Assessing retailer readiness to use blockchain technology to improve supply chain performance

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Abstract

Purpose – This paper aims to assess the readiness of retail workers to use blockchain technology (BCT) to improve supply chain performance. The assessment was made via a quantitative approach taken using a theoretical framework based on Keller's motivation model and self-determination theory in the BCT context.
Design/methodology/approach – The authors collected data from 567 retail workers from an emerging country through a structured survey questionnaire. The authors tested the hypotheses of the proposed model using Warp PLS 7.0 and controlled firm age, industry type and technological intensity.
Findings – Our findings may help firms in making the process of digital transformation inclusive. The authors found that supplier-based attention and motivation through BCT lead to supply chain performance, and that supplier-based satisfaction and trust achieved through BCT positively impact supply chain performance. Further, supplier-based relevance on raw material selection with the higher trust and motivation levels achieved through BCT was found to have a positive impact on supply chain performance.
Research limitations/implications – IT supply chain applications are referred to as "lean" rather than "rich" because they still rely mainly on written and numerical means to present data. When the environment is less ambiguous, then less rich media can be used to facilitate communication. IT supply chain applications allow suppliers to spend time building relationships with other suppliers instead of focusing on administrative tasks, thus enhancing such relationships.
Originality/value – This study can be considered the first to assess retailer readiness to use BCT to improve supply chain performance through the theoretical lens of Keller's motivation model and self-determination theory.

Keywords Supply chain performance, Retailers, Blockchain technology, Gamification, Self-determination theory

Paper type Research paper

1. Introduction

The blockchain is an evolution of database technologies, such as distributed ledgers and peer-to-peer networks. A distributed ledger technology contains a list of append-only, timestamped transactions encrypted and backed by consensus mechanisms. In peer-to-peer networks, immutable records are permanently stored over a decentralized network of equal peers (Hwang *et al.*, 2018). Several decades have passed since blockchain technologies were first developed (e.g. Bamakan *et al.*, 2021; Jang and Han, 2022; Bai *et al.*, 2020). As conventional work methods may prove ineffective during disruptive events like pandemics, businesses need to adapt and transform their business practices (Bai *et al.*, 2020; Sangal *et al.*, 2022).

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