






Determinants of Generative AI Adoption Among Vietnamese Students Using Extended UTAUT


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ABSTRACT

This study investigates factors influencing Vietnamese university students' adoption of Generative AI in learning, using an extended Unified Theory of Acceptance and Use of Technology model including attitude and personal innovativeness. Using data from 396 students analyzed via PLS-SEM, all hypotheses were supported: Performance expectancy and effort expectancy positively influence attitude; facilitating conditions enhance effort expectancy and behavioral intention; attitude predicts behavioral intention, which in turn drives adoption of AI in higher education; and personal innovativeness strongly predicts adoption. The model explains a significant portion of variance in adoption, highlighting mediating roles of attitude and behavioral intention. Findings emphasize that, beyond performance and effort expectancy, individual innovativeness and institutional support are key to responsible generative artificial intelligence integration in higher education, contributing theoretically to the model and practically to policy in developing countries.

KEYWORDS

Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behavioral Intention, Attitude, Higher Education, Educational Technology Acceptance, Developing Countries

INTRODUCTION

Artificial intelligence (AI), particularly generative AI, has evolved from a mere computational tool into a key driver of meaningful transformation in modern education. By enabling novel forms of teaching, learning, and assessment, generative AI technologies are redefining the mechanisms of knowledge creation and delivery within academic ecosystems (Zhang & Tur, 2023). Since ChatGPT's public launch in late 2022, there has been a rapid increase in global interest in educational applications of large language models (Lo, 2023). These systems offer unprecedented pedagogical possibilities,

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such as personalizing learning trajectories and providing adaptive feedback, which foster individualized inquiry and student creativity (Mittal et al., 2024; Zheng et al., 2023).

Nevertheless, the acceptance of generative AI in higher education is accompanied by considerable debate and uncertainty. While some stakeholders highlight its potential to enhance access and foster creativity (Kasneji et al., 2023), others raise worries about academic honesty, algorithmic bias, and the risk of misuse (Warschauer et al., 2023). Institutional responses remain highly variable, spanning from restrictive prohibitions to proactive integration, and indicating persistent tensions between technological innovation and established educational values (Chan, 2023; de Fine Licht, 2024). Furthermore, the absence of consistent policy frameworks across institutions and regions underscores the importance of additional research and the establishment of practical frameworks for fair and responsible implementation of AI in education (Jin et al., 2024).

From a theoretical perspective, the unified theory of acceptance and use of technology (UTAUT) remains a commonly used framework for analyzing user behavior in educational technology contexts (Venkatesh et al., 2003). Nevertheless, recent research shows that the adoption of generative AI may be affected by additional psychological and contextual factors, such as attitude and personal innovativeness, which extend beyond the traditional UTAUT constructs (Bui et al., 2025; Chan & Hu, 2023). Furthermore, most empirical studies validating UTAUT have been conducted primarily in Western higher education settings, resulting in a limited understanding of how students in developing contexts perceive and adopt emerging AI tools (Linh, 2025).

To address these limitations, this study adopts an extended UTAUT model that includes attitude and personal innovativeness to discover university students' acceptance of generative AI tools in Vietnam. As Vietnam is a rapidly digitizing yet underrepresented country in the literature, it offers a distinctive opportunity to explore the convergence of worldwide technological developments with local pedagogical, cultural, and institutional factors. The study is expected to contribute to theoretical knowledge of generative AI adoption and provide practical guidance for fostering fair and effective use of intelligent technologies in higher education.

LITERATURE REVIEW

According to Gil de Zúñiga et al. (2023), AI refers broadly to machines' capability to carry out tasks or solve problems in a manner that resembles human reasoning. AI can be categorized into narrow AI, which concentrates on applications, including tasks like speech recognition, image analysis, and general AI, which aims to replicate human-level intelligence (Sheikh et al., 2023). Within this field, generative AI is notable for its capacity to generate various types of content by analyzing and learning from underlying data patterns (Feuerriegel et al., 2023). In education, it offers vast potential by generating adaptive materials, personalized feedback, and research support, making it a transformative tool that enhances and reshapes teaching and learning (Chan & Hu, 2023).

A thorough understanding of how students engage with new technologies depends on the use of a solid theoretical framework. The UTAUT introduced by Venkatesh et al. (2003) as an advancement of the technology acceptance model (Davis, 1989), remains one of the most applied models in this area. UTAUT brings together elements from eight earlier theories and highlights four determinants of technology adoption comprise performance expectancy (the benefits users anticipate), effort expectancy (perceived ease of use of the technology), social influence (the extent to which others' views shape usage decisions), and facilitating conditions (the degree to which supporting resources and infrastructure are available) (Venkatesh et al., 2003). Additionally, the impact of these factors may differ based on characteristics such as gender and age prior experience, and whether technology use is voluntary. These features have contributed to UTAUT's broad use in studies of technology acceptance.

The applicability of the UTAUT model has been demonstrated across a range of technology adoption studies in diverse fields, including healthcare (Rouidi et al., 2022), banking (Jena, 2022), and educational technologies (Honig et al., 2025; Li et al., 2022). In recent years, growing scholarly

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