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Generative Artificial Intelligence in Higher Education: Understanding Faculty Adoption through the Technology Acceptance Model

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Abstract

Generative artificial intelligence (AI) is increasingly transforming higher education by enhancing teaching methodologies, automating administrative tasks, and supporting research initiatives. Faculty adoption of generative AI is crucial for maximizing its potential benefits; however, its acceptance remains inconsistent due to factors such as usability, perceived usefulness, and ethical concerns. This study employs the Technology Acceptance Model (TAM) to investigate the relationships between Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Attitude (ATT), and Intention to Use (IU) among faculty in higher education. A quantitative correlational research design was used, with data collected through an online questionnaire distributed to faculty members. The results indicate that PEOU significantly predicts PU, reinforcing the importance of usability in AI adoption. However, PU negatively influences ATT, suggesting that while faculty members recognize AI's usefulness, they may have concerns regarding its implications for academic integrity and pedagogical changes. Despite this, ATT strongly predicts IU, indicating that faculty attitudes are the primary driver of AI adoption. These findings underscore the importance of institutional AI training, ethical guidelines, and AI- integrated curriculum strategies to facilitate the responsible adoption of AI. Future research should incorporate qualitative insights and expand to multiple institutions to enhance generalizability and validity.

Keywords: Artificial Intelligence, Technology Acceptance, Education, Faculty