

Designing a Socio-Technologically Adaptable, Scalable Peer-to-Peer Accommodation Platform to Support SMEs in Sri Lanka After the Crisis

R.W.V.A.S.C. Rajapaksha and U.E. Ranasooriya

Department of Computer Science and Informatics, Uva Wellassa University of Sri Lanka

Abstract

The tourism industry is a globally significant sector that contributes substantially to economic growth. However, small and medium-sized enterprises (SMEs) in the tourism sector face challenges in accessing global digital platforms due to high commission rates and technological barriers to providing accommodation services. This study aims to design and evaluate a locally developed peer-to-peer (P2P) accommodation platform that directly connects tourists with SME providers while minimizing foreign currency outflow. A key innovation of the proposed system is the integration of blockchain anchored trust mechanisms, which ensure transparent, tamper-proof bookings and secure financial transactions. The study uses a Design Science Research (DSR) approach. First, the problem was identified, then a blockchain-enabled P2P system was designed and demonstrated. To evaluate the system, a quantitative survey was conducted with 225 SME accommodation providers across all nine provinces of Sri Lanka. The data collected from structured questionnaires were analyzed to understand challenges, system requirements, and the willingness of SMEs to adopt the new platform. Results show that SMEs face major disadvantages on global platforms but are ready to use a local blockchain-based solution. The research concludes that a blockchain integrated P2P system has the potential to improve SME competitiveness, reduce economic leakage, and contribute to sustainable tourism growth. However, limitations include the study's reliance on a time-bound sample and the exclusion of direct foreign tourist perspectives. Future research should explore pilot implementations, cross-border blockchain interoperability, and behavioral adoption factors from both tourists and hosts.

Keywords: Blockchain, Peer-to-Peer Platforms, Tourism, SMEs, Sri Lanka