

RISK ANALYSIS OF BLOCKCHAIN TECHNOLOGY IN CROSS-BORDER E-COMMERCE DRUG TRACEABILITY USING ANALYTIC HIERARCHY PROCESS

(Analisis Risiko Teknologi Blok Rantai dalam Pengesanan Ubatan E-Dagang Rentas
Sempadan Menggunakan Proses Hierarki Analitik)

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ABSTRACT

As blockchain technology develops, it is crucial to create a cross-border e-commerce traceability method for imported pharmaceuticals in response to consumer demand for the safety and reliability of medical items. This method promotes the adoption of blockchain technology in the field of traceability as well as the development of a new cross-border e-commerce model for imported pharmaceuticals. However, there are still some technical difficulties and dangers associated with using blockchain in traceability methods. Based on the Analytic Hierarchy Process (AHP), the dangers associated with using blockchain technology for cross-border e-commerce medical traceability were examined in this study. The results show that the difficulty of system integration, the consequences of data breaches, mix-boundary data transfer regulations, market acceptance, and operating costs have the most important impact on the application of blockchain technology in the traceability of pharmaceuticals in cross-border e-commerce within their risk categories.

Keywords: blockchain; drug traceability; AHP method; risk analysis

ABSTRAK

Seiring dengan perkembangan teknologi blok rantai (*blockchain*), adalah penting untuk mewujudkan satu kaedah pengesanan e-dagang rentas sempadan bagi ubat-ubatan yang diimport bagi memenuhi permintaan pengguna terhadap keselamatan dan kebolehpercayaan produk perubatan. Kaedah ini bukan sahaja menggalakkan penggunaan teknologi blok rantai dalam bidang pengesanan, malah menyumbang kepada pembangunan model baharu e-dagang rentas sempadan untuk ubat-ubatan yang diimport. Walau bagaimanapun, masih terdapat beberapa kesukaran teknikal dan risiko dalam menggunakan teknologi blok rantai bagi kaedah pengesanan. Berdasarkan kaedah Proses Hierarki Analitik (AHP), kajian ini menilai risiko yang berkaitan dengan penggunaan teknologi blok rantai bagi pengesanan ubat-ubatan dalam e-dagang rentas sempadan. Hasil kajian menunjukkan bahawa kesukaran dalam integrasi sistem, akibat daripada kebocoran data, peraturan pemindahan data rentas sempadan yang kompleks, penerimaan pasaran, dan kos operasi adalah faktor risiko utama yang memberi kesan ketara terhadap aplikasi teknologi blok rantai dalam pengesanan ubat-ubatan e-dagang rentas sempadan.

Kata kunci: blok rantai; pengesanan ubat; kaedah AHP; analisis risiko

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