

Impact of Using AI-Based Content-Generating Tools on Academic Performance among Undergraduates at State Universities of Sri Lanka

W.D.D.U. Wanigasooriya¹ and C.S. Ranasinghe^{2,*}

*Department of Information Systems, Faculty of Management Studies,
Rajarata University of Sri Lanka, Mihintale, Sri Lanka^{1,2}*

*Corresponding author: csranasinghe456@gmail.com

Abstract

This study examines the impact of AI-based content-generating tools on the academic performance of undergraduates at state universities in Sri Lanka. With the growing integration of tools such as ChatGPT, Grammarly, QuillBot, Microsoft Copilot, and Google Gemini in higher education, students increasingly rely on them for academic writing and learning support. While these tools enhance efficiency and provide personalised assistance, they also raise concerns regarding plagiarism, over-reliance, and ethical engagement. Despite global attention, limited empirical evidence exists on their influence in the Sri Lankan higher education context. Addressing this gap, the study investigated how four factors—frequency of use, purpose of use, self-efficacy, and digital literacy—affect undergraduates' academic performance. A quantitative, cross-sectional survey was conducted using a structured online questionnaire administered to a stratified sample of 384 undergraduates across all 17 state universities governed by the University Grants Commission (UGC). Academic performance was measured through GPA, end-of-semester examination results, and assignment marks. Data were analysed using SPSS software through descriptive statistics, correlation analysis, and multiple regression. The findings revealed that most students used multiple AI tools, with ChatGPT being the most frequently used. Purposeful use, higher self-efficacy, and stronger digital literacy showed statistically significant positive effects on academic performance, while frequency of use alone exerted a weaker influence. Regression analysis indicated that digital literacy explained a notable proportion of variance in academic outcomes. The study concludes that AI tools can support academic success when integrated responsibly, emphasising the need for digital literacy training and clear policies on ethical AI use. It contributes original empirical evidence by jointly analysing multiple AI tools and highlighting the combined role of digital literacy and self-efficacy in the Sri Lankan undergraduate context.

Keywords: academic performance, AI-based tools, ChatGPT, higher education, self-efficacy