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FACTORS INFLUENCING ADOPTION OF QR CODE PAYMENT SYSTEM: A STUDY BASED IN NORTHERN PROVINCE, SRI LANKA

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ABSTRACT

Despite initiatives to promote digital financial solutions, the adoption of QR code payments among small vendors in Sri Lanka remains limited, particularly in the Northern Province, compared to more developed countries and regions within Sri Lanka, such as the Western Province. This gap persists despite the introduction of LankaQR by the Central Bank of Sri Lanka, which aims to facilitate digital transactions among SMEs through integration with popular payment applications. The transition to digital financial solutions has been accelerated by the COVID-19 pandemic and persistent economic challenges. Hence, this research aims to identify the " factors that affect small vendors in Sri Lanka in adopting QR code payment in Jaffna, Sri Lanka. The study adopts a qualitative research design and interpretivism approach, utilizing a purposive sample of 12 small vendors in Jaffna. The study used to gather data and analyze it using thematic to identify key determinants of behavioral intention toward adoption of QR payment. This study found that QR code payment adoption among small vendors in Jaffna is limited due to three main factors. Technological barriers include low digital literacy and unreliable internet connectivity. Behavioral factors involve perceived complexity, distrust, and fear of fraud. Socio-economic constraints, such as cash dependence, credit-based practices, and transaction costs, further restrict adoption, with cultural norms and generational differences reinforcing reliance on cash. The findings indicate that enhancing digital infrastructure, fostering trust through education, offering incentives, and engaging communities are vital for sustainable QR payment adoption in Sri Lanka.

Keywords: Behavioral Intention, LankaQR, Socio-Economic Factors, Small Vendors, Technological Barriers

1. Introduction and Research Problem

In Sri Lanka's rapidly digitizing economy, where over 52% of the

population was online by early 2022 (Hewawasam et al., 2023) QR (Quick Response) codes have emerged as an important means of connecting physical transactions to digital networks. A QR code is a two-dimensional barcode that encodes information readable by a smartphone camera. Scanning a merchant's QR code with a phone can directly invoke a payment or other action (Hayes, 2025) while, eliminating the need for cash or dedicated card terminals (Hewawasam et al., 2023). In recognition of this potential, the Central Bank of Sri Lanka introduced LankaQR in 2018, an EMV-based national QR standard to enable low-cost, interoperable digital payments for all banks and merchants (CBSL, 2025). Such QR-based systems allow even small retailers to accept secure electronic payments at minimal cost, broadening financial inclusion and connectivity in the country's transition to a cashless economy (Hewawasam et al., 2023). These features underscore why studying QR payment adoption is particularly relevant in Sri Lanka's emerging digital finance landscape.

Asia leads the global QR (Quick Response) code payment surge, yet adoption varies widely. Some economies showcase dramatic success. In China, QR codes are ubiquitous a report suggests roughly 95% of the population even recognizes QR code usage (Glaspie, 2024). Indonesia's national QRIS platform has driven billions of transactions, by mid-2025 Indonesians had executed about 3.7 billion QRIS payments, involving 56.5 million users and 38.7 million merchants, 92.5% of whom are small and medium enterprises (Dwibaskoro, 2025). India's Unified Payments Interface (UPI), which integrates the Bharat QR standard, likewise

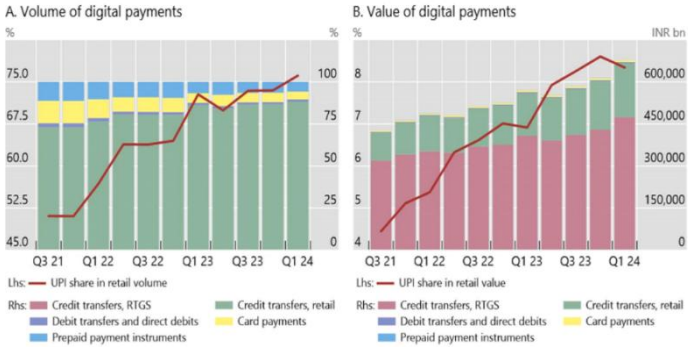

Figure 1: UPI Increasingly Dominant *(Source: Cornelli et al, 2024)*

transformed payments, Figure 1 show, by early 2024 UPI accounted for approximately 81.8% of the nation's digital payment volume, processing over 13 billion transactions per month (Cornelli et al., 2024). These cases illustrate how cohesive policy, interoperability, and network effects can make QR-based payments a cultural and economic norm.

Table 1: Lanka QR Merchants (*Source: Lanka Pay (Pvt) Ltd, 2024)*

	LANKA QR Merchants (As Lanka QR Merchants)			
Description	2023	Q3 2023	Q3 2024 (a)	% Change Q3 24/23
Merchants registered to LANKA QR	388,319	377,255	410,523	8.8
Provisional	Sources: Lanka Pay (Pvt) Ltd Licensed Financial Institutions			

In contrast, Sri Lanka's digital payment ecosystem remains nascent. The Central Bank of Sri Lanka (CBSL) introduced the LankaQR standard in 2018 to promote low-cost digital payments for merchants (CBSL, 2018). According to Table 1, by Q3 2024, 410,523 merchants had registered for LankaQR, which is 8.8% increase year on year and by Q4 2024 LankaQR processed about 1.18 million transactions worth Rs. 5.3 billion (Payments Bulletin, 2025). However, these volumes are modest compared to cash usage. For example, by Q3 2024 Sri Lanka's currency in circulation had risen to roughly Rs. 1.33 trillion, emphasizing continued public preference for cash. Moreover, per-capita transaction values underscore the gap, combined retail electronic payments (CEFTS) amounted to about Rs. 787,207 per person in 2024, whereas QR payments contributed only Rs. 242 per person (Payments Bulletin, 2025). Although policy and bank-led initiatives have expanded the QR network (with 24 certified payment apps as of 2020), actual usage remains limited.

This adoption deficit is extreme when viewed against regional peers. India had tens of millions of QR merchants by 2024, whereas Sri Lanka's 0.41 million LankaQR merchants are relatively few (Payments Bulletin, 2024). Even within Sri Lanka, usage of QR payment is highly uneven. Urban centers dominate, as over 60% of the country's 96,000 point-of-sale terminals are located in the Western Province, with Colombo alone accounting for 42.1% (The Morning, 2021). Consequently, digital payment activities are concentrated around Colombo and other urban hubs, while provinces like the North (including Jaffna) lag behind. As shown in Central Bank data, there are 630 bank branches in Western Province compared to only 150 in Northern Province (CBSL, 2023), and IFC (International Finance Corporation) noting that smartphone and digital adoption outside Colombo remains limited (IFC, 2023). Geographically, Jaffna and similar areas have seen less targeted in promotion, leading to what CBSL calls digital marginalisation in rural districts. The result is a persistent reliance on cash outside cities and minimal QR engagement per merchant.

Literature on Sri Lankan QR-code payment usage has largely focused on consumer behavior, leaving small scale vendors perspectives underexplored. For example, Hewawasam et al. (2023) note that their study "focuses on consumers' acceptability" and explicitly call for further research on Sri Lankan small vendors. Likewise, Dahlberg et al. (2015) observe that prior research on mobile payments "was mostly focused on customer adoption and technology and there is a limited number of studies focused on perspectives of small-scale vendors especially in rural areas resist QR payments. In practice, many Sri Lankan retailers still rely on cash or cheques and are not fully aware of the benefits of QR payments. These findings show that small, rural vendors have not been adequately studied, highlighting the need to identify their reasons for resisting QR-based payments. Therefore, the present study fills this gap by focusing exclusively on small vendors in Jaffna who have not adopted QR payments. The research scope is deliberately narrow and concentrates on the Jaffna district in Northern Province, examining only small vendors (micro- and family-run shops) who have not adopted QR-code payments. It excludes the customer perspective, large retailers, and non-QR payment modes.

The remaining sections of this paper are organized as follows: first, the literature review is presented, followed by the research methodology; then the results and discussion are outlined, and finally, the paper concludes with the conclusion, practical implications, and limitations with directions for future research.

2. Literature Review

2.1. Global and Regional Trends in QR Code Adoption

QR code usage is rapidly growing globally, especially in the US, where mobile users scanning QR codes are expected to increase by 16 million from 2022 to 2025, with 84% having scanned at least once (Revankar and Jambhale, 2025). US households using QR codes rose from 9.76 million in 2018 to 11 million in 2023, and the QR code label market is projected to reach $2.1 billion by 2027 with an 8.9% annual growth (Innovation, 2023; Michlewicz, 2021). Major brands like Starbucks and Walmart leverage QR codes for their marketing (Mertsis, 2025; Bradford, 2025). In China, half the population uses QR codes multiple times daily (Chiampo et al., 2018). With smartphone prenetration expected to reach 7.33 billion by 2025, QR code adoption has strong growth potential (QRCodeChimp, 2023). QR codes offer quick, secure, contactless, and cost-effective payments without expensive hardware, benefiting especially small vendors in developing countries (World Bank Group, 2021). Standards like EMVCo (Europay, Mastercard, and Visa

Consortium) ensure global interoperability, supporting both in-person and online transactions and promoting digital transformation worldwide.

QR payments have become widely popular across the Asia Pacific region, in countries like China, India, Japan, South Korea, Indonesia, Vietnam, Singapore, and Thailand integrating them into everyday transactions (Statista, 2025). China leads the QR adoption, with nearly 10 billion devices using apps like Alipay and WeChat Pay, offering diverse financial services beyond payments (Karel, 2025). India's UPI (Unified Payments Interface) system revolutionized digital payments by enabling fast, secure, and interoperable transactions, processing over 13.4 billion payments worth $161 billion in January 2024 alone (Shukla, 2024). Other countries such as Japan, South Korea, Indonesia (QRIS), Vietnam (VietQR), Singapore (SGQR), Malaysia (DuitNow), and Thailand (PromptPay) have also seen significant QR payment adoption driven by government initiatives and fintech growth (Zhong and Sullivan, 2025). Despite this regional boom, LankaPay is Sri Lanka's national payment network established under the guidance of the Central Bank of Sri Lanka and launched in 2020 but, Sri Lanka's Lanka Pay faces challenges like limited digital literacy and cash preference, lacking some functionalities found in other systems (Jayasundara and Wickramarachchi, 2024). Overall, government support, interoperability, security features, and integration with everyday services underpin the rapid growth and trust in QR code payments across Asia (Tjhin et al., 2023).

2.2. QR Code Adoption in Sri Lanka

QR code usage in Sri Lanka has rapidly expanded across payments, marketing, and various applications, with the introduction of LankaQR by the Central Bank of Sri Lanka serving as the national standard for digital payments (CBSL, 2020). LankaQR facilitates secure, low-cost mobile transactions primarily benefiting small and medium enterprises, with over 400,000 small vendors adopting the system by 2024 (hirunews, 2024). Digital transactions through Lanka Pay reached Rs. 25 trillion in 2023, nearly equal to the country's GDP, with digital payments comprising 45.4% of GDP, up from 8.7% in 2019 (Fernando, 2024). Government initiatives to promote QR based payments, security regulations including KYC and anti-money laundering, and features like real-time notifications and two-step authentication have built trust and accelerated adoption (CRIF, 2025). The system's versatility extends from small vendors to large enterprises and government services, supporting Sri Lanka's ongoing digital transformation initiatives despite continued cash usage (Minaz et al., 2023).

QR code payment adoption in Sri Lanka, especially in rural areas, faces significant challenges including economic constraints, limited technology access, and social barriers (Nasiketha et al., 2023). Concerns over security, fraud, and data protection fuel distrust in digital payments, while poor internet connectivity and low digital literacy further hinder usage in regions like Ampara and Polonnaruwa (Jayathilaka and Udara, 2020). Small businesses struggle with high setup costs, lack formal financial access, and language preferences for Sinhala and Tamil that limit their level of adoption (Kariyakarawana et al., 2023). Overall, these factors contribute to a strong cash preference, with 75% of money held outside banks, slowing the transition to QR code payments.

QR code payments offer significant benefits to consumers, small businesses, and governments by enabling fast, secure, and cost-effective transactions (Hewawasam, 2024). These payments reduce the need for cash, lower transaction fees, and improve convenience, especially for small vendors lacking expensive POS equipment (Le, 2021). QR payments also enhance customer engagement through loyalty programs and data-driven marketing, helping businesses increase sales and efficiency (Verestro, 2024). Governments benefit from increased banking inclusion, reduced cash handling costs, better tax compliance, and environmental advantages like less paper waste (CBSL, 2020). Overall, QR payments support digital economies by fostering transparency, security, and broad accessibility (Funke et al., 2024).

2.3. Jaffna and Small Vendors

Jaffna is a key business hub in Northern Sri Lanka, supporting the local economy through merchants, small businesses, wholesale markets, and industries (Kengatharan, 2020). It links smaller towns to larger markets and maintains strong trade with India via Kankesanturai (KKS) harbour and Palali Airport (Gunawardhana, 2022), importing textiles, spices, and auto parts. Agriculture and fishing are vital, with red onions, chilies, bananas, mangoes, tobacco, and seafood like dried fish, prawns, and crabs supplied to other regions (CBSL, 2020). Wholesale and retail trade attracts shop owners from nearby towns, reinforcing Jaffna's role as a commercial hub. Post-war, construction and real estate growth have boosted new markets and shopping centers, driving up land demand (Dissanayake and Samarathunga, 2021). These developments show Jaffna's rising importance in Sri Lanka's economy.

Small vendors, or Small-scale Individual Entrepreneurs (SIEs), are localized retail operators such as petty traders, street vendors, barbers, and shop owners (Azmat & Samaratunge, 2009). They play a vital role in

the informal economy of developing countries, despite challenges in responsible practices. While wholesalers dominate supply chains, small traders like market vendors and chop bar owners lead retail sales (Mendelson et al., 2006). This study focuses on fresh produce vendors selling fruits, vegetables, red onions, chilies, and spices in the central market (Dharmaratne, 2014). Other groups include seafood vendors along beaches, handicraft sellers offering palm leaf, cane, and coconut product, street food stalls serving fritters and palmyrah snacks (DailyFT, 2017), garment vendors selling clothes and bags, and specialty sellers of palmyrah powders, dried herbs, and sauces. Most vendors operate as sole proprietorships or family-run businesses (Advocata, 2020), with or without local licenses. Their workforce is usually 1–5 people, often family-based, and daily sales remain under LKR 50,000(Advocata, 2020). They run from low-cost spaces like roadside stalls, booths, carts, or rented units. Technology use is minimal, and transactions are mainly cash-based (Wattegama, 2025). Small and micro enterprises represent approximately 75% of all enterprises, provide 45% of employment, and contribute about 52% to the GDP (Rathnasinghe, 2024). In Jaffna specifically, small and medium enterprises account for 99% of all enterprises (Yogendrarajah et al., 2017) and have played a pivotal role in post-war recovery and economic development by creating jobs, reducing poverty, supporting communities, and empowering women entrepreneurs (Vaikunthavasan et al., 2016)

2.4. Theoretical Framework

2.4.1. Symbolic Interactionism

Symbolic interactionism is a micro-level sociological theory emphasizing that people interpret and act on the social world through shared symbols and meanings. In this view, human behavior is guided by the symbolic meanings people attach to objects and interactions. As one source puts it, humans “act toward things based on the meanings those things have for them,” and these meanings are not innate but “arise from social interaction” (Nickerson, 2025). In other words, people’s actions are responses to the social meanings they construct, rather than to objective features of things.

Applied to QR code payments among small Jaffna vendors, this perspective suggests that vendors’ choices depend on the symbolic meaning their community assigns to the technology. Vendors form beliefs about QR payments (e.g. trustworthiness, ease or complexity) through conversations with customers, peers, and family, but not in isolation. If the local social narrative treats QR codes as risky or difficult, that shared interpretation will discourage vendors from adopting the

technology, even if the technical infrastructure is available. Symbolic interactionism thus highlights how vendors' subjective experiences and community norms shape their adoption of QR payment systems (Husin et al., 2021).

3. Methodology

3.1. Research Strategy and Population, Sampling, and Sampling Technique

This study used an interpretivist approach, which focuses on understanding people's personal experiences and views (Pulla & Carter, 2018). A qualitative method was used to explore how small vendors in Jaffna see QR code payments and what socio economic, technological and behavioural factors affect their decisions.

The population of the study was small vendors in Jaffna who have not adopted QR code payments. Jaffna was chosen because it has weak digital infrastructure, low LankaQR usage, and limited banking services due to post-war recovery (World Bank, 2016). Many vendors run small informal businesses with poor access to digital tools (UNDP, 2021) and face growing competition from supermarkets and online shopping, making digital payments vital for survival (Aithal et al., 2022).

Purposive sampling was used to select only the vendors who were micro or family-run sole proprietorships with daily revenues below LKR 50,000 (FNA, 2021), a workforce of 1–5 people and operating from temporary or low-cost spaces as these were most relevant to the study (Karunaratna et al., 2021). The study initially targeted 30 participants, however, due to data saturation, 12 small vendors were interviewed, from different categories fresh produce, seafood and fish, handmade crafts, street food and snacks, garments and textiles, and specialty items. This method helped capture views from a variety of vendors while still focusing on those who had not adopted QR payments.

3.2. Data Collection

In this study data was collected mainly through unstructured face-to-face interviews and direct observations which follow a qualitative research method. An interview guide was first prepared using past studies and then validated through expert review and pilot testing. It was first reviewed by academic experts and then pilot-tested with two small vendors in Jaffna. Two undergraduate students assisted by translating the questions and ensuring the Tamil version was clear and culturally appropriate. Based on feedback from both the experts and the

pilot test, the wording and terminology were revised for clarity and relevance based on their suggestions some alterations were made especially in the Tamil version were changed to make the questions clearer.

The interviews carried out in Jaffna (Figure 2 show the locations) and

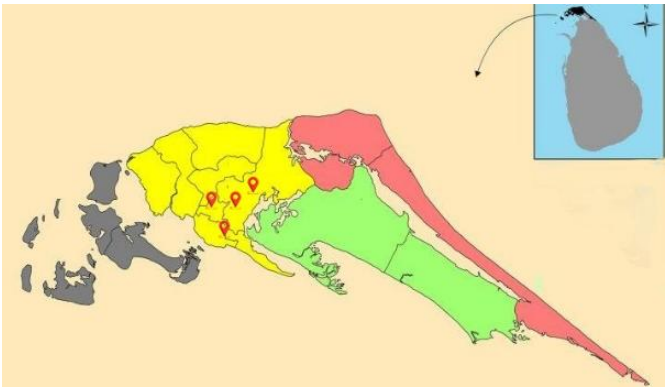

Figure 2: Purposive Sampling Locations of the Study in Jaffna

data collected between 08 July and 12 July 2025, interviews were conducted at different locations in Jaffna district. Those are Chunnakam, Kodikamam, Uduvil, Tellippalai, Vattukottai, Manipay, Kondavil, Kokkuvil, and Ilavalai and Most interviews were done in Tamil, since it is the mother tongue of the participants. With their permission, the interviews were recorded, and later all the answers were translated into English. This method allowed the collection of detailed stories and experiences, showing how small vendors personally view and explain their reasons for not using QR code payments.

3.3. Data Analysis

This study used thematic analysis to examine the interview data as the topic of QR payment adoption among small vendors in Sri Lanka is relatively underexplored. Thematic analysis is a flexible method for identifying patterns and themes, involving coding, refining and interpreting data to capture complex phenomena (Kiger & Varpio, 2020). It enables researchers to engage deeply with the data, uncover rich insights and contribute to theory development. While challenges such as misunderstandings of its foundations and inconsistent application exist, careful use ensures thematic analysis

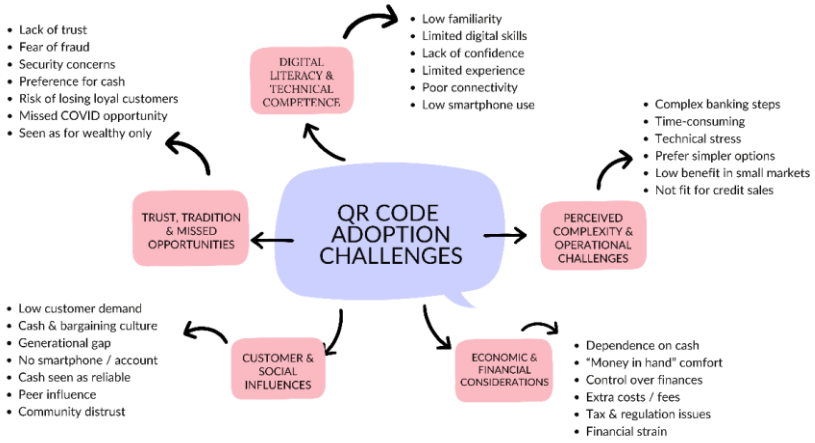

Figure 3: Visual Representation of Key Themes and Enduring QR Code Adoption Challenges based on the Findings *(Source: Developed by the authors)*

remains a robust and reliable tool for qualitative research (Naeem et al., 2023). Figure 3 shows the theme we used for the analysis.

4. Results and Discussions

This study investigated the limited adoption of QR code payment systems among small vendors in Jaffna, Sri Lanka, examining technological, behavioral, and socio-economic factors. The study's findings, structured according to the research objectives, are discussed below.

4.1. Technological Reasons for Limited Adoption

Across multiple locations, low digital literacy and technical competence emerged as central barriers. Many participants reported unfamiliarity with digital payment systems, directly affecting their ability to adopt and use QR-based payments. For example, in Chunnakam, one business

owner admitted that "The system was unfamiliar to me." while in Kodigamam, another shared, "I had limited knowledge about QR code systems, even I did not have sufficient knowledge." Similar experiences included discomfort with new payment technologies and lack of personal confidence, as illustrated by statements like "I personally lack the skills and confidence to use them." and "Even at a shop, if I have to use a payment machine, I struggle." Limited personal digital exposure also restricted adoption: "I personally have limited digital exposure and prefer to receive payments in cash." These observations align with Megama et al. (2020), who note that low digital literacy can impair business operations and readiness to adopt technology-based payments.

Technical and infrastructure issues further compounded these challenges. In Uduvil, inconsistent mobile network coverage and congestion during peak hours led to delayed transactions, while in Thellipalai, unreliable internet and delayed confirmation messages discouraged adoption. The Morning (2025) confirms that internet coverage in Sri Lanka remains inconsistent, even in urban areas like Colombo, and LIRNEasia (2021) reports that mobile networks, particularly 4G, experience congestion during peak demand. These technological barriers slow transaction efficiency and reduce customer satisfaction. Retailers frequently cite employee and customer digital literacy as key constraints (Jayarathne et al., 2022), while Weerakoon and Anuradha (2024) note that financial and digital literacy significantly influence SMEs' ability to adopt digital banking solutions. These findings clearly illustrate that technological readiness including both personal competence and reliable infrastructure is a foundational factor limiting QR payment adoption in Jaffna.

4.2. Behavioral Reasons for Limited Adoption

Across study locations, perceived complexity and operational challenges were prominent. Vendors expressed concerns over cumbersome setup processes, time-consuming procedures, and dual-system management (cash and digital), which increased operational burden. In Chunnakam, a vendor explained, "From my experience, the banking process to set it up was not clearly established." while in Thellipalai, participants noted, "I feel that maintaining two systems would add unnecessary complexity." Vendors often adopted simpler alternatives selectively, such as Dialog Recharge QR codes in Chunnakam or occasional ATM card payments in Kodigamam, indicating a preference for reduced operational complexity.

Customer and social influences also shaped behavioral adoption. Vendors reported that most customers did not inquire about QR

payments, reflecting low community demand. As one vendor in Chunnakam stated, "In my experience, most customers do not inquire about QR payments." and in Kodigamam, "I think there is a lack of general awareness and understanding among the public" was highlighted. Cultural and demographic factors further influenced adoption, with elderly customers avoiding QR payments due to unfamiliarity or lack of smartphones and bank accounts, while younger customers were more receptive. Community norms and bargaining practices, such as those in Vattukottai, favored cash transactions for flexibility in credit arrangements. Social distrust toward digital payments was also evident, particularly in Manipay, where "I've noticed that people feel fear even when handing over their cards." These findings resonate with Hewawasam and Mendis (2024), emphasizing that community trust, generational divides, and cultural norms critically shape digital payment adoption.

Trust issues were pervasive, reinforcing behavioral reluctance. Vendors in Kondavil and Thellipalai reported concerns over fraud, with smartphone scams and QR code tampering cited as common risks. National data indicate over 9,200 phishing incidents linked to digital platforms in 2024–25 (Daily Mirror, 2025), corroborating these fears. Even with infrastructure expansion by LankaQR to nearly 400,000 merchants, rural traders reported limited access (LankaPay, 2024), reflecting the gap between institutional initiatives and community-level adoption. Behavioral tendencies toward risk aversion, adherence to traditional payment practices, and reliance on observable cash balances collectively restrict QR adoption, aligning with findings by Hewawasam (2023) that tangible cash provides both security and control.

4.3. Socio-Economic Reasons for Limited Adoption

Vendors across study sites emphasized cash as a practical liquidity tool and psychological safety net. In Kokkuvil, a business owner noted, "In my view, daily operations are fully dependent on cash, and cash provides a sense of financial stability." Transaction costs, including bank-imposed fees and regulatory compliance, further discouraged digital adoption. Vendors reported that adopting QR payments might increase financial burdens, particularly under existing pressures from taxation or pawning-based credit reliance. Kondavil participants also highlighted systemic macroeconomic constraints, stating, "I think first of all, the economy should develop; only then can we use QR codes effectively." These findings align with Ceylon Today (2025), noting SMEs' difficulty affording digital payment systems, and Echelon (2025), observing limited regulatory impact on the informal sector.

Socio-economic factors also intersect with operational and behavioral barriers. Vendors in Ilawalai emphasized the misalignment of QR payments with existing credit-based practices, stating, "I feel that digital transactions do not align easily with credit-based exchanges, and it will be harder to maintain this procedure." This interaction between economic realities, operational preferences, and behavioral tendencies reinforces the complex constraints on adoption. Overall, socio-economic considerations, including cash reliance, transaction costs, regulatory pressures, and macroeconomic instability, significantly shape vendors' willingness and ability to adopt QR-based payments.

A notable and somewhat unexpected theme that emerged was the strong influence of cultural loyalty and generational divides. While technical, behavioral, and economic barriers were anticipated, the depth of reliance on cash due to customer trust, bargaining practices, and loyalty to traditional vendors was particularly pronounced. In Nallur, elderly customers reportedly avoided QR payments, even when infrastructure was available, and small vendors feared customer attrition if cash was de-emphasized. Similarly, in Vattukottai, the fear that QR adoption might disrupt established customer relationships highlights the socio-cultural dimension of technology adoption, a factor often underestimated in prior studies. Another surprising insight was the "missed opportunity" during COVID-19, where infrastructure for contactless payments was available, but sustained adoption did not occur, highlighting the gap between temporary policy-driven uptake and long-term behavioral change.

5. Conclusion

This study found that small vendors in Jaffna are slow to adopt QR code payments because of low digital skills, weak internet, lack of technical help, and worries about fraud or costs. Vendors also feel safer with cash, see QR as complex, and face low customer demand. Socio-economic factors like cash dependence, small profit margins, and credit-based trade further reduce interest, although younger and more educated vendors are more open to adoption. The findings show that adoption is not only about having technology but also about building trust, reducing costs, and supporting vendors with proper knowledge and tools. Policymakers, banks, and technology providers should improve internet access, design simple apps in local languages, provide training, and offer financial incentives for both vendors and customers. Successful adoption of QR payments requires combining technical readiness, behavioral support, and socio-economic alignment, as ignoring any of these factors will limit progress.

5.1. Practical Implication

The findings of this study carry several practical implications that can guide efforts to improve QR payment adoption in Sri Lanka, particularly in rural and semi-urban areas such as Jaffna. Expanding and stabilizing digital infrastructure is critical. Strengthening mobile network coverage and ensuring reliable internet access will reduce delays and failures that discourage merchants and customers. Affordable data plans and targeted investment in underserved regions can ensure that QR transactions work more smoothly. At the same time, financial institutions and payment service providers should focus on improving technology platforms by designing simpler, more user-friendly interfaces and incorporating offline-capable features so that transactions can succeed even with weak connectivity. Providing toolkits and training for merchants can further enhance their ability to handle QR systems confidently.

Another key implication is the need to invest in education, awareness, and trust-building. Targeted training programs delivered in local languages for both shopkeepers and consumers, especially the elderly, would increase familiarity and confidence in using QR codes. Public campaigns, led by banks or community organizations, could highlight benefits such as speed, security, and record-keeping, while also addressing common fears. Consumer-protection measures like fraud insurance and clear dispute-resolution mechanisms would strengthen trust and reduce fears of scams. In addition, education on online risks and fraud prevention would help users feel secure and more willing to adopt digital payment systems.

Economic and policy measures also play a vital role in overcoming adoption barriers. Financial incentives such as reduced transaction fees, subsidies for equipment, and tax breaks for digital transactions would lower the cost burden on small businesses. Microloans tied to digital payment adoption could motivate hesitant vendors, while broader financial literacy efforts would encourage merchants to view digital tools as viable business enablers. Importantly, incentives must not only target merchants but also customers. Cashback programs, loyalty rewards, or discounts for QR-based purchases can stimulate demand and break the cycle where both parties wait for the other to adopt. Offering merchants added value through services like mobile top-ups or bill payments within the same QR system can also enhance the attractiveness of adoption.

Cultural and community engagement is essential to bridge trust and loyalty to cash. In communities where cash is the dominant practice,

trusted local figures such as religious leaders, village councils, or business associations can play a pivotal role in normalizing digital payments. Joint awareness events involving both merchants and customers could help show the practical benefits of QR payments. Tailoring systems to local norms is equally important. For example, incorporating features that allow vendors to record small credit-based transactions or offering flexible payout schedules can ensure digital payments complement, rather than disrupt established practices. Moreover, providing apps and instructions in Sinhala and Tamil would make systems more accessible to elderly and rural users. Overall, a combined strategy that addresses technological, behavioral, economic, and cultural barriers is necessary to promote the sustainable adoption of QR-based payments in Sri Lanka.

5.2. Limitations and Future Research

The study is limited to small vendors in Jaffna, restricting generalization across Sri Lanka. Future research should expand to diverse regions, include customer perspectives, and explore additional variables such as financial literacy or cultural attitudes. Wants to focus more on all around Sri Lanka.

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