Education

The erosion of learner autonomy: modeling the mediating role of AI reliance under academic and economic pressure among Vietnamese EFL students

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Abstract

The rapid growth of artificial intelligence (AI) writing tools has transformed how English as a Foreign Language (EFL) students complete academic writing tasks. While these tools provide linguistic support, concerns have emerged regarding their potential impact on learner autonomy. This study examines how academic and economic pressures influence Vietnamese EFL students' reliance on AI writing tools and how this reliance affects learner autonomy. Survey data were collected from 235 students across three universities in Hanoi and analyzed using regression and mediation analysis. The results show that academic pressure significantly increases students' reliance on AI tools, whereas economic pressure does not. Furthermore, AI reliance is negatively associated with learner autonomy and partially mediates the relationship between academic pressure and autonomy. The findings highlight the need for balanced pedagogical strategies that promote responsible AI use while supporting autonomous learning.

Keywords: AI writing tools, Learner autonomy, Academic pressure, Self-regulated learning, Vietnamese EFL students

1. Introduction

1.1. Background

In today's digitally mediated academic landscape, university students across disciplines face a growing array of pressures that reshape how they approach their studies. Increasing academic workloads, social demands, and financial responsibilities particularly the need to take on part-time employment have intensified the struggle to balance time, energy, and cognitive resources. As these pressures mount, many students are turning to digital tools such as artificial intelligence (AI)-powered writing assistants to cope with academic demands. While these tools offer rapid support for writing and revision, their growing integration into students' writing routines raises concerns regarding potential erosion of self-regulated learning practices and long-term academic independence.

This study focuses specifically on English as a Foreign Language (EFL) learners, a population for whom academic literacy development is especially complex. In Vietnam, and especially in Hanoi's state and private universities, EFL students are not only managing general academic and economic pressures but also navigating the demands of learning to read and write in a second language. For these learners, AI writing tools such as ChatGPT, Grammarly, and Google Translate often function as convenient solutions to time scarcity and linguistic difficulty. However, this convenience may come at a cost: the overreliance on AI-generated feedback may gradually undermine the development of learner autonomy defined here as the ability to self-direct, monitor, and take responsibility for one's academic literacy practices in English.

Although the pedagogical benefits and ethical concerns surrounding AI tools have attracted global attention, little empirical research has addressed how students' contextual pressures lead to increased AI reliance, and how this reliance in turn affects their academic behavior. Most existing studies treat AI as an instructional tool, ignoring the broader socio-academic environment in which students choose (or feel compelled) to use it. In Vietnam, where autonomy is increasingly emphasized in English language education policy, understanding this behavioral shift is both timely and necessary.

To address this gap, the present study models the indirect relationship between academic and economic pressure and learner autonomy, with AI reliance as a mediating variable. By focusing on Vietnamese EFL learners in both state and private universities in Hanoi, the study offers a focused case through which broader concerns about digital dependence and academic self-regulation can be explored. Using Structural Equation Modeling (SEM), the research provides an evidence-based analysis of how contextual pressures and technological coping strategies interact to influence students' autonomy in academic English. The findings aim to inform learner-centered pedagogy, responsible AI integration, and sustainable academic practices in Vietnamese higher education.

1.2. Research objectives

This study aims to investigate the relationship between contextual pressures, students' reliance on artificial intelligence (AI) writing tools, and learner autonomy among Vietnamese EFL university students. Specifically, the research seeks to examine how academic and economic pressures

influence students' tendency to use AI-based writing tools in their academic work.

In addition, the study aims to explore the relationship between AI reliance and learner autonomy in academic English literacy, particularly in terms of students' ability to independently plan, monitor, and evaluate their reading and writing activities. By examining this relationship, the study attempts to determine whether frequent reliance on AI tools is associated with changes in students' self-regulated learning behaviors.

Finally, the research seeks to model the mediating role of AI reliance in the relationship between external pressures and learner autonomy. By analyzing these relationships, the study aims to provide empirical insights into how contextual stressors and technology-mediated learning strategies interact to shape students' autonomous learning practices in English language education.

1.3. Research questions

To address these objectives, the study is guided by the following research questions:

- How do academic and economic pressures influence Vietnamese EFL students' use of AI-based writing tools?
- What effect does AI reliance have on learner autonomy in academic English reading and writing?
- Does AI reliance mediate the relationship between academic and economic pressures and learner autonomy?

1.4. Research hypotheses

To further clarify the predictive relationships among the study variables, the following hypotheses are proposed based on the theoretical and empirical literature on learner autonomy, digital tool use, and socioeconomic influences in language education:

- **H1:** Academic and economic pressures are associated with an increased use of AI-based writing tools among Vietnamese EFL students.
- **H2:** AI reliance has a significant negative effect on learner autonomy in academic English literacy (reading and writing).
- **H3:** AI reliance mediates the relationship between academic and economic pressures and learner autonomy among Vietnamese EFL students.

2. Literature review

2.1 Learner autonomy in language education

Learner autonomy refers to the capacity of learners to take control of their own learning processes. Little (1991) [9] defines it as the ability for "detachment, critical reflection, decision-making, and independent action." Benson (2011) expands this by emphasizing learners' willingness and capacity to take charge of their learning decisions. Autonomy is also closely linked to metacognition and motivation (Ushioda, 2011) [24], as it empowers learners to manage their own progress and adapt strategies to meet evolving linguistic goals. In the context of English as a Foreign Language (EFL) education, fostering learner autonomy is crucial because it not only encourages students to engage actively with the language beyond the classroom, but also enhances their capacity for lifelong learning and resilience in globalized academic and professional environments (Smith, 2008) [18].

In Vietnam, the development of learner autonomy has been increasingly prioritized in higher education reforms as part of the national strategy for improving graduate employability and responsiveness to labor market demands (Hoang, 2017) [7]. However, deeply embedded cultural and institutional practices—such as teacher-centered instruction, exam-oriented assessment, and limited student agency continue to hinder this transformation (Nguyen & Habok, 2021) [12]. Vietnamese EFL students often demonstrate a strong dependence on teacher guidance and textbook-driven content, which can inhibit the growth of independent learning behaviors unless adequately supported by pedagogical innovation and institutional change.

2.2 Academic and economic pressures in university contexts

University students worldwide often juggle academic responsibilities alongside economic demands, such as part-time employment. In Vietnam, this trend is especially pronounced, with a significant proportion of undergraduates engaging in part-time work to fund tuition and cover living costs (Nguyen & Le, 2020) [13]. While part-time employment can contribute to the development of soft skills, financial independence, and real-world experience, it has also been linked to detrimental academic outcomes. Research by Ly *et al*. (2021) [11] indicates that while part-time work can enhance practical skills, it often leads to increased stress, time pressure, and reduced academic performance among EFL students. Similarly, Hang (2012) [6] notes the difficulty students face in balancing work and study, particularly during exam periods, which can result in decreased engagement with coursework and higher absenteeism rates.

The adverse effects of part-time work are compounded when students are simultaneously navigating heavy academic workloads. According to Tran (2019) [21], Vietnamese university students working over 15 hours per week reported higher levels of academic burnout and lower levels of intrinsic motivation. These cumulative pressures reduce the mental bandwidth available for strategic learning, thereby limiting students' ability to engage in self-regulated learning behaviors such as goal-setting, time management, and reflective revision (Pham, 2015; Do & Le, 2022) [16, 4]. Such findings underscore the importance of understanding how external pressures, economic and academic, might indirectly affect learner autonomy by shifting students toward more expedient, technology-mediated learning strategies.

2.3 The rise of AI writing tools in EFL learning

The advent of Artificial Intelligence (AI) writing tools, such as ChatGPT, Grammarly, and QuillBot, has transformed the landscape of academic writing. These tools offer instant feedback on grammar, style, and coherence, providing substantial support for EFL students grappling with language barriers. Tambunan *et al*. (2022) [20] highlight the widespread adoption of Grammarly among EFL learners for reviewing and revising written works. Similarly, Barkaoui and Yu (2023) [1]

found that EFL learners increasingly turn to AI tools to scaffold their writing tasks, especially during high-stakes assignments or in time-constrained academic environments. These tools not only correct surface-level errors but also suggest vocabulary enhancement and organizational improvements, allowing students to meet academic expectations with greater ease.

However, concerns have emerged regarding over-reliance on these tools. Warner (2025) [26] argues that while AI-generated prose may be grammatically correct, it often lacks originality and critical engagement, essential components of genuine writing. Over-dependence on AI tools may lead to superficial revisions, bypassing deeper cognitive processes involved in writing development. Lai and Gu (2022) [8] caution that habitual use of AI-driven assistance can displace learners' reflective practices and diminish their motivation to engage with the complexity of language construction. Furthermore, Tran and Nguyen (2023) [23] observed that Vietnamese EFL students who regularly used AI writing tools tended to demonstrate lower levels of revision planning and grammatical self-monitoring in independently written texts. These findings raise concerns about a potential decline in learner autonomy, especially in contexts where students view AI not as a supplement but as a substitute for critical engagement in writing.

2.4 Theoretical framework: self-regulated learning and cognitive load

Self-Regulated Learning (SRL) theory posits that effective learning occurs when learners actively manage their thoughts, emotions, and behaviors in pursuit of academic goals (Zimmerman, 2002) [27]. Central to SRL are metacognitive strategies—planning, monitoring, and evaluating that allow learners to engage in reflective decision-making and adapt their approaches to learning tasks. According to Pintrich (2000) [17], SRL includes three phases: forethought (goal-setting and strategic planning), performance (self-monitoring and task execution), and self-reflection (evaluation and adaptation). These processes are critical for academic writing, where students must formulate ideas, organize content, revise drafts, and assess the quality of their output. In EFL contexts, SRL supports learners' ability to cope with linguistic challenges by fostering independence and internal motivation (Oxford, 2017) [14].

Cognitive Load Theory (CLT), introduced by Sweller (1998) [19], complements SRL by emphasizing the role of working memory in learning. CLT identifies three types of cognitive load: intrinsic (task complexity), extraneous (irrelevant instructional design), and germane (processing that contributes to learning). High levels of extraneous or intrinsic load can overwhelm a learner's limited working memory capacity, impairing comprehension and problem-solving (Paas & Ayres, 2014) [15]. In academic environments where students face simultaneous demands multiple assignments, exams, or external work obligations cognitive load may reach levels that impede strategic learning.

In the context of this study, academic and economic pressures contribute to elevated cognitive load, leading students to adopt coping strategies that simplify complex tasks. AI writing tools, while offering support by reducing surface-level errors and cognitive effort, may inadvertently encourage learners to bypass deeper engagement with content. This over-reliance can interfere with the activation of SRL processes, particularly meta-cognitive reflection and revision. Thus, while AI tools can temporarily reduce extraneous cognitive load, their habitual use may hinder the development of autonomous writing competence, especially among EFL learners who are still acquiring academic literacy skills.

2.5. Empirical studies on AI tools and learner autonomy

Empirical research on the impact of AI writing tools on learner autonomy is still emerging, though interest in this field has grown rapidly in response to the rise of tools like ChatGPT and Grammarly. A study by Liu *et al*. (2021) [10] found that AI-assisted language learning positively influenced Chinese EFL students' writing skills and motivation, especially when AI tools were integrated into task-based learning environments. Similarly, Ghufron and Rosyida (2022) [5] reported that EFL students using Grammarly improved their grammatical accuracy and sentence coherence in academic writing tasks.

However, concerns about overdependence on AI tools remain. Warner (2025) [26] cautioned that reliance on AI tools may undermine critical thinking and originality in writing, particularly when learners begin to use such tools as a primary means of generating content rather than refining their ideas. In a mixed-methods study, Tran and Hoang (2023) [22] found that while Vietnamese EFL students appreciated the convenience of AI support, frequent users demonstrated weaker performance on independent writing tasks, suggesting a decline in self-regulated strategies.

Additionally, Vu and Le (2022) [25] found a significant inverse relationship between AI reliance and meta-cognitive writing strategies among upper-intermediate learners. This aligns with findings from Lai and Gu (2022) [8], who argue that AI-driven feedback may discourage students from engaging in deep processing of language structures, resulting in passive learning behaviors. In sum, while AI tools hold clear potential for scaffolding L2 writing development, their uncritical and frequent use may hinder the development of learner autonomy, particularly in under-resourced or high-pressure academic environments.

In the Vietnamese context, research by Ly *et al*. (2021) [11] indicated that part-time employment among EFL students, driven by economic pressures, negatively influences academic performance and stress levels. Nguyen and Le (2020) [13] also highlight how students under academic and financial strain increasingly turn to digital writing aids to meet deadlines. However, studies specifically examining the mediating role of AI reliance in the relationship between academic/economic pressures and learner autonomy are scarce, highlighting a critical gap this study aims to address.

2.6. Research gap and study contribution

While existing literature provides insights into learner autonomy, academic pressures, and AI writing tools

independently, there is a paucity of research examining the interplay between these factors, particularly in the Vietnamese EFL context. This study seeks to fill this gap by modeling the mediating role of AI reliance in the relationship between academic and economic pressures and learner autonomy. By doing so, it aims to offer a nuanced understanding of how external pressures and technological aids interact to influence EFL students' autonomous learning behaviors, informing pedagogical strategies that balance technological support with the cultivation of learner autonomy.

3. Methodology

3.1. Research design

This study employed a quantitative research design to examine the relationships between academic and economic pressures, students' reliance on AI tools, and learner autonomy among English as Foreign Language (EFL) students. A cross-sectional survey was used to collect data, allowing for the analysis of correlation and potential mediating effects among variables.

3.2. Participants

The study recruited a total of 235 EFL students from three Vietnamese universities: Dai Nam University, Hanoi Law University, and Foreign Trade University. Participants were selected using convenience sampling due to accessibility and willingness to participate. The sample included both male and female students, across different academic years, with diverse exposure to AI tools in their learning practices.

3.3. Instruments

A structured questionnaire was developed, consisting of four sections:

Section A: Demographic information (e.g., gender, year of study, university).

Section B: Academic and economic pressures (e.g., workload, tuition concerns), measured using a 5-point Likert scale adapted from previous studies.

Section C: AI reliance, assessing the frequency and purpose of using AI tools (e.g., ChatGPT, Grammarly, translation apps) for academic tasks.

Section D: Learner autonomy, measured through items reflecting goal-setting, self-monitoring, and independent study behaviors.

The questionnaire was validated through expert review and pilot tested with 30 students to ensure clarity and reliability. Cronbach's alpha was calculated for each scale, all exceeding the acceptable threshold of 0.70.

3.4. Data collection procedure

The survey was administered online via Google Forms over a period of three weeks. Participation was voluntary, and all respondents were informed of the study's purpose, anonymity, and their right to withdraw at any time. Data were exported to Excel and later processed using SPSS for statistical analysis.

3.5. Data analysis

Data were analyzed using SPSS version 26. Descriptive statistics (means, standard deviations) were first computed. Pearson correlation was used to examine relationships among variables. To test the mediating role of AI reliance between academic/economic pressures and learner autonomy, a multiple regression analysis was conducted following Baron and Kenny's (1986) mediation steps. Additionally, bootstrapping methods (PROCESS Macro by Hayes) were used to verify the significance of indirect effects.

4. Findings

4.1. The influence of academic and economic on the use of AI

Descriptive statistics revealed notable differences in the frequency of AI use among students across three Vietnamese universities. As shown in Table 1, students at Dai Nam University reported the highest mean frequency of AI tool use for writing tasks (M = 2.65, SD = 0.50), closely followed by those from Foreign Trade University (M = 2.64, SD = 0.38). In contrast, students from Law University had the lowest mean frequency (M = 2.29, SD = 0.48). The overall mean across all institutions was 2.52 (SD = 0.49), indicating a moderate level of engagement with AI-based writing tools among Vietnamese EFL learners. These findings suggest that institutional factors may influence students' engagement with AI technologies, potentially reflecting differences in academic expectations, technological support, or exposure to AI-integrated curricula.

Table 1: Mean AI use frequency by universities

Universities	Mean use of AI	Std. deviation	N
Dai Nam University	2.65	0.50	96
Law University	2.29	0.48	84
Foreign Trade University	2.64	0.38	62
Total	2.52	0.49	242

To examine the extent to which academic and economic pressures influence students' use of AI writing tools, a multiple linear regression analysis was conducted. The results, presented in Table 2, indicate that the model was statistically significant, F(2,239)=30.55, p<.001F(2, 239) = 30.55, p< .001F(2,239)=30.55, p<.001, and explained approximately 20.4% of the total variance in AI use frequency (R2=.20R^2 = .20R2=.20). This suggests that academic and economic pressures together make a meaningful contribution to students' likelihood of using AI in writing tasks.

Table 2: ANOVA Summary for Regression Model

Source	Sum of squares	df	Mean square	F	Sig.
Regression	11.98	2	5.99	30.55	.000**
Residual	46.88	239	0.20		
Total	58.86	241			

As detailed in Table 3, academic pressure was a statistically significant positive predictor of AI use (β=.45, p<.001\beta = .45, p<.001β=.45, p<.001), with a relatively strong standardized effect size. This finding implies that students experiencing greater academic demands are more likely to use AI-based tools for writing likely as a coping strategy to meet

academic expectations. In contrast, economic pressure did not significantly predict AI use (β=.01, *p*=.87\beta = .01, *p*=.87β=.01, *p*=.87), suggesting that financial concerns do not play a substantial role in students' decisions to engage with AI writing technologies.

Table 3: Coefficients for predictors of AI use frequency

Predictor	Unstandardized B	Std. error	Beta	t	Sig. (*p*-value)
(Constant)	1.355	0.190	—	7.125	.000
Academic Pressure	0.326	0.042	0.451	7.808	.000
Economic Pressure	0.007	0.041	0.009	0.162	.871

Taken together, these findings highlight the central role of academic context in shaping students' behavioral responses to AI in learning environments. Whereas academic demands appear to encourage AI adoption, economic concerns seem to have little influence. This underscores the importance of academic pressure as a driving force behind students' engagement with AI writing tools, and it also suggests that universities aiming to integrate AI in writing instruction should consider how academic support, workload, and performance pressure interact with students' adoption behavior.

Hypothesis H1 stated that academic and economic pressures are associated with an increased use of AI-based writing tools among Vietnamese EFL students. The findings partially support this hypothesis.

Specifically, academic pressure was found to be significantly and positively associated with the frequency of AI tool use (β=.45, *p*<.001\beta = .45, *p*< .001β=.45, *p*<.001), indicating that students who experience higher academic demands are more likely to rely on AI-assisted writing tools. In contrast, economic pressure was not a significant predictor (β=.01, *p*=.871\beta = .01, *p*=.871β=.01, *p*=.871), suggesting no meaningful relationship between financial stress and students' AI use.

Therefore, H1 is only partially supported: while academic pressure contributes significantly to increased AI tool usage, economic pressure does not show a statistically significant association.

4.2. The effect of AI reliance on learner autonomy

To examine the relationship between AI reliance and learner autonomy in academic English literacy, a linear regression analysis was conducted. The results indicated a significant negative association between the frequency of AI tool use and students' reported levels of learner autonomy.

Table 4: Regression analysis: AI reliance predicting learner autonomy

Predictor	B	Std. error	Beta	T
Constant	3.842	0.118	—	32.55
AI Reliance	-0.287	0.063	-0.301	-4.56

The analysis shows that AI reliance significantly predicted learner autonomy ($\beta = -.30, p < .001$). The negative coefficient indicates that students who frequently rely on AI writing tools tend to report lower levels of autonomous learning behaviors, including independent revision, goal-setting, and self-monitoring in writing tasks.

These findings suggest that although AI tools may support students in completing academic assignments, excessive reliance may reduce opportunities for learners to actively engage in self-regulated learning processes. As a result, habitual dependence on AI-generated feedback may gradually weaken students' ability to independently plan, monitor, and evaluate their own writing development.

Hypothesis H2 proposed that AI reliance would have a significant negative effect on learner autonomy. The results provide empirical support for this hypothesis.

4.3. Mediating role of AI reliance

To test whether AI reliance mediates the relationship between academic and economic pressures and learner autonomy, mediation analysis was conducted using the PROCESS macro (Model 4) with 5,000 bootstrap samples.

The mediation model examined the indirect effect of academic and economic pressures on learner autonomy through AI reliance.

Table 5 presents the results of the mediation analysis.

Table 5: Mediation analysis results

Path	Effect	SE	t	Sig.
Academic Pressure → AI Reliance	.326	.042	7.81	.000
AI Reliance → Learner Autonomy	-.287	.063	-4.56	.000
Academic Pressure → Learner Autonomy (direct)	-.118	.051	-2.31	.022

Bootstrapping analysis confirmed that the indirect effect of academic pressure on learner autonomy through AI reliance was statistically significant (indirect effect = −.094, 95% CI [-.145, -.051]). Because the confidence interval did not include zero, the mediation effect was considered significant.

In contrast, economic pressure did not show a significant indirect effect through AI reliance, consistent with the earlier regression findings indicating that economic pressure was not a significant predictor of AI tool usage.

These findings indicate that AI reliance partially mediates the relationship between academic pressure and learner autonomy, meaning that academic pressure encourages students to rely more heavily on AI tools, which in turn contributes to reduced autonomy in academic English learning.

Hypothesis H3 proposed that AI reliance mediates the relationship between contextual pressures and learner autonomy. The results partially support this hypothesis, as mediation was found for academic pressure but not for economic pressure.

5. Discussion

The present study examined how academic and economic pressures influence Vietnamese EFL students' reliance on AI writing tools and how this reliance affects learner autonomy. The findings contribute to a growing body of literature on AI-

assisted learning by situating students' technology use within the broader context of academic pressure and self-regulated learning.

First, the results indicate that academic pressure significantly predicts students' use of AI writing tools**.** Students experiencing heavier academic workloads were more likely to use tools such as ChatGPT, Grammarly, and translation applications to complete writing tasks. This finding aligns with previous studies suggesting that digital tools often function as coping mechanisms for students facing time constraints and academic stress (Lai & Gu, 2022; Barkaoui & Yu, 2023) [8, 1]. When students encounter tight deadlines or complex writing assignments, AI tools provide rapid solutions that reduce cognitive effort and accelerate task completion.

Interestingly, economic pressure did not significantly influence AI usage. Although previous research suggests that students who work part-time experience academic stress (Ly *et al*., 2021) [11], the current findings suggest that financial concerns alone may not directly encourage students to rely on AI tools for writing. Instead, it appears that academic workload rather than financial stress is the primary factor shaping students' technology adoption behavior in academic literacy tasks.

Second, the study found a significant negative relationship between AI reliance and learner autonomy. Students who frequently depended on AI writing tools reported lower levels of independent learning behaviors, including planning their writing, revising drafts independently, and monitoring language accuracy. This finding supports concerns raised in recent literature that excessive reliance on AI assistance may discourage learners from engaging deeply with the writing process (Warner, 2025; Tran & Hoang, 2023) [26, 22].

From the perspective of Self-Regulated Learning theory, writing development requires learners to actively engage in planning, monitoring, and evaluation processes (Zimmerman, 2002) [27]. However, when AI tools provide immediate solutions to linguistic problems, students may bypass these cognitive processes. Over time, this pattern may reduce opportunities for metacognitive reflection, ultimately weakening the development of autonomous learning skills.

Finally, the mediation analysis revealed that AI reliance partially mediates the relationship between academic pressure and learner autonomy. In other words, academic pressure indirectly contributes to reduced learner autonomy by increasing students' dependence on AI tools. This finding highlights the importance of understanding AI use not merely as a technological phenomenon but as a behavioral response to contextual academic demands.

6. Pedagogical implications

The findings of this study have several implications for English language education in Vietnamese universities.

First, educators should reframe AI tools as learning support rather than writing substitutes. Instead of banning AI tools, instructors should guide students in using them responsibly—for example, using AI for brainstorming ideas, receiving grammar feedback, or checking coherence rather than generating entire texts.

Second, English writing instruction should emphasize metacognitive writing strategies that strengthen learner autonomy. Teachers can incorporate reflective writing activities, peer review sessions, and revision workshops that encourage students to evaluate their own writing processes rather than relying solely on AI-generated suggestions.

Third, universities should consider integrating AI literacy into English language curricula. AI literacy programs can help students understand both the benefits and limitations of AI tools, promoting balanced use that supports rather than replaces independent learning.

Finally, institutional policies should acknowledge the role of academic pressure in shaping students' technology use. Reducing excessive assignment loads and promoting formative assessment practices may help create learning environments where students can engage more deeply with the writing process.

7. Limitations

Despite its contributions, this study has several limitations.

First, the study relied on self-reported questionnaire data, which may be subject to response bias. Students may overestimate or underestimate their use of AI tools and their level of learner autonomy.

Second, the research used convenience sampling from three universities in Hanoi, which may limit the generalizability of the findings to other regions or educational contexts.

Third, the cross-sectional design of the study does not allow for conclusions about causal relationships. Longitudinal studies would be useful for examining how AI reliance and learner autonomy evolve over time.

Future research could also incorporate experimental designs or writing performance analysis to examine how AI use affects the quality of students' independently written texts.

8. Conclusion

This study investigated the relationship between academic and economic pressures, AI reliance, and learner autonomy among Vietnamese EFL university students. The findings demonstrate that academic pressure significantly increases students' reliance on AI writing tools, while economic pressure does not appear to play a significant role.

More importantly, the results reveal that frequent reliance on AI tools is associated with lower levels of learner autonomy. Mediation analysis further shows that AI reliance partially mediates the relationship between academic pressure and learner autonomy, suggesting that academic stress indirectly contributes to reduced independent learning behaviors through increased dependence on AI assistance.

These findings highlight the need for balanced approaches to AI integration in language education. While AI tools can support EFL learners in overcoming linguistic challenges, excessive reliance may hinder the development of autonomous learning skills essential for long-term academic success. Effective pedagogical strategies should therefore focus on fostering AI literacy, promoting self-regulated learning, and ensuring that technological tools enhance rather than replace students' engagement in the writing process.

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