
Adopting blockchain technology to prevent the flow of counterfeit pharmaceuticals in Sri Lanka: A conceptual model

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Controlling the adverse effects of counterfeit pharmaceuticals requires ensuring the transparency of pharmaceutical supply chain. Blockchain technology has been widely recognized by supply chain researchers as an emerging technology for improving the transparency and security of supply chain. Although there is a surge of attention to blockchain technology in the supply chain domain, there is not much empirical evidence on the use of blockchain technology to support decision-making in the pharmaceutical supply chain. The purpose of this paper is to present a conceptual model that was developed to investigate the challenges of adopting blockchain technology to control the pharmaceutical supply chain while combating counterfeit pharmaceutical flow. The conceptual framework of the study is developed by conducting a thorough literature review and structured interviews. To validate the conceptual model, sample data is obtained from supply chain practitioners, pharmaceutical manufacturers, MSD and NMRA. Structural equation modelling approach is used to test the proposed conceptual model, and PLS-SEM is utilized to determine the validity of the proposed model. The suggested conceptual model, which is based on a thorough examination of the literature, encompasses the interrelationships between eight influential factors, including 1) Relative advantage 2) Upper management support 3) Cost, 4) Human Resource 5) Complexity, 6) Compatibility 7) Architecture and 8) Upper Management Support. The study further shows that the upper management support moderates the relationship between the intention of adopting blockchain technology and its complexity. Consequently, the model would enable practitioners to get useful insights for adopting blockchain technology in the Sri Lankan pharmaceutical supply chain.

Keywords: Blockchain adoption, Drug counterfeiting, Pharmaceutical supply chain

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