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Scan, Pay, and Go? Unpacking the Barriers to Cross-Border QR Payments through the Lens of VAM

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ABSTRACT

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The Value-Based Adoption Model (VAM) theory provides an important framework for understanding the use of QR mobile payments across borders, especially in terms of international transactions. Meanwhile, the adoption of mobile payment systems is growing in the domestic context. However, the adoption of mobile payments across borders still remains inconsistent, mainly among outbound Malaysian tourists. There are several factors that lead to this inconsistency. Firstly, the mobile QR payment operation mechanism used in other countries is unfamiliar to many Malaysian travellers, leading to uncertainty and doubt. Secondly, high exchange rates and additional service fees will discourage users from using mobile payments in the international context. Thirdly, concerns over data security, fraud, and differing regulatory protections across borders increase the perceived risk of using such systems. Furthermore, the lack of trust in foreign FinTech providers and the limited visibility of internationally recognized support contribute to this inconsistency. This paper investigates the origins, strengths, and limitations of VAM and its application in cross-border QR mobile payments. By integrating constructs such as perceived value, benefit, cost, and risk, this study provides a theoretical lens to analyse digital consumer behaviour and can contribute to the existing body of knowledge by offering theoretical extensions to VAM. Besides that, it can provide actionable insights for FinTech developers, policymakers, and tourism industry stakeholders aiming to improve QR mobile payment adoption among international travellers.

1. Introduction

In the context of domestic and international transactions, mobile payment technology has transformed the way consumers make daily payments. Its features, such as speed, convenience, and contactless nature, have made Quick Response (QR) mobile payments gain widespread acceptance. However, Malaysian outbound tourists are inconsistent in adopting QR payments in a cross-border

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context due to high transaction costs, regulatory uncertainty, and perceived risks, which are barriers to the adoption of QR payments. This study uses the Value-Based Adoption Model (VAM) to explore and uncover these barriers. This model focuses on consumers' assessments of perceived benefits, costs, and value, offering a powerful theoretical lens to explain why certain technologies are adopted or rejected. By applying VAM to cross-border QR payment acceptance, this paper aims to identify factors that can increase the adoption of FinTech solutions among international travellers.

2. Literature Review

According to the Tagiyeva *et al.*, [1], financial transactions have become an essential trend in the context of continued digitalization, driving the adoption of payment international innovations. The rapid growth of mobile technology has become crucial in a new era of financial transaction services worldwide. The adoption of mobile payment systems has significantly increased with the advancement of digital technologies and the rising demand for fast, convenient, and secure payment options. Mobile payments, particularly QR-based transactions have become integral in daily life across several developed and developing countries [2]. However, cross-border mobile payment adoption among Malaysian outbound tourists is still inconsistent due to a lack of standardized payment systems which will lead to a low adoption rate [3]. Technology Acceptance Model (TAM) [4], Unified Theory of Acceptance and Use of Technology (UTAUT), and Mobile Technology Acceptance Model (MTAM) have attempted to explain the factors influencing the use of mobile payments with a focus on key constructs such as perceived usefulness, perceived ease of use, and behavioral intention to explain general acceptance behavior. However, these models cannot fully explain the complex exchanges faced by users, especially in the context of international transactions involving risks, trust, costs, and regulatory uncertainties across borders [5]. Meanwhile, according to the Value-Based Adoption Model (VAM), theory model developed by Kim *et al.*, [6] Value-Based Adoption Model (VAM), suggests that user decisions are based on the consideration of value, balancing perceived benefits (e.g., usefulness, enjoyment, convenience) against perceived sacrifices (e.g., cost, effort, risk). In a cross-border context, several challenges of cross-border payments such as complex currency exchange dynamics, high transaction expenses, security vulnerabilities, and lack of standardized payment systems [3]. Therefore, there is a need to research to understand all the barriers such as standardized payment systems, high transaction expenses, complex currency exchange dynamics, and security vulnerabilities. By using Value-Based Adoption Model (VAM), we can gain a better understanding of QR code applications and encourage people to use them. This will make travel easier and cheaper for Malaysian outbound tourists.

2.1 Mobile Payment Adoption

Mobile payment adoption systems enable consumers to purchase goods and services such as pay bills through a specific mobile app that is installed on user's smart devices like mobile phones. Mobile payment allows consumers to make various types of micropayments like purchasing a small volume of services and products such as groceries, books, transportation tickets, hotel booking, and paying electrical and water bills [7].

2.1.1 Cross-border QR mobile payments

According to the Narendra *et al.*, [8], cross-border payments are transactions sent from one country and received in a different country. There are several players in cross-border payments that consumers have long trusted, such as Visa, RuPay, and Mastercard. However, according to this author, there are three main problems such as different rules in each country, no common global standard, and technology for better user experience.

2.1.2 Importance of QR payments in modern transactions

Digital payment systems have revolutionized the way consumers, businesses, and companies exchange payment methods or values in recent years. Quick Response (QR) code payments are one example of this revolution. It is easy and convenient for users to make transactions by scanning the QR code displayed by the merchant or service provider using their smartphone, eliminating the need for physical cash. In a global context, QR code payments have become an accessible technology that requires minimal hardware investment. This technology can benefit small and medium enterprises and improve the daily routine for users. QR payment allows users to scan a machine-readable code using their smartphone whenever they want to make a payment transaction. By using QR payment, users can make the payment process faster.

However, despite its advantages, QR payments face challenges from the perspective of digital literacy gaps. Elderly users or those unfamiliar with digital technology may find QR payments difficult to use. Another challenge comes from the perspective of security weaknesses, which can cause users to feel hesitant to use this QR platform. Globally, the adoption of QR payments, with platforms such as Alipay and WeChat Pay in China, illustrates the potential of QR payments to reshape the financial ecosystem worldwide.

In short, QR applications play a vital role in modern financial transactions by offering security, convenience, and other features. To fully realize the benefits of QR payments in the growing digital economy, all parties must work together to increase digital literacy, strengthen security protocols, and expand the infrastructure of QR payment application features.

2.1.3 Value-Based Adoption Model (VAM) and Relevance to Fintech

Originally developed by Kim *et al.*, [9], VAM is a model based on perceived value and explores users' willingness to use mobile internet from a value optimization perspective.

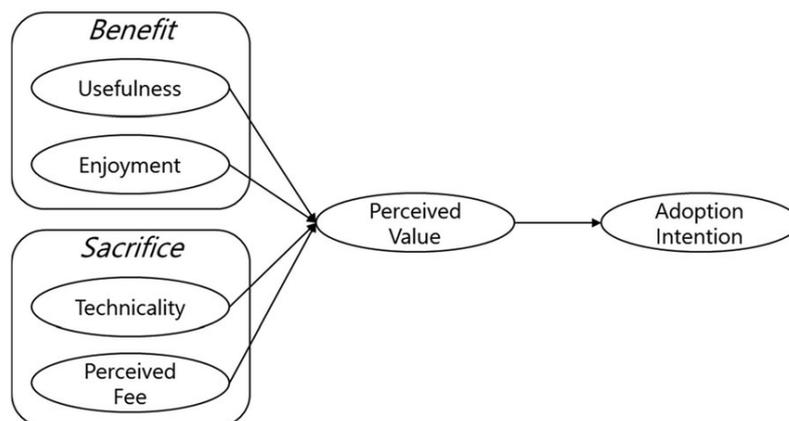


Fig.1.Value-based Adoption Model (VAM)

Based on Figure 1, the key components of the Value-based Adoption Model (VAM) are shown. This model is structured based on two dimensions: perceived benefits, which consist of usefulness and enjoyment, and perceived sacrifices, which consist of technicality and perceived fees.

According to Kim *et al.*, [6], the Value-Based Adoption Model explains why consumers adopt new technology by focusing on their perceived value of that technology. This theory combines concepts from Consumer Perceived Value Theory and Technology Adoption Theories. It involves a trade-off between perceived benefits and perceived sacrifices. There are several components under this theory, such as Perceived Benefits, Perceived Sacrifices, Perceived Value, and Adoption Intention. Each component will influence customer acceptance towards technology.

The reasons why this theory fits well with fintech innovations in which in order to encourage adoption it requires trust from the users.

2.1.4 Current state of cross-border QR payments

Cross-border QR payments represent a growing frontier in digital finance, enabling consumers to make seamless and convenient payments while traveling internationally or engaging in global commerce. Despite the widespread adoption of QR code payments domestically in many countries, cross-border usage still faces significant challenges but also promising advancements.

The growth of mobile payment interoperability has been facilitated by international collaborations among financial institutions, regulatory bodies, and fintech companies [10]. Initiatives like the ASEAN Payment Connectivity, in which Malaysia actively participates, aim to integrate payment systems across member countries. This effort promotes economic integration, supporting both consumers and businesses in their cross-border activities. Key innovations, such as QR code standardization, further enhance the usability of mobile payment platforms for the users.

One major limitation to the development of this cross-border QR payments application is the lack of standardization. One obstacle to developing cross-border QR payment applications is the lack of standardization. Each country has its own payment methods, including payment providers using different QR code standards (static vs. dynamic), payment procedures within settlement systems, and security regulations and protocols, which hinder interoperability.

In an effort to address this issue, various initiatives have been taken, including the ASEAN Pay agreement [10]. This agreement aims to create a unified QR payment ecosystem among Southeast Asian countries. As well as, allowing tourists and consumers to make cross-border payments using QR codes. Apart from that, security and compliance factors also need to be taken into account in cross-border QR payments in order to increase the rate of QR code usage among consumers. In

summary, this payment system using QR has received a lot of response and has the potential to increase the convenience of payments using QR and can speed up every transaction carried out.

2.1.5 Dominant barriers to cross-border QR adoption

While QR code payments have gained widespread acceptance for domestic transactions, their adoption across borders remains relatively limited. Several key barriers inhibit the smooth uptake of cross-border QR payments, which need to be addressed for these systems to realize their full potential.

One of the challenges for cross-border QR mobile payments is the lack of standardization and interoperability [3]. Using the QR payment method for purchase transactions can be difficult because different countries use different payment providers, leading to a low acceptance rate.

Another barrier to cross-border QR acceptance is currency conversion and settlement complexity [11]. These transactions involve multiple currencies, which can delay the settlement process due to issues like real-time currency conversion rates and foreign exchange fees.

Regulatory and compliance challenges also hinder cross-border QR adoption, as it must comply with regulatory requirements and complexity, making the process difficult for users. Additionally, limited acceptance of goods abroad prompts users to choose other platforms that are more convenient for transactions. Lastly, security and trust concerns arise as users feel insecure due to potential risks like data breaches [12].

All these obstacles need to be resolved immediately to ensure that cross-border QR mobile payments can be used without any problems for users. Therefore, efforts from various parties to improve this QR system in addressing issues such as lack of standardization and interoperability, currency conversion and settlement complexity, regulatory and compliance challenges, and security and trust concerns need to be resolved.

3. Methodology

This study uses a conceptual research approach, synthesizing existing literature on Value-Based Adoption Model (VAM) Model, mobile payment usage, and QR-based cross-border transactions to identify the key factors influencing mobile payment adoption. Then, the key factors are reviewed to identify barriers and success factors.

4. Results

The Value-Based Adoption Model (VAM) model serves to understand the factors that influence the use of QR mobile payment systems in a cross-border context because it is very complete for analyzing user behavior and useful for understanding the adoption mobile payment [9].

5. Discussion

The Value-Based Adoption Model (VAM) model provides a theoretical framework for understanding and increasing the use of QR mobile payments in cross-border digital transactions. Although mobile payments offer convenience, consumers still face main problems such as different rules in each country, no common global standard, and technology for better user experience. Addressing these challenges is essential to increase trust and acceptance across different regions. Addressing these challenges through increased security, regulatory harmonization and high cost

including cost of currency exchange can make Value-Based Adoption Model (VAM) a valuable model for improving QR-based cross-border digital transactions.

6. Conclusion

This paper demonstrates the applicability of Value-Based Adoption Model (VAM) in understanding the inconsistent adoption of cross-border QR mobile payments among Malaysian outbound tourists. It contributes to theory by expanding Value-Based Adoption Model (VAM) with trust and regulatory context variables. Practically, it suggests actionable solutions for FinTech developers and policymakers. Future research should empirically validate this framework using structural equation modelling or experimental design to measure the strength of proposed relationship.

References

- [1] Tagiyeva, Nigar, Esmira Babashirinova, Gulnara Agabekova, Yashar Damirov, and Gulnara Ismayilova. "Interdependence of the banking system development and the economic growth in the context of digitalization: Case study of Azerbaijan and its key trading partners." *Banks and Bank Systems* 18, no. 3 (2023): 147. doi: [10.21511/bbs.18\(3\).2023.13](https://doi.org/10.21511/bbs.18(3).2023.13).
- [2] Nawang, Wan Rasyidah Wan, and Syabil Nazhan Ahd Moess. "Predicting intention to use QR code mobile payment among Malaysian Muslim millennials." *The Journal of Muamalat and Islamic Finance Research* (2023): 49-63.
- [3] Percherla and Anand Kumar, "Global Transactions: Navigating Cross-Border Transactions in Retail," *European Journal of Advances in Engineering and Technology*, vol. 9, no. 11, pp. 75–81, 2022.
- [4] Davis, Fred D., Richard P. Bagozzi, and Paul R. Warshaw. "User acceptance of computer technology: A comparison of two theoretical models." *Management science* 35, no. 8 (1989): 982-1003. doi: 10.1287/mnsc.35.8.982.
- [5] Lee, Voon-Hsien, Jun-Jie Hew, Lai-Ying Leong, Garry Wei-Han Tan, and Keng-Boon Ooi. "Wearable payment: A deep learning-based dual-stage SEM-ANN analysis." *Expert systems with Applications* 157 (2020): 113477. doi: [10.1016/j.eswa.2020.113477](https://doi.org/10.1016/j.eswa.2020.113477).
- [6] Kim, Hee-Woong, Hock Chuan Chan, and Sumeet Gupta. "Value-based adoption of mobile internet: an empirical investigation." *Decision support systems* 43, no. 1 (2007): 111-126. doi: [10.1016/j.dss.2005.05.009](https://doi.org/10.1016/j.dss.2005.05.009).
- [7] Raina, Vibha Kaw. "Overview of mobile payment: technologies and security." In *Banking, finance, and accounting: concepts, methodologies, tools, and applications*, pp. 180-217. IGI Global Scientific Publishing, 2015. doi: [10.4018/978-1-4666-6268-1.ch011](https://doi.org/10.4018/978-1-4666-6268-1.ch011).
- [8] Narendra, Kommu, and G. Aghila. "Fortis-ámyna-smart contract model for cross border financial transactions." *ICT Express* 7, no. 3 (2021): 269-273. doi: [10.1016/j.icte.2021.08.007](https://doi.org/10.1016/j.icte.2021.08.007).
- [9] Kim, Hee-Woong, Hock Chuan Chan, and Sumeet Gupta. "Value-based adoption of mobile internet: an empirical investigation." *Decision support systems* 43, no. 1 (2007): 111-126. doi: [10.1016/j.dss.2005.05.009](https://doi.org/10.1016/j.dss.2005.05.009).
- [10] Chew, Boon Cheong, Lay Hong Tan, Nurlisa Loke Abdullah, and Syaiful Rizal Hamid. "Ant-financial in establishing the early stage of the Alipay eco system in Malaysia." *Qualitative Research in Financial Markets* 17, no. 4 (2025): 880-921. doi: [10.1108/QRFM-03-2024-0057](https://doi.org/10.1108/QRFM-03-2024-0057).
- [11] Auer, Raphael, Philipp Haene, and Henry Holden. "Multi-CBDC arrangements and the future of cross-border payments." *BIS papers* (2021).
- [12] Zhou, Tao. "An empirical examination of continuance intention of mobile payment services." *Decision support systems* 54, no. 2 (2013): 1085-1091. doi: [10.1016/j.dss.2012.10.034](https://doi.org/10.1016/j.dss.2012.10.034).