

# **Digital Financial Technology for Enhancing Financial Inclusion in CSR Fund Management: A Case Study of Pulau Ketam Conservation Area, Kuala Perlis, Malaysia**

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## **Abstract**

This study examines the implementation of Digital Financial Technology (FinTech) in supporting financial inclusion within the Corporate Social Responsibility (CSR) fund management framework of the Pulau Ketam Conservation Area in Kuala Perlis, Malaysia. Using a qualitative case study approach, data were collected through semi-structured interviews, focus group discussions, document analysis, and field observations involving CSR administrators, community stakeholders, and beneficiaries. The findings show that FinTech has the potential to enhance transparency, accountability, and efficiency in CSR fund distribution while strengthening community participation in conservation-related initiatives. However, several challenges hinder its effective adoption, including limited digital literacy, infrastructural constraints, and concerns regarding data security and trust. The study concludes that successful FinTech integration requires not only technological readiness but also social preparation, capacity building, and strong institutional collaboration. These insights contribute to the growing discourse on digital financial innovation and offer practical recommendations for improving CSR governance in remote and conservation-dependent communities.

**Keywords:** Digital Financial Technology; Financial Inclusion; CSR Fund Management; Community Development; Conservation Area; Pulau Ketam; Malaysia

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## **Introduction**

In recent years, the rapid development of Digital Financial Technology (FinTech) has transformed the landscape of financial services worldwide. FinTech innovations, ranging from mobile payment systems, digital wallets, online banking platforms, to automated financial management tools, have significantly contributed to expanding access to financial services, particularly in underserved communities. Financial inclusion has therefore become a global priority, as it plays a pivotal role in reducing poverty, strengthening economic resilience, and supporting socio-economic development in both urban and rural areas.

Corporate Social Responsibility (CSR) programs have similarly evolved, shifting from traditional philanthropic activities toward more strategic, sustainable, and accountable models of community empowerment. Effective CSR fund management requires transparency, accuracy, and efficiency, especially when targeting vulnerable or remote communities. The integration of FinTech within CSR fund governance offers an opportunity to enhance financial traceability, improve resource distribution, and ensure inclusive access to financial services among beneficiaries.

Pulau Ketam, located within the Kuala Perlis coastal conservation area in Malaysia, represents a unique socio-economic ecosystem where local communities depend heavily on marine resources and environmental conservation efforts. Despite various CSR initiatives implemented in the region, challenges such as limited financial access, inadequate digital literacy, and manual fund management practices persist. These issues hinder the optimal utilization of CSR resources and reduce the potential impact on community development and environmental sustainability.

Previous studies have highlighted the role of FinTech in promoting financial inclusion and strengthening financial governance. However, limited research examines its application within CSR fund management, especially in conservation-based communities like Pulau Ketam. This creates a strategic research gap concerning how digital financial tools can be effectively implemented to improve transparency, accessibility, and community engagement in CSR-funded programs.

This study aims to explore the implementation of Digital Financial Technology in supporting financial inclusion within CSR fund management in the Pulau Ketam Conservation Area. Through a case study approach and collaboration between Universitas Pembangunan Panca Budi (UNPAB) and Politeknik Tuanku Syed Sirajuddin (PTSS) Malaysia, this research investigates the potential of FinTech to strengthen CSR financial governance and enhance the socio-economic empowerment of local communities. The findings are expected to contribute to the growing literature on digital financial innovation while offering practical recommendations for CSR program administrators, policymakers, and conservation stakeholders.

## **Literature Review**

### **2.1 Financial Technology (FinTech) and Financial Inclusion**

Financial Technology (FinTech) has emerged as a transformative force in expanding access to financial services globally. Innovations such as mobile banking, digital wallets, online payment systems, and peer-to-peer lending platforms reduce traditional barriers to financial access, particularly in underserved and remote communities. Previous empirical studies have shown that FinTech contributes to increased account ownership, more frequent financial transactions, and improved access to microcredit. However, its effectiveness often depends on regulatory readiness, institutional support, and the digital literacy level of the target population.

### **2.2 FinTech Applications in Corporate Social Responsibility (CSR) Fund Management**

The integration of FinTech into CSR governance offers significant opportunities for enhancing transparency, accountability, and efficiency in the management of social funds. Digital systems enable real-time tracking, automated record-keeping, and transparent reporting to stakeholders. Some studies highlight that digital tools such as blockchain-based ledgers, e-payment portals, or CSR management platforms can minimize leakages, ensure proper allocation of funds, and improve community participation. Nevertheless, academic research specifically addressing the use of FinTech for CSR fund management remains limited, especially in the context of community-centered conservation programs.

### **2.3 Digital Financial Ecosystem in Malaysia**

Malaysia has been recognized for its progressive financial digitalization and comprehensive national strategies aimed at strengthening financial inclusion. Policies led by Bank Negara Malaysia promote digital banking, e-wallet services, and inclusive financial frameworks that target low-income groups and remote communities. Despite this progress, challenges persist, including digital gaps between rural and urban areas, differences in financial literacy, and the need to ensure Shariah-compliant financial products. These contextual factors are relevant when assessing the feasibility of FinTech adoption in CSR programs located in areas such as Pulau Ketam.

### **2.4 Digital Tools for Transparency and Accountability in Social Funds**

Digital financial systems, ranging from mobile payment applications to blockchain-based smart contracts, are increasingly explored as mechanisms to improve transparency and traceability in managing social or community funds. Research indicates that decentralized digital records can support efficient fund distribution, reduce administrative burdens, and allow stakeholders to verify transactions easily. Nonetheless, practical challenges such as implementation costs, interoperability, community training needs, and data security issues continue to hinder large-scale adoption of these technologies.

### **2.5 FinTech Implementation in Coastal and Conservation Communities**

Studies examining the use of FinTech in environmental conservation areas remain scarce. Research in coastal communities generally focuses on livelihood development, stakeholder engagement, and sustainable financing mechanisms such as ecotourism or conservation payments. Only a small number of studies explore how digital financial tools can directly enhance the effectiveness of CSR programs in these settings. This underscores the need to investigate how digital platforms may support both financial inclusion and conservation outcomes in local communities such as Pulau Ketam.

### **2.6 Barriers to FinTech Adoption in Marginalized and Maritime Communities**

Several common challenges are identified in the literature when introducing digital financial tools to marginalized or geographically isolated populations. These include limited internet infrastructure, low digital and financial literacy, cultural resistance to technology-driven financial systems, concerns regarding data privacy and security, and regulatory limitations. Understanding these barriers is essential for designing FinTech-based CSR interventions that are realistic, inclusive, and tailored to the needs of Pulau Ketam's residents.

## **Methods**

### **3.1 Research Design**

This study adopts a qualitative case study design to examine the implementation of Digital Financial Technology in supporting financial inclusion within CSR fund management in the Pulau Ketam Conservation Area. The case study approach is suitable because it enables

an in-depth exploration of the real-life context, stakeholder experiences, and institutional processes related to CSR governance and FinTech adoption. The design emphasizes contextual understanding rather than generalization, making it appropriate for examining community-based conservation programs.

### **3.2 Study Location**

The research was conducted in Pulau Ketam, Kuala Perlis, Malaysia, an area known for its coastal and marine conservation initiatives. Pulau Ketam presents a unique context due to its reliance on marine resources, its socio-economic vulnerabilities, and its active engagement with CSR programs implemented by public and private institutions.

### **3.3 Population and Sampling Technique**

The population consisted of stakeholders involved in CSR fund management and community development activities in Pulau Ketam. To ensure rich, relevant data, this study employed purposive sampling, selecting participants based on their roles and knowledge related to FinTech, CSR governance, and community engagement.

Participants included:

1. CSR program managers and administrators
2. Representatives from collaborating institutions (UNPAB and PTSS)
3. Local community leaders and conservation volunteers
4. Beneficiaries of CSR-funded initiatives
5. FinTech service providers or local authorities familiar with digital financial services

The sample size was determined by the principle of data saturation, where additional interviews no longer produced new insights.

### **3.4 Data Collection Methods**

Data for this study were collected using multiple qualitative techniques to ensure a comprehensive understanding of the implementation of Digital Financial Technology in CSR fund management within the Pulau Ketam Conservation Area. The primary method involved semi-structured interviews with CSR administrators, community leaders, FinTech-related stakeholders, and beneficiaries of CSR programs. These interviews explored participants' experiences, perceptions, and challenges related to financial inclusion and the use of digital financial tools. To capture collective views, focus group discussions were conducted with community members, allowing researchers to examine shared perspectives on digital literacy, financial accessibility, and expectations toward FinTech-supported CSR initiatives. In addition, document analysis was carried out using CSR financial reports, project documentation, institutional guidelines, and relevant national policies related to digital financial inclusion, enabling contextual triangulation with interview data. Field observations also played an important role in providing firsthand insights into community interactions, the existing digital ecosystem, and the practical realities of fund distribution practices. Together, these methods ensured data richness, credibility, and a multifaceted understanding of the research context.

### **3.5 Data Analysis Technique**

The data collected in this study were analyzed using a thematic analysis approach to identify patterns, meanings, and insights related to the implementation of Digital Financial Technology in CSR fund management at the Pulau Ketam Conservation Area. The analysis process began with transcribing all interview and focus group discussion recordings, followed by repeated reading to gain familiarity with the content. Initial codes were then generated to capture significant statements, recurring issues, and emerging concepts across the dataset. These codes were systematically organized into broader themes reflecting key aspects such as

transparency in CSR fund management, digital literacy challenges, community readiness, and perceived benefits of FinTech adoption. Document analysis and field observations were integrated into the coding process to strengthen data triangulation and ensure consistency between reported experiences and observed practices. The themes were then reviewed and refined to ensure coherence, accuracy, and alignment with the research objectives. Finally, the findings were interpreted in relation to existing scholarly literature, enabling a deeper understanding of how FinTech can support financial inclusion within community-based CSR initiatives.

## **Result and Discussion**

The findings of this study reveal several key insights into the implementation of Digital Financial Technology (FinTech) for enhancing financial inclusion in CSR fund management within the Pulau Ketam Conservation Area. First, the results show that community stakeholders generally recognize the potential benefits of digital financial tools, such as increased transparency, reduced fund misallocation, and faster disbursement processes. CSR administrators noted that digital platforms could streamline reporting procedures and strengthen accountability, particularly when dealing with multi-stakeholder programs involving conservation activities, community groups, and institutional partners.

Despite these perceived advantages, the study also highlights several barriers affecting FinTech adoption. Many community members in Pulau Ketam still possess limited digital and financial literacy, which restricts their ability to engage effectively with digital platforms. Concerns about data privacy, fear of technology misuse, and mistrust in digital transactions remain prevalent. Additionally, infrastructural constraints such as unstable internet connectivity and limited access to smartphones hinder the widespread use of FinTech-based systems. These findings align with studies that emphasize the importance of socio-technical readiness in digital financial transformation, especially in marginalized or remote communities.

Another significant finding relates to the alignment between national financial inclusion policies and local implementation capacity. While Malaysia's regulatory environment supports digital financial innovation, the study reveals a gap between policy intentions and on-the-ground readiness in a conservation-oriented island community. CSR managers express optimism that FinTech can enhance monitoring and evaluation processes; however, they also acknowledge the need for targeted training programs and community engagement initiatives to build trust and digital capability. Moreover, the findings suggest that integrating digital financial systems into CSR governance requires more than technological deployment, it necessitates social preparation, institutional coordination, and ongoing support mechanisms.

Overall, the discussion underscores that FinTech has strong potential to support transparent, inclusive, and efficient CSR fund management in Pulau Ketam. Yet, achieving meaningful impact depends on addressing contextual barriers, designing user-friendly systems, and strengthening institutional collaboration between UNPAB, PTSS, local authorities, and community stakeholders.

## **Conclusion**

This study concludes that Digital Financial Technology offers substantial opportunities to improve financial inclusion and enhance CSR fund management in the Pulau Ketam Conservation Area. The findings demonstrate that FinTech can strengthen accountability, increase transparency, and simplify fund distribution processes within conservation-related CSR programs. However, the adoption of such technologies is challenged by limited digital literacy, infrastructure constraints, and community-level concerns regarding security and trust.

The study highlights the importance of a context-sensitive approach when integrating digital solutions in remote or conservation-dependent communities. Effective implementation

requires not only technological readiness but also capacity building, stakeholder engagement, and alignment with local socio-economic conditions. Collaboration between academic institutions, CSR implementers, and local authorities plays a crucial role in ensuring successful adoption and sustainability of FinTech-based initiatives.

In conclusion, while FinTech has the potential to significantly enhance CSR financial governance and promote inclusive participation in conservation programs, its success depends on coordinated efforts to address community barriers and support long-term digital empowerment. Future research may explore pilot implementation models or comparative studies across similar coastal communities to further validate and expand these findings.

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