

Factors Associated with Potential Adoption of Automated Payment Methods in Sri Lankan Public Transportation Sector

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Abstract

Technological advancements have transformed public transport payment systems worldwide, with countries such as Singapore, Japan, and the United Kingdom adopting automated solutions including contactless cards, QR codes, and mobile wallets. These systems have enhanced the commuter experience and minimized fare leakage. In contrast, Sri Lanka continues to rely heavily on cash-based transactions for public transport payments, which are slow, inefficient, and prone to financial losses. This study investigates the potential adoption of automated payment systems in Sri Lanka's public transport sector by examining key technological factors influencing commuter acceptance. The research aims to identify the factors associated with the potential adoption of automated payment methods. A quantitative research approach was employed, using a structured questionnaire administered to a convenience sample of 384 public transport users. The study draws on constructs from the Technology Acceptance Model (TAM) and related frameworks, focusing on Perceived Ease of Use, Perceived Usefulness, Perceived Security, and Technology Readiness. Data analysis (SPSS v21) involved factor analysis, correlation, and multiple regression to assess relationships and the predictive strength of each variable. The findings reveal that all four factors significantly influence the likelihood of adopting automated payment systems ($R = .718$, $R^2 = .515$). Perceived Ease of Use ($\beta = .264$) and Perceived Usefulness ($\beta = .201$) emerged as the strongest predictors, followed by Perceived Security ($\beta = .142$) and Technology Readiness ($\beta = .264$). These results suggest that commuter acceptance hinges on systems being user-friendly, beneficial, secure, and aligned with users' technological capabilities. The study insights for policymakers, operators, technology providers and new researches and recommending pilot projects, user education, and secure digital solutions to modernize Sri Lanka's public transport payments.

Keywords: automated payment systems, digital payment, potential adoption, public transport, technology acceptance model