Tendency to Adopt Blockchain Technology in Portuguese Supply Chains

Paulo Alexandre Pereira[1], Ana Lúcia Martins[2], João C. Ferreira[3]

[1]Iscte - Instituto Universitário de Lisboa, Portugal; [2]Iscte - Instituto Universitário de Lisboa, Portugal, Bru-Iscte; [3]Iscte - Instituto Universitário de Lisboa, Portugal, Istar-Iscte

Purpose of this paper:

This paper aims to investigate the implementation potential of blockchain technology in supply chain management by Portuguese organizations, by perceiving their advantages, disadvantages, and barriers their familiarity with the concept and the adoption scenario.

Design/methodology/approach:

A systematic literature review approach to identify the main characteristics of blockchain technology to formulate a structured questionnaire to be applied to managers from food, transportation, and pharmaceutical sectors.

Findings:

A systematic literature review (SLR) approach allowed identifying items to build a structured questionnaire which demonstrates that the implementation of blockchain technology in supply chain management is a very recent topic and its characteristics of sharing information and storing data in a decentralized disturbed ledger provokes advantages in increasing traceability, certifiability, transparency, security, and self-regulation and reduces hacking risks and data manipulation by companies. Additionally, it will have the bigger impact in areas connected to finances, communication with partners and transportation. However, it was identified a low desire of implementing blockchain in Portuguese organizations, because of the scepticism and perceived knowledge about it as the absence of governmental laws and regulation. Data gathered from 48 companies, analyzed through SPSS version 27.0 revealed that the links between the variables are very weak mostly because there is a misunderstanding about BCT.

Value:

This paper provides a systematization of advantages, disadvantages, barriers supported not only by a systematic literature review but also with real data from Portuguese supply chain managers, beyond the identification of resistances, potential and knowledge regarding implementing blockchain in the organizations.

Research limitations/implications:

The study is limited to the number of answers being only from Portugal, and applied to a few industries, although it is valid for the analysis that is performed in these sectors of activity.

Practical implications:

Blockchain technology will bring several modifications of how supply chain managers take decisions in their companies. Mostly they are afraid of losing control of their own databases and sharing their information with other links of the chain, as well as the investments needed and the difficulty in implementing recent technologies