



## **A THEORETICAL FRAMEWORK OF QUANTUM COMMUNICATION TECHNOLOGY ACCEPTANCE: AN APPLICATION TECHNOLOGY READINESS AND ACCEPTANCE MODEL**

**Mukrim Nurul Hayati Binti Khairulamri<sup>1\*</sup>**

Faculty of Economics and Muamalat  
Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan  
Malaysia  
[mukrimhayati@gmail.com](mailto:mukrimhayati@gmail.com)

\*Corresponding Author email: [mukrimhayati@gmail.com](mailto:mukrimhayati@gmail.com)

Submitted: 16 June 2025

Revised: 31 August 2025

Accepted: 10 September 2025

*Peer-review under responsibility of 9th ASIA International Multidisciplinary Conference (Thailand) Scientific Committee*

<http://connectingasia.org/scientific-committee/>

© 2025 Published by Readers Insight Publisher,

Office # 6, First Floor, A & K Plaza, Near D Watson, F-10 Markaz, Islamabad, Pakistan,

[editor@readersinsight.net](mailto:editor@readersinsight.net)

*This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).*



## ABSTRACT

Quantum Communication Technology (QCT) presents a transformative approach to communication and data security by leveraging quantum mechanics. While countries such as the United States, China, and the European Union are advancing rapidly in this field, Malaysia remains in the early stages of development. However, its acceptance in Malaysia remains underexplored. This study employs the Technology Readiness and Acceptance Model (TRAM) model to examine key factors influencing QCT acceptance, including optimism, innovativeness, discomfort, insecurity, perceived usefulness, and perceived ease of use. Understanding readiness is crucial since it determines the acceptance of QCT. This study will contribute to ongoing discussions on QCT by fostering research initiatives and promoting technological advancements in Malaysia. The proposed framework from this study could be served as guideline in implementing QCT in Malaysia. This study provide input to the government and stakeholders such as industries in formulating strategies to implement QCT. This study also contributes to the body of knowledge in QCT field.

**Keywords:** *Quantum Communication Technology (QCT), Readiness, Technology Readiness and Acceptance Model (TRAM)*