

Abstract

Indonesia's land registration system suffers from data integrity deficiencies and limited stakeholder interconnectedness, leading to duplicate certificates. This research addresses these challenges by proposing a digital land certificate system built on a decentralized, transparent, and hybrid blockchain technology. The system aims to streamline land transactions in Indonesia, facilitating the process from digital transfer to National Land Agency (BPN) registration. The methodology employs a qualitative analysis framework, drawing upon literature reviews of existing blockchain land management research and stakeholder interviews. Data analysis guides the design model recommendations and prototype application development. Findings suggest that digitizing land certificates through a transfer media system is a critical initial step for blockchain implementation. Furthermore, a hybrid blockchain model, coupled with Public Key Infrastructure (PKI), appears best suited for the Indonesian context. This approach leverages smart contract verification and peer-to-peer networks to ensure data authenticity. Building upon this research, future applications can explore integrating blockchain technology into land buying and selling systems alongside enhancements to relevant websites.