

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

**DYNAMICS OF AI ADOPTION AMONG STUDENTS IN
HIGHER EDUCATION: DRIVERS, BARRIERS, AND
NEGATIVE IMPACTS - A STATISTICAL AND DEMATEL
ANALYSIS**

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THE MOST GRACIOUS, THE MOST MERCIFUL ALLAH

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ABSTRACT

As AI continues to revolutionize various sectors, its adoption among students in higher education has gained significant attention. AI offers the promise of customized learning, dynamic assessments, and meaningful interactions, presenting exciting opportunities for online, mobile, and blended learning environments. However, as AI adoption grows, it becomes crucial to explore the key drivers, barriers, and potential negative impacts to make informed decisions and foster responsible integration. The problem statement identifies the lack of a comprehensive understanding of the influencing factors, the need for an accurate predictive model, and the lack of understanding of interdependencies and causal relationships. To address the aforementioned problem statement, this research objective is to explore the key drivers, barriers, and negative impacts of AI adoption in higher education using Descriptive Analysis (DS). Understanding these drivers, barriers and negative impacts is vital to tailor strategies that effectively promote AI integration. Next research objective is to model the key drivers, barriers, and negative impact of AI adoption in higher education using Binary Linear Regression (BLR). This approach allows for quantitative analysis of the relationships between identified factors and the level of AI adoption, providing valuable insights into their significance. Last research objective is to identify the casual relationship of the key drives, barriers, and negative impact of AI adoption in higher education using the DEMATEL approach. Through DEMATEL analysis, this research will uncover the interdependencies and directional relationships among these factors, providing a deeper understanding of how they influence each other and contribute to the overall dynamics of AI adoption in the higher education setting. The methodology involves statistical analysis with descriptive analysis and binary linear regression, as well as DEMATEL. Findings reveal that accessibility and customization drive AI adoption, while traditional learning preferences pose a barrier, and privacy and security issues are significant concerns. To ensure the successful and responsible integration of AI in higher education, the following recommendations are proposed which are it is crucial foremphasize investing in infrastructure and comprehensive training for faculty, prioritizing ethical considerations with clear guidelines and policies, and viewing AI as a collaborative tool that enhances educators' capabilities.