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The Effect of Environment and Self-Regulated Learning on Learning Interest at Social Geography Courses: A Quantitative Approach

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Abstract

Learning interest is essential for student engagement and learning quality in higher education, particularly in Social Geography, where students must connect theoretical concepts with socio-spatial realities. This study aimed to analyze the partial and simultaneous effects of the learning environment and self-regulated learning on students' learning interest. A quantitative explanatory design was used involving 113 students from the 2024 cohort of the Social Science Education Study Program at Universitas Islam Negeri Maulana Malik Ibrahim Malang, selected from 158 students through simple random sampling using Slovin's formula. Data were collected using a closed-ended questionnaire and analyzed through multiple linear regression with SPSS version 23. The results showed that the learning environment and self-regulated learning had positive and significant effects on learning interest, both partially and simultaneously. Both variables explained 75.0% of the variance, with self-regulated learning as the stronger predictor. These findings support SDG 4 by emphasizing supportive learning environments and lifelong learning capacity.

[Minat belajar sangat penting untuk keterlibatan mahasiswa dan kualitas pembelajaran di pendidikan tinggi, khususnya dalam matakuliah Geografi Sosial, di mana mahasiswa harus menghubungkan konsep teoritis dengan realitas sosial-spasial. Studi ini bertujuan untuk menganalisis pengaruh parsial dan simultan dari lingkungan belajar dan pembelajaran mandiri terhadap minat belajar mahasiswa. Desain eksplanatori kuantitatif digunakan dengan melibatkan 113 mahasiswa dari angkatan 2024 Program Studi Pendidikan Ilmu Sosial di Universitas Islam Negeri Maulana Malik Ibrahim Malang, yang dipilih dari 158 mahasiswa melalui pengambilan sampel acak sederhana menggunakan rumus Slovin. Data dikumpulkan menggunakan kuesioner tertutup dan dianalisis melalui regresi linier berganda dengan SPSS versi 23. Hasil menunjukkan bahwa lingkungan belajar dan pembelajaran mandiri memiliki pengaruh positif dan signifikan terhadap minat belajar, baik parsial maupun simultan. Kedua variabel tersebut menjelaskan 75,0% varians, dengan pembelajaran mandiri sebagai prediktor yang lebih kuat. Temuan ini mendukung SDG 4 dengan menekankan lingkungan belajar yang mendukung dan kapasitas belajar sepanjang hayat.] © The Authors.

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1. Introduction

Learning interest is a highly important psychological factor in determining student engagement and the quality of classroom learning [1]. Students with strong learning interest tend to demonstrate readiness, sustained attention, persistence, and active participation in learning activities. Conversely, students with low learning interest are more likely to display passive behavior, reduced concentration, and limited effectiveness in comprehending course materials [2], [3]. This indicates that learning quality is shaped not only by external conditions, such as facilities and infrastructure, but also by students' psychological states that influence their academic engagement [4]. Therefore, learning interest requires serious attention as an essential foundation for meaningful learning experiences.

In the Social Geography course, learning interest becomes particularly important because students are expected not only to understand theoretical concepts, but also to connect them with socio-spatial realities and empirical evidence [5], [6]. This course requires active engagement, critical thinking, and analytical ability to examine social phenomena, interpret spatial patterns, and relate classroom knowledge to real community contexts. When students' learning interest is low, they may experience difficulties in understanding course materials, participating in academic interaction, constructing arguments, and interpreting socio-spatial problems. Consequently, the learning process may become less interactive, less reflective, and less effective in achieving learning objectives [7], [8].

This condition is reflected in preliminary observations involving 103 students from the 2024 cohort of the Social Science Education Study Program at Universitas Islam Negeri Maulana Malik Ibrahim Malang. The findings showed that 53 students (52%) were categorized as having low learning interest, as indicated by limited readiness, attention, active participation, and involvement in non-academic activities during learning. Meanwhile, 25 students (24%) demonstrated high learning interest, while the remaining 25 students (24%) were in the moderate category. These findings indicate that learning interest in the Social Geography course remains a substantial learning problem requiring empirical investigation.

Previous studies confirm that learning interest is closely related to student engagement, retention, and learning quality. Ainley [9] found that low learning interest may reduce engagement and increase academic distraction during the learning process. Similarly, Jamet et al. [10] reported that non-academic activities during lectures are associated with lower retention of learning materials, which may hinder conceptual understanding and the attainment of learning objectives. Thus, the predominance of low learning interest identified in the preliminary observation may pose a risk to the quality of discussion, depth of analysis, and overall learning effectiveness in the Social Geography course if not addressed properly.

Learning interest is shaped by both external and internal factors that interact in the learning process [11], [12]. One important external factor is the learning environment, which refers to the physical and social conditions surrounding learning, including classroom adequacy, facilities and infrastructure, academic interaction, and social support [13]. A conducive learning environment can enhance students' comfort, focus, motivation, and engagement, thereby supporting the development of learning interest [14], [15]. Conversely, a less conducive learning environment such as monotonous teaching methods, unvaried learning media, limited facilities, and low levels of academic interaction between lecturers and students can lead to boredom and decreased learning motivation, which in turn may result in a decline in students' learning interest [16]. Previous studies by Gultom et al. [17] and Maghfirah et al. [18] also show that the learning environment has a significant relationship with students' learning interest.

In addition to the learning environment, self-regulated learning is an important internal factor that may strengthen students' learning interest. Self-regulated learning refers to students' ability to manage their learning processes through planning, monitoring, strategy use, time management, distraction control, and self-evaluation [19], [20]. Students with strong self-regulated learning tend to be better prepared, more focused, and more actively engaged in learning activities [21]. Rahmadina and Marsofiyati [22] reported that self-regulated learning positively influences students' learning interest. Similarly, Boleng [23] showed that self-regulated learning contributes to increased learning interest and academic achievement. These findings suggest that learning interest in the Social Geography course needs to be examined by considering both external support and students' internal learning capacity.

The relationship between learning environment, self-regulated learning, and learning interest can be explained through Kurt Lewin's Field Theory, which emphasizes that behavior emerges from the interaction between personal and environmental factors [24], [25]. In this study, learning interest is positioned as a form of learning behavior because interest reflects students' psychological

tendency to engage actively in learning activities. The learning environment represents external conditions that provide support, stimulation, and academic interaction, while self-regulated learning represents students' internal capacity to manage and sustain learning. Thus, students' learning interest is understood through the interaction between educational conditions and personal learning regulation.

Although previous studies have examined the effects of learning environment and self-regulated learning on learning interest, most have treated these variables separately and have not sufficiently explained their simultaneous contribution, particularly in Social Geography learning. This study offers novelty by integrating external and internal determinants of learning interest within a socio-spatial learning context. This contribution is relevant to SDG 4 on quality education because a conducive learning environment reflects institutional responsibility to provide supportive learning conditions, while self-regulated learning strengthens students' lifelong learning capacity. Furthermore, it supports inclusive quality education by accommodating diverse student needs and learning styles, promotes lifelong learning skills as a core competency for all learners, and embeds student-centered learning approaches that empower learners to take an active role in their educational journey aligning directly with SDG 4 targets of ensuring inclusive, equitable, and quality education for all. Therefore, this study aims to analyzes the partial and simultaneous effects of learning environment and self-regulated learning on students' learning interest.

2. Method

The study employed a quantitative approach with an explanatory research design to analyze the effects of the learning environment and self-regulated learning on students' learning interest in the Social Geography course. This design was selected because it is appropriate for explaining causal relationships among variables through inferential statistical testing [26], [27]. The study was conducted in the Social Science Education Study Program at Universitas Islam Negeri Maulana Malik Ibrahim Malang from September to December 2025. The site was selected purposively because UIN Malang integrates Islamic values into its social science curriculum, providing a distinctive religious-academic setting relevant to the study's focus. The research population consisted of 158 students from the 2024 cohort, distributed across six parallel classes. This cohort was selected because all students were enrolled in the Social Geography course during the research period, providing relatively comparable learning experiences. Using simple random sampling and Slovin's formula with a 5% margin of error, 113 respondents were selected [26].

The research variables consisted of the learning environment as the first independent variable (X_1), self-regulated learning as the second independent variable (X_2), and learning interest as the dependent variable (Y). The learning environment was measured through physical and social aspects based on Slameto [28] and Sardiman [29]. Self-regulated learning was measured based on the dimensions of metacognition, motivation, and behavior within Zimmerman's framework [20], [30], [31]. Meanwhile, learning interest was measured through the dimensions of enjoyment, attraction, attention, and learning involvement, referring to Adetia et al. [32]. These operational definitions ensured that each variable was measured systematically according to its theoretical construct.

The data collection instrument was a closed-ended questionnaire using a four-point Likert scale, ranging from strongly disagree to strongly agree. The instrument was developed based on the theoretical indicators of each variable, with each indicator elaborated into three statement items. Overall, the questionnaire consisted of 87 items, comprising 21 items for the learning environment, 42 items for self-regulated learning, and 24 items for learning interest. This item composition was designed to ensure adequate content coverage for each research construct. The distribution of variables, dimensions, indicators, and questionnaire items is presented in Table 1.

Table 1. Research Instrument

Variable	Dimension	Indicator	Items
Learning Environment	Physical	Comfortable and clean classroom	1-3
		Good lighting, ventilation, and room temperature	4-6
		Completeness of facilities and infrastructure	7-9
		Appropriateness of learning media	10-12
	Social	Positive lecturer-student interaction	13-15
		Positive student-student interaction	16-18
		Strong family support	19-21
Self-Regulated Learning	Metacognition	Rehearsal strategy	1-3
		Elaboration strategy	4-6
		Organization strategy	7-9

		Metacognitive self-regulation	10-12
		Self-encouragement	13-15
		Relevance enhancement	16-18
		Situational interest enhancement	19-21
	Motivation	Motivation based on self-comparison	22-24
		Extrinsic motivation	25-27
		Self-consequating	28-30
		Environmental structuring	31-33
		Effort regulation	34-36
	Behavior	Time and learning environment management	37-39
		Help seeking	40-42
	Enjoyment in learning	Feeling happy when starting learning activities	1-3
		Readiness to participate in learning	4-6
	Interest in learning	Interest in learning activities	7-9
Learning Interest		Enthusiastic attitude toward learning	10-12
	Attention in learning	High attention during learning	13-15
		Seriousness in learning	16-18
		Awareness of the importance of learning	19-21
	Engagement in learning	Active questioning and participation	22-24
Total Items			87

(Source: Researcher's processed data, 2026)

Before the main data collection, the instrument was piloted on 32 students from the 2022 and 2023 cohorts who had completed the Social Geography course. The validity test was conducted using Pearson Product-Moment correlation. Items were considered valid when the calculated r-value exceeded the r-table value at the 5% significance level. With 32 pilot respondents, the r-table value was 0.349 [26]. The results showed that all items met the validity criterion. A summary of the validity test results is presented in Table 2.

Table 2. Validity Test Result for Learning Environment, Self-Regulated Learning, and Learning Interest

Variable	Number of Items	r-table	r-count Range	Decision
Learning Environment	21	0.349	0.355–0.817	Valid
Self-Regulated Learning	42	0.349	0.373–0.937	Valid
Learning Interest	24	0.349	0.447–0.902	Valid

(Source: Researcher's processed data, 2026)

Reliability was examined using Cronbach's Alpha, with coefficients above 0.70 indicating acceptable internal consistency [33], [34]. The results showed that all variables exceeded this threshold. The learning environment obtained a coefficient of 0.921, self-regulated learning obtained 0.979, and learning interest obtained 0.967. These results indicate that the instrument had strong internal consistency and was reliable for measuring each construct. The reliability test results are presented in Table 3.

Table 3. Reliability Test Results

Variable	Cronbach's Alpha	Number of Items
Learning Environment (X_1)	.921	21
Self-Regulated Learning (X_2)	.979	42
Learning Interest (Y)	.967	24

(Source: Researcher's processed data, 2026)

The analysis of data proceeded in three stages, descriptive analysis, assumption testing, and hypothesis testing. Descriptive analysis summarized the data's general pattern using the mean, standard deviation, minimum, and maximum values. Assumption testing involved the Kolmogorov-Smirnov test for normality, Levene's test for homogeneity, and the Glejser test for heteroscedasticity, all applying a significance threshold of > 0.05, as well as a multicollinearity check requiring tolerance > 0.10 and VIF < 10. Hypothesis testing relied on multiple linear regression, with the t-test assessing partial effects, the F-test examining simultaneous effects, and R^2 indicating the independent variables' contribution to the dependent variable. All analyses were carried out using SPSS version 23.

3. Results

Descriptive analysis was conducted to describe the learning environment, self-regulated learning, and learning interest among 113 students in the Social Geography course. As shown in Table 4, the mean scores were 76.06 for the learning environment, 77.80 for self-regulated learning, and 78.15 for learning interest, with standard deviations of 8.79 (X_1), 8.65 (X_2), and 7.89 (Y), respectively. These results indicate that all variables were at a moderate level, with variations in student responses that justified further inferential analysis.

Table 4. Descriptive Statistics of the Research Variables

Variable	N	Minimum	Maximum	Mean	Median	Standard Deviation
X1	113	31.00	99.00	76.06	75.00	8.79
X2		39.00	98.00	77.80	77.00	8.65
Y		42.00	98.00	78.15	77.00	7.89

(Source: Researcher's processed data, 2026)

Before hypothesis testing, assumption tests were conducted. Table 5 shows that the data were normally distributed, homogeneous, free from multicollinearity, and showed no heteroscedasticity. The normality test produced a significance value of 0.200, while the homogeneity test produced 0.224. The tolerance values for both predictors were 0.498, with VIF values of 2.009. The Glejser test also showed significance values above 0.05, indicating that the regression model met the required assumptions.

Table 5. Summary of Assumption Test Results

Classical Assumption Test	Variable	Indicator	Value	Decision
Normality	-	Sig.	.200	Normally distributed
Homogeneity	Learning Interest (Y)	Sig.	.224	Homogeneous
Multicollinearity	Learning Environment (X_1)	*Tolerance* / VIF	0.498 / 2.009	No multicollinearity
	Self-Regulated Learning (X_2)	*Tolerance* / VIF	0.498 / 2.009	No multicollinearity
Heteroscedasticity	Learning Environment (X_1)	Sig.	.338	No heteroscedasticity
	Self-Regulated Learning (X_2)	Sig.	.055	No heteroscedasticity

(Source: Researcher's processed data, 2026)

Multiple linear regression was used to examine the partial effects of the learning environment and self-regulated learning on learning interest. As presented in Table 6, the regression equation was $Y = 13.252 + 0.262X_1 + 0.578X_2$. The learning environment had a positive and significant effect on learning interest ($t = 4.322$, $p = 0.000$), while self-regulated learning also had a positive and significant effect ($t = 9.371$, $p = 0.000$). The standardized beta coefficient of self-regulated learning ($\beta = 0.634$) was higher than that of the learning environment ($\beta = 0.292$), indicating that self-regulated learning was the stronger predictor.

Table 6. Results of Multiple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	13.252	3.616		3.665	.000
Learning Environment (X_1)	.262	.061	.292	4.322	.000
Self-Regulated Learning (X_2)	.578	.062	.634	9.371	.000

(Source: Researcher's processed data, 2026)

The simultaneous test showed that the learning environment and self-regulated learning jointly had a significant effect on learning interest. Table 7 presents an F-value of 164.614 with a significance value of 0.000, which is below the 0.05 threshold. This indicates that the regression model was statistically significant.

Table 7. Results of Simultaneous Analysis

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	5223.268	2	2611.634	164.614	.000
Residual	1745.174	110	15.865		
Total	6968.442	112			

(Source: Researcher's processed data, 2026)

The coefficient of determination showed an R Square value of 0.750 and an Adjusted R Square value of 0.745. This means that 75.0% of the variance in learning interest was explained by the learning environment and self-regulated learning, while the remaining 25.0% was explained by other factors outside the model.

Table 8. Coefficient of Determination (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.866[a]	.750	.745	3.98312

(Source: Researcher's processed data, 2026)

Overall, the results indicate that both the learning environment and self-regulated learning positively and significantly influenced students' learning interest, both partially and simultaneously. Self-regulated learning emerged as the dominant predictor, suggesting that students' internal capacity to regulate their learning played a more substantial role than environmental support in shaping learning interest. The model also demonstrated strong explanatory power, as both predictors explained 75.0% of the variance in students' learning interest. The regression model is visualized in Figure 1 to clarify the partial contribution of each predictor and the overall explanatory power of the model.

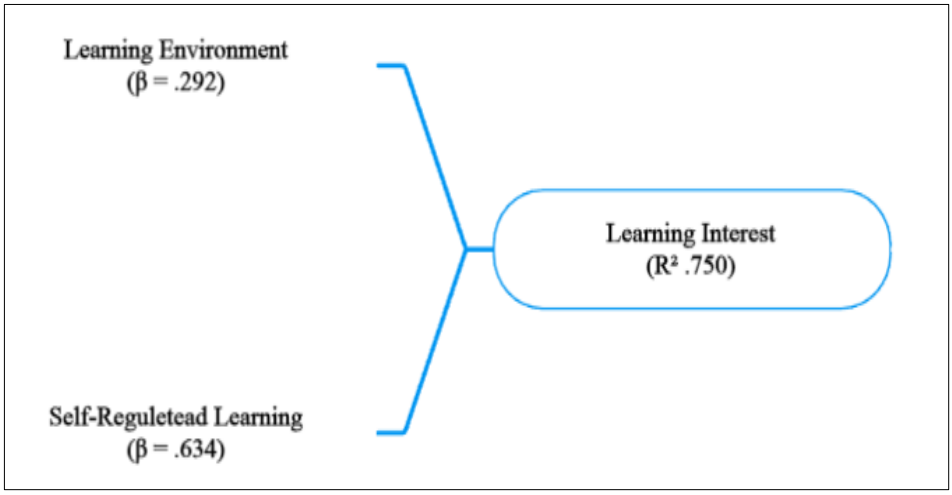

Figure 1. Conceptual Model of The Effects of The Learning Environment and Self-Regulated Learning on Learning Interest

4. Discussion

4.1 The Effect of Learning Environment on Learning Interest in the Social Geography Course

The findings of this study reveal that the learning environment has a positive and statistically significant effect on students' learning interest in the Social Geography course. This finding supports the first hypothesis and indicates that students who perceive their learning environment as more conducive tend to show stronger interest in participating in learning activities. The descriptive findings also show that both the learning environment and learning interest are at a moderate level, suggesting that further improvement is still needed to optimize students' learning interest in the Social Geography course.

The results imply that the learning environment functions not only as a physical space, but also as a broader contextual condition that shapes students' attention, comfort, and engagement. A supportive learning environment includes comfortable classrooms, adequate lighting and ventilation, sufficient learning facilities, relevant learning media, clear instructional organization, and positive academic interaction [35], [36]. These conditions can minimize distractions, strengthen concentration, and encourage active participation [37], [38]. This is particularly important in Social Geography learning, where students are required to interpret socio-spatial issues, connect concepts with real-world conditions, and contribute to classroom dialogue.

This finding can be explained through Hidi and Renninger's Four-Phase Model of Interest Development, which views interest as a psychological state that develops through meaningful learning experiences, stimulating contexts, social support, and repeated engagement [8], [38]. In this study, the learning environment provides situational support that can stimulate initial learning interest

and help maintain it during the learning process. This interpretation is consistent with Schweder and Raufelder [39], who found that changes in the learning environment and self-directed learning were associated with increased interest and self-efficacy. Similarly, Sudiksa et al. [40] reported that the campus environment influenced learning interest through physical and social dimensions, while Rotgans and Schmidt [36] emphasized the importance of teacher interaction in fostering situational interest.

Nevertheless, the effect of the learning environment may differ across research contexts. Amelia and Septika [41], reported that the campus environment did not significantly affect learning interest when examined independently, while Mutamam and Jihad [42], found that a conducive environment was not always the strongest predictor compared with internal factors. These differences suggest that the contribution of the learning environment may depend on contextual quality, operational indicators, student characteristics, and other mediating factors such as motivation and perceived academic support. In the present study, however, the significant effect indicates that the learning environment remains an important contextual factor in supporting students' learning interest in Social Geography.

4.2 The Effect of Self-Regulated Learning on Learning Interest in the Social Geography Course

The results of this study indicate that self-regulated learning has a positive and statistically significant effect on students' learning interest in the Social Geography course. This finding supports the second hypothesis and shows that students who are better able to regulate their learning processes tend to demonstrate stronger learning interest. The descriptive results also indicate that both self-regulated learning and learning interest are at a moderate level, suggesting that students' capacity to manage their own learning still needs to be strengthened to support more consistent academic engagement.

Self-regulated learning helps students maintain learning interest through goal setting, time management, attention regulation, progress monitoring, strategy adjustment, and self-evaluation [43], [44]. These abilities enable students to remain persistent and involved, particularly in courses that require concentration, interpretation, and active participation [30]. In the Social Geography course, students are expected not only to understand theoretical concepts, but also to apply them to empirical and socio-spatial phenomena [6]. Under such learning demands, students with stronger self-regulated learning are more likely to sustain interest because they can manage difficulties, control distractions, and maintain commitment to academic goals.

This finding is aligned with Hidi and Renninger's Four-Phase Model of Interest Development, which explains that interest may begin from situational triggers and develop into a more stable individual disposition through sustained engagement and self-regulatory processes [8], [38]. In this context, self-regulated learning functions as an internal mechanism that prevents students' engagement from declining during the learning process. This interpretation is supported by Wu et al. [45], who found that learning interest and persistence are reciprocally related, and that self-regulated learning strategies are important for maintaining engagement. Rahayu and Imami [44] also reported that self-regulated learning positively influenced students' learning interest, while Raković et al. [43] emphasized the role of evaluation and adaptation in sustaining deep engagement.

However, previous findings regarding the influence of self-regulated learning on learning interest are not entirely consistent. Mahda [46] and Ilma et al. [47] reported insignificant effects of self-regulated learning on learning interest in different contexts. These differences may be related to educational level, course characteristics, measurement indicators, and students' ability to apply regulation strategies effectively. In the present study, self-regulated learning emerged as the stronger predictor, indicating that students' internal capacity plays a dominant role in sustaining learning interest. This suggests that improving students' self-regulation is essential for helping them remain focused, persistent, and engaged throughout the learning process.

4.3 The Simultaneous Effect of the Learning Environment and Self-Regulated Learning on Learning Interest in the Social Geography Course

The results show that the learning environment and self-regulated learning simultaneously have a positive and significant effect on students' learning interest in the Social Geography course. This finding supports the third hypothesis and confirms that learning interest cannot be explained by a single factor alone. Instead, it develops through the interaction between external learning conditions and students' internal capacity to regulate learning [11], [12]. Although self-regulated

learning emerged as the stronger predictor, the learning environment remains an important contextual prerequisite because it provides support, structure, and learning conditions that reduce situational barriers.

These findings indicate that students' learning interest is shaped through the simultaneous operation of environmental and personal factors. The learning environment supports the emergence of interest through classroom structure, academic interaction, relevant learning resources, and social encouragement, while self-regulated learning helps students manage goals, strategies, attention, and persistence [8], [45], [39]. Stable learning interest is therefore more likely to develop when students learn in a supportive environment and possess adequate self-regulation skills [44], [48]. In other words, the learning environment can initiate and facilitate engagement, whereas self-regulated learning helps sustain and strengthen that engagement over time.

This interpretation is consistent with Hidi and Renninger's Four-Phase Model of Interest Development, which explains that interest develops from situational triggers into a more stable individual disposition through repeated engagement and supportive conditions [38]. It is also consistent with Kurt Lewin's Field Theory, which conceptualizes behavior as the result of interaction between the individual and the environment [24], [25]. In this study, learning interest can be understood as a learning behavior that becomes stronger when students experience supportive educational conditions and are simultaneously able to regulate their responses to those conditions. A supportive classroom without self-regulation may generate only temporary engagement, while strong self-regulation in a poor environment may not be sufficient to sustain interest optimally.

The explanatory power of the model strengthens this argument. The coefficient of determination shows that 75.0% of the variance in students' learning interest is explained by the learning environment and self-regulated learning. This indicates that both variables make a substantial contribution to understanding learning interest in the Social Geography course. The main contribution of this study lies in its integrated explanation of learning interest by combining environmental and personal determinants within a socio-spatial learning context. This integration extends previous studies that generally examined the learning environment and self-regulated learning separately.

In relation to SDG 4 on quality education, the findings suggest that quality higher education requires both institutional responsibility and students' individual learning capacity. A conducive learning environment reflects the responsibility of study programs and lecturers to provide supportive, inclusive, and meaningful learning conditions. Meanwhile, self-regulated learning strengthens students' lifelong learning capacity by enabling them to manage goals, monitor progress, and sustain engagement independently. Therefore, improving students' learning interest should not rely only on classroom facilities or teaching support, but also on learning activities that foster goal-setting, reflection, time management, feedback use, and independent learning.

5. Conclusion

This study concludes that the learning environment and self-regulated learning have positive and significant effects on students' learning interest in the Social Geography course, both partially and simultaneously. A conducive learning environment supports learning interest by providing physical comfort, academic interaction, relevant learning media, and supportive learning conditions. Meanwhile, self-regulated learning strengthens students' interest by enabling them to set goals, manage time, monitor progress, control distractions, and sustain engagement. Self-regulated learning emerged as the stronger predictor, indicating that students' internal capacity to regulate learning plays a more dominant role than environmental support. The model explained 75.0% of the variance in learning interest, confirming that students' interest develops through the integration of external learning conditions and internal learning regulation.

Theoretically, these findings strengthen self-regulated learning theory by demonstrating that the forethought, performance, and self-reflection cycles operate effectively within the context of Social Geography, even surpassing the role of the external environment. Furthermore, this study supports the Four-Phase Model of Interest Development by empirically mapping that the learning environment plays a role in triggering situational interest, while SRL serves as the key factor in the transition from maintained situational interest toward fully developed individual interest.

These findings are relevant to SDG 4 on quality education because they show that improving learning interest requires both institutional responsibility and students' lifelong learning capacity. Higher education institutions and lecturers need to provide supportive, inclusive, and meaningful learning environments while also fostering students' self-regulation through goal-setting, reflection,

time management, feedback use, and independent learning activities. However, this study was limited to one study program and one cohort, and the use of self-report questionnaires may reflect students' subjective perceptions. Future research should involve broader samples, different course contexts, and additional variables such as academic motivation, digital literacy, peer support, lecturer feedback, and prior achievement. Mixed-method or longitudinal designs are also recommended to examine how learning interest develops over time.

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