

Unpacking Learning Motivation: How Learning Environment Shapes Learning Motivation through Goal Orientation

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ABSTRACT

Objective: As higher education continues to evolve, higher education institutions face the challenge of maintaining and strengthening student motivation across different learning environments. To address this issue, this study examines how the learning environment influences student motivation, with goal orientation serving as a mediating variable. The study also explores whether these relationships differ across gender groups. **Method:** This study employed a survey design using structured questionnaires. Out of 300 questionnaires distributed, a total of 234 datasets were analyzed using SEM-PLS, including both measurement and structural model evaluations. **Results:** The findings confirm that student motivation emerges from the interaction between external factors and internal processes rather than functioning solely as a direct response to learning environment conditions. The results also indicate that no significant differences are observed in the perceived relationships among constructs across gender groups. **Novelty:** The research gap addressed in this study lies in the limited understanding of the mediating role of goal orientation in the relationship between the learning environment and student motivation, as well as the limited number of studies examining gender differences in these relationships among constructs.

INTRODUCTION

Higher education continues to evolve rapidly in response to changing student needs, diverse backgrounds, and increasing expectations for academic performance. Contemporary classrooms are becoming more diverse in terms of structure, teaching approaches, and student composition (Papaioannou et al., 2023). These developments create opportunities for more inclusive and student-centered learning. At the same time, they raise an important question: how can higher education institutions maintain and strengthen student motivation across different learning environments? This issue is particularly important because motivation remains one of the strongest predictors of student engagement, persistence, and academic success (Githinji & Nyangoma, 2025).

Learning motivation influences how students approach their studies (Otermans et al., 2025), the level of effort they invest (Kalita, 2023), and the way they respond to academic challenges (Bunda et al., 2024). Students with strong motivation tend to participate more actively, persist when facing challenges, and achieve better academic outcomes (Bureau et al., 2022). However, motivation does not emerge in isolation. It develops through continuous interaction between students and their learning environment (Zheng, 2021). Elements such as teaching quality (Gencoglu et al., 2021), clarity of instruction (Zheng, 2021), classroom interaction (Comawas & Caloc, 2025), and feedback (Al-Hammoud, 2023) play an important role in shaping students' learning experiences. A supportive environment can encourage students to remain engaged and confident, whereas a less supportive environment may reduce their interest and effort.

Even so, the effect of the learning environment on motivation is not always direct. Students do not respond to the same environment in identical ways. Each student interprets learning experiences based on personal beliefs, expectations, and goals (Daumiller et al., 2023)(Daumiller et al., 2023). This difference highlights the importance of understanding the internal processes that connect the learning environment to motivation (Amadi & Plessis, 2025). One important concept in this context is goal orientation. Goal orientation explains the reason students engage in learning activities (Juhañák et al., 2023). Some students aim to develop competence and deepen their understanding, commonly referred to as mastery orientation. Others focus on demonstrating their ability and achieving better results than their peers, which is known as performance orientation.

These orientations influence how students respond to their learning environment. Students with a mastery orientation may view challenges as part of the learning process and remain motivated even when tasks are difficult (Kampylafka et al., 2023). In contrast, students with a performance orientation may be more sensitive to evaluation and comparison (Kapasi & Pei, 2022). Therefore, goal orientation can be viewed as a link between the learning environment and motivation (Ross, Pirraglia, Aquilina, Zulla, et al., 2022). The learning environment shapes the type of goals students adopt (Yang et al., 2023), and these goals subsequently influence their level of motivation (Zhang et al., 2022). In the Indonesian higher education context, students across genders are subject to uniform curricula, grading criteria, and learning resources. Since goal orientation signifies students' drive for academic performance, these educational system influences may shape goal-setting behaviors in the same manner among all genders (Sevilla et al., 2023).

This perspective is particularly relevant in higher education, where students are expected to take an active role in managing their own learning. They must organize their time, engage with course materials, and remain committed throughout the semester. In this context, internal factors become as important as external support. Some students maintain motivation by focusing on personal growth, whereas others may struggle when they rely heavily on external validation. Understanding the role of goal orientation in this process helps explain these differences.

Gender may also influence how students experience the learning environment and develop motivation. Previous studies suggest that students of different genders may differ in their learning preferences (Saxena et al., 2024), attitudes (Almasri, 2022), and responses to classroom situations (Elvira-zorzo et al., 2025). For example, some findings indicate that female students tend to value supportive and collaborative environments (Almasri et al., 2021), whereas male students may respond more positively to competitive elements (Flinton et al., 2023). However, these differences are not always consistent and may vary across learning contexts.

Rather than treating gender as merely a background variable, this study considers it as a grouping factor. Multi-group analysis (MGA) is employed to identify whether the relationships among learning environment, goal orientation, and motivation differ across gender groups. This approach allows a deeper understanding of the processes underlying student motivation (Expósito-lópez et al., 2021). Male and female students may demonstrate similar levels of motivation, yet the factors influencing them and the ways these factors interact may differ (Kessels & Houtte, 2021). Students also come from diverse educational and social backgrounds, which may shape how they interpret their

learning environment. In addition, gender roles and expectations may influence how students respond to academic demands and opportunities (Elvira-zorzo et al., 2025). Examining these differences can provide a more balanced and realistic understanding of student motivation.

Despite growing interest in this area, several gaps remain. Although learning environments are known to influence goal orientations, the specific mechanisms underlying this relationship remain underexplored. Previous studies suggest that goal orientation is increasingly recognized as an important factor, yet its precise mediating role still requires further investigation (Ross, Pirraglia, Aquilina, Zulla, et al., 2022). Research involving gender also tends to treat it as a control variable rather than examining its potential influence on the relationships among key constructs (Shapiro et al., 2021). This study seeks to address these limitations by examining how the learning environment influences student motivation through goal orientation as a mediating variable. It also investigates whether these relationships differ between male and female students using multi-group analysis. This approach provides a more comprehensive understanding of how student motivation develops. The findings are expected to offer useful implications for educators in designing learning environments that accommodate different student needs and improve learning outcomes.

Hypothesis Framework

Students in an interactive and supportive learning environment tend to demonstrate a more positive attitude toward participation in the learning process. A learning environment that encourages active participation, material relevance, and engagement can shape a positive emotional climate (Rusticus et al., 2023). Such an environment may stimulate students' internal motivation and strengthen their intentional involvement in learning activities (Pan, 2023). According to (Held & Mejeh, 2024), learning environments that support autonomy, competence, relatedness, and self-regulated learning can enhance students' learning motivation. Students who are encouraged to determine learning objectives independently, select appropriate learning strategies, and reflect on their learning processes tend to demonstrate higher levels of motivation.

H1: Learning environment affects learning motivation.

The learning environment also plays an important role in shaping students' goal orientation by influencing their motivation, expectations, and overall learning experiences. A supportive environment that emphasizes the learning process and self-development tends to foster mastery goal orientation, which promotes sustained engagement in learning (Ross, Pirraglia, Aquilina, & Zulla, 2022). In particular, mastery-oriented environments encourage students to focus on developing competence, whereas performance-oriented environments are more likely to promote performance goal orientation, especially avoidance-oriented goals (Kampylafka et al., 2023). Furthermore, the influence of the learning environment extends through the development of a proactive mindset and students' perceptions of opportunities to achieve their goals. When the environment is growth-oriented, students are more likely to adopt positive, adaptive, and expansive goal orientations in both their learning processes and future planning (Benson-Greenwald & Diekman, 2022).

H2: Learning environment affects goal orientation

Goal orientation influences learning motivation through increased intrinsic motivation, self-efficacy, persistence in facing failure, and engagement in learning activities. Mastery orientation is considered more effective in increasing and maintaining learning motivation than performance orientation, particularly among students with avoidance tendencies (Cheng, 2023). This statement is consistent with the findings of Abzhanova et al. (2024) who reported that goal orientation affects learning motivation by shaping students' reasons, beliefs, and attitudes toward learning. Mastery orientation tends to produce more positive, consistent, and adaptive motivation, whereas performance orientation may reduce learning motivation.

H3: Goal orientation affects learning motivation

A positive learning environment tends to foster learning goal orientation, which subsequently enhances students' intrinsic motivation, engagement, and academic effort. Supportive learning environments that provide adequate resources and encourage exploration and self-development can strengthen students' learning goal orientation. The resulting goal orientation then becomes an important driver of learning motivation. Students with a strong learning goal orientation are generally more active, proactive, and responsive to learning challenges. They also tend to demonstrate higher intrinsic motivation because they enjoy the learning process, seek to develop their abilities, and view challenges as opportunities for growth. Therefore, goal orientation acts as an important mediating variable that explains how and why the learning environment can enhance learning motivation (Fan & Cai, 2022).

H4: Learning environment affects the learning motivation through goal orientation

Gender is expected to moderate the relationships among the constructs. Students across gender groups may demonstrate different responses to the learning environment, goal orientation tendencies, and motivational processes. Previous studies of Stolk et al. (2021) identified gender-related differences in motivational responses and perceptions of the learning environment. Male and female students were found to demonstrate differences in both motivation and goal orientation. The findings of Chuang et al. (2025) further support this argument by showing that variations in learning motivation across gender groups may influence the strength of relationships among the constructs.

H5: Gender affects the associations among the constructs.

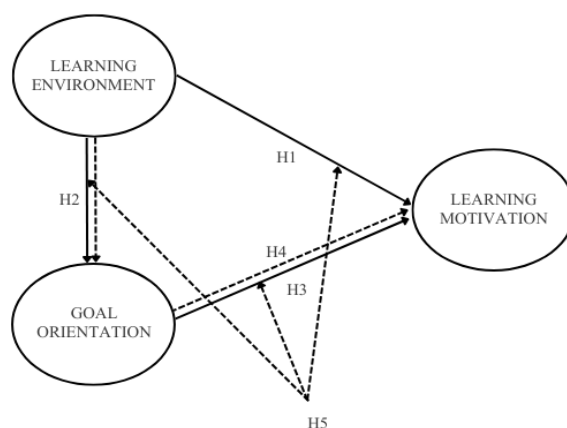


Figure 1. Conceptual Framework

RESEARCH METHOD

This study employed a survey design by distributing structured questionnaires to measure respondents' perceptions of the underlying constructs. A quantitative descriptive approach was applied to examine the relationships among the constructs. The questionnaire items were developed based on established theoretical frameworks underlying each construct. Learning motivation was measured using seven indicators adopted from the Academic Motivation Scale developed by Vallerand et al. (1992). The learning environment was assessed using four indicators proposed by Thygesen et al. (2020), whereas goal orientation was measured using four indicators derived from the Achievement Goal Framework (AGF) developed by Elliot & McGregor (2001). All constructs were measured using a five-point Likert scale covering a range from strongly disagree (1) to strongly agree (5).

In addition to examining the relationships among the constructs, this study also analyzed whether gender influenced these relationships. A total of 300 students from different academic levels and institutions participated as respondents. After data screening and the removal of incomplete responses, 237 valid questionnaires were retained for analysis, yielding an 79% response rate. This number was considered adequate for the study sample size (Kock & Hadaya, 2018). The final sample size (after a screening for outliers) yields 234, which satisfies the recommended requirements for PLS-SEM multi-group analysis and provides adequate statistical power for estimating the proposed structural model (Taherdoost & Madanchian, 2023). The dataset was analyzed using SEM-PLS because of its capability to examine relationships among latent constructs and produce robust analytical results without requiring normally distributed data (Hair Jr et al., 2017).

The study conducted a measurement model assessment to ensure that the indicators measured the latent constructs accurately and consistently through validity and reliability testing. Validity testing was carried out to confirm that the indicators appropriately represented their respective constructs by examining convergent and discriminant validity. Reliability testing was also performed to evaluate the internal consistency of the indicators in measuring the latent constructs using Composite Reliability (CR) and Cronbach's α values.

In addition, the study conducted a structural model evaluation to identify the effects of exogenous latent constructs on endogenous latent constructs and to test the proposed hypotheses. A multi-group analysis (MGA) was also performed to examine the moderating role of gender in the relationships among the latent constructs.

RESULTS AND DISCUSSION

Results

The screening process was conducted to identify outliers in the dataset using the boxplot method. This procedure was necessary to ensure the validity and reliability of the research results. The screening process identified three outlier data points, which were subsequently removed from the dataset. A total of 234 datasets were included in the subsequent analysis, consisting of 108 male and 126 female respondents.

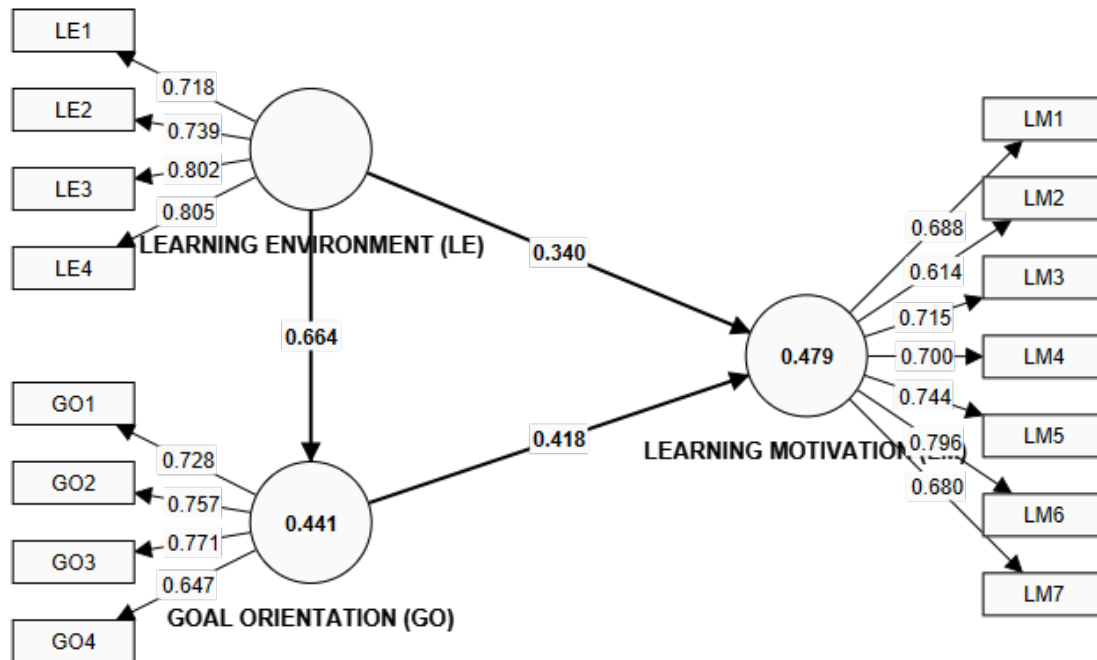


Figure 2. Measurement Model Results

The measurement model was evaluated to assess the validity and reliability of the research model. Validity testing was conducted using convergent and discriminant validity criteria. Convergent validity testing aimed to ensure that the indicators adequately represented the underlying constructs. The indicators' contributions were evaluated based on factor loading and Average Variance Extracted (AVE) values. The lowest factor loading was 0.614, whereas the AVE value was 0.500, indicating acceptable convergent validity (Hair Jr et al., 2017), as reported in Table 1.

Reliability testing was conducted to ensure that the indicators demonstrated internal consistency in measuring the constructs. The assessment employed Composite Reliability (CR) and Cronbach's α criteria, with the required threshold exceeding 0.7 (Hair Jr et al., 2017). The results indicate that all CR and Cronbach's α values exceeded 0.7, confirming the reliability of the constructs, as presented in Table 1.

Table 1. Measurement Model Analysis

Constructs	Indicators	Factor Loading	AVE	Cronbach α	Composite Reliability (CR)
GO (Goal Orientation)	GO1	0.728	0.529	0.707	0.817
	GO2	0.757			
	GO3	0.771			
	GO4	0.647			
Learning Environment (LE)	LE1	0.718	0.588	0.766	0.851
	LE2	0.739			
	LE3	0.802			
	LE4	0.805			
Learning Motivation (LM)	LM1	0.688	0.500	0.833	0.875
	LM2	0.614			
	LM3	0.715			
	LM4	0.700			
	LM5	0.744			
	LM6	0.769			
	LM7	0.680			

Discriminant validity testing was also conducted to ensure that each construct was distinct from the others. The assessment employed the Heterotrait-Monotrait (HTMT) criterion because of its higher level of accuracy. The results show that all HTMT values were below 0.9, confirming that each construct demonstrated acceptable discriminant validity and measured conceptually distinct constructs (Henseler et al., 2015), as presented in Table 2.

Table 2. Discriminant Validity with Heterotrait-Monotrait (HTMT)

Constructs	GO	LE	LM
Goal Orientation (GO)	-	-	-
Learning Environment (LE)	0.872	-	-
Learning Motivation (LM)	0.817	0.764	-

Assessment of multicollinearity was performed to ensure that the exogenous constructs in the model were not highly intercorrelated. The assessment employed the Variance Inflation Factor (VIF), with a recommended cutoff value below 5 (Hair Jr et al., 2017). The results indicate that all constructs had VIF values below the acceptable threshold, confirming the absence of multicollinearity issues.

Table 3. Multicollinearity Testing with VIF Values

Constructs	GO	LE	LM
Goal orientation (GO)	-	-	1.788
Learning environment (LE)	1.000	-	1.788
Learning motivation (LM)	-	-	-

Model fit assessed the extent to which the theoretical model aligned with the empirical data using the Standardized Root Mean Square Residual (SRMR). The results show an SRMR value of 0.077, which is below the acceptable cutoff value of 0.08, thereby indicating a satisfactory model fit (Hair Jr et al., 2017).

Table 4. Model Fit

	Saturated Model	Estimated Model
SRMR	0.077	0.077

The R^2 value was used to evaluate the predictive power of the structural model by indicating the extent to which exogenous constructs explained the variance in endogenous constructs. The results demonstrate that the learning environment accounted for 44.1% of the variance in goal orientation, whereas the learning environment and goal orientation simultaneously explained 47.9% of the variance in learning motivation. Overall, the model demonstrates a moderate level of predictive power (Hair Jr et al., 2017).

Table 5. Predictive Power Testing

Constructs	R^2	R^2 Adjusted
Goal Orientation (GO)	0.441	.438
Learning motivation (LM)	0.479	.474

The results indicate that the learning environment has a positive and significant effect on learning motivation, contributing 34.0% to its variance. This effect is evidenced by a calculated t-value of 5.253, which exceeds the critical value of 1.96, and a p-value of 0.000, indicating significance at the 1% level (Table 6). Therefore, H1 is accepted. The learning environment encompasses the psychological, social, cultural, and physical contexts that shape the learning process (Rusticus et al., 2023). A learning environment that promotes

active interaction and provides supportive learning conditions can enhance students' engagement in the learning process and foster more positive learning experiences, thereby strengthening learning motivation. This finding is consistent with previous studies by Rusticus et al. (2023) and Pan (2023), which confirmed that the learning environment positively and significantly influences students' learning motivation.

The results also demonstrate that the learning environment has a positive and significant effect on students' goal orientation, contributing 66.4% to its variance. This effect is indicated by a calculated t-value of 16.458, which exceeds 1.96, and a p-value of 0.000, which is below 0.05. Therefore, H2 is accepted (Table 6). A constructive and supportive learning environment encourages students to develop a more adaptive goal orientation. The learning environment influences how students define success and establish learning goals, whether mastery-oriented or performance-oriented. Students with mastery goal orientation tend to be more engaged and persistent in the learning process, whereas students with performance goal orientation are generally more competitive and motivated to achieve academic success. These findings highlight the important role of the learning environment in strengthening students' goal orientation. The results are also consistent with the findings of Fan & Cai (2022), who reported that a stimulating learning environment can foster students' learning goal orientation, network relationships, and knowledge-sharing practices.

The study revealed that students' goal orientation played a significant role in enhancing learning motivation. The positive and significant effect of goal orientation on learning motivation is evidenced by a calculated t-value of 6.732 and a p-value of 0.000, both of which satisfy the required threshold to support H3 (Table 6). Goal orientation also exerts a stronger influence on learning motivation than the learning environment, contributing 41.8% to its variance. Students with strong goal orientation generally possess higher self-efficacy and a clearer understanding of their learning objectives, which enhances their focus and persistence throughout the learning process. As a result, they tend to demonstrate stronger self-regulated learning and higher levels of learning motivation. This finding is consistent with the study by Tsai (2024), which identified goal orientation as a strong predictor of learning motivation.

The findings further reveal that goal orientation plays a significant mediating role in the relationship between the learning environment and learning motivation, accounting for 27.8% of the effect. This mediating effect is evidenced by a calculated t-value of 6.416, which exceeds 1.96, and a p-value of 0.000, which is below 0.05, thereby supporting H4. A positive learning environment that supports student independence and provides competent lecturers, manageable academic workloads, and appropriate assessment systems can serve as an external stimulus for students to establish learning goals. Students with clear learning goals generally demonstrate greater focus, dedication, and motivation in the learning process to achieve those goals. These findings confirm that the learning environment shapes students' goal orientation, which subsequently influences learning outcomes (Fan & Cai, 2022)

Table 6. Hypothesis Testing

Relationship Between Constructs	Path Coefficient	T Statistics	P Values	Conclusion
H1: LE → LM	0.340	5.253	0.000	supported
H2: LE → GO	0.664	16.458	0.000	supported
H3: GO → LM	0.418	6.732	0.000	supported
H4: LE → GO → LM	0.278	6.416	0.000	supported

The study also found no significant differences in the relationships among the constructs across gender groups; therefore, H5 is rejected. The exogenous latent variables demonstrate positive and significant direct and indirect effects on the endogenous latent variables in both gender groups. This result is evidenced by calculated t-values exceeding the critical threshold of 1.96 and p-values below 0.05 for both male and female groups. The effect of the learning environment on learning motivation is stronger among male students (0.441) than female students (0.212). This result might indicate that male students are more easily motivated by learning environment stimuli, such as good teaching, appropriate workload, or assessment, resulting in increasing their learning motivation. This finding is supported by the study of Wang et al. (2024). The findings also indicate that the learning environment explains more than 50% of the variance in goal orientation for both gender groups. However, the effect of the learning environment on goal orientation is less pronounced among male students (0.581) than female students (0.735). The results indicate that female students exhibit a stronger relationship between learning environment and goal orientation ($\beta = 0.735$) than male students ($\beta = 0.581$). This finding demonstrates that females are likely translating supportive learning environments into a more defined academic goal. Extant literature has studied that female students place more focus on a structured learning environment, which may strengthen their goal-oriented behavior, as also found by Guo et al. (2024). Goal orientation also demonstrates a stronger effect on learning motivation among female students (0.534) than male students (0.344).

Goal orientation significantly mediates the effect of the learning environment on learning motivation. The learning environment demonstrates a positive and significant indirect effect on learning motivation through goal orientation, with a stronger effect observed among female students. These findings contrast with previous studies by Stolk et al. (2021) and Chuang et al. (2025), which reported that gender contributed to the relationships among the constructs.

Table 7. Multi-Group Analysis Based on Gender

Relationship Between Constructs	Path Coefficient		T Statistics		P Values		Conclusion
	M	F	M	F	M	F	
H1: LE→LM	0.441	0.212	4.889	2.209	0.000	0.027	Not supported
H2: LE→GO	0.581	0.735	8.865	16.012	0.000	0.000	Not supported
H3: GO→LM	0.344	0.534	3.623	6.359	0.000	0.000	Not supported
H4:LE→GO→ LM	0.200	0.393	3.344	6.095	0.001	0.000	Not supported

Note: M = Male; F = Female

Discussion

The findings of this study confirm that the learning environment remains an important factor in shaping students' learning motivation. A well-structured environment can encourage students to become more actively involved in the learning process (Rosar & Weidlich, 2022). They also indicate that students' motivation is influenced not only by internal factors but also by how they experience the learning process in their daily academic activities, supporting the findings of Ishida and Sekiyama (2024). Conversely, a less supportive environment can reduce students' interest and engagement (Monteiro et al., 2021), even among those with adequate academic ability (Monteiro et al., 2021).

This result aligns with the perspective that the learning environment functions as an external trigger in shaping motivation (Held & Meje, 2024). In higher education settings, this role becomes increasingly important because students are expected to manage their learning process more independently. A conducive environment can help students maintain consistent motivation, particularly when facing academic challenges (Wild et al., 2024). This influence also demonstrates that students' motivation remains sensitive to external conditions (Ishida & Sekiyama, 2024). Therefore, efforts to improve motivation should not focus solely on individual students but also on enhancing the quality of the learning environment (Permana et al., 2024). As reported by Nagarajan & Anbazhagan (2025), the relationships among students, lecturers, and classroom dynamics play an important role; therefore, the quality of the learning environment should not be overlooked.

This study also finds that the way students interpret learning goals is not formed naturally but is influenced by their experiences within the learning environment. An environment that provides clear direction, support, and opportunities for growth encourages students to develop a more adaptive goal orientation (Steinberg et al., 2024). This reinforces the view that goal orientation is not merely a stable individual characteristic (Asanjarani et al., 2022) but can also be shaped through the learning context (Alipour et al., 2025). When students are placed in an environment that emphasizes the learning process, understanding, and self-development, they tend to adopt a mastery orientation (Ross, Pirraglia, Aquilina, & Zulla, 2022). Conversely, environments that emphasize outcomes, assessment, and social comparison may encourage the development of performance orientation (Yu & Chun, 2024). This finding suggests that the learning environment plays an important role in shaping how students define academic success.

The implications of these findings are particularly important for higher education institutions. Efforts to encourage sustainable motivation should not focus solely on improving teaching facilities or instructional methods. Institutions also need to pay attention to the implicit messages conveyed through the learning environment. The way lecturers assign tasks, conduct evaluations, and manage classroom interactions can indirectly direct students toward particular types of goals. In the context of higher education in Indonesia, where learning practices often remain outcome-oriented and assessment-oriented, these findings are highly relevant. Such environments may strengthen performance orientation, which in some cases can make motivation more dependent on external results and recognition. Therefore, creating a learning environment that emphasizes the learning process and competency development is important for fostering a more positive goal orientation.

These findings confirm that the way students establish and interpret learning goals is an important factor in determining their level of motivation. In other words, motivation is not only influenced by external conditions but also strongly shaped by how students direct their academic goals (Yau et al., 2022). Students with a mastery orientation tend to demonstrate stronger and more stable motivation (Laitinen et al., 2024). They view the learning process as an opportunity for growth, which enables them to remain motivated despite facing difficulties (Lo et al., 2022). In contrast, students with a performance orientation rely more heavily on outcomes and external recognition (Asanjarani et al., 2022). Their motivation may increase when opportunities to demonstrate competence are

available, yet it may also decline more easily when they encounter pressure or the risk of failure (Capelle et al., 2023).

These findings further reinforce the understanding that goal orientation functions as an internal mechanism that directs students' learning behavior. Two students within the same learning environment may demonstrate different levels of motivation because they possess different goal orientations. This explains why similar learning approaches do not always produce uniform responses among students. In higher education settings, the role of goal orientation becomes increasingly important because students are expected to manage their learning process more independently. Without strong internal encouragement, students may experience declining motivation, particularly when facing complex academic demands. Therefore, developing adaptive goal orientation should become an important consideration in the learning process.

The results demonstrate that the relationship between the learning environment and motivation does not occur directly but through an internal process in which students first develop a goal orientation before becoming motivated to learn. This mediating role indicates that the learning environment influences motivation by shaping how students interpret their learning goals (Amasha, 2024). A supportive, structured, and understanding-oriented environment is more likely to foster a mastery-oriented mindset (Pulkka & Budlong, 2022). This orientation subsequently encourages stronger and more sustainable motivation. In other words, the learning environment does not automatically increase motivation; rather, it shapes the patterns of thinking that ultimately determine students' level of motivation.

This mediating relationship provides a deeper explanation of how the learning environment influences motivation. Two students within the same environment may demonstrate different levels of motivation because they develop different goal orientations. This condition highlights the importance of students' cognitive processes in bridging the influence of the learning environment on learning behavior.

The learning environment influences motivation by strengthening intrinsic motivation through the fulfillment of basic psychological needs. When students across different gender groups experience similar learning environments, they tend to develop comparable learning experiences, resulting in relatively similar levels of motivation and goal orientation. In contemporary educational settings, where academic roles across genders are becoming increasingly equal, differences in learning behavior, including goal orientation and motivation, appear to be less pronounced.

In higher education contexts, these findings carry important implications. Improving student motivation should not rely solely on enhancing external aspects such as teaching methods or learning facilities. Equal attention should also be directed toward how the learning environment shapes students' learning orientation. Lecturers and educational institutions need to create learning experiences that are not only informative but also capable of directing students toward more meaningful learning goals (Andrews et al., 2023).

Taken together, the results reinforce the role of goal orientation as a key mechanism explaining how the learning environment influences learning motivation (Liu et al., 2023). The findings also confirm that student motivation emerges from the interaction between external factors and internal processes rather than merely functioning as a direct response to learning environment conditions.

In the Indonesian higher education system, male and female students are provided with similar curricula, learning outcomes, assessment methods, and academic expectations. Universities provide a relatively similar learning environment across genders. This system creates more similar patterns of goal orientation and learning motivation regardless of gender. Universities should enhance standardized teaching practices with adaptable learning strategies that foster different student requirements. This initiative is expected to support both motivation and goal orientation among all genders.

CONCLUSION

This study examines how the learning environment influences student motivation both directly and indirectly through goal orientation as a mediating variable. It also explores whether these relationships differ between male and female students using multi-group analysis. The findings indicate that the learning environment is an important determinant of both learning motivation and students' goal orientation. A constructive and supportive learning environment encourages students to develop a more adaptive goal orientation and strengthens their learning motivation. Students with clear learning goals generally possess higher self-efficacy and a better understanding of their learning objectives, which enhances their focus and persistence throughout the learning process. The results also reveal that goal orientation plays a significant mediating role in the relationship between the learning environment and learning motivation. In addition, no significant differences in the relationships among constructs were identified across gender groups.

These findings carry important implications for higher education. Improving student motivation should not focus solely on external aspects such as teaching methods or learning facilities, but should also consider how the learning environment shapes students' learning orientation. Therefore, universities should provide learning environments that foster clear academic goals for students by implementing some practices. These practices might include transforming grading criteria into more personalized competencies, mentoring programs, goal-setting workshops, and project-based learning activities. Lecturers can strengthen students' goal orientation by linking course activities to long-term academic and career development. Nevertheless, this study has several limitations. The research was conducted within a specific context, limiting the generalizability of the findings. In addition, although the dataset was sufficient for analyzing the proposed constructs, the sample size remained relatively limited. Future studies are therefore encouraged to involve a larger number of respondents to improve the robustness of the results. Further research may also be conducted in different geographical contexts to verify the broader applicability of these findings.

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