

Role of Blockchain in Enhancing Supply Chain Transparency in the Fashion Industry: Special Reference to Sri Lanka's Western Province

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Abstract

The Sri Lankan fashion, particularly in the Western Province is an indispensable sector of its economy and still cannot afford to get transparency in supply chain. Rising global consciousness of ethical sourcing, sustainability and accountability merits the use of technology as interventions. Although blockchain has been discussed in related studies, not much empirical research exists on the use of blockchain in fashion supply chain in developing countries like Sri Lanka. The proposed research will help close this gap because it will focus on the role of blockchain usage in providing transparency in the supply chain in Sri Lanka in the fashion industry with the view of promoting traceability, smart contracts, and enhanced consumer trust. The adopted research design was quantitative research based on positivist paradigm. Through structured questionnaires, a survey on 384 respondents (companies producing apparel, suppliers and logistics partners) was carried out through employing a stratified random sampling method. Descriptive statistics, correlation and multiple regression were used to analyze data. The results show that there is a high positive, statistically significant relationship between the adoption of blockchain and the transparency of the supply chain ($R^2 = 0.62$, $p < 0.001$). The studied use cases were able to imply an increase in accountability and automation of compliance processes due to smart contracts, better product tracing and ethical sourcing due to traceability, and the trust of consumers as the most dominant force driving towards greater transparency. The researchers find that blockchain could introduce definable benefits to the transparency of fashion supply chains in Sri Lanka, but issues like high prices, lack of expertise, and the absence of regulation impairs broader use. The recommendations to the policies will be enhancing technological capacity of SMEs and favorable regulatory environment. Contextualizing the potential of blockchain in the context of an emerging economy, this study not only adds to academic knowledge, but also to practical changes in the way digital supply chains in fashion become developed.

Keywords: blockchain, consumer trust, fashion industry, supply chain transparency, traceability