Abstract

ChatGPT, a groundbreaking conversational AI model developed by OpenAI, represents a significant advancement in human-computer interaction. In Zimbabwe, a significant 60% of programmers in the IT sector express concerns about the user interface (UI) and user experience (UX) design of the software systems they use. Additionally, 70% of the country's IT sector faces challenges affecting service quality, attributed to software bugs and inadequate testing protocols. According to the Zimbabwe Investment and Development Agency (ZIDA), developers introduce approximately 70 bugs per 1,000 lines of code, with bug fixes taking significantly longer than initial coding efforts, leading to substantial costs for companies.

Despite its potential, there is limited research on the adoption of ChatGPT in Zimbabwe. Based on the identified gaps in the literature, the research aims to analyze the factors influencing customer adoption of ChatGPT in web development by utilizing the DeLone and McLean Success Model as a theoretical framework. This framework provides a structured approach to understanding the relationships between system quality, information quality, service quality, user satisfaction, and organizational performance, thereby addressing critical gaps in current understanding.

Methodologically, the study employs a quantitative approach using survey data and statistical methods to analyze connections between variables and validate hypotheses. Non-probabilistic snowball sampling was used to gather data from tech professionals in Zimbabwe, and the analysis utilized SmartPLS 3.0 for structural equation modeling alongside descriptive analysis. The questionnaire comprised scales developed from previous studies, with participants rating their level of agreement on a 5-point Likert Scale.

Confirmatory factor analysis assessed psychometric characteristics, including reliability via Cronbach's alpha and composite reliability scores, and examined convergent and discriminant validity using factor loadings, AVE, and HTMT ratio. The R-squared values

for user benefits, user satisfaction, and organizational performance were found to be in the "good" category, indicating the robust explanatory power of the modified DeLone and McLean Success Model in this context. PLS-SEM results indicate that system quality significantly impacts organizational performance, followed by service quality and information quality, while a culture oriented towards flexibility did not show significant effects.

This research provides insights into how customers in Zimbabwe's web development and tech industry adopt ChatGPT. Findings reveal that developers in Zimbabwe's web development and tech industry utilize ChatGPT to enhance error handling and debugging processes, illustrating practical applications of AI in software development contexts. Recommendations include improving training data relevant to Zimbabwean tech needs, integrating real-time data sources, suggesting paid versions for updated data access, enhancing error handling for service quality, offering educational resources for user satisfaction, implementing developer training programs, and fostering cross-functional collaboration.