

Learning management systems and sustainability in Kenyan higher education institutions: a multi-group analysis using PLS-SEM

Abstract Purpose – This study seeks to examine how learning management system (LMS) quality influences perceived sustainability value (PSV) among users in Kenyan higher education institutions (HEIs), by examining usage and user satisfaction as mediators based on the DeLone and McLean information systems success model (DMISSM). The triple bottom line (TBL) theory provided the theoretical grounding for measuring the overall perceived sustainability impact derived from LMS utilization in HEIs.

Design/methodology/approach – This is a cross-sectional study. A stratified random sampling technique was used to collect data from 384 students and 375 instructors. Hypothesis testing was carried out following partial least squares structural equation modeling procedures using R statistical software.

Findings – The empirical findings revealed that user satisfaction significantly mediated the relationship between LMS quality and PSV, while LMS Use had an insignificant mediating role in the same relationship. The impact of user satisfaction on PSV varied between teachers and students, with teachers experiencing a stronger influence. The findings also confirmed a statistically significant direct relationship between LMS quality and PSV.

Originality/value – This study advances the DMISSM by adding learner and instructor quality contributors to the antecedent quality constructs, while integrating TBL sustainability dimensions as net benefits. The integration of sustainability into the model creates a new pathway for evaluating educational technologies beyond technical and user-centric metrics to a more long-term value-driven success aligned with global sustainability goals.

Keywords DeLone and McLean information systems success model, Digital sustainability, Higher education institutions, Learning management system, PLS-SEM, User satisfaction
Paper type Research article