PAYMENT INNOVATIONS AND RISKS IN SOUTH ASIA
EXECUTIVE SUMMARY

DIGITAL PAYMENT METHODS ARE THE FUTURE OF PAYMENTS IN SOUTH ASIA

✓ Consumers prefer digital modes of payment over paper-based transactions.
✓ Digital government-to-person payments have been increasingly adopted since the beginning of the COVID-19 pandemic.
✓ The use of cash in most economies is on the decline.
✓ QR code-based payments are the most preferred mode of payment.

DIGITAL PAYMENTS ARE A CRUCIAL TOOL FOR FINANCIAL INCLUSION

Leveraging technology makes these innovations easier and more affordable, particularly for addressing the gender gap and urban-rural divide in access to financial services in South Asia. Digital payment innovations can also improve security and transparency in financial transactions, making them the chosen mode for mass G2P payments and a critical component of economic development efforts. Most national financial inclusion strategies in South Asia consider digital finance an imperative tool for financial inclusion.

ENABLING DIGITAL INFRASTRUCTURE HAS ACCELERATED DIGITAL PAYMENT INNOVATIONS IN SOUTH ASIA

Real-time payment systems are increasingly popular in the region, especially for low-value and retail transactions. They offer secure and interoperable platforms for instant digital payments, which are available 24/7. Digital national IDs for e-KYC are a priority for all countries. While many countries already have an established framework, most are working out the bottlenecks to make the consumer experience more seamless.

ENHANCING FINANCIAL INCLUSION THROUGH REGIONAL COLLABORATIONS IN SOUTH ASIAN CROSS-BORDER REMITTANCES

Cross-border remittances contribute heavily to many South Asian economies due to the high number of migrant workers. Since international remittances are often the first level of financial services migrants use, they create a unique opportunity for financial inclusion. Many regional collaborations to ease cross-border remittances in South Asia are coming up.
Despite the progress, foundational barriers persist, hindering the widespread adoption of digital payment innovations.

In rural and remote areas, there is limited access to basic telecom services, with a gender gap in mobile ownership and internet usage. Every person with a smartphone does not necessarily have access to the internet, making offline payments a need to further financial inclusion. Financial and digital literacy need more impetus to make digital payment solutions part of the financial mainstream.

Along with rapid growth in the adoption of digital financial services, there has been an increase in consumer risks associated with digital payments.

- The increased reliance on digital financial services has exposed consumers to various cybersecurity threats, including fraudulent transactions, money laundering, and data breaches.
- Social engineering has become ubiquitous, and consumers’ financial data is increasingly targeted to make unauthorized transactions.
- Cyber threats have also evolved along with technological advancements, with fraudsters devising new ways to siphon money through payment platforms, such as QR Code scams, SIM skimming, and phishing links.
- Apart from these risks, operational challenges such as service downtime can impede the stability and integrity of digital payments.

Although there is no disaggregated data on a national or regional level to ascertain the exact degree of financial loss caused by these risks, there is a unanimous understanding relating to the severity of the threat posed by them.

Addressing these concerns is crucial for upholding trust in the digital payment system. Therefore, AFI and the South Asia Region Financial Inclusion Initiative Technical Task Force, led by Nepal Rastra Bank, have identified payment innovations and the associated risks as a priority area for research, recognizing the scarcity of information concerning the risks linked to digital payment innovations.

This report serves as a resource for regulators, aiding them in comprehending the evolving nature of the payment landscape in the South Asian region. It aims to identify key payment innovations and assess the associated risks to effectively mitigate them and create a safe and inclusive payment ecosystem, thereby achieving the region’s overarching financial inclusion goals.

In pursuit of advancing digital financial services, several key recommendations have emerged.

These include fostering collaboration among regions to innovate payment methods and manage associated risks. Additionally, there’s a push for unified regulatory efforts to ensure inclusivity in payment systems. Strengthening these systems through centralized data collection and bolstering consumer protection measures are also highlighted. Moreover, initiatives to enhance security, promote literacy programs, and ensure interoperability aim to foster trust and efficiency in digital payment infrastructure, ultimately bridging the digital divide.
1. INTRODUCTION
1.1 BACKGROUND

The payment landscape in South Asia has undergone significant changes in recent years. The technological revolution marked by the widespread adoption of smartphones and mobile applications has led to a surge in digital payment transactions, including mobile money, mobile financial services (MFS), instant payment systems (IPS), and cross-border remittances.

The growth of FinTech companies has played a vital role in bridging geographical gaps and developing popular payment products, such as contactless or touch-free payment methods. The uptake of digital payment solutions has rapidly increased over the past five years, prompting countries to leverage these innovative tools to extend financial inclusion to remote areas by disbursing funds to various sectors. It has enabled businesses and vulnerable populations to stay afloat, for example, during the COVID-19 pandemic, to access essential services, thereby facilitating the swift revival and recovery of the economy.

South Asia is one of the most densely populated areas globally, accommodating over one-fourth of the world’s population. Access to formal financial services is crucial for the economic development of these populations, particularly for the underserved and vulnerable, such as women, the rural poor, and the elderly. While there have been notable improvements in financial access, South Asia remains the region with the highest number of unbanked populations. Further, gender, one of the key denominators based on which financial inclusion is measured, is also a major concern for the region, with multiple countries having a higher percentage of the unbanked female population, as shown in Figure 1.1.²

In Bangladesh (43 percent), Nepal (50 percent), and Pakistan (43 percent), less than half of the women have access to formal banking services. Although 32.1 percent of South Asians, predominantly women, lack banking access as per the Global Findex data of 2021, it is imperative to recognize progress.

2 Figure 1.1 includes countries based on availability and endorsement of data.

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**FIGURE 1.1. PERCENTAGE OF UNBANKED POPULATION IN SOUTH ASIA (2021)**

<table>
<thead>
<tr>
<th></th>
<th>Overall Rate</th>
<th>Bangladesh</th>
<th>India</th>
<th>Nepal</th>
<th>Sri Lanka</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Asia (Overall)</td>
<td>32.1%</td>
<td>15%</td>
<td>17.1%</td>
<td>22.5%</td>
<td>11.3%</td>
</tr>
<tr>
<td>Unbanked Women</td>
<td>18.95%</td>
<td>11.2%</td>
<td>10.7%</td>
<td>25.05%</td>
<td>5.35%</td>
</tr>
<tr>
<td>Unbanked Men</td>
<td>46%</td>
<td>28.25%</td>
<td>11.3%</td>
<td>20.95%</td>
<td>5.35%</td>
</tr>
</tbody>
</table>

Source: The Little Data Book on Financial Inclusion, Global Findex Database 2021
1.3 RESEARCH METHODOLOGY

To achieve the research goals, a dedicated task force comprising key stakeholders from the central banks of Bangladesh, Bhutan, the Maldives, Nepal, Pakistan, and Sri Lanka was actively engaged in the research.

Under the aegis and guidance of the task force led by Nepal Rastra Bank (NRB) and in collaboration with AFI, the Bridge Policy Think Tank was invited to contribute to preparing the report. Throughout the study, extensive interviews were conducted with South Asian central banks, including Bangladesh Bank (BB), the Royal Monetary Authority (RMA) of Bhutan, the Reserve Bank of India (RBI), the Maldives Monetary Authority (MMA), the Nepal Rastra Bank, the State Bank of Pakistan (SBP), and the Central Bank of Sri Lanka (CBSL). Key stakeholders were also interviewed, such as the National Payments Corporation of India (NPCI) and Nepal Clearing House Limited (NCHL). These interviews further enriched and substantiated the desk research conducted at the initial stage. The details of participating organizations and individuals are specified in Annex I.

1.4 LIMITATIONS OF THE STUDY

This study focuses exclusively on retail payments, excluding wholesale payments from its scope.

The research relies primarily on data up to August 2023, except when highlighting specific key progress or conclusions beyond that timeframe. Although we have endeavored to collect uniform information, we acknowledge that data limitations may exist, primarily due to the unavailability of South Asia-level data. While this study successfully involved extensive interviews with central banks and key stakeholders across South Asia, it faced limitations in engaging all regional clearing houses due to time and contact constraints. While narrowing the scope of clearing house insights, this restriction does not diminish the study’s overall contributions to understanding the region’s digital payment ecosystem. Finally, Afghanistan was excluded from the study due to insufficient data regarding the country’s payment system.

65.8% The Global Findex Data from 2017 to 2021 has observed a rise in the percentage of banked women, from 64.1 percent to 65.8 percent.4 Hence, recent years have witnessed a surge in individuals gaining access to banking services. For instance, Sri Lanka has achieved a high rate of banked population, for both men and women, through targeted policy interventions, the mandatory opening of licensed bank branches in non-urban areas, and opening school savings units. Other South Asian countries have also employed similar strategies, which indicates a continued commitment towards improving the state of the banked population and achieving financial inclusion.

Although digital payment innovations have proved instrumental in furthering financial inclusion, the growth in digital payments has also introduced new risks, including fraud, money laundering, cyber threats, and data breaches. Cybercriminals are increasingly targeting digital payment platforms, leading to data breaches and unauthorized transactions such as Hundi, thereby posing significant challenges to the safety and trust of the digital payment ecosystem in the region.5 In light of these challenges, the South Asian Region Financial Inclusion Initiative (SARFII) embarked on this study to understand the landscape of payment innovations and risks in South Asia.

1.2 OBJECTIVES OF THE STUDY

Through this report, SARFII aims to identify payment-related innovations in the region, assess the associated risks, examine the policy interventions implemented by central banks to effectively mitigate these risks, and provide recommendations on the way forward.

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2. REGIONAL DEVELOPMENTS AND PAYMENT INNOVATIONS IN SOUTH ASIA
The development of essential infrastructure, innovative payment channels, and the utilization of digital technology are emerging as key tools for expanding financial inclusion in South Asia. Central banks and governments in the region are working hand in hand to reach a broader audience and drive inclusive innovation in payment systems.

### 2.1 JOURNEY TOWARDS A DIGITAL ECONOMY

Figure 2.1. shows that in the last five years, from paper-based payment instruments, like cheques and demand drafts, consumer preference has switched to digital payments in the majority of South Asian countries. However, in Nepal, the use of paper-based instruments increased by 37 percent. Nevertheless, the growth rate of cheque presentation experienced a 5 percent decline (from 21 percent to 16 percent) over the past year.


8 Ibid.

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### FIGURE 2.1. DECLINING DEPENDENCY ON PAPER-BASED INSTRUMENTS IN SOUTH ASIA (2018 AND 2022)

<table>
<thead>
<tr>
<th>GROWTH RATE</th>
<th># OF PAPER-BASED TRANSACTIONS (IN MILLIONS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5%</td>
<td>Bangladesh: 22.05, Bhutan: 0.419, India: 699.9, Nepal: 13.92, Pakistan: 991.9, Sri Lanka: 33.049</td>
</tr>
<tr>
<td>-40%</td>
<td>Bangladesh: 22.05, Bhutan: 0.419, India: 699.9, Nepal: 13.92, Pakistan: 991.9, Sri Lanka: 33.049</td>
</tr>
<tr>
<td>-16%</td>
<td>Bangladesh: 22.05, Bhutan: 0.419, India: 699.9, Nepal: 13.92, Pakistan: 991.9, Sri Lanka: 33.049</td>
</tr>
</tbody>
</table>

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9 Bangladesh exchange rate: approximately BDT110 to USD1 (mid-December 2023).


**FIGURE 2.2. GROWTH OF DIGITAL PAYMENT TRANSACTIONS IN SOUTH ASIA**

**BANGLADESH (2020-22)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (Million)</th>
<th>Value (Billion USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-20</td>
<td>3092.1</td>
<td>2892.1</td>
</tr>
<tr>
<td>2020-21</td>
<td>4044.5</td>
<td>519.39</td>
</tr>
<tr>
<td>2021-22</td>
<td>4701.7</td>
<td>710.95</td>
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</table>

**BHUTAN (2018-22)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (Million)</th>
<th>Value (Billion USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-18</td>
<td>17.65</td>
<td>2.63</td>
</tr>
<tr>
<td>2018-19</td>
<td>63.4</td>
<td>2.72</td>
</tr>
<tr>
<td>2019-20</td>
<td>76.19</td>
<td>5.91</td>
</tr>
<tr>
<td>2020-21</td>
<td>161.27</td>
<td>7.35</td>
</tr>
<tr>
<td>2021-22</td>
<td>226.03</td>
<td></td>
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</table>

**INDIA (2019-23)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (Million)</th>
<th>Value (Billion USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-19</td>
<td>23260</td>
<td>19624</td>
</tr>
<tr>
<td>2019-20</td>
<td>34124</td>
<td>19711</td>
</tr>
<tr>
<td>2020-21</td>
<td>43744</td>
<td>20998</td>
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<tr>
<td>2021-22</td>
<td>71876</td>
<td>113938</td>
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**PAKISTAN (2018-22)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (Million)</th>
<th>Value (Billion USD)</th>
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<tbody>
<tr>
<td>2017-18</td>
<td>1442</td>
<td>1874</td>
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<tr>
<td>2018-19</td>
<td>1613</td>
<td>1187.3</td>
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<tr>
<td>2019-20</td>
<td>1624</td>
<td>1616.2</td>
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<tr>
<td>2020-21</td>
<td>908.5</td>
<td></td>
</tr>
<tr>
<td>2021-22</td>
<td>1186.57</td>
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**MALDIVES (2018-22)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (Million)</th>
<th>Value (Billion USD)</th>
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<tbody>
<tr>
<td>2017-18</td>
<td>4.54</td>
<td>30.81</td>
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<tr>
<td>2018-19</td>
<td>4.87</td>
<td>39.35</td>
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<tr>
<td>2019-20</td>
<td>8.22</td>
<td>43.3</td>
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<tr>
<td>2020-21</td>
<td>15.28</td>
<td>62.42</td>
</tr>
<tr>
<td>2021-22</td>
<td>22.65</td>
<td>95.75</td>
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</table>

**SRI LANKA (2018-22)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (Million)</th>
<th>Value (Billion USD)</th>
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</thead>
<tbody>
<tr>
<td>2017-18</td>
<td>564.39</td>
<td>657.37</td>
</tr>
<tr>
<td>2018-19</td>
<td>657.37</td>
<td>672.13</td>
</tr>
<tr>
<td>2019-20</td>
<td>919.02</td>
<td>1186.57</td>
</tr>
<tr>
<td>2020-21</td>
<td>19 711</td>
<td></td>
</tr>
<tr>
<td>2021-22</td>
<td>20 998</td>
<td></td>
</tr>
</tbody>
</table>

*Total digital payments for Maldives were computed based on mobile and internet banking transactions.

*Total digital payments for Sri Lanka were computed based on CEFTS, SLIPS, internet-based payments, card payments and e-money transactions.

**NEPAL (2021-22)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (Million)</th>
<th>Value (Billion USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020-21</td>
<td>429.98</td>
<td>40.02</td>
</tr>
<tr>
<td>2021-22</td>
<td>645.11</td>
<td></td>
</tr>
</tbody>
</table>

*Total digital payments for Nepal were computed based on mobile banking, internet banking, wallet, QR, payment cards, ConnectIPS, ATM and POS.
In Pakistan, the user base of branchless banking mobile apps grew by 41.7 percent in the past year, and Raast-based transactions increased by over 19 times.\(^{14}\)

Sri Lanka experienced a 76.3 percent rise in the value of noncash payments from Q2 2021 to Q2 2023,\(^{16}\) with the Common Electronic Fund Transfer Switch (CEFTS) transaction value as a GDP percentage jumping from 2.7 percent in 2018 to 36.8 percent in 2022.\(^{17}\)

Additionally, digitization in payment innovation has allowed the automation of toll collection. India’s FASTag and Sri Lanka’s Electronic Toll Collection (ETC) are prime examples of this scenario. Transport services and vehicle owners use Sri Lanka’s ETC system, while LANKAQr is also commonly used by ad hoc users of expressways. FASTag’s success is highlighted by a dramatic increase in transactions, from 0.6 million in FY2019 to over 162.6 million in FY2023, marking a significant shift towards hassle-free and efficient toll payment systems.\(^{18}\)

2.2. PAYMENT INNOVATIONS PAVING THE WAY FOR FINANCIAL INCLUSION

Payment innovations in digital financial services (DFS) are reshaping consumer behavior and serving as an important tool for financial inclusion, notably through direct-to-beneficiary transfers across South Asia. These innovations facilitate easier beneficiary identification, reduce intermediary involvement in government disbursement, and improve efficiency. In Nepal, almost 90 percent of government expense transactions, including government-to-person (G2P) payments such as salaries, pensions, and social security, are now digital, with about 30 percent of government revenue collected via digital platforms like mobile applications, online gateways, mobile wallets, or web applications.\(^{19}\) Similar adoption trends are observed in Sri Lanka and the Maldives, reflecting a significant shift towards digital transactions in government financial operations.

In Bangladesh, G2P transactions via MFS have surged from USD12.2 million in 2019 to USD370.35 million in 2023, while salary disbursement grew from USD48.91 million to USD472.45 million over the same period (Figure 2.3). The COVID-19 pandemic led to the BB’s implementation of social protection programs, facilitating the use of MFS for salary disbursement\(^{20}\) to over 4.2 million factory workers.\(^{21}\) This initiative has largely replaced cash with digital payments and has been extended to over 15 million citizens through the Social Safety Net Fund. Union Digital Centers, run by local entrepreneurs, one male and one female, further support digital inclusion within rural areas and address the digital gender gap in the country.

Pakistan’s emergency cash transfers through branchless banking\(^{22}\) and Sri Lanka’s direct fund transfers in the Aswesuma scheme have bolstered financial inclusion by requiring beneficiaries to open bank accounts. Similarly, Nepal’s Social Security Allowance scheme, focusing on


\(^{15}\) Ibid, p. 6.


\(^{17}\) Including CEFTS, LankaPay Online Payment Platform, LANKAQr, and JustPay transactions.


\(^{19}\) Based on interviews conducted with NRB.


\(^{21}\) Based on interviews conducted with BB.

the elderly, women, the poor, and disabled individuals, has digitized welfare payments in the past few years. Likewise, G2P payments in the Maldives, including social security benefits and payroll services, are also directly disbursed to beneficiaries’ bank accounts.

In India, the Pradhan Mantri Jan Dhan Yojana and direct benefit transfer systems, alongside the Aadhar identification system, have significantly enhanced access to DFS, particularly at the grassroots level. The Jan Dhan-Aadhar-Mobile Trinity streamlined the opening of bank accounts and enabled transparent and swift digital payments of direct benefit transfer, with over 505.6 million beneficiaries under the Pradhan Mantri Jan Dhan Yojana having bank accounts as of September 2023, out of which 280.7 million women and 337.6 million beneficiaries are from rural and semi-urban areas. In Bhutan, the introduction of the e-Public Expenditure Management system in July 2019, utilizing the Bhutan Inter-Bank Real-Time fund transfer, has digitalized government payments and increased G2P and business-to-person transactions.

In recent years, SSA funds and government employees’ salaries/pensions are directly transferred to bank accounts via EFT, benefiting the elderly, women, and persons with disabilities.

The Social Safety Net Fund digitally disbursed through MFs

The e-Public Expenditure Management System launched for G2P, salary, and pension transfer

Direct benefit transfer over the Pradhan Mantri Jan Dhan Yojana for women and rural populations

All G2P payments, including social security benefits and payroll services for employees, may be directly disbursed to the beneficiary’s bank account

Emergency cash transfers are digitally disbursed during natural calamities and COVID-19

Aswesuma social benefits are digitally disbursed for rural and poor populations

Digital pension disbursements through bank transfers are available for all pensioners

The Social Safety Net Fund digitally disbursed through MFs

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Aswesuma social benefits are digitally disbursed for rural and poor populations

Digital pension disbursements through bank transfers are available for all pensioners
Similarly, the Sri Lanka Inter-Bank Payment System used for salary and pension disbursements saw a growth of 23.6 percent from 2020 to 2022 in volume of transactions. Regulatory enhancements by CBSL, such as digital customer onboarding through video know your customer (KYC), QR code-based payments, increased wallet limits, and reduced transaction costs such as the Merchant Discount Rate (MDR) on QR-based transactions to 0.5 percent, have promoted financial inclusion. The LANKAQR system supports small and medium-sized enterprises with a national QR code standard for convenient, interoperable transactions. Customers face no fees, while merchants pay CBSL-set MDR to the LANKAQR issuing institution.

23 While the high cost traditionally associated with digital transaction may not significantly impact large purchases like furniture or laptops, it can entirely erase the profit margin for neighbourhood small business merchants on any product they sell.

21 As of January 2024, 21 certified financial institutions and 28 mobile applications facilitate LANKAQR transactions as per LANKAQR Membership. LankaPay. Homepage. Available at: https://www.lankapay.net/products-and-services/lankaqr.

22 Instant Payment systems in South Asia

Driven by a rising preference for instant transactions, real-time payment systems have gained massive momentum in the region, particularly for low-value and retail payments. These systems offer interoperable platforms that enable secure, seamless digital payments 24/7.

### INSTANT PAYMENT SYSTEMS IN SOUTH ASIA

<table>
<thead>
<tr>
<th>Country</th>
<th>Platform</th>
<th>Launched</th>
<th>Operated by</th>
<th>Transactions</th>
<th>Incurs fee for using the platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>BINIMOY</td>
<td>2022</td>
<td>NPCI</td>
<td>Through virtual payment addresses</td>
<td>Yes</td>
</tr>
<tr>
<td>India</td>
<td>UPI</td>
<td>2016</td>
<td>NPCI</td>
<td>Through virtual payment addresses</td>
<td>No</td>
</tr>
<tr>
<td>Maldives</td>
<td>FAVARA</td>
<td>2023</td>
<td>MMA</td>
<td>Through Favara ID</td>
<td>Yes</td>
</tr>
<tr>
<td>Nepal</td>
<td>CONNECTIPS</td>
<td>2018</td>
<td>NCHL</td>
<td>Through multiple accounts</td>
<td>Yes</td>
</tr>
<tr>
<td>Pakistan</td>
<td>RAAST</td>
<td>2021</td>
<td>NCHL</td>
<td>Through various channels: mobile app, internet banking, USSD, P2P</td>
<td>Yes</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>CEFTS</td>
<td>2015</td>
<td>Various</td>
<td>Enables multiple extensions for various use cases</td>
<td>No</td>
</tr>
</tbody>
</table>

JustPay allows linking multiple accounts to a single app for P2P, in-app and QR payments

LPOPP allows payments to government

Other features: LANKAQR, Direct Debit, PEN (phone number based payments)
India’s Unified Payment Interface (UPI), developed by the NPCI, stands out as a pioneering IPS in the region, enabling users to link multiple bank accounts to a single mobile app. UPI allows for efficient fund transfers and receipts using virtual payment addresses, supporting bill payments, online shopping and peer-to-peer (P2P) transactions, and collecting requests that can be scheduled to the user’s preference. Its success is largely due to its user-friendly design and interoperability across many banks and financial institutions (BFIs). Since its introduction in 2016, UPI has seen exponential growth (Figure 2.4.), becoming the predominant payment method, accounting for over 70 percent of payment system contributions in FY2023. Transaction volumes have surged from 5.3 billion in FY2019 to an estimated 83.7 billion in FY2023, with transaction values increasing from USD105.58 billion to USD1,588.82 billion over the same period.

Similarly, Nepal’s ConnectIPS, launched in 2018 by NCHL, has become a key player in the instant payment ecosystem. Accessible through multiple mediums, such as mobile banking apps and dedicated ConnectIPS mobile and web applications, users can link bank account(s) for transactions. This innovation has quickly become popular for its convenience and efficiency in managing financial transactions. From 2020 to 2023, its user base skyrocketed from 162,117 to 1,108,436 (Figure 2.5.).

Launched in 2015, Sri Lanka’s CEFTS is a comprehensive IPS offering a multi-channel platform for real-time retail payments. It supports transactions between customer accounts, high-value government payments via the LankaPay Online Payment Platform, and low-value payments through JustPay-enabled apps and LANKAQQR. Direct debit enables corporations or registered institutions to debit authorized recurring bills from customer bank accounts automatically. CEFTS also enables both scheduled and bulk payments, like salaries. Further, the Payment Exchange Name system facilitates real-time P2P transfers within its network using mobile number-linked nicknames instead of bank details, enhancing convenience and security.

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34 National Payment Corporation of India. Unified Payment Interface homepage. Available at: https://www.npci.org.in/what-we-do/upi/product-overview.
38 LankaPay. Payment Exchange Name. Available at: https://www.lankapay.net/products-and-services/peni/#:~:text=Payment%20Exchange%20Name%20(PENS)%20Is,Fund%20Transfer%20With%20CEFTS.
CEFTS transaction values grew by 80 percent in 2022 from 2021, with growth rates consistently above 30 percent each quarter in 2023 (Figure 2.6). In 2022, the LankaPay Online Payment Platform saw a 73.5 percent rise in transactions and a 151.4 percent growth in value for direct current and savings account payments to government entities, reflecting a broader shift towards digital payments.

Recently, SBP launched a peer-to-merchant (P2M) payment service through Raast, allowing easy payments across channels like mobile apps, internet banking, and Unstructured Supplementary Service Data (USSD) codes. Users can make payments by creating a Raast ID linked to their mobile number and initiate transfers using a mobile or international bank account number. Raast has partnered with organizations, such as Accountant General Pakistan Revenues and the Central Directorate of National Savings, for bulk disbursements. Currently, customers are allowed one Raast ID per computerized national IDs. By FY23, Raast User IDs hit 34.2 million, with transactions soaring from 8 million in FY22 to 306 million in FY23 and the transaction value surging from USD413.06 million to USD22.24 billion in FY23.

In August 2023, MMA launched Favara, which enables banks and payment system providers (PSPs) to use Favara IDs as aliases for customer account numbers, simplifying payment initiation without lengthy account details. Favara also launched two new services: Favara request, for sending payment requests and reminders, and Favara recall, allowing users to retract transactions in error or fraud, enhancing security and trust. Despite launching with just three of the eight banks in the Maldives and a transaction cap of USD3,286, by 31 December 2023, Favara had recorded an impressive transaction volume of 912,802 and a value of USD179.25 million, with two more banks joining, raising the total to five.

In Bangladesh, Binimoy, also known as the Interoperable Digital Transaction Platform, serves as a conduit among various PSPs, allowing users to create a unique ID linked to any bank, PSP, or MFS account for seamless money transfers. This integration fosters easier bill payments and financial transactions through a unified platform.

Digital identity stands out as a key enabler contributing to citizens’ access to financial services in South Asia, streamlining public service delivery, and ensuring benefits reach the intended recipient. It facilitates easy bank account openings and access to various financial services, boosting one’s financial well-being. Enhanced security through encrypted technologies and biometrics reduces fraud risks by authenticating users. In this regard, AFI’s Policy Model provides crucial guidance to member institutions for leveraging digital identity for e-KYC. Accordingly, South Asia has universally adopted digital identity to create a digitally and financially empowered society.

In Bangladesh, national identity cards (NIDs) or Smart ID Cards have simplified e-KYC, speeding up financial service access. The National Identity Registration Bill from 2023 allows even minors to apply for NIDs, enhancing inclusivity. Similarly, India and Pakistan have introduced Aadhar and computerized national IDs as unique identification documents. These cards, which contain demographic and biometric data, support secure banking and KYC processes. These digital IDs simplify administrative procedures, enhance transparency, and secure access to various services. Transitioning from physical to electronic IDs and introducing platforms like India’s DigiLocker, which securely stores and shares verified documents with user consent, further simplifies document handling and cross-ministerial data sharing.

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39 SBP. Raast-Pakistan’s IPS. Available at: https://www.sbp.org.pk/dfs/Raast.html.
41 Pakistan exchange rate: approximately PKR280 to USD1 (mid-December 2023).
42 Maldives exchange rate: approximately MVR15.4 to USD1 (mid-December 2023).
focusing on personal data control and self-sovereign identity. 48 Similarly, the Maldives is developing e-KYC regulations and guidelines 49 and has launched the digital ID app ‘e-Faas.’ 50

Additionally, Nepal and Bhutan are integrating digital identity into their development frameworks. Nepal’s multipurpose NIDs, initiated in 2018, have seen gradual adoption due to their non-mandatory nature. 45 In contrast, Sri Lanka employs e-KYC, video KYC, and digital onboarding for banks and insurers through the Department for Registration of Persons in compliance with the regulations, guidelines, and rules issued by CBSL’s Financial Intelligence Unit (FIU). 46 Sri Lanka is also exploring blockchain for e-KYC to facilitate shared KYC information and documentation. 47 Bhutan delivered the National Digital Identity Act in 2023.

Recent years have seen a surge in unique payment innovations across countries, driven by robust digital infrastructure and supportive payment ecosystems. Digital wallets and mobile money dominate in Bhutan and Nepal, whereas in Bangladesh digital transactions are led by MFs. These advancements, fostered by FinTechs, payment service operators (PSOs) and PSPs, reflect the dynamic nature of the payment landscape. Bangladesh’s MFs stands out by combining several innovations, establishing it as a distinct player in its payment ecosystem.


Alternatively, the reference of these rules may be found at: Administrative Measures adopted by the Govt and Monetary Board during the year, Page 94, https://www.cbsl.gov.lk/sites/default/files/cbslweb_documents/publications/annual_report/2020/en/19_Part_03.pdf


50 Government of the Maldives, National Center for Information Technology. eFaas portal. Available at: https://efaas.egov.mv.
2.4. PAYMENT CHANNELS

QR-BASED PAYMENT TECHNOLOGIES

The rapid growth of digital and payment infrastructures and the fast adoption of financial technology have fueled FinTech innovation, signaling a shift in public payment needs to regulators and private entities. QR code payment solutions, offering a contactless two-dimensional bar code to be scanned via smartphone for transactions, have seen rapid adoption in South Asia. These solutions are widely used for merchant payments, utility bills, and purchases, significantly transforming the region’s payment landscape. Although new, this innovation has revolutionized the South Asian payment landscape. In Bhutan, QR transactions have soared from 2.72 million in 2020 to 69.27 million in 2022.52 Nepal saw QR transactions increase to 26.96 million in 2021-22, a nearly fivefold rise from the previous year’s 5.58 million.53 Sri Lanka’s LANKAQR transactions also grew from 133,100 in 2020 to 599,500 in 2022, with 276,251 transactions in Q2 of 2023.54

<table>
<thead>
<tr>
<th>Country</th>
<th>Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhutan</td>
<td>96.07%</td>
</tr>
<tr>
<td>Nepal</td>
<td>79.03%</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>77.79%</td>
</tr>
</tbody>
</table>

The case of MFS in Bangladesh

In Bangladesh, MFS has significantly advanced financial inclusion since its inception in 2011, evolving from simple P2P transactions to offering a wide array of services, including cash-in/cash-out transactions, remittances, salary disbursements, bill payments, and more. As illustrated in Figure 2.7, MFS transactions grew from 2,035 million in FY 2018 to 4,103 million in FY 2022, with the transaction value rising from USD31.72 billion to USD77.84 billion. By June 2023, MFS accounts reached 207.27 million, with a higher rural uptake.51 MFS does not require a smartphone to access and can be used via application or USSD code, catering to those without internet access. It is available even to the underbanked in remote areas through agents, requiring only a SIM card and NID for simplified KYC processes. This accessibility is key, as mobile connections are more common than internet access among households, making MFS crucial for essential financial services in Bangladesh.

FIGURE 2.7. MFS GROWTH IN BANGLADESH (2018-22)

GROWTH OF QR TRANSACTIONS (2022)

Despite a lack of official data on the rise of QR-based payments in other countries, their notable expansion and adoption have prompted central banks in the region to standardize unified QR codes. In Bangladesh, the move from proprietary QR codes to a standardized Bangla QR by BB enhanced interoperability and usability across payment platforms. Bhutan is integrating licensed banks into the unified Bhutan QR Network, based on EMVCo standards for seamless and interoperable payments via RMA’s common QR infrastructure. For broader interoperability, India has also transitioned to standardized QR codes like UPI QR and BharatQR. Similarly, Sri Lanka established LANKAQR to standardize and ensure interoperability for local currency transactions, benefiting both consumers and merchants. LANKAQR has linked with UPI India and UnionPay China to enable UPI and UnionPay Apps to scan LANKAQR to make payments in Sri Lanka.

Nepal and Pakistan have also implemented standardization frameworks for QR-based payments in 2021 and 2022, respectively, to enhance their payment ecosystems. Nepal introduced QR Guidelines that detail rules for customers, merchants, issuers, PSPs, and PSOs, addressing aspects like eligibility criteria, settlement mechanisms, information security, risk management, compliance, customer services, and dispute resolution. Pakistan’s QR Standard ensures QR code payments are universally processed across all service providers (banks, microfinance banks, and e-money issuers) and channels (IPPs like Raast and payment cards), including P2P and P2M transactions. The Maldives also introduced QR code-based payments in 2019.

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58 LankaPay. LankaQR. Available at: https://www.lankapay.net/products-and-services/lankaqr.
To improve the QR user experience, devices like VoiceBox QR have been introduced in the region, which audibly confirm transaction outcomes upon QR code scanning. This innovation overcomes delayed SMS alerts by offering instant transaction confirmation. It benefits illiterate merchants by ensuring accessibility, thereby advancing financial inclusion for small and marginalized businesses.

Recent years have seen increased adoption of contactless cards in the region, with central banks supporting the technology. For example, BB expanded Near Field Communication (NFC) to debit and prepaid cards and raised transaction limits from USD27 to USD45, removing PIN requirements. Similarly, NRB increased NFC transaction limits to USD37.68. A maximum NFC transaction limit of approximately USD80 is also operational in Sri Lanka.

Some PSOs like FonePay in Nepal have innovated to develop offline QR payment solutions such as tap-and-pay functions (e.g., FoneTag, NepalPayTag, and Tap to Phone), allowing transactions where merchants are online but customers are offline. This innovation uses NFC technology, enabling customers to pay by tapping their phones on a Point of Sale (POS) device without an internet connection.

In India, the e-RUPI was launched in 2021 as a contactless, prepaid voucher for specific uses and recipients redeemable at the accepting center functioning without a bank account or personal information sharing and accessible on smartphones and basic phones via an SMS or QR code. This addresses financial inclusion by overcoming barriers related to the cost and access to internet-enabled smartphones. Similarly, Pakistan introduced the Asaan Mobile Account scheme to facilitate financial inclusion, especially for the unbanked and low-income population. This platform is accessible via feature phones and USSD codes, making it a powerful tool for extending financial services without requiring internet access.

Cross-border remittances are critical for the region's economic development, with around USD176 billion flowing into the region annually, significantly contributing to the GDPs of countries like Bangladesh, Bhutan, Nepal, and Pakistan. These remittances, often the first financial service used by migrants, offer a unique opportunity for financial inclusion. However, studies estimate that around 40 percent of South Asians conducting cross-border transactions rely on informal channels, such as Hundi, for receiving remittances, posing risks. To address this, governments and private players have worked to ease cross-border fund transfers. For example, BB has permitted banks to partner with MFS providers, enabling expatriates to send money directly to MFS accounts for immediate use, including paying school fees, utility bills, and e-commerce, thereby overcoming geographical boundaries.

In Pakistan, SBP launched the Roshan Digital Account initiative in partnership with commercial banks to simplify cross-border fund transfers for non-resident Pakistanis. Non-residents with NIDs, National Identity Card for Overseas Pakistanis, or Pakistan Origin Cards can open digital accounts in Pakistani banks without a visit to a bank or an embassy, making the process remote and digital. These accounts allow for real-time currency conversion to PKR.

Regional solutions to ease cross-border payments

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Accounts have surged from 12,947 in 2020 to 617,730 in 2023, with funds received jumping from USD7 million to USD6,756 million (Figure 2.8). Apart from this, SBP introduced the Pakistan Remittance Initiative in collaboration with the Ministry of Overseas Pakistanis and the Ministry of Finance, facilitating efficient and free P2P remittance flow.

Bhutan has made significant headways towards regional collaboration in South Asia, with its RMA launching the RuPay Project in August 2019. This project connects Bhutan’s and India’s national switches, allowing the use of RuPay cards for digital payments. Leveraging Bhutan’s tourism economy,

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68 SBP. Key Statistics on Roshan Digital Accounts. Available at: [https://www.sbp.org.pk/RDA/Progress.html](https://www.sbp.org.pk/RDA/Progress.html).

69 Royal Monetary Authority of Butan. Payment Systems Background. Available at: [https://www.rma.org.bt/paymentsystem.jsp](https://www.rma.org.bt/paymentsystem.jsp).
this integration facilitates transactions for tourists from both nations by eliminating the need for multiple currencies. In 2021, the RMA partnered with NPCI to introduce UPI QR-based payments in Bhutan.70

India and Nepal have signed a MoU71 to integrate Nepal’s NCHL with India’s UPI system, enabling seamless cross-border payments through the national payment interface72 and potentially introducing QR payment services through Fonepay’s collaboration with NPCI’s international arm.73 Plans are underway to launch UPI-Nepal, an interoperable real-time payment platform for P2P and P2M cross-border transactions,74 aiming to simplify digital transactions for entrepreneurs, students, pilgrims, and tourists and enhance financial connectivity between the two countries. Similarly, Sri Lanka has agreements with UnionPay International and NPCI International Payments Limited to enable tourist payments through LANKAQR. Meanwhile, the Maldives is exploring avenues to introduce the Favara system for cross-border regional transactions as its next phase.

Central banks globally are keenly exploring Central Bank Digital Currency (CBDC) to modernize payments, reduce the operational cost involved in physical cash management, and foster financial inclusion. CBDCs also aim to match the functionalities of private virtual currencies without their associated risks.75 India initiated the phased introduction of its digital rupee. The wholesale CBDC commenced in November 2022, with the retail segment pilot concluding satisfactorily by December 2022.76 This CBDC, founded on distributed ledger technology, assures anonymity and traceability. The RBI plans to expand the pilot among more participating banks and thematic areas. Other countries are actively researching CBDCs. BB is exploring CBDC issuance, backed by government-led feasibility studies.77 NRB is drafting legislative amendments to issue and govern digital currency78 and has published a concept report on CBDC development for public consultation. NRB has established a dedicated division for CBDC.79 Similarly, Pakistan’s SBP is examining CBDC technologies and use cases in collaboration with multilateral agencies providing technical assistance. Meanwhile, Bhutan’s RMA, the Maldives’ MMA, and Sri Lanka’s CBSL are in the research phase. Bhutan has shown interest in piloting various use cases for the digital Ngultrum, including retail, wholesale, and cross-border transactions.80

3. REGULATORY FRAMEWORK FACILITATING INNOVATION AND INCLUSION
The South Asian region demonstrates a progressive trend in adopting national financial inclusion strategies as an overarching policy guide covering many aspects of financial inclusion, including digital inclusion. An enabling environment is provided through regulations and legislation for DFSs aiding financial inclusion.

### 3.1 FINANCIAL INCLUSION STRATEGIES GOING DIGITAL

The AFI's Maya Declaration has pushed South Asian member countries like Bangladesh, Bhutan, India, Pakistan, and Sri Lanka to develop national financial inclusion strategies (NFIS), focusing on digital financial inclusion and the crucial role of DFS in achieving financial inclusion. Although the Maldives and Nepal have yet to develop NFISs, they are progressing towards this goal. The MMA's 2018-2022 strategic plan has recognized the need to develop and adopt an NFIS for the Maldives. In contrast, Nepal has adopted the Making Access Possible road map, which sets strengthening digital payment methods as a short-term goal to achieve its key priority opportunities, i.e., unlocking the constrained credit and savings market and improving payment systems. The Maldives conducted its first demand-side National Financial Inclusion Survey in 2022. The National Financial Inclusion Technical Committee has been constituted to prepare and implement NFIS Maldives. These countries, along with Bangladesh, India, Pakistan, and Sri Lanka, have also adopted national digitization policies, to complement their financial inclusion efforts. Further, SBP's banking on equality policy encourages financial institutions to collaborate with FinTechs and incubators to develop digital tools aimed at women, enhancing digital literacy and access to women-centric products and services.

The NFIS across South Asia reflects each country's unique approach to promoting innovation in DFS through their financial inclusion strategies. Although the strategies vary, DFS is recognized as a crucial pillar for financial inclusion, emphasizing the need for risk assessment alongside its promotion.

However, the lack of explicit mention of DFS in some countries' financial inclusion definitions or vision statements has not detracted from its acknowledged importance in strategy documents.

At the same time, South Asian countries are at various stages of DFS development, with differences in geography and consumer behavior creating a diverse landscape of DFS strategy integration. Identifying shared strengths and commonalities can pave the way for regional cooperation and joint development.

### 3.2 PAYMENT SYSTEM LEGISLATIONS

Private sector participation is crucial for a robust payment ecosystem. South Asian regulators, including those in India, Nepal, Maldives, Pakistan, and Sri Lanka, have adopted comprehensive legislative frameworks for payment and settlement systems, granting central banks authority to regulate private sector participation.

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83 Based on information provided by MMA as part of primary research interviews conducted.


87 Government of India. 2007. Payment and Settlement System Act. Available at: https://www.indiacode.nic.in/handle/123456789/2082?view=XML Compare&handle=123456789/1362#:~:text=india%20code%3a%20payment%20 And%20settlement%20systems%2c%202007&text=long%20Title:3A%3A%20connected%20therewith%20or%20incidental%20thereto.


sector engagement, including supervision, entry criteria, and competition policies. While Bangladesh and Bhutan do not have specific legislation in this area, they have established regulations to oversee it. Bangladesh is in the process of enacting legislation related to payment and settlement, currently under review by its Ministry of Finance. 94

3.3 DATA GOVERNANCE AND PROTECTION

Ensuring clear data management standards is crucial for promoting digital payment innovation. Regulators and stakeholders across the region acknowledge the importance of addressing data and privacy risks associated with digital payments. They are moving towards or have already implemented general data protection laws. 95 Further, specific frameworks for financial data protection have been established, 96 including measures like biometric credentials, time-based one-time passwords (OTPs), limits, and monitoring login attempts to prevent breaches.

Service providers are mandated to adhere to information security guidelines covering aspects of data storage, encryption, and the security of applications and infrastructure. BFIs are legally obligated to protect user data, ensuring it remains secure and accurate when shared with payment system participants. Countries like India have introduced data localization requirements for payment systems. 97 Despite these efforts, data protection in South Asia is still evolving, with governments actively working to enhance regulations.

3.4. REGULATORY APPROACH FACILITATING CONSUMER PROTECTION AND ADOPTION

South Asian countries are actively protecting financial consumers’ rights and enhancing awareness of their basic financial rights by setting up dedicated customer service departments and grievance redressal frameworks. 98 Central banks have proactively formulated guidelines, regulations, and/or manuals to support complaint handling and grievance redressal, 99 focusing on safeguarding customers by utilizing payment innovations. These measures include user-friendly methods for consumers to seek redress against financial service providers (FSPs), such as hotline numbers, text messaging, e-mails, and online complaint forms. Additionally, online dispute resolution platforms have been introduced to enhance the efficiency and accessibility of resolving financial disputes, streamlining the process in the region.

For example, the Financial Integrity and Customer Services Department in BB, the Consumer Protection Cell in the Royal Monetary Authority of Bhutan, the Complaint Management System in RBI, the Financial Consumer Protection and Grievance Management System in NRB, the Consumer Protection Department in the SBP, and the Financial Consumer Relations Department in CBSL.

Digital and Financial Literacy Measures

Governments and regulators in the region have established national frameworks to enhance financial knowledge and digital skills among their populations. The National Financial Inclusion Survey of the Maldives highlights the importance of integrating financial

94 Based on primary interview with financial regulators.
98 Available at: https://rbidocs.rbi.org.in/rdocs/notification/PDF/7133PM01T3CE4224893C5588F7563E328C.PDF.
education into school curricula to improve financial literacy while advancing digital literacy as part of its Digital Maldives plan.\textsuperscript{103} Through its Digital Nepal Framework, Nepal addresses low digital literacy as a challenge to technology-based economic growth.\textsuperscript{104}

Bhutan has also adopted a five-year National Financial Literacy Strategy (2018-2023) to address challenges against financial literacy, complementing its NFIS and commitments under the Maya Declaration 2014.\textsuperscript{102} Likewise, India has also formulated a five-year National Strategy for Financial Education (2020-25) in collaboration with all financial regulators.\textsuperscript{104} Sri Lanka’s NFIS\textsuperscript{104} recognizes the importance of financial literacy, with the Financial Literacy Survey 2021 identifying the positive link between DFS usage and financial literacy and highlighting the need for equitable digital literacy access. Sri Lanka plans to launch a five-year Financial Literacy Roadmap in early 2024 to promote financial behavior change through evidence-based strategies emphasizing digital literacy.

### TABLE 3.1. FINANCIAL AND DIGITAL LITERACY FRAMEWORKS IN SOUTH ASIA

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>NATIONAL STRATEGY</th>
<th>FINANCIAL LITERACY RECOGNIZED IN NFIS</th>
<th>RECOGNITION OF DIGITAL LITERACY</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANGLADESH</td>
<td>Financial literacy guidelines for BFs, 2022</td>
<td>“Promoting financial literacy and consumer empowerment” acknowledged as the NFIS’s fourth strategic goal</td>
<td>Digital financial literacy defined within the financial literacy guidelines and further acknowledged among the strategic objectives</td>
</tr>
<tr>
<td>BHUTAN</td>
<td>National Financial Literacy Strategy 2018-23</td>
<td>“Financial literacy/ capability and consumer protection” recognized among the four pillars of NFIS</td>
<td>An assessment of a consumer’s financial capability considers their knowledge and skills pertaining to DFS</td>
</tr>
<tr>
<td>MALDIVES</td>
<td>The Maldives has not formulated a financial literacy strategy yet</td>
<td>The National Financial Inclusion Survey recommends the incorporation of financial literacy and education into the formal school curriculum</td>
<td>Notwithstanding the absence of a national financial literacy strategy, digital literacy has been identified among the primary tasks of the Digital Maldives Project</td>
</tr>
<tr>
<td>NEPAL</td>
<td>Financial Literacy Framework 2020</td>
<td>The Making Access Possible Action Plan encompasses six priority areas, including “consumer empowerment, protection and education”</td>
<td>The Financial Literacy Framework seeks to advance awareness regarding DFS</td>
</tr>
<tr>
<td>PAKISTAN</td>
<td>National Financial Literacy Program</td>
<td>The NFIS Action Plan places special emphasis on “raising financial awareness among poor people and women”</td>
<td>Enhanced usage of digital payments recognized among the NFIS’s headline targets</td>
</tr>
<tr>
<td>SRI LANKA</td>
<td>Financial Literacy Roadmap to be implemented in 2024</td>
<td>NFIS’s fourth pillar pertains to “financial literacy and capacity building”</td>
<td>The Financial Literacy Roadmap identifies digital literacy among its key content areas</td>
</tr>
</tbody>
</table>


There is a regional shift towards adopting e-KYC to bolster consumer protection and transaction integrity. Bangladesh,111 India112, Sri Lanka113 and Pakistan114 have adopted e-KYC directions/regulations, with the Maldives115 in the process and Sri Lanka exploring a shared KYC system between financial institutions.116 India’s e-KYC framework enables Aadhaar-based verification, whereas Bangladesh uses NID-based authentication. SBP facilitates remote and digital customer onboarding through the National Database and Registration Authority’s in-app biometric services.117 Regulatory efforts aimed at consumer protection are evident across Bhutan,118 Nepal119 and Pakistan.120

Regulations were updated globally to promote and facilitate private sector engagement in DFS, especially during the COVID-19 pandemic, increasing contactless transaction limits to facilitate cashless transactions.121 This trend appears to continue in the South Asian region, with countries like India and Sri Lanka

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106 Government of People’s Republic of Bangladesh. 2023. Personal Data Protection Act. Available at: https://ictd.portal.gov.bd/site/page/d05a8088-8272-49b4-83b-166786ddce3e/14d6a35a6e5688de07a75c6ed6a5f;
109 Government of people’s republic of Bangladesh. 2023. cyber security regulation of DFs involves implementing preventive measures and consumer protection guidelines to mitigate risks, including data security threats.
110 Most countries in the region have established their regulations or guidelines covering cybersecurity through data protection laws105 and guidelines,106 information and communications technology (ICT) legislation107 and guidelines,108 and cyber security directives109 and policies110 to ensure a secure cyber environment. Moreover, to combat cyberattacks, several South Asian countries have established Computer Incident/Emergency Response Teams (CIRTS/CERTS) responsible for handling cyber incidents. While cyber incident data often does not specify if the target of attacks was financial entities or financial data, some countries have developed financial sector-specific CERTs, such as India’s and Sri Lanka’s finance sector’s Computer Security Incident Response Team, highlighting the region’s commitment to strengthen cybersecurity and to ensure a secure payment ecosystem.

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In South Asia, efforts to promote inclusive DFS vary, ranging from legislative backing and regulatory support to creating specialized departments by central banks such as BB, RBI, SBP, and CBSL to promote FinTech innovation. For instance, BB established a Regulatory FinTech Facilitation Office in 2019. SBP initiated a Digital innovation and settlements Department in 2021, both aimed at supporting FinTech startups and enhancing digital payment innovations through regulatory sandboxes and advanced digital infrastructures. RBI and CBSL have also introduced FinTech regulatory sandboxes to encourage innovative FinTech products that adhere to regulatory standards, emphasizing customer protection.

This proactive regulatory approach has paved the way for a more inclusive DFS landscape. Yet, the region still faces challenges in achieving widespread digital financial inclusion in terms of quality and usage. A considerable need remains for increased regional collaboration, stronger public-private partnerships, and forward-thinking regulations on technological outsourcing, tokenization, data security, and consumer protection to further advance DFS growth.

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123 Sri Lanka exchange rate: approximately LKR326 to USD1 (mid-December 2023).
4. REGIONAL CHALLENGES
4.1 DIGITAL DIVIDE: A NEW VARIABLE IN FINANCIAL INCLUSION

In South Asia, mobile phone and internet subscriptions often exceed the total population, with countries like Bangladesh and the Maldives showing mobile penetration rates of 107.34 percent and 122.5 percent in 2023, respectively. Bhutan and Nepal also have high mobile internet penetration rates of 92.78 percent (2023) and 98.46 percent (2022). Likewise, Sri Lanka’s mobile density is 130 percent (2022). However, this does not imply universal access to mobile phones and the internet across the region, as individuals may own multiple devices or connections. For example, not everyone in Nepal with a smartphone has an internet connection. Despite high connectivity indicators, there remain significant disparities within countries regarding access to digital services, influenced by rural-urban divides, gender gaps, and geographical challenges. Figure 4.1. presents data based on the latest telecom and population figures available for each country, from either 2022 or 2023, owing to the limited availability of annual reports and corresponding data from the same year.

In Bangladesh, while mobile usage is high at 90.5 percent across genders, ownership shows a gender gap: 55 percent of women vs. 72 percent of men own a mobile phone. Internet access in households is 43.6 percent, with a gender disparity in usage (51.7 percent men, 37.3 percent women). In the Maldives, despite high mobile internet usage (91 percent men, 87 percent women), there is a notable gender gap in availing of DFS, with 30 percent of women never using the internet or mobile banking. India presents a contrast in teledensity between rural and urban areas, with figures of 57.71 percent and 133.81 percent, respectively, out of an overall teledensity of 84.51 percent. This indicates that people in urban areas may have multiple telecom subscriptions, whereas people in rural areas may not even have one subscription. Despite having over 881 million internet users, the rural-urban divide is evident, with 357.9 million rural and 523.2 million urban subscribers. Given that around 65 percent of India’s population is rural, internet penetration in these areas is relatively low, at merely 40 percent.

In Pakistan, a significant gender gap hampers financial inclusion, with women constituting only 21.7 percent of mobile and 11 percent of internet subscribers despite making up half the population. In 2022, male mobile subscribers outnumbered females by around 140.8 million to only 52.1 million. Male mobile broadband subscribers were over 88 million compared to only 26.4 million female subscribers. Despite the majority residing in rural Sri Lanka, access to telephones and cellular phones is nearly equal between urban (97 percent) and rural (94 percent) areas. However, internet usage has seen disparate growth from 2019 to 2021: urban usage increased from 47.4 percent to 61.2 percent, rural from 27.5 percent to 42 percent, and estate from 12.2 percent to 26 percent. Male internet

Table 4.1. Mobile and Internet Penetration in South Asia (Rate %)

<table>
<thead>
<tr>
<th>Country</th>
<th>Mobile Internet Penetration</th>
<th>Mobile Penetration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>107.34</td>
<td>140.07</td>
</tr>
<tr>
<td>Bhutan</td>
<td>92.78</td>
<td>79.46</td>
</tr>
<tr>
<td>Maldives</td>
<td>122.5</td>
<td>130</td>
</tr>
<tr>
<td>Nepal</td>
<td>67.78</td>
<td>58.53</td>
</tr>
<tr>
<td>India</td>
<td>98.46</td>
<td>53.14</td>
</tr>
<tr>
<td>Pakistan</td>
<td>84.51</td>
<td>50.9</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>102.3</td>
<td>87.25</td>
</tr>
</tbody>
</table>

Source: Telecom Regulatory Authorities in South Asia (BTRC, BICMA, TRAI, CAM, NTA, PTA and TRC)

[133] Male internet usage has seen disparate growth from 2019 to 2021: urban usage increased from 47.4 percent to 61.2 percent, rural from 27.5 percent to 42 percent, and estate from 12.2 percent to 26 percent. Male internet usage in 2022 was 90.5 percent across genders.
usage grew from 34.4 percent to 47.9 percent, while female usage increased from 26.5 percent to 41.4 percent (Figure 4.2).\textsuperscript{135}

In contrast, Bhutan shows minimal disparities in ICT access and usage, according to the National ICT Survey 2021. Household smartphone access is 93.7 percent overall, with 99 percent in urban and 90.6 percent in rural areas. Internet access is also high, at 99.4 percent in urban and 91.4 percent in rural households, and individual usage rates are 96.6 percent in urban and 79 percent in rural areas).\textsuperscript{136}


Bhutan, the Maldives, and Nepal demonstrate how geography can limit digital connectivity. In the Maldives, mobile internet usage is nearly equal between Male’ and the Atolls, yet over 28 percent of Atoll residents have never used the internet or mobile banking, compared to 17 percent of Male’ (Figure 4.3). Bhutan and Nepal, homes to some of the highest human settlements in the Himalayas, face challenges in digital access. In Nepal, internet access at the household level varies significantly by geography: 43 percent in hilly regions, 35 percent in the Terai, and a mere 17.4 percent in the mountainous areas (Figure 4.3). The high telecommunications and internet infrastructure costs in such terrains make private sector investments unviable. Despite access to and use of digital services, Bhutan struggles with consistent ICT service delivery due to its rugged terrain and dispersed population.

4.3 DIGITAL AND FINANCIAL LITERACY

Digital and financial literacy in South Asia lacks a standardized definition or measurement method. Further, irregular national surveys by regulators and governments hinder consistent assessment and growth evaluation. A 2019 study and a 2019 Digital Literacy Survey revealed that digital and financial literacy is low in Bangladesh, with rural areas and women notably behind (63 percent digitally literate men vs. 37 percent digitally literate women in rural areas). In India, a 2019 study showed that financial literacy was only 27 percent, with rural areas at 24 percent and urban areas at 33 percent, with a gender gap showing 29 percent of men and 21 percent of women as financially literate. In Pakistan, 53 percent of the population remains financially excluded due to a lack of awareness and knowledge. Despite a 91 percent account ownership rate in the Maldives, financial literacy remains low, particularly among the elderly, women, and Atoll residents.

In Pakistan, 53 percent of the population remains financially excluded due to a lack of awareness and knowledge. Despite a 91 percent account ownership rate in the Maldives, financial literacy remains low, particularly among the elderly, women, and Atoll residents. A 2022 study in Nepal found a national financial literacy rate of 57.9 percent, with a gender gap favoring men. Sri Lanka’s financial literacy increased from 35 percent in 2014 to 57.9 percent in 2021, but a 5.9 percent gender gap exists between men (61.1 percent) and women (55.2 percent).
4.4 CONSUMER BEHAVIOR AND TRUST

Despite the growing popularity of digital payments, cash dominates in the region due to trust, convenience, accessibility, cultural norms, technological infrastructure, and economic conditions. For example, in Bangladesh, cash-in and cash-out transactions account for 59 percent of MFS total transactions (Figure 4.4.), suggesting a preference for cash over digital, which contradicts the objective of digitization and emphasizes the need for a shift in consumer behavior. Similarly, Nepal’s Digital Dakshina saw slow adoption but is gaining momentum, especially after the COVID-19 pandemic,147 aided by incentives like cashback and coupon codes from banks.148 Other countries also use incentives to encourage digital payment adoption.149 The success of digital payment systems depends on consumer trust,150 which is significantly influenced by mobile and internet access.151 Consumers demand digital payments to match cash’s ease and convenience.152 Yet, reliability and availability issues, alongside inadequate mobile and internet access and ICT service disruptions, challenge establishing reliable consumer trust in digital payments in South Asia.

4.5 LIMITATIONS IN THE EXISTING DIGITAL INFRASTRUCTURES

Infrastructural limitations hamper South Asia’s progress in digital and financial inclusion. Drawbacks in digital identity systems, such as optional NIDs in Nepal, impact their acceptance and integration. In Bangladesh, the process of opening MFS accounts is obstructed by misspellings and mismatches of numbers allocated through NID. Bangladesh’s transition from 17-digit to 13-digit and then 10-digit NID formats complicates customer due diligence and account openings. The high costs associated with supporting infrastructure also pose a problem. A case in point is the fee for NIC number verification issued by the National Database and Registration Authority in Pakistan, which further limits accessibility to DFS.

4.6 PRICING AND VIABILITY OF PAYMENT SYSTEMS AND INNOVATIONS

Cost barriers can impede the widespread adoption of digital infrastructure and payment systems. Fees for IPS transactions vary across countries in the region, with some charging users and others not. For instance, Bangladesh and Sri Lanka impose fees, whereas India, the Maldives, and Pakistan153 do not. Nepal charges a nominal fee depending on the transaction amount,154 and in Bangladesh, fees for using the Binimoy platform are not uniform and can vary. A transaction between two MFS platforms may incur a lower transaction fee.

whereas a transaction between a bank and an MFS account may incur a slightly higher fee.\textsuperscript{155} The cost of transactions can discourage the use of payment systems, especially affecting the poor and vulnerable. Further, for contactless payments, like Tap and Go Cards or QR scanners, to be effective, merchants need the necessary devices, like POS machines and merchant QR codes, to accept them. If consumers often encounter vendors unable to accept digital payments, they may default to using cash, undermining the adoption of digital payment methods.

The commercial success of payment solutions in digital finance depends on technological innovation, user adoption, economic feasibility, and long-term viability. Balancing profit motives with financial inclusion goals is challenging, where many payment systems are privately owned. Introducing low-cost or no-cost payment solutions is key to this balance but may challenge private companies in generating sufficient returns or covering costs. Further, offering affordable payment options could disrupt the market, adversely impacting private-sector players.

\begin{itemize}
\item \textsuperscript{155} BB. Determination of Platform Fees, Interoperable Fees and Service Charges for transactions through Interoperable Digital Transaction Platform. Available at: https://www.bb.org.bd/mediaroom/circulars/psd/nov1022pdfpsd16.pdf.
\end{itemize}

\begin{itemize}
\item \textsuperscript{157} RBI. 2022. Discussion Paper on Charges in Payment Systems, Department of Payment and Settlement Systems. Available at: https://rbidocs.rbi.org.in/rdocs/Pubblications/PDFs/DPSDISCUSSIONPAPIER501662B52D344469F294007D14059A.PDF, p. 12.
\end{itemize}
4.7 INsufficient risk-Related data

Financial institutions are required to report any suspicious transactions or activities to the authorized financial intelligence department (Table 4.1). These reports, known as suspicious transaction reports and activity reports, cover various financial crimes, including unauthorized transactions and fraud, money laundering, Hundi, online scams, online gambling, tax evasion, and cryptocurrency. These reports are assessed and forwarded to the relevant law enforcement agencies, depending on the nature of the offense. For instance, tax evasion cases may be directed to the revenue department, cybercrimes to the cyber cell, and fraud cases to the police.

The decentralized approach to handling financial offenses, including payment-related ones, poses challenges due to the lack of transaction channel details and uniformity in data collection and analysis across various departments. This fragmentation hinders the identification of high-risk payment channels and the assessment of the payment risk landscape. Effective risk management requires comprehensive data to identify emerging threats, understand patterns, and implement preventive measures. Addressing these issues requires improved inter-departmental cooperation, information sharing, and comprehensive data maintenance.

TABLE 4.1. STRs RECEIVED BY SOUTH ASIAN FIUS

<table>
<thead>
<tr>
<th>YEAR</th>
<th>BANGLADESH</th>
<th>BHUTAN</th>
<th>INDIA</th>
<th>MALDIVES</th>
<th>NEPAL</th>
<th>PAKISTAN</th>
<th>SRI LANKA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>3,878</td>
<td>9</td>
<td>1,436,340</td>
<td>41</td>
<td>887</td>
<td>8,708</td>
<td>1,022</td>
</tr>
<tr>
<td>2019</td>
<td>3,573</td>
<td>7</td>
<td>323,162</td>
<td>120</td>
<td>1,351</td>
<td>20,030</td>
<td>2,804</td>
</tr>
<tr>
<td>2020</td>
<td>3,675</td>
<td>5</td>
<td>547,013</td>
<td>196</td>
<td>1,090</td>
<td>28,718</td>
<td>3,617</td>
</tr>
<tr>
<td>2021</td>
<td>5,280</td>
<td>52</td>
<td>602,057</td>
<td>168</td>
<td>1,533</td>
<td>33,743</td>
<td>3,825</td>
</tr>
<tr>
<td>2022</td>
<td>8,571</td>
<td>-</td>
<td>433,761</td>
<td>145</td>
<td>2,780</td>
<td>24,107</td>
<td>1,481</td>
</tr>
</tbody>
</table>


In South Asia, while most countries lack detailed payment-related risk data, some have established payment fraud registries like the RBI’s Central Payment Fraud Information Registry, which now uses Daksh-RBI’s Advanced Supervisory Monitoring System for detailed fraud tracking by bank type (private, public, payment banks, foreign banks) and transaction method (internet-based, cash-based, cheque-based). Stakeholders have acknowledged the need for a uniform data system for payment innovation risks. A few countries are considering a centralized repository for unified and streamlined data collection, analysis, and reporting, such as the Data Warehouse Project of Bhutan and the Rationalised Input Template of Bangladesh. Still, the region’s robust system for identifying payment-related risks remains largely unimplemented.
4.8 REGIONAL FRAMEWORK FOR DATA REGULATION IN SOUTH ASIA

For regulatory purposes, data is categorized into personal and anonymized forms. Personal data includes identifying information, while anonymized data is considered non-personal and free of such details. Regulations must distinguish between these types to optimize their use, ensuring individuals have control over their personal information and extending data protection responsibility beyond data controllers to any person/party handling the data, with strict penalties for breaches.

In South Asia, the rapid growth in DFS without corresponding increases in digital and financial literacy has made the region particularly vulnerable to cyberattacks and data breaches, underscoring a crucial need for improved regulations.

This vulnerability and insufficient action against such breaches erodes consumer trust. Although countries have national data protection laws, the absence of a unified regional framework weakens the overall data security posture. A harmonized and transparent regional data protection framework would deter cybercriminals and build consumer trust. Further, the free flow of anonymized data is important for public purposes such as advancing financial inclusion. However, a consolidated mechanism for this purpose is lacking in South Asia, with the potential public good of such data remaining largely untapped by private institutions.


165 India’s Account Aggregator Framework allows secure, consent-based financial data sharing between financial institutions and individuals through licensed entities. The adoption helps to streamline loans, manage finances, and provide comprehensive financial insights. While it offers substantial benefits through open banking, the Account Aggregator Framework’s uptake has been slow, partly due to it being operated by private entities. Government-owned infrastructure tends to gain more consumer trust due to the sensitive nature of financial information. At the same time, the private operation of such frameworks can prompt concerns relating to data security, transparency, and accountability.


5. RISKS ASSOCIATED WITH PAYMENT INNOVATIONS
Payment innovations in the region have introduced new, multifaceted risks due to the technology employed, unique geographical challenges, and varying user awareness levels in individual countries. These risks hinder the widespread adoption of DFS, particularly among those with limited financial literacy. Managing these risks is crucial for the success of digital payment innovations.

5.1 FRAUD

Despite the lack of detailed data, fraud is a major risk in the payment ecosystem, eroding trust. The expansion of mobile phones and the internet has increased the risks of crimes committed through these mediums, such as phishing e-mails, scam calls, and text messages designed to steal personal data for unauthorized transactions. Instant payment platforms give BFIs limited time to detect, counteract, and respond to fraudulent transfers, making the payment ecosystem particularly susceptible to such risks.

In Bangladesh, MFS faces potential misuse due to policies allowing one citizen to hold 15 SIMs. To address identity verification risks, the government now requires biometric SIM registration.167 Despite the previous widespread but illegal use of over-the-counter MFS transactions, recent studies estimate a significant decline in such activities.144 Similarly, in Bhutan, users can recharge and make payments without linking their wallets to a bank account.169 While this prioritizes convenience, it also increases the risk of misuse. It makes the system more susceptible to illicit transactions and potential abuse by fraudsters due to a lack of KYC procedures.170 In India, the Aadhaar Enabled Payment System, which only requires a thumb impression, Aadhaar number, and bank details,171 has been exploited by fraudsters,172 particularly due to the absence of additional layers of protection, such as two-factor or multi-factor authentication, as well as widespread ignorance about security measures like biometric locking.

Interestingly, QR code scams have been noted where fraudsters pose as buyers and trick people into scanning malicious QR codes under the pretext of receiving payment. These codes, once scanned, can immediately drain the victim’s funds. This scam particularly targets those lacking financial knowledge or are not tech-savvy, leading to significant financial losses.

Fraud disproportionately affects the poor and vulnerable due to their lower financial literacy and awareness levels. Social engineering attacks have surged globally, especially during the pandemic,173 with scammers impersonating bank officials to steal personal details like PINs and OTPs.

It can disincentivize unserved and underserved people from utilizing payment channels owing to erosion of trust and the heightened risk of financial losses. This has led to a growing recognition of the need to adopt RegTech and SupTech solutions to enhance oversight and combat fraudulent activities.

5.2 CYBER SECURITY AND DATA PRIVACY RISKS

Digital payment innovations have significantly integrated technology into our daily lives, enabling transactions and the sharing of sensitive financial information such as debit/credit card numbers, bank account numbers, and other personally identifiable data. Such cases have also introduced cyber risks like hacking, malware, ransomware, and phishing. For instance, data breaches in digital banking have...
In Pakistan, attackers accessed the financial data of over 67.5 million users from a cheque-clearing institution. In Nepal, significant financial losses from unauthorized transactions due to server breaches and data breaches in e-commerce platforms compromised consumer data.

Cybersecurity risks also expose vulnerabilities in national data privacy frameworks, leading to data breaches, especially within the digital payment systems that handle sensitive and confidential consumer information. Over the past decade, South Asia has experienced numerous data breaches, including India's digital payments being targeted for privacy violations.

Unauthorized data sharing within South Asia's payment systems poses a significant privacy risk. Service providers may, without consent, distribute user data to third parties or their officials may engage in unconsented data-sharing. Commercial bank officials may be deceived into unknowingly sharing sensitive information like customer details or OTPs with fraudsters, resulting in data breaches. Such incidents may vary as may be prevalent in rural and remote regions with lower literacy and consumer awareness. In such cases, consumers can lodge complaints against the commercial banks or their officials.

Regulators across the region have launched public awareness initiatives to educate the public on the safe sharing of personal and financial information, such as PINs, OTPs, and passwords. These initiatives include campaigns, caller ringtones, and advertisements. Further, BB has set up the Financial Integrity and Consumer Services Department to facilitate the consumers' filing of complaints via phone calls, mail, or e-complaint forms. Despite these efforts, public awareness of these resources remains inadequate.

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5.3 MONEY LAUNDERING LINKED TO DIGITAL PAYMENT INNOVATIONS

Money laundering is a growing problem in South Asia, with criminals increasingly using digital payment channels for their illicit activities. The crime’s secretive nature and lack of accurate national-level data make it difficult to gauge its full extent. Although FIUs in the region analyze suspicious transactions related to financial crimes, including money laundering, their data mainly indicates the number of reports rather than clearly depicting the current state of money laundering. FIU data suggests that the financial sector is the most vulnerable to risk due to its infrastructure and various services and products.

As digital payment platforms grow, so do innovative money laundering techniques, such as micro-structuring, where large funds are split into multiple smaller transactions to avoid detection and identity theft, using stolen personal and banking credentials and biometrics for illicit fund transfers. Additionally, the Hundsi system, an informal fund transfer method, is a significant issue in South Asia, notably in Bangladesh, India, Pakistan, and Sri Lanka. In response, these countries have enacted anti-money laundering and combating the financing of terrorism laws to monitor and combat these laundering threats.

Despite legislative efforts and centralized FIUs, South Asian countries face a significant challenge owing to a lack of detailed data on money laundering, especially regarding digital payment innovations. The Basel Anti-Money Laundering Index highlights this data gap as a major impediment to assessing risks. The surge

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**TABLE: LAWS, REGULATIONS, AND GUIDELINES ON MONEY LAUNDERING AND TERRORISM FINANCING IN SOUTH ASIA**

<table>
<thead>
<tr>
<th>Country</th>
<th>Law/Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BANGLADESH</strong></td>
<td>AML Guidelines for Banks and AML Guidelines for Financial Institutions</td>
</tr>
<tr>
<td><strong>BHUTAN</strong></td>
<td>Asset (Money) Laundering Prevention Act 2008 and Anti-Money Laundering and Countering of Financing of Terrorism Rules and Regulations 2022</td>
</tr>
<tr>
<td><strong>INDIA</strong></td>
<td>Prevention of Money Laundering Act 2002</td>
</tr>
<tr>
<td><strong>MALDIVES</strong></td>
<td>Prevention of Money Laundering and Terrorism Financing Act No. 10 of 2014</td>
</tr>
<tr>
<td><strong>NEPAL</strong></td>
<td>Money Laundering Prevention Act 2063 (2008)</td>
</tr>
<tr>
<td><strong>PAKISTAN</strong></td>
<td>Anti-Money Laundering Act 2010</td>
</tr>
</tbody>
</table>

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in digital payments introduces complexity to money laundering, underscoring the need for comprehensive safeguards to prevent these platforms from facilitating illegal financial activities.

The cross-border nature of money laundering necessitates regional cooperation among South Asian countries to establish a unified approach to combating this crime, improve reporting mechanisms, and enhance data collection/repository. Examining money laundering through the lens of digital payment innovations is important to developing effective measures to prevent digital platforms’ misuse. A harmonized framework is essential to documenting key information like the primary source/channels of money laundering and transaction values, facilitating thorough and comprehensive offense analysis, and identifying laundering channels. Access to this data is crucial for regulators, governments, and law enforcement agencies to make informed decisions and deploy targeted strategies against money laundering risks.

5.4 OPERATIONAL RISKS

Digital payment platforms in the region face operational risks, including human error, connectivity issues, service downtime, and processing delays. As more and more people become dependent on the digital mode of payment, it is crucial to ensure system reliability and resilience. In countries like Bhutan and Nepal, challenging terrain, difficult topography, and scattered populations complicate providing consistent infrastructure, particularly in rural and remote areas where poor internet and service disruptions degrade digital payment services. This has led to a huge concern in Bhutan, where inadequate connectivity and frequent transaction failures owing to infrastructure problems have driven a preference for cash transactions over digital methods.

Recently, the banking and financial sectors have become heavily reliant on third-party service providers (TPSPs) to perform their critical business functions, aiming to deliver quality products cost-effectively. Nevertheless, this outsourcing trend has significantly interconnected the financial sector, making it highly susceptible to various business and operational risks.

RBI has acknowledged this issue and stated that such outsourcing arrangements expose financial institutions to multiple financial, operational, and reputational risks.

Firstly, TPSPs offering services like application programming interface integrations and cloud computing to financial institutions are not subject to the same regulatory standards, increasing the risk of data breaches and sensitive data exposure. Secondly, utilizing TPSPs exposes financial risks for financial institutions, including bearing regulatory penalties without the governance structure to prevent breaches and financial losses that TPSPs cannot cover, leaving financial institutions responsible. Thirdly, operational risks from outsourcing include failures in processes, business continuity, personnel, and technology. Financial institutions outsourcing essential management tasks for cost savings may face significant business disruptions if the service provider encounters issues directly impacting the operations of financial institutions.


194 World Bank Group. 2022. Digital payments introduce complexity in money laundering, underscoring the need for comprehensive safeguards to prevent these platforms from facilitating illegal financial activities.

5.5 RISK ARISING FROM RIGID TRANSACTION REVOCABILITY

IPS have revolutionized the regional payment landscape but introduced risks owing to their real-time features. In traditional payment models, interbank settlements occur at the end of business days, aiding liquidity management. However, IPS’s reduced interbank settlement time complicates reversing erroneous transactions once settlements are completed.

Extending interbank settlement times could mitigate this issue, allowing easier transaction reversal for consumers.\footnote{World Bank Group. 2021. Risks in fast payment systems and implications for national payments systems oversight: World Bank Fast Payments Toolkit. Available at: https://fastpayments.worldbank.org/sites/default/files/2021-10/OverSight_Final_0.pdf, p. 6.} However, this extension poses a liquidity risk to banks and PSPs, who might need to refund payments before receiving them.\footnote{Bank for International Settlements. Supervisory Guidance for Managing Settlement Risk in Foreign Exchange Transactions. Available at: https://www.bis.org/publ/bcbs1310.pdf.} As a result, regulators face a conundrum in balancing transaction revocability with liquidity risk, necessitating careful consideration of settlement timings.

Optimizing the user experience, especially in challenging circumstances, is essential for any digital payment innovation to succeed. Balancing transaction revocability with liquidity risk becomes crucial. Regulators need to identify these risks and guide the industry accordingly. Determining the optimal interbank settlement duration demands collaborative efforts among regulators, banks, and PSPs to establish a timeframe that supports efficient settlement and transaction reversibility. This collaborative approach aims to harmonize consumer convenience and financial institutions’ financial stability.

5.6 LINKING ANCILLARY SERVICES TO THE PAYMENT SYSTEM

As FSPs mature in the payment systems sector, they increasingly look to diversify their revenue streams by offering additional services such as credit products (Buy Now, Pay Later, consumer finance, short-term loans, etc.) and insurance alongside core payment functionalities. This approach can enhance financial inclusion by making credit more accessible, promoting insurance penetration, and enhancing credit assessment methods. However, it simultaneously introduces various risks, particularly in data protection. Analyzing consumer behaviors and spending for credit offerings involves handling sensitive information, necessitating strict controls to prevent personal data from being shared with credit institutions without user consent.

In areas with low digital and financial literacy, offering credit through payment systems can cause overborrowing, leading to financial distress for users. A notable example is India, where unregulated FinTechs’ digital loans led to excessive lending and, in severe cases, borrowers committing suicide as they found themselves unable to repay.\footnote{The Hindustan Times. 2023. Caught in deadly loan trap: How dubious lending apps caused 60 deaths. Available at: https://www.hindustantimes.com/india-news/instan-loan-apps-trap-torture-harassment-60-deaths-india-china-link-101697013563581.html.} Reacting to the rapid FinTech growth and associated risks of digital lending and overborrowing, RBI responded by implementing digital lending guidelines to counter and regulate these risks.\footnote{RBI. 2022. Digital Lending Guidelines. Available at: https://rbi.org.in/Scripts/NotificationUser.aspx?Id=12382&Mode=0.}

Introducing new financial products through payment systems often leads to regulatory gaps. In India, the oversight of digital lending apps fell to private entities like the Google Play Store, placing them in an indirect regulatory role, which is not ideal.\footnote{The Hindu Business Line. 2023. Google rolls out stricter loan app norms, players fear short-term disruptions. Available at: https://www.thehindubusinessline.com/money-and-banking/google-rolls-out-stricter-loan-app-norms-players-fear-short-term-disruptions/article66920574.ece.} This situation highlights the need for a more direct regulatory approach, emphasizing the importance of addressing these risks to clear regulatory separation. It is crucial to ensure that market players adhere to regulatory processes without attempting to bypass them.

5.7 PREDATORY PRICING AND ANTI-COMPETITIVE PRACTICES

Regulators should be cautious when dealing with low-cost or no-cost payment products due to anti-competitive behavior and predatory pricing risks. Larger entities may use unsustainable pricing to oust smaller competitors, risking market monopolization. This reliance on cost-effective models could promote such practices. Regulators should monitor these major players closely to prevent abuse of their dominant position and ensure a healthy digital payment ecosystem by fostering a level playing field.
6. POLICY RECOMMENDATIONS
Promoting inclusive finance is a critical goal across South Asia, with governments and regulators making significant progress yet still facing opportunities for further development. Key stakeholders, including regulators and policymakers, are essential in fostering an environment that supports inclusive innovation. This chapter outlines comprehensive policy recommendations across three foundational areas: creating an inclusive regulatory and governance framework, enhancing consumer protection and empowerment, and developing inclusive digital and technological infrastructure. These pillars are pivotal in strengthening the digital payment ecosystem and ensuring that financial inclusion extends to all segments of society, paving the way for a more inclusive financial landscape in South Asia.

6.1. INCLUSIVE REGULATORY AND GOVERNANCE FRAMEWORK

In South Asia’s rapidly evolving financial technology landscape, the importance of regional collaboration, especially in payment innovations and risk management, cannot be overstated. The interconnected nature of risks, often transcending national borders, necessitates a unified approach among regional countries. This approach is essential for addressing challenges from cross-border transactions and leveraging emerging opportunities in payment systems. Innovations in the financial sector call for a framework of peer learning and cooperation. This enables countries to gain insights, experiences, and best practices, fostering a culture of inclusive and secure innovation. Such collaboration is crucial not only for ensuring that advancements in payment technologies benefit all stakeholders but also for enhancing the capacity of regulatory bodies to tackle new challenges.

Efforts to facilitate cross-border transactions and manage associated risks require the collective ability to integrate digital payment infrastructures effectively across South Asia. This integration enables a seamless flow of funds and information across borders, supported by a well-regulated, harmonized digital payment ecosystem. This ecosystem is vital for building a resilient and equitable financial environment for all users. Through an approach that emphasizes peer learning and regulatory collaboration, South Asia aspires to establish a financial ecosystem that is robust, adaptable to change, and accessible to its diverse population.

The need for domestic regulatory collaboration and harmonization has never been more critical within the rapidly evolving digital payments ecosystem. Establishing clear regulatory roles and strengthening national and regional frameworks are vital to fostering innovation and facilitating the inclusive adoption of payment systems. This requires a concerted effort from central banks, financial services authorities, and other regulatory entities to work in unison to maintain the system’s integrity, ensure its secure evolution and promote consumer protection and financial inclusion. This inclusivity extends to all segments of society, including the elderly, women, and the unbanked. Effective regulation should also extend to overseeing financial institutions’ compliance, particularly in areas such as cross-selling and anti-money laundering and combating the financing of terrorism.

The simultaneous implementation of approval processes across multiple regulatory bodies and stringent risk management enforcement, such as capital requirements and regulatory compliance, is essential for maintaining financial stability and improving risk management in dynamic financial markets.

To truly promote innovation within the financial sector, adopting inclusive regulatory approaches that facilitate dialogue and collaboration between regulators and private players is paramount. By implementing regulatory frameworks that offer clarity, flexibility, and support for new and emerging technologies, regulators set the stage for significant industry advancements.
Regular engagement with industry experts through stakeholder discussions is crucial for keeping abreast of the changing landscape, market demands, and FinTech challenges. This engagement promotes a proportionate, risk-based regulatory approach that nurtures the FinTech ecosystem’s dynamic nature without stifling innovation. Establishing innovation labs/facilitators, sandboxes, and industry forums encourages direct collaboration between regulators, financial institutions, and technology innovators. These platforms are invaluable for testing new products and addressing industry-wide challenges. Furthermore, providing industry-specific support and funding to mitigate risks associated with innovation in digital payment technologies is crucial, thereby bolstering technological advancements within the DFS landscape.

By effectively leveraging anonymized data, regulators and policymakers can gain a clear understanding of underlying trends and preferences within the payment ecosystem, facilitating the development of nuanced policies and the improvement of services to meet the population’s diverse needs.

It aids in assessing the effectiveness of policies, identifying underserved communities and areas, and tailoring interventions accordingly. Moreover, the ethical handling and centralized collection of anonymized data highlight the importance of innovative solutions in making digital payment options universally accessible and affordable, ensuring that benefits extend to all segments of society, including marginalized groups.

To effectively mitigate the risks associated with outsourcing services within the financial sector, regulators must develop and enforce a robust framework and governance structure tailored specifically for these practices. Such a framework should encompass the execution of periodic risk assessments, establishing a comprehensive risk management framework for outsourcing activities, and strategies to address concentration risks. A crucial component of this proposed framework is delineating core management functions that must remain internal to financial institutions, including policy decision-making, internal audits, and adherence to KYC norms.

It is essential to clearly define the roles and responsibilities of both financial institutions and TPSPs, ensuring transparency, clarity, and accountability in these partnerships. Moreover, to balance the need for regulatory oversight with the operational flexibility of financial institutions, the framework could introduce the concept of ‘material arrangements’ for high-risk outsourcing activities, necessitating specific risk mitigation strategies.
This nuanced approach would enable financial institutions to allocate resources more efficiently, tailoring their efforts to the significance of each outsourcing arrangement and, in turn, promoting a more streamlined and cost-effective operational framework. Furthermore, adopting comprehensive IT frameworks could standardize the outsourcing process across various services, thereby enhancing consistency, reliability, and security in outsourced operations. This strategic focus on developing a targeted regulatory framework for outsourcing in the financial sector aims to bolster risk prevention and mitigation, ensuring the sustainable and secure expansion of these essential services.

6.2. INCLUSIVE CONSUMER PROTECTION AND EMPOWERMENT

To bolster consumer protection in the DFS sector, refining existing frameworks with a tailored approach is crucial. This includes establishing a dedicated consumer protection unit focused on DFS-specific issues. Embracing a consumer-centric approach, which emphasizes market transparency and empowers consumers to make informed decisions, is fundamental. Implementing stringent internal policies on consumer data protection among DFS providers is essential, with a strong focus on a consent-based framework for financial data sharing. This approach places control squarely in the hands of consumers, enhancing their autonomy and security. Moreover, internal and external dispute resolution mechanisms should be designed to be transparent, fast, efficient, and subject to periodic evaluations or audits to ensure their effectiveness.

Engaging a broad spectrum of stakeholders—regulators, policymakers, industry experts, private players, and civil society organizations—is pivotal for advancing financial inclusion and protecting consumer interests.

Conducting regular training and consolidation on consumer protection topics, including cybersecurity training and drills, for financial institutions at both national and regional levels is vital. Such initiatives ensure that applications are rigorously tested for vulnerabilities and intrusion threats, thus preemptively identifying and mitigating cyber risks. While the regulatory push for payment technology innovation progresses, it is equally important to innovate in cybersecurity measures. Governments and private sectors should also consider amplifying investments in advanced technologies such as artificial intelligence and machine learning to detect digital financial crimes more reliably. By developing comprehensive consumer protection frameworks and promoting collaborative stakeholder engagement, we can mitigate the risks associated with digital payments and meet the needs of diverse user groups. This enhances overall financial security and trust, leading to greater inclusion.

Targeted digital and financial literacy programs are critical to effectively combating fraudulent transactions and bridging the digital divide, particularly for those who are financially illiterate, live in rural areas, or are women. These initiatives must equip individuals with the practical knowledge necessary for the safe and functional use of DFS, focusing on secure financial product handling. We can significantly improve inclusivity by integrating financial and digital literacy into educational curricula. Regular national-level demand-side surveys are essential to evaluating these programs’ effectiveness.

A cooperative and gender-sensitive approach is key to developing a regional strategy that enhances financial and digital awareness, enabling secure and efficient use of digital payment platforms. This strategy ensures wider access and higher adoption rates, with customized educational efforts addressing the unique needs of various communities to advance financial inclusion.
Implementing pre-transaction authentication and authorization enhancements is crucial to enhance financial transactions’ security and efficiency. Integrating advanced authentication technologies and ensuring users are fully informed about transaction details before confirmation can significantly reduce the likelihood of erroneous transactions. Allowing users to recall transactions or submit chargeback requests significantly enhances consumer confidence in digital payment platforms. Although transactions may be processed instantly, incorporating a delay within the settlement mechanism provides operators a crucial window to reverse transactions if necessary. Deploying real-time fraud and money laundering detection systems and emphasizing customer education are essential to strengthening front-end verification processes. Additionally, establishing robust risk management and straightforward dispute resolution frameworks is vital. This approach provides reliable means and procedures to address unauthorized or erroneous transactions and handle disputes, thereby cultivating trust, integrity, and security in the digital payment ecosystem.

On the other hand, managing liquidity risks and regulatory challenges necessitates innovative approaches. For PSPs and banks, utilizing dynamic liquidity management tools can mitigate risks associated with delayed interbank settlements by offering real-time liquidity insights. Furthermore, regulatory bodies are critical in ensuring transaction security and consumer protection by providing guidance and fostering stakeholder collaboration. Experimenting with alternative settlement models and establishing clear consumer protection measures, including transparent dispute resolution policies and compensation mechanisms, can balance the need for secure, irrevocable transactions with the flexibility required for effective liquidity management and consumer safeguarding in transaction errors or fraud cases.
6.3. INCLUSIVE DIGITAL AND TECHNOCAL INFRASTRUCTURE

Robust digital infrastructure is crucial for the adoption of DFS, particularly in rural and remote areas. This necessitates significant investments from the public and private sectors to develop a comprehensive digital public infrastructure, ensuring widespread access to reliable ICT services. Governments need to endorse and support trust-based payment systems through official channels to foster consumer trust. Additionally, overcoming the financial challenges associated with capital mobilization for digital payment infrastructure demands collaborative efforts and regional partnerships.

There is a pressing need for substantial investment in supply-side infrastructure across the region, including the deployment of widespread payment devices such as QR codes, POS terminals, and ATMs. This investment is critical to enable all merchants to accept digital payments.

Investing in a reliable and secure digital payment infrastructure reduces downtime and security breaches, which builds user trust and encourages the adoption of digital payments. Moreover, supporting technological innovation with industry-specific assistance and funding can significantly accelerate advancements in digital payment technologies, paving the way for a more inclusive and efficient digital payment ecosystem.

Advancements in digital payments must be matched with enhanced measures to prevent financial crimes, ensuring risk management, such as fraud and money laundering, keeps pace with technological innovations.

It is vital to foster interoperability and technology sharing to enhance the digital payment ecosystem, aiming to establish an integrated and efficient national and regional payment network. Seamless communication and transactions between diverse payment platforms can significantly improve the user experience. Given the substantial reliance on remittances within the region, leveraging regional collaboration to develop a unified payment infrastructure could streamline regulatory processes, harmonize standards, and enhance cross-border payment innovations. This approach involves enabling successful payment systems in one jurisdiction to operate across others, supported by central banks through MoUs for regulatory information exchange. Encouraging such interoperability has the potential to reduce transaction costs and complexity, offering tangible benefits to both users and businesses.

To overcome the challenges posed by limited mobile and internet access, particularly in regions hindered by geographical and economic constraints, governments and regulators must advocate for the adoption of low-cost or no-cost payment innovations. Emphasizing technologies that work on basic phones and can operate with minimal or no internet connectivity, such as offline and USSD code-based solutions, can significantly bridge the digital divide. This strategy is especially effective in reaching individuals with low financial and digital literacy, including women and the rural poor, by making digital transactions more accessible and appealing. It achieves this through lower transaction costs and enhanced interoperability. Moreover, developing regulatory frameworks for prevalent payment systems is vital to ensuring that low-cost services contribute to the sustainability of FinTech innovations without being compromised by anti-competitive practices. Financial inclusivity can be expanded by facilitating payment solutions that do not rely on advanced technology or connectivity, empowering those in the most remote or underserved areas.

The abovementioned recommendations are instrumental in strengthening the digital payment ecosystem and ensuring that financial inclusion extends to all segments of society, thereby paving the way for a more inclusive financial landscape in South Asia.

Through collaborative efforts and strategic initiatives in these areas, South Asia can foster a resilient, equitable, and accessible financial environment for all its citizens, driving sustainable economic growth and social development across the region.
## ANNEX I: LIST OF INTERVIEWEES

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<th>COUNTRIES</th>
<th>DIMENSION</th>
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<tr>
<td>1</td>
<td>Bangladesh</td>
<td>Md. Motasem Billah</td>
<td>Director, Payment Systems Department, Bangladesh Bank</td>
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<td></td>
<td></td>
<td>Mhd. Nazrul Islam</td>
<td>Director, Financial Inclusion Department, Bangladesh Bank</td>
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<td>2</td>
<td>Bhutan</td>
<td>Kesang Jigme</td>
<td>Director, Department of Payment and Settlement Systems, Royal Monetary Authority of Bhutan</td>
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<td>3</td>
<td>India</td>
<td>Shailendra Trivedi</td>
<td>Chief-General Manager, Department of Information Technology, Reserve Bank of India</td>
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<td></td>
<td></td>
<td>Rajesh Bansal</td>
<td>Chief Executive Officer, Reserve Bank Innovation Hub</td>
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<td></td>
<td></td>
<td>Dilip Asbe</td>
<td>Managing Director, Chief Executive Officer, National Payments Corporation of India</td>
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<td>4</td>
<td>Maldives</td>
<td>Hawwa Latheef</td>
<td>Executive Director, Payment Systems and Oversight Division, Maldives Monetary Authority</td>
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<td></td>
<td></td>
<td>Hamida Shakeela</td>
<td>Executive Director, Banks and Other Financial Institutions Division, Maldives Monetary Authority</td>
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<td></td>
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<td>Aminath Shaheeda</td>
<td>Assistant Executive Director, Banking and Payments Division, Maldives Monetary Authority</td>
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<td>Nepal</td>
<td>Guru Prasad Poudel</td>
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<td>Krishna Ram Dhunu</td>
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<td>Kiran Pandit</td>
<td>Director, Financial Inclusion and Consumer Protection, Nepal Rastra Bank</td>
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<td>Dr Pawan Kumar Sharma</td>
<td>Chairperson, Cyber Security Committee, Computer Emergency Response Team Nepal</td>
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<td>Neelesh Man Singh Pradhan</td>
<td>Chief Executive Officer, Nepal Clearing House Ltd</td>
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<td>Sanjib Subba</td>
<td>Chief Executive Officer, Nepal Electronic Payment Systems Ltd.</td>
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<td>6</td>
<td>Pakistan</td>
<td>Syed Sohail Javaad</td>
<td>Executive Director, Digital Financial Services Group, State Bank of Pakistan</td>
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<td>7</td>
<td>Sri Lanka</td>
<td>Dr Sujeetha Jegajeevan</td>
<td>Director, Economic Research Department, Central Bank of Sri Lanka</td>
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<td>K. V. K. Alwis</td>
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<td>S D Nilanka Chamindani</td>
<td>Deputy Director, Regional Development Department, Central Bank of Sri Lanka</td>
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<td>Dr K. Ambagahawita</td>
<td>Deputy Director, Payments &amp; Settlements Department, Central Bank of Sri Lanka</td>
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<td>8</td>
<td>SAARC Finance</td>
<td>Shah Zia-ul Haque</td>
<td>Member Secretary, SAARC Payments Initiative</td>
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# LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tr>
<td>BB</td>
<td>Bangladesh Bank</td>
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<td>BFIs</td>
<td>Banks and Financial Institutions</td>
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<td>CBDC</td>
<td>Central Bank Digital Currency</td>
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<td>CBSL</td>
<td>Central Bank of Sri Lanka</td>
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<td>CEFTS</td>
<td>Common Electronic Fund Transfer Switch</td>
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<tr>
<td>CIRTs/CERTs</td>
<td>Computer Incident/Emergency Response Teams</td>
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<td>CSIRT-Fin</td>
<td>Computer Security Incident Response Team-Finance Sector</td>
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<td>DBT</td>
<td>Direct Benefit Transfer</td>
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<td>DDOS</td>
<td>Distributed Denial of Services</td>
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<td>DFS</td>
<td>Digital Financial Service</td>
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<td>Digital Financial Services Group</td>
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<td>e-KYC</td>
<td>Electronic Know Your Customer</td>
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<td>FSP</td>
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<td>G2P</td>
<td>Government-to-Person</td>
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<td>State Bank of Pakistan</td>
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<td>TPSPs</td>
<td>Third-Party Service Providers</td>
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Payment Innovations and Risks in South Asia