Excel International Journal of
Technology, Engineering & Management
Journal homepage: exceljournals.org.in
ISSN ONLINE: https://portal.issn.org/resource/ISSN/2349-8455
ISSN PRINT: https://portal.issn.org/resource/ISSN/2348-0378

FACTORS AFFECTING HIGH SCHOOL STUDENTS' LEARNING INTEREST IN USING CHATGPT

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DOI Link: https://doi.org/10.64971/j.cph.eijtem.v13.i3.11.2026

Abstract
The rapid development of Generative Artificial Intelligence (GenAI), particularly ChatGPT, is transforming teaching and learning practices. ChatGPT supports information retrieval, knowledge explanation, and personalized learning, thereby enhancing learning effectiveness. However, students' learning interest when using ChatGPT is influenced by multiple factors. This study investigates the factors affecting high school students' learning interest based on an integrated Technology Acceptance Model (TAM), incorporating the constructs of perceived usefulness, perceived ease of use, AI literacy, self-regulated learning, teacher support, and information quality. Data collected from 400 high school students in Hanoi were analyzed using PLS-SEM. The results indicate that perceived usefulness, information quality, and AI literacy are the strongest determinants of learning interest, providing empirical evidence to support the effective integration of ChatGPT into secondary education
Keywords: ChatGPT; Generative Artificial Intelligence (GenAI); Learning Interest; High School Students; Technology Acceptance Model (TAM); PLS-SEM.

1. Introduction

In recent years, the rapid advancement of Generative Artificial Intelligence (GenAI) has created significant opportunities for innovation in education. AI-powered tools such as ChatGPT, Gemini, and Microsoft Copilot not only facilitate information retrieval but also support knowledge explanation, content generation, problem-solving, and personalized learning experiences. Among these tools, ChatGPT has become one of the most widely adopted due to its natural language interaction capabilities, enabling learners to access knowledge more efficiently and conveniently.

In secondary education, ChatGPT is increasingly being used by high school students as a learning support tool. Rather than relying solely on conventional Internet searches, students can ask questions, request explanations of concepts, summarize learning materials, and practice various academic skills through interactions with ChatGPT. These capabilities make the learning process more flexible, autonomous, and engaging. However, the effectiveness of ChatGPT in education depends not only on the technology itself but also on learners' perceptions, AI-related competencies, and the guidance provided by teachers.

Learning interest is widely recognized as a key determinant of students' learning motivation, engagement, and academic achievement. From the perspective of educational psychology, students with higher levels of learning interest tend to demonstrate greater initiative, active knowledge seeking, and persistence throughout the learning process. As ChatGPT becomes increasingly integrated into educational activities, investigating the factors that influence students' learning interest is essential for maximizing the educational benefits of AI technologies.

Although numerous studies have examined the acceptance and adoption of ChatGPT in higher education, research focusing on high school students remains relatively limited. Previous studies have primarily investigated behavioral intention, technology acceptance, or learning performance, while insufficient attention has been paid to the roles of perceived usefulness, perceived ease of use, AI literacy, self-

regulated learning, teacher support, and information quality in shaping students' learning interest. Moreover, empirical evidence from developing countries such as Vietnam remains scarce.

To address these research gaps, this study aims to identify the factors influencing high school students' learning interest when using ChatGPT. Specifically, the study integrates the Technology Acceptance Model (TAM) with educational constructs to develop a theoretical framework, which is empirically tested using Partial Least Squares Structural Equation Modeling (PLS-SEM) based on survey data collected from high school students in Hanoi, Vietnam.

This study makes three major contributions. First, it extends the Technology Acceptance Model by incorporating educational factors that are particularly relevant to the context of generative AI adoption. Second, it provides empirical evidence regarding the determinants of high school students' learning interest in using ChatGPT in Vietnam. Third, the findings offer practical implications for educational policymakers and teachers in designing AI-integrated instructional strategies to enhance students' learning interest and promote digital transformation in secondary education.

2. Literature Review

2.1. Learning Interest

Learning interest is a positive psychological state characterized by learners' curiosity, enjoyment, and willingness to engage in learning activities. It is widely recognized as one of the most important factors that enhance learning motivation, increase student engagement, and improve academic performance (Hidi & Renninger, 2006; Schiefele, 2009). According to motivation theory, learning interest enables learners to sustain attention, overcome learning difficulties, and actively explore new knowledge (Deci & Ryan, 2000). In digital learning environments, learning interest is influenced not only by instructional content but also by the technologies that support learning (Keller, 2010). Technologies that provide high interactivity, immediate feedback, and personalized learning experiences are more likely to enhance learners' motivation and maintain their interest (UNESCO, 2023). Owing to its natural conversational capability and real-time learning support, ChatGPT is expected to contribute significantly to enhancing students' learning interest (Kasneci et al., 2023).

2.2. Perceived Usefulness of ChatGPT

Perceived usefulness (PU) is one of the two fundamental constructs of the Technology Acceptance Model (TAM) proposed by Davis (1989). It refers to the extent to which an individual believes that using a particular technology will improve learning or job performance. Within educational settings, ChatGPT functions as an intelligent learning assistant capable of explaining concepts, answering questions, generating examples, summarizing learning materials, and providing near real-time feedback (Kasneci et al., 2023). When students perceive that ChatGPT helps them understand lessons more efficiently, complete assignments more effectively, and save study time, their learning interest is likely to increase (Dwivedi et al., 2023). Conversely, if ChatGPT fails to provide practical value or frequently generates inaccurate information, students may become less motivated to use the technology (Tlili et al., 2023). Recent studies consistently identify perceived usefulness as one of the strongest predictors of ChatGPT acceptance and adoption in education (Sallam, 2023). Furthermore, systematic reviews based on TAM confirm that perceived usefulness positively influences both technology acceptance and learning experiences (Marangunić & Granić, 2015). Accordingly, the following hypothesis is proposed: **H1:** Perceived usefulness of ChatGPT positively influences high school students' learning interest.

2.3. Perceived Ease of Use

Perceived ease of use (PEOU) refers to the extent to which an individual believes that using a technology requires minimal effort (Davis, 1989). In the context of ChatGPT, this construct reflects the system's user-friendly interface, natural language interaction, rapid response, and accessibility across multiple devices. According to TAM, technologies that are easier to use are more likely to be adopted and generate positive user attitudes (Venkatesh & Davis, 2000). For high school students, ChatGPT's intuitive interface eliminates the need for programming knowledge or advanced technical skills, thereby facilitating autonomous learning and enhancing learning interest (Kasneci et al., 2023). Previous empirical studies have consistently demonstrated that perceived ease of use positively affects ChatGPT acceptance and indirectly improves learners' educational experiences (Dwivedi et al., 2023; Tlili et al., 2023). Therefore, the following hypothesis is proposed: **H2:** Perceived ease of use of ChatGPT positively influences students' learning interest.

2.4. AI Literacy

AI literacy refers to the knowledge and competencies required to understand, evaluate, and use artificial intelligence effectively, responsibly, and appropriately in educational contexts (Long & Magerko, 2020). It encompasses not only operational skills but also the ability to evaluate information accuracy, recognize AI limitations, understand ethical and privacy issues, and make informed decisions when using AI technologies for learning (Ng et al., 2021). As ChatGPT becomes increasingly integrated into education, AI literacy enables students to maximize the benefits of AI while avoiding excessive dependence on AI-generated outputs (UNESCO, 2024). Students with higher AI literacy are generally more capable of constructing effective prompts, verifying information from multiple sources, and critically evaluating AI-generated responses. Recent studies emphasize AI literacy as a fundamental competency for the responsible use of AI and the development of digital learning capabilities (Long & Magerko, 2020; Ng et al., 2021). Accordingly, the following hypothesis is proposed: **H3:** AI literacy positively influences students' learning interest when using ChatGPT.

2.5. Self-Regulated Learning

Self-regulated learning (SRL) refers to the process through which learners actively establish learning goals, develop study plans, monitor their progress, and regulate learning strategies to achieve desired outcomes (Zimmerman, 2000). SRL is widely regarded as a core competency in contemporary education, particularly within digital learning environments (Pintrich, 2004). ChatGPT can support learners by assisting with study planning, concept explanation, practice activities, and self-assessment (Kasneci et al., 2023). However, the effectiveness of ChatGPT largely depends on learners' ability to regulate their own learning processes. Students with stronger self-regulation are more likely to use ChatGPT as a cognitive support tool rather than relying entirely on AI-generated answers (Aleven et al., 2016). Previous studies extending TAM in educational contexts have demonstrated that SRL enhances the effective use of ChatGPT and promotes active learning (Tlili et al., 2023). Therefore, the following hypothesis is proposed: **H4:** Self-regulated learning positively influences students' learning interest when using ChatGPT.

2.6. Teacher Support

Teacher support refers to the extent to which teachers guide, encourage, and facilitate students' effective use of ChatGPT for learning purposes. In secondary education, teachers are expected not only to deliver knowledge but also to guide students in using AI responsibly, avoiding plagiarism, and developing critical thinking skills (UNESCO, 2023). Educational research consistently demonstrates that teacher support positively influences students' motivation, engagement, and academic achievement (Wentzel, 2010). Recent reports further indicate that AI technologies achieve their greatest educational value when implemented under appropriate teacher guidance rather than through completely independent student use (Holmes et al., 2022; UNESCO, 2024). Consequently, the following hypothesis is proposed: **H5:** Teacher support positively influences students' learning interest when using ChatGPT.

2.7. Information Quality

Information quality refers to the accuracy, completeness, clarity, timeliness, and relevance of the information provided by ChatGPT. According to the Information Systems Success Model, information quality is one of the primary determinants of user satisfaction and system effectiveness (DeLone & McLean, 2003). For high school students, when ChatGPT provides accurate, understandable, and curriculum-relevant information, they are more likely to trust and continue using the technology (Kasneci et al., 2023). However, ChatGPT may occasionally generate inaccurate or hallucinated responses; therefore, the quality of AI-generated information should be critically evaluated (OpenAI, 2023; Ji et al., 2023). Recent studies also recommend combining AI-generated content with information verification and teacher guidance to maximize learning effectiveness (Dwivedi et al., 2023; UNESCO, 2024). Accordingly, the following hypothesis is proposed: **H6:** Information quality provided by ChatGPT positively influences students' learning interest.

2.8. Proposed Research Model

Drawing upon the Technology Acceptance Model (TAM), self-regulated learning theory, and recent studies on AI applications in education, this study proposes a conceptual framework in which six independent variables-Perceived Usefulness (PU), Perceived Ease of Use (PEOU), AI Literacy (AIL), Self-Regulated Learning (SRL), Teacher Support (TS), and Information Quality (IQ) - are hypothesized to influence Learning Interest (LI) among high school students using ChatGPT.

The proposed framework retains the theoretical foundation of TAM while extending it through the incorporation of educational constructs that are particularly relevant to the context of generative AI. This integrated model provides a theoretical basis for empirical validation using Partial Least Squares Structural Equation Modeling (PLS-SEM) in the subsequent sections of this study.

3. Research Methodology

3.1. Research Design

This study employed a quantitative research approach to identify the factors influencing high school students' learning interest when using ChatGPT. A cross-sectional survey design was adopted because it enables data collection from a large number of participants at a single point in time while being appropriate for testing the proposed theoretical model using Partial Least Squares Structural Equation Modeling (PLS-SEM).

The research procedure consisted of five stages. First, an extensive literature review was conducted to develop the conceptual framework based on the Technology Acceptance Model (TAM), learning motivation theory, and self-regulated learning theory. Second, the questionnaire was developed by adapting validated measurement scales from previous studies to suit the context of ChatGPT use among Vietnamese high school students. Third, a pilot survey involving 30 students was conducted to assess the clarity and comprehensibility of the questionnaire. Fourth, the main survey was administered, and the collected data were screened and cleaned. Finally, the measurement and structural models were evaluated using SmartPLS 4.

3.2. Research Participants and Sample

The target population consisted of students enrolled at Van Xuan High School in Hanoi who had used ChatGPT for learning purposes at least once during the previous three months.

Convenience sampling combined with purposive sampling was employed to ensure that all participants had practical experience using ChatGPT. A total of 430 questionnaires were distributed between March and May 2026. After excluding incomplete and invalid responses, 400 valid questionnaires remained for analysis, yielding a valid response rate of 93.0%.

According to Hair et al. (2022), a sample size ranging from 300 to 500 observations is appropriate for PLS-SEM studies involving five to seven latent constructs. Therefore, the final sample of 400 respondents was considered sufficient to ensure the reliability and generalizability of the research findings.

3.3. Measurement Scales

All constructs were measured using a five-point Likert scale ranging from 1 (“Strongly Disagree”) to 5 (“Strongly Agree”). The measurement items were adapted from internationally validated scales and modified to fit the educational context of Vietnamese high school students.

Table 1. Research Constructs and Their Sources

Construct	Code	Number of Items	Source
Perceived Usefulness	PU	4	Davis (1989); Sallam (2023)
Perceived Ease of Use	PEOU	4	Davis (1989)
AI Literacy	AIL	4	Ng et al. (2021)
Self-Regulated Learning	SRL	4	Zimmerman (2002)
Teacher Support	TS	4	Tondeur et al. (2017)
Information Quality	IQ	4	DeLone & McLean (2003)
Learning Interest	LI	5	Hidi & Renninger (2006)

Source: Calculated by author

3.4. Questionnaire Design

The questionnaire consisted of two sections. The first section collected respondents' demographic information, including gender, grade level, duration of ChatGPT use, frequency of use, and primary purposes for using ChatGPT. The second section measured the research constructs using five-point Likert-scale statements.

3.5. Data Collection

Data were collected through both face-to-face surveys conducted at Van Xuan High School and an online questionnaire administered via Google Forms. Before participating, students were informed about the objectives of the study, assured that all responses would remain confidential, and notified that the collected data would be used solely for academic research purposes.

Participation was entirely voluntary, and respondents had the right to decline answering any question. All questionnaires were anonymized to ensure participants' privacy.

3.6. Data Analysis

The collected data were analyzed using SPSS 26 and SmartPLS 4 following a seven-step procedure.

First, the dataset was cleaned and descriptive statistical analyses were performed. Second, internal consistency reliability was assessed using Cronbach's Alpha and Composite Reliability (CR), with values above 0.70 considered acceptable. Third, convergent validity was evaluated based on outer loadings (greater than 0.70) and Average Variance Extracted (AVE), with AVE values exceeding 0.50 indicating satisfactory convergent validity. Fourth, discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT), with values below 0.85 regarded as acceptable. Fifth, multicollinearity was examined using the Variance Inflation Factor (VIF), and values below 3.0 indicated no multicollinearity concerns. Sixth, the structural model was evaluated through the coefficient of determination (R^2), predictive relevance (Q^2), effect size (f^2), and overall model fit using the Standardized Root Mean Square Residual (SRMR). Finally, the proposed hypotheses were tested using the bootstrapping procedure with 5.000 resamples. A hypothesis was considered statistically supported when the p-value was less than 0.05.

3.7. Proposed Research Model

Based on the theoretical framework, six research hypotheses were proposed:

H1: Perceived usefulness positively influences learning interest.
H2: Perceived ease of use positively influences learning interest.
H3: AI literacy positively influences learning interest.
H4: Self-regulated learning positively influences learning interest.
H5: Teacher support positively influences learning interest.
H6: Information quality positively influences learning interest.

The proposed research model assumes that the six independent constructs-Perceived Usefulness (PU), Perceived Ease of Use (PEOU), AI Literacy (AIL), Self-Regulated Learning (SRL), Teacher Support (TS), and Information Quality (IQ) -have direct positive effects on students' Learning Interest (LI) when using ChatGPT for educational purposes. These hypothesized relationships were subsequently examined using Partial Least Squares Structural Equation Modeling (PLS-SEM).

4. Results

4.1. Sample Characteristics

After data screening and cleaning, 400 valid questionnaires collected from students at Van Xuan High School, Hanoi, were retained for analysis. This sample size satisfies the recommended minimum requirement for PLS-SEM and ensures the reliability of the statistical analyses.

Table 2. Characteristics of the survey sample (N = 400)

Characteristic	Frequency	Percentage (%)
Gender		
Male	184	46.0
Female	216	54.0
Grade level		
Grade 10	132	33.0
Grade 11	138	34.5
Grade 12	130	32.5
ChatGPT usage frequency		
Less than once/week	58	14.5
1–3 times/week	138	34.5
4–6 times/week	124	31.0
Daily	80	20.0

Characteristic	Frequency	Percentage (%)
Purpose of using ChatGPT		
Seeking information/knowledge	302	75.5
Doing homework/assignments	248	62.0
Learning foreign languages	182	45.5
Writing	154	38.5
Reviewing/Studying	267	66.8

Source: Calculated by author

The results indicate that the majority of students have used ChatGPT for their studies, with 85.5% using it at least once a week. This reflects the fact that ChatGPT is increasingly becoming a popular study tool among high school students. The two most common purposes for its use are looking up information (75.5%) and reviewing lessons (66.8%), followed by assistance with solving exercises (62.0%). These findings suggest that students primarily use ChatGPT as a study aid rather than as a complete replacement for the traditional learning process.

4.2. Descriptive Statistics

Table 3. Descriptive statistics

Biến	Mean	SD
PU	4.12	0.62
PEOU	4.08	0.65
AIL	3.86	0.71
SRL	3.74	0.69
TS	3.68	0.73
IQ	4.01	0.66
LI	3.95	0.67

Source: Calculated by author

The mean values of the variables ranged from 3.68 to 4.12, indicating that students tended to agree with the statements in the questionnaire. Notably, Perceived Usefulness of ChatGPT (PU) recorded the highest mean score (Mean = 4.12), reflecting that the majority of students considered ChatGPT a useful tool for their studies. Conversely, Teacher Support (TS) had the lowest mean score (Mean = 3.68), suggesting that guidance for students on utilizing ChatGPT in the learning process remains limited.

4.3. Evaluation of the measurement model

Reliability of the scale

Table 4. Cronbach's Alpha, CR, and AVE results.

Biến	Cronbach Alpha	CR	AVE
PU	0.904	0.931	0.771
PEOU	0.893	0.925	0.755
AIL	0.912	0.938	0.791
SRL	0.901	0.930	0.769
TS	0.887	0.922	0.748
IQ	0.918	0.942	0.803
LI	0.925	0.944	0.772

Source: Calculated by author

The scales demonstrated excellent reliability, with Cronbach's Alpha coefficients ranging from 0.887 to 0.925-exceeding the 0.70 threshold. Composite Reliability values exceeded 0.90 and AVE values surpassed 0.50, confirming that the scales achieved convergent validity in accordance with the recommendations of Hair et al. (2022).

Outer Loading

Table 5. Outer Loading

Biến	Khoảng giá trị
PU	0.842 – 0.901
PEOU	0.823 – 0.895
AIL	0.847 – 0.916
SRL	0.825 – 0.902
TS	0.812 – 0.887
IQ	0.861 – 0.918
LI	0.826 – 0.904

Source: Calculated by author

All factor loadings exceed 0.80, demonstrating that the observed variables effectively reflect the research concept.

Differentiating value

Table 6. HTMT (Heterotrait-Monotrait Ratio)

	PU	PEOU	AIL	SRL	TS	IQ	LI
PU	-						
PEOU	0.54	-					
AIL	0.58	0.47	-				
SRL	0.49	0.43	0.52	-			
TS	0.36	0.31	0.41	0.45	-		
IQ	0.61	0.52	0.56	0.49	0.38	-	
LI	0.68	0.59	0.63	0.60	0.47	0.72	-

Source: Calculated by author

All HTMT values are below 0.85, demonstrating that the research variables achieve discriminant validity and that there is no overlap between the constructs.

4.4. Evaluation of the structural model

Table 7. Model evaluation metrics

Chỉ tiêu	Giá trị
R^2	0.703
Adjusted R^2	0.698
Q^2	0.522
SRMR	0.046
NFI	0.928

Source: Calculated by author

The research model yielded an R^2 of 0.703, indicating that the six independent variables explain 70.3% of the variance in learning interest when using ChatGPT. A Q^2 value of 0.522 demonstrates good predictive capability, while an SRMR of 0.046 (<0.08) and an NFI of 0.928 confirm the model's fit with the survey data.

4.5. Testing research hypotheses

After the measurement model was confirmed to possess reliability and validity, the study proceeded to evaluate the structural model using the bootstrapping method with 5.000 resamples in SmartPLS 4. The results are presented in Table 8.

Table 8. Results of hypothesis testing

Hypothesis	Relationship	β	t-value	p-value	f^2	Conclude
H1	PU → LI	0.286	6.984	<0.001	0.124	Accept
H2	PEOU → LI	0.142	3.218	0.001	0.046	Accept
H3	AIL → LI	0.231	5.477	<0.001	0.091	Accept
H4	SRL → LI	0.167	3.964	<0.001	0.057	Accept
H5	TS → LI	0.118	2.746	0.006	0.034	Accept
H6	IQ → LI	0.324	7.538	<0.001	0.153	Accept

Source: Calculated by author

The analysis results indicate that all six hypotheses were accepted at a statistical significance level of $p < 0.01$. This demonstrates that perceived usefulness, perceived ease of use, AI literacy, self-regulated learning, teacher support, and information quality all positively influence students' learning interest when using ChatGPT.

Among the factors studied, information quality (IQ) exerted the strongest influence on learning interest (β = 0.324), followed by perceived usefulness (PU) (β = 0.286) and AI literacy (AIL) (β = 0.231). Meanwhile, teacher support (TS) had the weakest influence (β = 0.118), though it remained statistically significant. This suggests that while teachers play a crucial role in guiding the use of ChatGPT, students' current learning experiences are still more heavily influenced by the quality of the AI tool and the learners' own AI proficiency.

Table 9. Ranking of impact levels

Thứ hạng	Yếu tố	β
1	Information quality (IQ)	0.324
2	Perceived usefulness (PU)	0.286
3	Understanding AI (AIL)	0.231
4	Self-regulated learning (SRL)	0.167
5	Perceived ease of use (PEOU)	0.142
6	Teacher support (TS)	0.118

Source: Calculated by author

The results indicate that the three factors with the greatest influence on learning interest are information quality, perceived usefulness, and AI knowledge. This reflects that students place greater importance on the academic value ChatGPT offers rather than merely focusing on the technology's ease of use.

4.6. Discussion of research results

Research findings confirm that the quality of information provided by ChatGPT is the strongest factor influencing the learning interest of high school students. When ChatGPT delivers accurate, clear, and easy-to-understand answers that align with the curriculum, students tend to use the tool more frequently and feel more engaged in the learning process. Conversely, if the information is inaccurate or inconsistent, levels of trust and learning interest decline. These findings indicate that the core value of ChatGPT in education lies not in the technology itself, but in the quality of the content the tool generates.

This result aligns with the Information Systems Success Model, in which information quality is a key determinant of user satisfaction and usage effectiveness. It also resonates with recent studies on ChatGPT in education, confirming that the quality of AI-generated responses is a prerequisite for sustaining learner motivation and engagement.

Perceived usefulness exerts the second-strongest influence on learning interest. When students perceive that ChatGPT helps them grasp lessons more quickly, effectively assists with assignments, and saves time, they tend to develop a positive attitude and increase their engagement in learning activities. This finding is consistent with the Technology Acceptance Model (TAM), wherein perceived usefulness is regarded as the most critical factor determining the adoption of new technology.

AI literacy also has a significant impact on learning engagement. Students with a solid understanding of AI generally know how to craft prompts, evaluate the accuracy of responses, and utilize ChatGPT as a

learning aid rather than relying on it entirely. This demonstrates that AI literacy not only enhances the effectiveness of using ChatGPT but also fosters a positive attitude toward learning.

Self-regulated learning exerts a positive, albeit moderate, influence. This indicates that students capable of planning their studies, monitoring their progress, and self-evaluating their outcomes tend to leverage ChatGPT more effectively, thereby sustaining their learning engagement over the long term. These findings align with research on self-regulated learning in digital environments, which suggests that AI is truly effective only when learners maintain an active role.

Regarding perceived ease of use, the results indicate a positive influence, though one not as strong as that of perceived usefulness. This can be attributed to the fact that ChatGPT's interface is already relatively intuitive and user-friendly for today's students. As the technology becomes familiar, learners tend to prioritize the educational value the tool offers over its ease of use.

Finally, teacher support had the least impact, though it remained statistically significant. This result reflects the reality that the integration of ChatGPT into high school education in Vietnam is still in its early stages. Many teachers have not yet received adequate training in generative AI or remain cautious about guiding students in its use. Consequently, the teacher's role in fostering learning engagement through AI has not yet been fully realized. However, if teachers guide students to use ChatGPT for appropriate purposes, encourage information verification, and combine AI with active learning methods, the tool's effectiveness could be significantly enhanced.

5. Conclusions and managerial implications

5.1. Conclusions

This study aims to identify the factors influencing the learning interest of high school students when using ChatGPT in the context of digital transformation in education. By integrating the Technology Acceptance Model (TAM) with theories of self-regulated learning and information system quality, the study proposes a model comprising six independent factors: perceived usefulness, perceived ease of use, AI literacy, self-regulated learning, teacher support, and information quality.

Data analysis from 400 high school students indicates that all research hypotheses were supported. Information quality emerged as the strongest influence on learning interest, followed by perceived usefulness and AI knowledge. This demonstrates that students are not only interested in ChatGPT's interactive capabilities but also place particular importance on the accuracy, completeness, and relevance of the information provided by the tool. When ChatGPT generates high-quality responses, students tend to use the tool more frequently, engage actively in learning activities, and sustain their interest in learning over the long term.

The study also indicates that perceived ease of use, self-regulated learning, and teacher support all positively influence learning interest, albeit to a lesser extent. This suggests that fostering learning interest in an AI environment depends not only on technology but is also shaped by learner capabilities and the educational environment.

5.2. Contributions of the study

Theoretical contribution: This study extends the Technology Acceptance Model by integrating educational factors-such as AI literacy, self-regulated learning, teacher support, and information quality-into a model explaining students' learning interest when using ChatGPT. The findings provide empirical evidence regarding the application of generative AI in secondary education, a field that remains under-researched, particularly in developing countries. Furthermore, the study confirms that learning interest is simultaneously influenced by both technological and pedagogical factors. This suggests that future research on AI in education should adopt an interdisciplinary approach, combining educational science, technology management, and data science.

Practical contribution: The study's findings provide a scientific basis for high schools to develop strategies for integrating ChatGPT into teaching and learning activities. Rather than banning or restricting AI usage, schools should guide students to utilize ChatGPT responsibly while fostering skills in information evaluation, critical thinking, and self-directed learning.

5.3. Managerial implications

The Ministry of Education and Training needs to develop official guidelines regarding the use of generative AI in teaching and assessment. At the same time, it must issue principles concerning AI ethics, personal data protection, and the assurance of academic integrity. Furthermore, integrating AI literacy into the general education curriculum will help students understand the operating principles, benefits, and limitations of AI tools, thereby enabling them to use the technology effectively and responsibly.

For schools: High schools need to create AI-friendly digital learning environments and invest in technological infrastructure while encouraging teachers to integrate ChatGPT into instructional activities—such as lesson planning, question design, and guiding students in information search and analysis. Schools should also organize AI-focused training sessions, workshops, or clubs to enhance the digital literacy of both teachers and students.

For teachers: Teachers need to shift from the role of knowledge transmitters to that of guides, mentors, and facilitators who support students in using AI. Instead of simply providing answers, teachers should instruct students on how to craft prompts, verify information from multiple sources, and use ChatGPT as a tool to support critical thinking. Furthermore, teachers should design learning activities that encourage analysis, critical thinking, and creativity, rather than the mere copying of AI-generated content.

For students: Students should view ChatGPT as a supportive tool rather than a substitute for the learning process. They need to develop self-study skills, information evaluation abilities, and critical thinking to select, verify, and apply information provided by AI. Responsible use of ChatGPT will help enhance learning efficiency while fostering the digital competencies essential in the era of digital transformation.

5.4. Limitations of the study

Despite achieving its stated objectives, the study has certain limitations that warrant consideration. First, as the research was conducted at a single high school in Hanoi, the generalizability of the findings to the entire high school student population in Vietnam is limited; regional disparities in economic conditions, technological infrastructure, and teaching methods could influence the results. Second, the study relied on cross-sectional data collected at a single point in time, failing to capture changes in learning interest resulting from long-term ChatGPT usage; longitudinal studies would provide a clearer assessment of how learning interest evolves over time. Third, the research model focused on six key factors, whereas, in reality, learning interest may be influenced by various other variables-such as learning motivation, creativity, digital skills, self-directed learning capabilities, attitudes toward AI, and the influence of family and peers.

5.5. Directions for future research

Future studies could expand the scope of the survey to include a wider range of provinces, cities, and school types, thereby enhancing the generalizability of the findings. Comparisons between public and private schools, or between urban and rural areas, would also provide further evidence regarding differences in ChatGPT usage. Additionally, future research could extend the model by incorporating variables such as trust in AI, critical thinking, learning motivation, digital competence, or responsible AI use. Examining the mediating role of attitudes toward ChatGPT, or the moderating roles of gender, grade level, and AI usage experience, would also help clarify the mechanisms through which these factors influence learning engagement. Furthermore, combining quantitative methods with in-depth interviews or case studies would allow for a deeper exploration of the actual experiences of students and teachers when using ChatGPT in teaching and learning activities.

Conflict of Interest Statement

The authors declare that there are no potential conflicts of interest related to the research process, authorship, or publication of this article.

Funding Statement

The authors received no financial support for the research, authorship, or publication of this article.

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How do I cite this article?

Phi Cong Manh, Factors affecting high school students' learning interest in using chatgpt, Excel International Journal of Technology, Engineering and Management, 2026; Volume -13, Issue-3_Page_119-129. https://doi.org/10.64971/j.cph.eijtem.v13.i3.11.2026

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