

**Blockchain Technology Application on Efficiency of Supply Chain Management
Practices for Government Subsidized Fertilizers in Tanzania
A Case of Selected Districts in Kilimanjaro Region**

**By
Mwesigwa Richard Kabyemela**

**Master of Procurement and Supply Management
Moshi Co-operative University**

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Abstract

This study was intended to assess the blockchain technology applications on the efficiency of supply chain management practices for government-subsidised fertilizers in Tanzania. Blockchain technology in Tanzania is merging across different sectors, the current supply chain of subsidised fertilizer faces challenges such as mismanagement of subsidies, delays in distribution, and difficulties in tracking the movement of fertilizers from manufacturers to end-users (farmers). This study specifically aimed to determine blockchain technology application in the supply chain management of subsidized fertilizers in Tanzania, determine the extent to which blockchain technology applications influence contract management in the supply chain management of government-subsidized fertilizers, evaluate the extent blockchain technology influences the transparency of government-subsidized fertilizers along the supply chain management and analyse the application of blockchain technology in controlling the counterfeiting of government-subsidized fertilizers along the supply chain. An exploratory research design was employed in this study. 172 respondents made up the sample, and the sample was chosen using a combination of basic random and purposeful sampling techniques. Ordinal and multiple regression analysis were employed to analyse the data with the assistance of the statistical package for social sciences. The study concludes that accountability, and traceability from blockchain technology stand out as the most important influence of contract management in the supply chain management of government-subsidized fertilizers. On the determinants of blockchain technology application in supply chain management of subsidized fertilizers, the study concludes that blockchain technology enhances distribution operations by providing real-time data verification, facilitating smooth coordination, and reducing delays in fertilizer distribution at. To an extent, blockchain technology influences the transparency of

government-subsidized fertilizers along the supply chain management. The study concluded that blockchain technology significantly reduces fraud and corruption. The study recommended that governments need to Create and execute legislative frameworks that encourage the application of blockchain technology to the agricultural sector. Enhancing overall efficiency, decreasing fraud, and boosting supply chain transparency should be the main goals of these frameworks.

Keywords: Blockchain, technology, supply chain, management, subsidized fertilizers