

Cloud Security Adoption in Malaysia's Public Healthcare Sector: A TOE–PRT Framework Review

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Abstract

Cloud computing is increasingly acknowledged as a transformative force in healthcare, providing scalable infrastructure, improved data accessibility, and greater operational efficiency. However, its adoption within Malaysia's public healthcare sector continues to face significant challenges, including ongoing cybersecurity threats, disjointed regulatory systems, and institutional resistance. This paper offers a structured review of cloud security implementation, highlighting key patterns such as cyberattacks, data breaches, and systemic vulnerabilities, while pinpointing major gaps in technological preparedness, governance structures, and stakeholder involvement. By incorporating the Perceived Risk–Trust (PRT) model into the Technology–Organisation–Environment (TOE) framework, the study applies a behavioural perspective to explore adoption patterns in compliance-heavy healthcare environments. The review underscores the influence of perceived risks and trust on organisational decision-making, especially in contexts governed by stringent data protection regulations. The findings lead to strategic recommendations for policymakers, healthcare practitioners, and technology providers, stressing the importance of interoperable security frameworks, trust-enhancing strategies, and focused capacity-building efforts to cultivate a robust and secure cloud ecosystem in Malaysia's healthcare landscape.

Keywords: Cloud Computing, Cloud Security, Healthcare, Informatics, T-O-E framework.