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Evaluating the Adoption of Metaverse in Medical Training

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Abstract

This study explores the key factors affecting the acceptance of healthcare metaverse technologies in medical education among current and future healthcare providers. Utilizing an extended Technology Acceptance Model (TAM), the research incorporates additional constructs such as technology readiness, perceived trialability, imagination, and technology anxiety to capture the complexity of immersive technology adoption. Data were collected from 314 Turkish medical students and physicians and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that perceived usefulness (PU) is the strongest predictor of behavioral intention (BIU). Perceived ease of use (PEOU) significantly influences both PU and BIU, while technology readiness positively impacts PEOU. Perceived trialability enhances PU, imagination contributes positively to both PU and PEOU, and technology anxiety negatively affects both constructs. These results support the theoretical expansion of TAM in immersive learning environments and highlight practical strategies to improve acceptance. For educators and developers, the study underscores the value of offering trial experiences, designing user-friendly platforms, and fostering creative engagement. Reducing anxiety through training and support can further ease adoption. As one of the first empirical studies of its kind in Turkey, this research also emphasizes the metaverse's potential to bridge the gap between theoretical instruction and clinical application in medical education. The study contributes to advancing theoretical models for immersive technologies and provides actionable insights for policy and practice. It lays the foundation for future cross-cultural studies and supports the integration of healthcare metaverse platforms into medical education to enhance learning outcomes.

Keywords
Healthcare Metaverse, Technology Acceptance, Medical Education, Structural Equation Modeling, PLS-SEM

Biographies
Dr. Gulsah Hancerliogullari Koksalmis holds a BSc and MSc in Industrial Engineering from Bilkent University and earned her PhD in Engineering Management and Systems Engineering from Old Dominion University, USA. Her research focuses on technology management, operations management, medical decision making, healthcare digital

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