path Coefficient | SE | CR | p | Test Result | $R^2$ |
|---|---|---|---|---|---|---|
| **Learning Motivation (X3)** | | | | | | **0.327** |
| Learning Motivation (X3) ← Teacher Competence (X1) | 0.5694 | 0.0196 | 13.138 | *** | Significant | |
| Learning Motivation (X3) ← Prior Knowledge (X2) | -0.0556 | 0.0420 | -1.283 | 0.199 | Not Significant | |
| **Learning Outcomes (Y)** | | | | | | **0.789** |
| Learning Outcomes (Y) ← Teacher Competence (X1) | 0.0694 | 0.0124 | 2.356 | 0.018 | Significant | |

| | | | | | |
|---|---|---|---|---|---|
| Learning Outcomes (Y) ← Prior Knowledge (X2) | 0.8858 | .0219 | 36.441 | *** | Significant |
| Learning Outcomes (Y) ← Learning Motivation (X3) | 0.0059 | 0.0273 | 0.201 | 0.840 | Not Significant |

*Source: AMOS Output*

In relation to the first hypothesis, which posited that teacher competence and prior knowledge have a significant influence on students' learning motivation, the statistical results revealed a mixed outcome. The path coefficient from teacher competence to learning motivation was 0.5694, with a critical ratio (CR) of 13.138 and a p-value less than 0.001 (*),** indicating a highly significant and positive effect. This result suggests that higher levels of teacher competence are strongly associated with higher levels of student motivation. Interpreted further, if teacher competence increases by one standard deviation, learning motivation is predicted to increase by 0.569 standard deviations. When squared ($0.569^2$), this implies that approximately 32.38% of the variance in learning motivation is explained by teacher competence alone.

In contrast, the influence of students' prior knowledge on learning motivation was found to be statistically insignificant. The path coefficient was -0.0556, with a CR of -1.283 and a p-value of 0.199, exceeding the threshold of 0.05. This negative and non-significant relationship suggests that variations in students' prior knowledge did not have a meaningful impact on their motivational levels in this particular context. The magnitude of this effect was also minimal, accounting for only 0.31% of the variance in learning motivation.

Taken together, teacher competence and prior knowledge jointly accounted for 32.7% of the variation in learning motivation ($R^2 = 0.327$), leaving 67.3% of the variation explained by other unmeasured or latent variables. This highlights the multifactorial nature of learning motivation, which may also be shaped by factors such as family support, classroom environment, peer interactions, or individual psychological attributes like self-efficacy or anxiety. Based on these findings, the structural model equation for learning motivation can be expressed as:

$$X3 = 0.569X1 - 0.056X2 + 0.82e_1$$

With respect to the second hypothesis, which examined the direct effects of teacher competence, prior knowledge, and learning motivation on students' learning outcomes in economics, the results showed more robust patterns.

First, teacher competence was found to have a statistically significant effect on learning outcomes, with a path coefficient of 0.0694, a CR of 2.356, and a p-value of

0.018. Although the coefficient is smaller in magnitude compared to prior knowledge, it nonetheless signifies that improved teacher competence contributes positively to students' academic performance. When squared ($0.0694^2$), the impact translates to approximately 0.48% of the variance in learning outcomes explained by teacher competence alone.

Second, and most notably, students' prior knowledge emerged as the strongest predictor of learning outcomes. The path coefficient was 0.8858, with an exceptionally high CR of 36.441 and a p-value less than 0.001 (*),** indicating a very strong and highly significant relationship. Squaring this value, we find that approximately 78.5% of the variance in learning outcomes is directly attributable to prior knowledge, underscoring its foundational role in academic achievement. This finding aligns well with theoretical models of cognitive learning, where students' ability to integrate new information is heavily dependent on the quality and depth of their existing knowledge structures.

However, the effect of learning motivation on learning outcomes was not significant in this study. The path coefficient was 0.0059, with a CR of 0.201 and a p-value of 0.840, suggesting that the degree to which students are motivated did not significantly contribute to variations in their academic performance in economics. This result may appear counterintuitive, as motivation is widely recognized as a driving factor in educational success. Nonetheless, it might reflect the presence of mediating or suppressing variables, or it could suggest that while students may be motivated, other barriers (e.g., instructional quality, curriculum difficulty) may inhibit that motivation from translating into measurable achievement.

The structural model equation for learning outcomes is thus:

$$Y = 0.069X_1 + 0.886X_2 + 0.006X_3 + 0.46e_2$$

In light of the statistical insignificance of certain paths, a model refinement procedure known as trimming was conducted to improve the model's parsimony and overall goodness-of-fit. Specifically, the two non-significant paths, from prior knowledge to motivation and from motivation to learning outcomes, were removed.

**Table 3.** *Summary of Parameter Estimates (Post-Trimming)*

| Model | Path Coefficient | SE | CR | p | Test Result | $R^2$ |
|---|---|---|---|---|---|---|
| **Learning Motivation (X3)** | | | | | | **0.329** |
| Learning Motivation (X3) ← Teacher Competence (X1) | 0.573 | 0.019 | 13.315 | *** | Significant | |

| | | | | | |
|---|---|---|---|---|---|
| **Learning Outcomes (Y)** | | | | | **0.789** |
| Learning Outcomes (Y) ← Teacher Competence (X1) | 0.073 | 0.010 | 3.002 | 0.002 | Significant |
| Learning Outcomes (Y) ← Prior Knowledge (X2) | 0.885 | 0.022 | 36.508 | *** | Significant |

Source: AMOS Output

The results of the post-trimming model demonstrate an improvement in model simplicity without sacrificing explanatory power. Teacher competence remained a significant predictor of both learning motivation and learning outcomes, while prior knowledge continued to exert a substantial influence on academic achievement. By removing non-significant paths, the model became more parsimonious and theoretically elegant, aligning more closely with the principle of model parsimony in structural equation modeling.

In conclusion, the trimmed model offers a more efficient explanation of the data and can be regarded as the best-fit model for understanding the dynamics between teacher competence, prior knowledge, learning motivation, and learning outcomes in the context of senior high school economics education in Bandung

## DISCUSSION

The discussion section should focus on the interpretation of the findings and link them to existing literature. The author should explain why the findings are significant and how they contribute to enhancing theoretical understanding in the researched field. Additionally, the discussion should include an analysis of any contradictions or differences with previous studies, as well as provide practical and theoretical implications.

The findings of this study underscore the pivotal role of teacher competence in influencing both students' learning motivation and their academic outcomes. The significant path coefficient from teacher competence to learning motivation reflects the crucial influence that teachers exert in the learning environment. Competent educators those who exhibit strong pedagogical mastery, uphold professional standards, demonstrate positive social engagement, and possess a stable and mature personal character are capable of creating classroom climates that stimulate curiosity, foster student engagement, and sustain motivation throughout the learning process. This finding aligns with prior research that has consistently recognized the teacher as the most impactful in-class factor contributing to student achievement (Keller et al., 2017). Furthermore, this is consistent with the body of literature that emphasizes

the multifaceted nature of teacher competence and its direct influence on learners' attitudes, behavior, and performance (Fauth et al., 2019).

While teacher competence had a clear and statistically significant effect on learning motivation, the influence of students' prior knowledge on motivation was not found to be significant. This result diverges from certain educational theories that suggest prior academic preparation should enhance self-efficacy and motivation. In this context, students' cognitive readiness although essential for knowledge acquisition did not appear to fuel higher motivational drive. This might be attributed to contextual and psychological mediators that were not directly measured in this study, such as the quality of teacher-student relationships, classroom emotional support, peer dynamics, learning autonomy, or the presence (or absence) of parental and community support. These elements have been previously identified as important in fostering student motivation (Leitão et al., 2021).

The absence of a significant relationship between prior knowledge and motivation also suggests a potential gap between what students know and how they feel about learning. In other words, a student who enters the classroom with a strong academic background may not necessarily possess the internal or external motivation to engage deeply with the learning content. This phenomenon may relate to students' perceived task value, interest in the subject, or even curriculum relevance factors that are well-documented in motivational theory but not directly tested in this model (Schoute et al., 2022).

Despite its limited influence on motivation, prior knowledge was shown to have a powerful and direct impact on learning outcomes, explaining approximately 78.5% of the variance in academic performance. This finding reinforces the principles of cognitive learning theory, particularly Gagné's Information Processing Model, which posits that learning occurs most effectively when new knowledge is connected to existing mental structures. In this model, prior knowledge serves as an essential scaffold upon which new learning is built. Shi et al. (2021), who argue that meaningful learning is heavily dependent on the learner's capacity to integrate new input with established cognitive frameworks.

Moreover, this result resonates with empirical findings from multiple studies indicating that students with strong foundational knowledge are more likely to exhibit better problem-solving ability, greater comprehension, and higher test scores, particularly in subjects like economics that require abstract reasoning and conceptual understanding (Shanta & Wells, 2020).

Surprisingly, learning motivation did not have a statistically significant effect on learning outcomes in this study. This result contrasts with many previous studies that have found strong and often consistent relationships between motivational

factors such as intrinsic interest, goal orientation, and self-efficacy and academic achievement (Vu et al., 2024). The inconsistency may be explained by the presence of moderating or mediating variables not captured in this model. For instance, even highly motivated students may fail to achieve expected outcomes due to test anxiety, insufficient learning strategies, limited access to academic support, or time management issues (Al-Tameemi et al., 2023).

Another possible explanation lies in the complexity of translating motivation into performance. Motivation may serve as a necessary condition for engagement but not a sufficient one for achievement unless accompanied by effective instruction, cognitive capacity, and opportunities to demonstrate competence. It is also possible that the motivational measures employed in the study (e.g., self-report scales) may not have fully captured students' actual learning behavior or engagement levels (Singh et al., 2022).

The process of model refinement through trimming helped enhance the clarity and fit of the structural model. By eliminating non-significant paths specifically, the paths from prior knowledge to learning motivation and from motivation to learning outcomes the final model became more parsimonious and theoretically coherent. This improved version of the model supports the argument that teacher competence and students' prior knowledge are the two most influential variables in determining academic success in the subject of economics (Blömeke et al., 2022). Theoretical parsimony is especially valued in structural modeling because it enables researchers to identify the most impactful predictors while reducing the risk of overfitting and multicollinearity (Marsh et al., 2020).

In practical terms, these results carry several important implications. For educators and policymakers, the findings suggest that efforts to improve students' performance in economics particularly at the senior high school level should prioritize enhancing teacher quality. Investments in professional development, pedagogical training, and subject-matter expertise will likely yield substantial returns in terms of student engagement and academic success. Equally important is the need to strengthen students' foundational knowledge, perhaps through early diagnostic assessments, enrichment programs, or supplementary learning materials that reinforce prerequisite skills.

Finally, the fact that motivation did not significantly predict learning outcomes in this study should not be interpreted to mean that motivation is unimportant. Rather, it emphasizes that motivation alone, without the support of competent instruction and adequate prior knowledge, may not be sufficient to drive academic achievement. Interventions aimed at boosting student motivation must be

strategically integrated with instructional improvement efforts and academic scaffolding to maximize their effectiveness (Azizi & Khafaga, 2023).

## CONCLUSION

This study provides a comprehensive understanding of the interconnected roles of teacher competence, students' prior knowledge, learning motivation, and learning outcomes in the context of economics education at the senior high school level. The findings reveal that among the variables studied, teacher competence and students' prior knowledge emerge as the most consistent and significant predictors of student academic success. Teachers who possess strong pedagogical, personal, social, and professional competencies contribute positively and meaningfully not only to student learning motivation but also to actual learning performance. Their influence extends beyond content delivery to shaping students' attitudes, engagement, and overall academic development.

Equally important, students' prior knowledge was shown to be a dominant factor affecting learning outcomes. The presence of solid foundational knowledge allows students to absorb new concepts more effectively and to perform better in academic assessments. This underscores the critical importance of cumulative learning in economics and highlights the need for structured interventions to build strong academic foundations from earlier stages of schooling.

Interestingly, while motivation is widely believed to be a driving force behind academic achievement, this study found that it did not significantly impact students' learning outcomes in isolation. This suggests that motivation alone is insufficient when not supported by other essential components such as effective instruction, cognitive preparedness, and supportive learning environments. Therefore, while motivation remains an important psychological factor, its role should be viewed in the context of a more complex educational ecosystem that includes quality teaching, adequate resources, and well-aligned curricula.

The final, trimmed model used in this study confirms a more accurate and efficient representation of the data by removing insignificant pathways. This refined model affirms that enhancing teacher competence and strengthening prior knowledge are the most effective levers for improving student academic performance in economics. It offers a simplified yet powerful framework that can be applied in educational policy, curriculum planning, and classroom practice.

In light of these findings, the study recommends that efforts to improve student academic achievement in economics should focus on two primary strategies. First, schools and educational stakeholders must invest heavily in teacher professional development. This includes designing training programs that enhance

teachers' content mastery, instructional strategies, classroom management skills, and reflective practices. High-quality teachers are the foundation of a successful learning system, and their continuous growth must be supported institutionally.

Second, schools must ensure that students possess adequate prior knowledge before engaging with complex subject matter. Diagnostic tools should be used early in the academic year to identify gaps in students' understanding, followed by remedial support and differentiated instruction to bring all learners to a sufficient baseline of knowledge. Such measures can prevent learning difficulties later and foster deeper understanding of economics concepts.

While boosting student motivation should not be neglected, it should be integrated within a holistic educational approach that addresses the interplay between pedagogy, content, and learner characteristics. Motivation should be cultivated through engaging instruction, relevant learning materials, positive reinforcement, and emotionally supportive classrooms.

In summary, to foster better learning outcomes in economics education at the senior high school level, educational strategies must focus on enhancing teacher competence and strengthening students' academic foundations. These two pillars provide the most reliable pathways to improving student success. Future research is encouraged to expand the scope of this inquiry by examining additional moderating or mediating variables such as classroom climate, emotional resilience, instructional quality, and school leadership, which may further illuminate the mechanisms that influence student achievement.

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