Chapter 16
Unveiling AI Adoption in Higher Education: Perspective of Gen Y Faculty in an Emerging Economy

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ABSTRACT

This study aims to examine Gen Y faculty's attitudes and behaviors towards AI-enabled educational tools for improving student learning in higher education, specifically in emerging economies. Integrating three notable theories of technology adoptions, this study employs a quantitative approach using a cross-sectional survey. A total of 246 responses is collected using a purposive sampling strategy targeted at Gen Y faculty (born between 1981 and 1994) currently teaching at various Bangladeshi universities. Data is analyzed using partial least squares structural equation modeling (PLS-SEM). The results corroborate that the PE and EE have a considerable impact on the PU and PEU, respectively, which in turn favorably influences a positive attitude about adopting the AI-enabled tools. This attitude toward using AI-enabled tools and perceived behavioral control is found to positively influence the faculty's intention to adopt AI-powered educational tools in their teaching and academic activities. These findings offer several theoretical and practical contributions.

1. INTRODUCTION

The education sector, formerly mostly reliant on face-to-face interaction between teachers and students, is now steadily enhanced by artificial intelligence (AI) powered digital methods, transforming the field of education, leading to an increasing acceptance and deployment of AI for educational purposes (Al-Mughairi & Bhaskar, 2024; Fu et al., 2020; Luckin & Cukurova, 2019; Sharma et al., 2022). AI technologies are transforming university administration, enhancing student engagement, and providing

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improved support for faculty, so creating novel prospects for teaching and learning in higher education (Sharma et al., 2022). AI, in general, refers to computer systems that are capable of conducting cognitive activities, such as learning and problem-solving, that are frequently associated with human intelligence (Martins, 2024). In education, AI involves integrating several technologies and approaches, including machine learning, natural language processing, data mining, neural networks, and algorithms, into the field of education (Zawacki-Richter et al., 2019).

Additionally, AI in education, may be used as personal instructors, augmenting, and improving the student's learning capacity, as well as providing intelligent assistance for collaborative learning and intelligent virtual reality experiences (Sharma et al., 2022). In particular, AI has the potential to improve several aspects of student education and institutional operations. It may offer personalized support to students, assist in grading assignments, help with degree planning, and aid in making administrative choices by pulling information from numerous campus systems (Wang et al., 2021). More specifically, in higher education, AI tools fall into three main types: learner-facing tools, which assist students in actively participating with the subject matter (Wang et al., 2021); teacher-facing tools, which improve teaching methods and decrease the amount of work required (Baker et al., 2023); and system-facing tools, which aid in administrative tasks related to instruction and align with institutional efficiency goals (Wang et al., 2021).

In recent times, innovative educational solutions have started to use advanced AI algorithms to augment traditional classroom training (Wang et al., 2021). For instance, Chattaraman et al. (2019) highlight the use of AI in automatic scoring apps (ASA) to assess and assign grades to students in educational settings. Moreover, the recent trend reveals a heightened increment in AI-powered learning solutions, which can improve trial-and-error learning by offering instant scores, correcting pronunciation, and delivering quick feedback (Chattaraman et al., 2019). This helps students overcome their reluctance to inquire and express uncertainties. Acknowledging these significant impacts, higher education institutions all over the world are progressively implementing AI on their campuses (Kamalov et al., 2023). However, successful implantation is contingent upon a variety of factors, including community readiness, willingness to embrace change, capacity to adapt, resource availability, and potential benefits (Wasilah et al., 2021).

Furthermore, the integration of AI technologies into higher education faces numerous obstacles. The use of AI educational tools, such as ChatGPT, may reduce the significance of human interaction and personal rapport between educators and learners (Qadir, 2023). Another major obstacle to using AI tools is the ethical dilemma surrounding assignments and examination papers (Qadir, 2023). Access to technological infrastructure is necessary for AI tool integration, which might lead to educational opportunity gaps depending on resource availability (Khan et al., 2023). There is a legitimate fear that AI technologies might potentially undermine collaboration and coordination among instructors (Arif et al., 2023).

Obstacles to implementing AI in higher education institutions vary from nation to nation, with emerging economies in particular facing unique challenges. Regrettably, a significant proportion of users in these economically disadvantaged nations do not possess the essential tools required to access and effectively employ AI systems (Azubuike et al., 2021). The accessibility of the internet, electronic gadgets such as smartphones and laptops, and other technical tools is a significant issue for users from various socio-economic and geographical origins (Mogaji et al., 2020). The faculty's resistance has also been a significant impediment to the integration of advanced technologies, including AI, into higher education (Perkins et al., 2023). Faculty continue to hold the belief that AI in the classroom is still in its infant stages and has a long way to go (Azubuike et al., 2021). In a study by Chan and Lee (2023),