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DFS Consumer Protection Regulations
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Key Findings:

- We reviewed the literature on consumer protection institutions and regulatory documents for digital financial services (particularly mobile money) in 22 developing countries.
- We identified 260 sources across the 22 countries discussing consumer protection regulation for digital financial services (DFS), including 95 regulatory documents. All findings presented here are based on information available in these publicly-available regulatory documents.
- All but 4 (Peru, Ecuador, Malaysia, and Sierra Leone) of the 22 countries have three or more active mobile money services.
- 5 of 22 countries (Bangladesh, Egypt, Nepal, Pakistan, and South Africa) specify a bank-led DFS model. 16 allow mobile money operators (MMOs) that are not tied to banks. Ecuador is unique in that the Central Bank of Ecuador (CBE) is the sole e-money issuer in the country.
- In all 22 countries, a financial regulator (often the central bank) is involved in DFS regulation. In many countries, telecommunications regulators license MNOs, oversee aspects of market competition, and manage quality of service within DFS channels.
- 14 of 22 countries have a competition authority, eight of which are also responsible for consumer protection. 8 countries have separate consumer protection authorities.
- We identified a variety of regulatory documents pertaining to DFS consumer protection including mobile money/electronic transactions (20 of 22 countries), agent/branchless banking (12), consumer protection/competition (14), payment systems/banking (9), and customer service/dispute resolution (4).
- Regulatory documents state that the MMO/DFS provider is responsible for costs from consumer financial losses or other harm in 7 of 22 countries in the event system malfunctions, in 3 countries in the event of fraud, in 16 countries in the event of agent misconduct, and in 3 countries in the event of transfer failures.
- 18 of 22 countries have regulations that mandate transparent communication of costs associated with DFS, and 6 have regulations mandating regulator reviews of provider Terms & Conditions.
- 18 of 22 countries have regulations mandating security policies for DFS providers to reduce the risk of loss of funds or data, including pin/password requirements (11 countries), data security requirements (12), standards for accessing consumer funds or data (6), limits to sharing of consumer data with third parties (9), and training for agents and employees (10).
- 10 of 22 countries have regulations mandating specific mechanisms for consumers to report complaints. In eight of 22 countries, regulations state that complaint channels should be free, and in 13 countries regulations specify maximum response times. 15 countries have regulations specifying alternative dispute resolution channels in case consumers are not satisfied with provider mechanisms.

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Please direct comments or questions about this research to Principal Investigators Leigh Anderson and Travis Reynolds at epar.evans.uw@gmail.com.

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Abstract

We review the literature on consumer protection institutions and regulatory documents for digital financial services (particularly mobile money) in 22 developing countries, and identify examples of specific consumer protection regulations relevant to mobile money in each country. Following an introduction to regulatory institutions and documents relating to consumer protection and digital financial services (DFS), we identify examples of regulations covering charges to consumers including fees, tariffs, and taxes for DFS in each country. We then review consumer protection regulations relating to costs from consumer losses resulting from system errors, erroneous transactions, agent misconduct, bankruptcy, and fraud. We further review regulations relating to transparency of provider terms and conditions, procedures for protecting consumers from harm, and complaints and dispute resolution.

Introduction

In Sub-Saharan Africa, 12% of adults now report having a mobile money account, representing over a quarter of the share of those who have any kind of financial account at all (Demirguc-Kunt et al., 2015). In Kenya and Cote D'Ivoire, mobile money account rates are higher among the bottom 40% of income earners compared to the top 60 percent, suggesting that, under some circumstances, mobile money has the potential to reach low-income populations (*Ibid.*). Over half of the world's "live" mobile money services are concentrated in Sub-Saharan Africa (GSMA, 2015), where 12% of all adults report having a mobile money account (Demirguc-Kunt et al., 2015). This level of adoption is relatively high compared to all other regions of the world, where less than 3% of adults own a mobile money account (*Ibid.*). Mobile money penetration is increasing worldwide, however, with 271 services now available in 93 countries, and 31% growth in registered mobile money accounts from 2014 to 2015, including 47% growth in South Asia (GSMA, 2015a).

As mobile money expands, there is interest in how regulatory frameworks develop to support DFS and also support broader financial inclusion (GSMA, 2015a). Consumer protection broadly refers to the framework of "laws and regulations governing relations between service providers and users and ensuring fairness, transparency and recourse rights," as well as the enforcement mechanisms that provide a stick to ensure that such rights are protected (Ardic, Ibrahim, & Mylenko, 2008, p. 2). In theory, protecting consumers from risk, and ensuring that they have the information and understanding required to make informed decisions, may increase their confidence and trust in mobile money systems, leading to higher adoption and usage rates (Alliance for Financial Inclusion (AFI) Mobile Financial Services Working Group, 2014).

Recent research aims to understand risks within mobile money systems and how risks impact the demand for, and supply of, services. Drawing on evidence from qualitative surveys in nine countries, McKee, Kaffenberger, & Zimmerman (2015) find that when consumers perceive or encounter problems within mobile money systems that expose them to risk, it decreases their trust, uptake, and use of the services. A review conducted by MicroSave on consumer concerns in Bangladesh, Philippines, and Uganda reports that DFS customers are primarily concerned with service downtime, agent illiquidity, fear of sending money to the wrong number, and the charging of unauthorized fees by agents (Wright, 2015b). A Consultative Group to Assist the Poor (CGAP) focus note, which analyzes consumer research findings from 16 countries, comes to similar conclusions (McKee, Kaffenberger, & Zimmerman, 2015). The study also finds that consumers are concerned about user interfaces that are complex and confusing, poor customer recourse, nontransparent fees and terms, fraud, and inadequate data privacy and protection. These risks are heightened for individuals with limited or no financial or other literacy in the language used in the mobile services (AFI Mobile Financial Services Working Group, 2014). On the supply side, the industry's use of agent banking

introduces operational and technical risks, such as fraud and system failures (*Ibid.*). A primary goal of consumer protection regulations is to mitigate different forms of risk (*Ibid.*).

While mobile money providers could reasonably aim to implement appropriate solutions to address these consumer concerns, CGAP contends that adequate solutions may not be widely adopted through normal market development due to a lack of incentive and support. Consumer protection regulations can therefore provide the necessary intervention for issues that the market cannot solve through competition alone (McKee, Kaffenberger, & Zimmerman, 2015).

Consumer protection proponents argue that consumer protection regulation will lead to increased usage and uptake of mobile financial services (AFI Mobile Financial Services Working Group, 2014). However, consumer protection regulations may also carry certain trade-offs in terms of cost, usage, and innovation. Regulators face a balancing act, weighing the benefits of protecting consumers against limitations and costs such protections may place on providers (Sitbon, 2015). Regulations that are too stringent risk imposing high compliance costs on providers that reduce their ability to innovate and build out extensive networks to reach bottom of the pyramid customers (AFI Mobile Financial Services Working Group, 2014). Research conducted by Gutierrez & Singh (2013) finds that stronger consumer protection regulation is associated with *lower* usage of mobile banking services among poorer populations. They speculate that stricter regulation may lead to increased service provision costs which get passed on to consumers.

The challenge, according to proponents of consumer protection, is to develop regulations that promote access and innovation, yet still offer an acceptable level of consumer protection (Mauree & Kohli, 2013). In order to accomplish this balance between consumer protection and innovation, AFI argues that a regulatory framework should consider a balance between the increased benefits that MFS provides to consumers (such as greater access, convenience, and lower costs) with the risks that may be encountered from both the demand and supply side. Regulators can accomplish this by ensuring that minimum proportionate risk standards are in place, while at the same time allowing for innovation (AFI Mobile Financial Services Working Group, 2014).

As mobile financial services permeate the regulatory space of both telecommunications (telecom) and finance, cooperation between both sectors may also be necessary. This overlap becomes especially relevant for consumer redress mechanisms. When a customer encounters a problem, it may not always be clear which party is responsible for addressing the complaint – the telecom regulator or the financial regulator (AFI Mobile Financial Services Working Group, 2014). AFI contends that the principal provider should assume full responsibility in tracking and handling complaints, but there should also be coordination between the financial and telecom regulators to ensure that clear protocols exist to resolve and address complaints (*Ibid.*).

Another regulatory consideration concerns competition. Mobile network operators' (MNOs) increased participation in mobile payments presents challenges for market competition due to their influence over the networks on which mobile financial services are offered, which financial and telecom operators will need to monitor closely and address jointly (Mas, 2012). Mazer & Rowan (2016) argue that competition and consumer protection policies can be mutually reinforcing, as they often share the same goal of increasing consumer welfare. For example, a price transparency regulation can help consumers shop around, which in turn promotes increased market competition (New Perimeter, 2015).

Given the potential impact of consumer protection regulation for mobile money markets, and consequently on financial inclusion, this report reviews regulatory documents as well as academic and grey literatyre

pertaining to DFS consumer protection in 22 countries across Latin America, Africa, and South and Southeast Asia.

In this review, we seek to respond to six core questions:

1. *Regulatory Actors for Digital Financial Services (DFS) Consumer Protection* – What are the primary relevant regulatory institutions within each country, what are their general responsibilities, and what are their roles in monitoring or regulating DFS consumer protection issues?
2. *DFS Consumer Protection Regulatory Documents* – What existing and/or planned regulatory documents include relevant provisions for DFS consumer protection regulation in each of the reviewed countries, and what are the characteristics of these documents?
3. *DFS Pricing* – How do DFS consumer protection regulations address what prices, fees, or other charges may be charged to DFS consumers? What policies do regulations mandate in order to protect consumers from additional charges?
4. *Responsibility for Consumer Losses or Other Harm* - How do DFS consumer protection regulations address who bears the legal and financial responsibility for customer financial losses or other harm?
5. *Transparency of Terms and Protection from Consumer Harm* – How do DFS consumer protection regulations address transparency in DFS Terms & Conditions? What measures do regulations mandate in order to protect consumers from financial losses and other harm?
6. *Complaints and Dispute Resolution* – How do DFS consumer protection regulations address dispute resolution in the event of fraud or other customer grievances?

We begin with an outline of our literature search and review methodology. Next, we describe and compare the DFS consumer protection regulatory structures and documents for each country. We then analyze how the countries' DFS consumer protection regulations address each of the above issues.

Methodology

Our literature search aimed to identify regulatory institutions and regulations governing consumer protection for digital financial service schemes in 22 developing countries,[1] as identified by the International Telecommunications Union (ITU) Focus Group on Digital Financial Services for Financial Inclusion (FG-DFS) Consumer Experience and Protection (CEP) working group. We used the following search strings to identify relevant websites and legislation:

1. *General* — "[Country Name]" AND ("mobile money" OR "mobile financial service" OR "digital financial service" OR DFS OR e-money) AND (customer OR consumer) AND (protection OR experience) AND (regulation OR guideline OR law OR strategy OR supervision OR market)

2. *Consumer Costs/Harm* — "[Country Name]" AND (agent OR provider OR consumer OR customer) AND (loss OR cost OR fraud OR privacy) AND (security OR protection) AND ("mobile money" OR "mobile financial service" OR "digital financial service" OR DFS OR e-money)

[1] Our review originally also sought to include Yemen. While the country's central bank released a mobile banking regulation in 2014 (Owens, 2015), we are unable to locate this regulation online. We also cannot find any other regulations related to mobile money. Because no information was found, we do not include Yemen in discussion throughout this paper.

3. *Complaints and Dispute Resolution* — "[Country Name]" AND (agent OR provider OR consumer OR customer) AND (grievance OR dispute OR complaint) AND (redress OR resolution) AND ("mobile money" OR "mobile financial service" OR "digital financial service" OR DFS OR e-money)

We conducted searches using these search strings on the websites of each country's central bank, telecommunications authority, and other relevant ministries or departments for DFS and consumer protection legislation and regulations. In addition, we conducted a Google search for any other key documents relating to DFS consumer protection regulation in each country. We screened the top 100 results for each of these country-specific regulatory searches, and also browsed the websites of the country regulatory agencies to search for relevant regulations and documents. Results selected for review were limited to full-text documents in English, Spanish, French, or Indonesian that described relevant DFS consumer protection regulatory issues in our selected countries for review, and that were published after 2005. For certain countries, lack of publicly-available regulatory documents in English, Spanish, French, or Indonesian may have limited our ability to identify and review all pertinent regulations. Following this initial search, phone or email interviews were conducted with central bank and/or telecom regulators from Bangladesh, India, and Uganda. Information obtained in these interviews was used to confirm regulatory structures and to better understand the "on the ground" experience within each country.

Our search yielded 260 unique results that appeared to be relevant from the title and abstract. Of those 260 results, we identified 95 regulatory documents and 164 results from academic and grey literature as relevant for review. *Appendix 1* includes a summary of the body of evidence reviewed by country, including key sources of information. In cases where review of these documents led to new information about literature or regulations relevant to our report, we conducted follow-up searches to retrieve additional evidence.

After identifying and retrieving relevant documents for review, we developed a review framework with questions based on common concerns for DFS consumer protection regulation as identified by the International Telecommunications Union (ITU) Focus Group on Digital Financial Services (FG-DFS) Consumer Experience and Protection working group and an initial review of the literature. We used this review framework (included in *Appendix 2*) to organize the information from the reviewed documents and to code the evidence from each country into a spreadsheet for analysis. We developed categorical responses for each question in the review framework in order to facilitate comparative analysis, and each coding response is accompanied by a description of the evidence informing the coding decision. The resulting spreadsheet includes one line for each country, summarizing evidence from all documents with information on regulatory documentation and institutions, as well as regulations relating to DFS pricing, liability for consumer loss of funds or other harm, transparency and protection from loss of funds, and consumer complaints and dispute resolution. In order to capture the most recent information, we prioritized articles for review by date beginning with the most recent documents.

Following the review and coding, we compared regulatory institutions and policies for DFS consumer protection across the 22 selected countries. This review summarizes the information included in our results coding spreadsheet, which is included as an attachment along with the report.

DFS Consumer Protection Regulatory Actors and Institutions

Most DFS consumer protection regulations identified in our review are issued by government bodies or financial institutions. Typically, the central bank of a country is the primary regulatory institution for payment systems, including electronic and mobile money. A few countries, however, have established independent financial regulatory institutions with responsibility over these areas. In Colombia, Ecuador,

and Peru, for example the Superintendencia de Bancos appears to play a significant role in regulating payment systems in the country, including digital financial services such as mobile money. Our reviewed finds that telecommunications authorities sometimes participate in DFS consumer protection regulation, but usually in a secondary role behind a financial regulator, and some countries also have separate consumer protection and competition regulators.

In this section, we summarize the various regulatory actors and institutions with authority over aspects of DFS consumer protection regulation in the 22 countries reviewed. *Appendix 3* provides a detailed overview of the regulatory institutions in each country that may apply to consumer protection for digital financial services, including central banks, financial supervisory authorities, (tele)communication authorities, consumer protection authorities, and competition authorities.

Primary Regulatory Institutions

All 22 countries reviewed place primary authority for regulating mobile money with either the central bank or another financial regulator. **The central bank is the primary institution responsible for regulating DFS consumer protection in 17 of the 22 countries reviewed**. For the majority of countries reviewed (17 of 22), with the exception of Ecuador, Colombia, Peru, Tanzania, and Zambia regulations pertaining specifically to mobile/electronic money and agent/branchless banking originate from the country's central bank, suggesting that the central bank is the primary regulatory institution for digital financial services. For example, the Bank of Uganda published the Mobile Money Guidelines for Uganda, which clearly states the Bank of Uganda's role in regulating mobile money services: "Bank of Uganda is in charge of approval and supervision of mobile money services. It can issue directives regarding mobile money operations" (Bank of Uganda, 2013, p. 9).

In some countries, however, the central bank's role in regulating mobile money is more ambiguous. For example, in South Africa, the terms "mobile money" and/or "mobile payment services" are not specifically mentioned in any piece of South African legislation (King & Graham, 2015). Instead, the South Africa Reserve Bank (SARB) offers a "Position Paper on Electronic Money," which permits registered South African banks to issue e-money, but specifies little else aside from the Bank's ability to reevaluate its position paper as required by future developments (South African Reserve Bank, 2009, p.2).

In Zambia and Tanzania, electronic money regulations are published as additions to the National Payment System Acts by the respective governments of each country, as opposed to by the countries' central banks. However, in Zambia, the National Payments Systems Directives on Electronic Money Issuance specify: "the Bank [of Zambia] shall be the regulatory authority for the purposes of giving effect to these directives" (Republic of Zambia, 2015), suggesting that the Bank of Zambia has considerable authority over digital financial services.

In Tanzania, the Electronic Money Regulations specify the authority of the Bank of Tanzania to approve and license e-money issuers and handle customer complaints[2] among other responsibilities. The Guidelines for Agent Banking and the Electronic Payment Schemes Guidelines are also published by the Bank of Tanzania. Moreover, USAID confirms that the National Payments Group in the Bank of Tanzania regulates mobile money in Tanzania (USAID, 2013).

[2] Customer complaints may also be referred to the Fair Competition Commission or the Tanzania Communication Regulatory Authority (Government of Tanzania, Electronic Money Regulations, 2015, p. 15).

Five countries (Colombia, Ecuador, Peru, Indonesia, and soon South Africa), have adopted a regulatory structure that separates regulatory powers that are often held in a country's central bank and vests them in a separate financial regulator. In Colombia, Ecuador, and Peru, payment systems are regulated by separate agencies with distinct regulatory oversight over the central banks of each country, and are consequently significant actors in regulating digital financial services. In Indonesia, the Otoritas Jasa Keuangan [Financial Service Authority] (OJK) oversees activities of banks and non-banks in Indonesia, including market conduct and consumer protection, separate from the regulatory powers of the Bank of Indonesia. In South Africa, financial regulators are preparing for a similar "twin peaks" model of regulation, in which the powers of the South African Reserve Bank (SARB) and the Financial Services Board will be separated in order to strengthen banking services and better protect customers in South Africa.

WHAT IS "TWIN PEAKS" REGULATION?

Twin Peaks regulatory systems establish a stand-alone, independent financial regulator in addition to the central bank regulators, with each authority concentrating on particular regulatory issues (Alembakis, 2015). This model of separation of regulatory power was originally introduced in Australia and the UK (Oak, 2015). Indonesia's financial system currently follows a "twin peaks" model, and South Africa is preparing to adopt one as well. Columbia, Ecuador, and Peru's regulatory systems with Superintendencia regulators resemble a "twin peaks" model, but are not described in these terms in any of the documents we reviewed.

In Colombia, regulations for mobile money are published by Congress and the Superintendencia Financiera de Colombia (SFC) is the regulatory and supervisory authority over payment system providers in Colombia (CGAP, 2010b). As the regulatory agency for payment system providers, the SFC plays a significant role in "maintaining the integrity, efficiency, and transparency of the financial market while protecting its consumers" (IFC, 2011b).

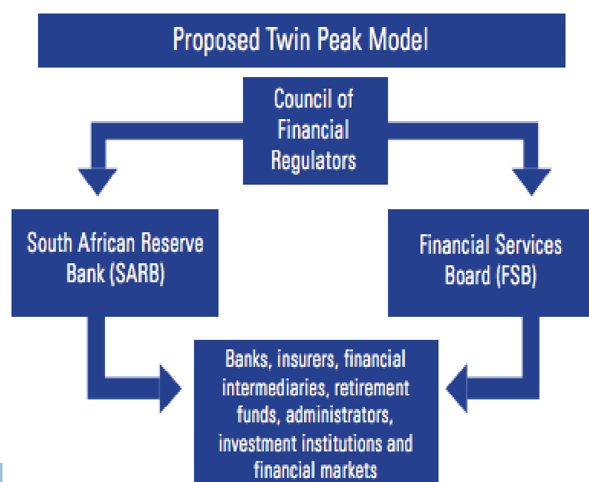
In Peru, the Superintendencia de Banco Seguros (SBS) is the primary regulatory institution for banking institutions, with the power to enact binding regulations and intervene or impose sanctions for financial institutions when necessary, including issuers of mobile money (The World Bank, 2013d). Along with the government of Peru, the SBS provides several regulations for electronic money in the form of resolutions.

Ecuador is unique in that the Central Bank of Ecuador (CBE) is the sole e-money issuer in the country (Almazán & Frydrych, 2015). Consequently, the Terms and Conditions of Usage for Electronic Money Accounts issued by the CBE are the only set of terms and conditions for mobile money in Ecuador. Nonetheless, the CBE does not appear to be the primary regulatory institution for digital financial services. Instead, the Superintendencia de Bancos y Seguros (SBS) and La Junta de Política Y Regulación Monetaria y Financiera [Board of Monetary and Financial Regulation] play a significant role in regulating the CBE's electronic money services. The Junta de Política Y Regulación Monetaria y Financiera published Ecuador's 2014 Organic Monetary and Financial Code, which grants the board regulatory oversight for electronic money operations conducted by the CBE (Article 101). In addition, the SBS in Ecuador is responsible for financial regulation, and is tasked with strengthening the legal framework and ensuring quality and security of consumer's personal and transaction data (IFC, 2011c). In particular, the SBS in Ecuador is responsible for issuing the Code for Transparency and Consumer Rights, which provide consumer protection regulations for the financial sector (The World Bank, 2013d).

Prior to 2013, the Bank of Indonesia (BI) was the single authority that regulated Indonesian monetary policy as well as the country's payment system (Joyce, 2015). In 2013, Indonesia created the Otoritas Jasa

Keuangan [Financial Service Authority] (OJK) to separate these regulatory functions formerly held by the Bank of Indonesia. The Chairman of the OJK stated that Indonesia's regulatory structure is based on the twin-peaks model, in which OJK serves as a prudential[3] regulatory and supervisory body for financial institutions to protects the safety and soundness of the Indonesian banking system and deposit taking financial institutions (Hadad, 2013). The OJK has the authority to issue permits to banks and non-banks and to regulate and supervise activities or both bank and non-bank institutions (Villasenor et al., 2015), including digital financial services (Oak, 2015). In addition, the OJK has the authority to provide consumer protections and education (Hadad, 2013). Several mobile/electronic money regulations are issued by the OJK, including Regulation 19/POJK.03/2014 on Branchless Financial Services in the Framework of Financial Inclusion and 1/POJK.07/2013 on Consumer Protection in the Financial Services Sector (2013).

Figure 1. South Africa Proposed Financial Regulatory Model



Source: KPMG, 2013, p. 5

In December 2014, South Africa passed the Financial Sector Regulation Bill (FSR Bill), which serves as the catalyst for the new twin peaks model of financial sector regulation in South Africa. Under the proposed regulatory structure, the South Africa Reserve Bank (SARB) will become the prudential authority, while the Financial Service Board (FSB) will be transformed to the Financial Sector Conduct Authority (FSCA) and granted authority over market conduct. The new FSCA will be primarily responsible for protecting customers' financial interests whereas the SARB will be mostly concerned with the safety and soundness of South Africa's financial institutions (Financial Services Board, 2013).

Secondary Regulatory Institutions

In addition to the Central Bank and other Financial Supervisory Authorities, all 22 countries reviewed have a telecommunications, consumer protection, and/or competition authority that may play a role in regulating consumer protection and competition for mobile money services. The extent to which these regulatory authorities influence consumer protection for digital financial services in each country is often unclear. For instance, in Brazil, CGAP (2009) reports that the Consumer Protection Code (CPC) is written in such a way that "one would conclude that all principles and rules set forth in CPC would be strictly applicable to relationships between financial institutions and their clients/users… Nonetheless there has been a lot of controversy over the extent to which CPC applies to financial services (and therefore the agency responsible for enforcement and the boundaries for its actions)" (p. 10). Because of the frequent challenges in interpreting the applicability of legal documents and institutional relationships within a given country, a full analysis of the extent to which secondary regulatory institutions apply to DFS consumer protection is beyond the scope of this report. Nonetheless, we offer a summary review of the types of

[3] Prudential regulation protects the stability of the financial system. It's "main focus is on the safety and soundness of the banking system and on non-bank financial institutions that take deposits" (Brownbridge, Kirpatrick, & Maimbo, 2002, p. 1).

secondary regulatory actors for consumer protection and competition regulation that may apply to DFS in each of the reviewed countries.

Seventeen of the 22 countries reviewed have either a consumer protection or competition authority. In addition to Brazil, we found mention of the primary regulatory institutions' relationship with a consumer protection/competition authority in several countries (Colombia, Nigeria, and Peru). In Colombia, the Consumer Protection Code explicitly states that the Superintendencia de Industria y Comercio (SIC) applies to all customer-provider relationships, including financial services (CGAP, 2010b). In addition, the Central Bank of Nigeria includes language in a proposed consumer protection framework regarding the Consumer Protection Council and its responsibilities for consumer protection in Nigeria (Central Bank of Nigeria, 2015a). Lastly, in Peru, the consumer protection and competition agency (INDECOPI) is responsible for consumer protection, including financial services (The World Bank, 2013d). INDECOPI and the Superintendencia de Banca y Seguros (SBS) have a memorandum of understanding that specifies the particular roles of each institution in regulating consumer protection for customers of financial services (*Ibid.*).

While financial institutions largely retain control over issues governing mobile money, **in several of our reviewed countries telecom regulators may play a supplementary role by regulating issues surrounding licensing MNOs, market competition, and quality of service**. We find evidence that telecom regulators have issued regulations specific to mobile money only in India and Peru. The Telecom Regulatory Authority of India (TRAI) issued The Mobile Banking [Quality of Service] (Amendment) Regulations in 2013. Peru's telecommunications regulator, OSIPTEL, released its Rules Concerning Access of Electronic Money Issuers to Telecommunication Networks[4] in 2013 as well.

In some countries, telecom regulators' role in regulating mobile money and relationships with financial regulators is formally articulated in legislation or through a memorandum of understanding. For instance, in Nigeria, the Central Bank of Nigeria (NBC) describes the National Communications Commission (NCC)'s role in licensing MNOs in its Guidelines on Mobile Money in Nigeria: "All Mobile Money Operators (MMOs) shall: […] (c) Be issued unique short codes by the NCC. (d) Ensure that all telecommunication equipment are type approved by the NCC" (Central Bank of Nigeria, 2015b, p. 4-5). We find similar legislation in Uganda, where the Uganda Communications Commission is given responsibility to license and supervise MNOs, ensure quality of

REGULATING COMPETITION IN UGANDA

For some telecom regulators, mandates to ensure competition can include ensuring equal access to channels over which mobile communication services flow, especially USSD (Unstructured Supplementary Service Data). Where smartphones are still rare, USSD plays an important role because of its ability handle network-based menus (Mas, 2012). It is also more secure than other types of channels that are used for mobile money transactions (e.g., SMS) because messages are not stored (*Ibid.*).

Mobile network operators control access to USSD channels, presenting opportunities to restrict access overtly or through uncompetitive pricing if banks or other kinds of providers wish to use the channel for to deliver mobile money services (*Ibid.*). In an interview, a Uganda Communications Commission (UCC) regulator identified this competition abuse as one of the top concerns of regulators, and described two options that UCC is considering pursuing: 1) new licensing obligations to ensure providers to toe the line; 2) constructing a pricing regime that would regulate the cost around access to—and use of—USSD channels.

[4] Normas Relativas al Acceso de los Emisores de Dinero Electrónico a los Servicios de Telecomunicaciones

service on the networks on which mobile money operates, and power to "take measures to strengthen a competitive environment (Bank of Uganda, 2013, p. 10).

In interviews with regulators in Bangladesh and India, we learned that central banks in both countries take the lead on coordinating roles between various institutions involved in DFS. Bangladesh Telecommunication Regulatory Commission focuses on telecom related issues like SIM cards or USSD channels (EPAR, 2016a). The Telecommunications Regulatory Authority of India's role is restricted to prescribing quality of service parameters for various channels of communication that deliver DFS and ensuring that MNOs comply with these regulations (EPAR 2016c). In some cases, a memorandum of understanding exists to formally designate how responsibilities for regulating the mobile money sphere are split. Bank of Tanzania and the Tanzania Communications Regulatory Authority signed an MOU in 2011. While we don't find evidence of a MOU in Rwanda, a high degree of coordination and direct communication already exists between the Rwanda Utilities Regulatory Authority (RURA) and the National Payments Council, an entity under the National Bank of Rwanda (Biallas et al., 2012).

In other countries the relationship between the telecommunication authority and central bank or financial sector regulator is less clear. Telecommunication, financial, and competition regulators may all have jurisdiction over aspects of mobile money, and sometimes this jurisdiction is overlapping (Hernandez, Bernstein, & Zirkle, 2011). An IFC scoping report (2013a) suggests that the Nepal Telecommunication Authority may have uncertainty over its role in regulating mobile money: "The Nepal Telecommunication Authority request for guidance in developing regulations to govern mobile commerce suggest there may be some need for clarity on institutional roles and responsibilities as it concerns mobile banking and commerce" (p. 7).

Appendix 3 provides a detailed overview of the regulatory institutions in each country reviewed that may have authority over some aspect consumer protection for DFS, including central banks, (tele)communication authorities, consumer protection authorities, competition authorities, and financial supervisory authorities.

DFS Consumer Protection Regulatory Documents

The primary sources for DFS consumer protection regulations in our review are mobile money or electronic transaction regulation, and agent or branchless banking regulation. In addition, we found regulations pertaining to consumer protection, but not necessarily digital financial services, in consumer protection, competition, customer service, or dispute resolution regulation. Lastly, we found regulations that were relevant to consumer protection and digital financial services in several countries' payment system or banking regulations as well as other regulatory documents.

Table 1 provides a summary overview of the types of primary regulatory documents reviewed in each of the 22 countries examined in this report. For a detailed comparison of regulations by country, see *Appendix 4*.

Table 1. Summary of Types of Regulatory Documents Reviewed

	Mobile Money/ Electronic Transactions†	Agent /Branchless Banking†	Consumer Protection/ Competition*	Customer Service or Dispute Resolution*	Payment System or Banking	Other
Bangladesh	Yes	Yes		Yes		Yes
Brazil		Yes	Yes	Yes	Yes	Yes
Colombia	Yes		Yes			Yes

DRC	Yes					
Ecuador	Yes		Yes			
Egypt	Yes		Yes			
Ghana	Yes	Yes				Yes
India	Yes	Yes	Yes	Yes		Yes
Indonesia	Yes	Yes	Yes		Yes	
Kenya	Yes	Yes	Yes		Yes	Yes
Lesotho	Yes				Yes	
Malaysia	Yes				Yes	Yes
Nepal	Yes	Yes				Yes
Nigeria	Yes	Yes	Yes			
Pakistan		Yes		Yes	Yes	Yes
Peru	Yes		Yes		Yes	Yes
Rwanda	Yes	Yes	Yes			
Sierra Leone	Yes					
South Africa	Yes	Yes	Yes		Yes	
Tanzania	Yes	Yes	Yes		Yes	Yes
Uganda	Yes		Yes			
Zambia	Yes		Yes			
TOTAL	**20**	**12**	**14**	**4**	**9**	**11**

† Specific to DFS

* Specific to consumer protection

Twenty of the 22 countries reviewed (all but Brazil and Pakistan) have specific mobile money/ electronic transactions regulatory documents. These documents can take the form of a regulation, law, guideline, directive, resolution, or circular pertaining to electronic money, or specifically, mobile money. Mobile money and electronic transaction regulations are specific to digital financial services and typically include regulations for consumer protection relating to risk, fraud, data privacy, protection of funds, transparency/consumer information, dispute resolution, and competition.

Mobile Money or Electronic Transaction Regulations were the most commonly reviewed for this report, available for all countries reviewed besides Brazil and Pakistan. In particular, all African countries reviewed have specific regulations for mobile money and/or electronic transactions. However, South Africa is unique in that the terms “mobile money” and/or “mobile payment services” are not specifically mentioned in any piece of South African legislation (King & Graham, 2015). Instead, the South Africa Reserve Bank has drafted a “position paper” that outlines the Bank’s stance on the concept of electronic money and has general banking and consumer protection legislation that applies to electronic money.

Twelve countries have regulatory documents covering agent/branchless banking. These documents typically are guidelines, but may also come in the form of a regulation, circular, or resolution. Regulations for mobile money agents and branchless banking are specific to digital financial services, and typically pertain to topics around consumer protection in relation to agent banking. Just over half of the countries reviewed (12 out of 22 countries) have legislation that specifies conduct for agents through agent/branchless banking regulations, including Brazil and Pakistan, for which we found no mobile money or electronic transaction regulations.

Fifteen countries have regulatory documents covering consumer protection and/or competition regulations. These documents typically come in the form of an act (5 out of 22) or law (5 out of 22), but may also be a decree, statute, code, regulation, guideline, or policy. The regulatory documents pertaining to consumer protection and competition are typically not specific to DFS or finance. Consequently, regulations from

general consumer protection regulations should be interpreted with caution as their applicability to finance or specifically digital financial services is unclear. However, four of the countries reviewed (Brazil, Ecuador, Indonesia, Uganda) have finance-specific consumer protection guidelines. Consumer protection legislation often includes regulations for market competition, but three countries (Rwanda, Tanzania, and Zambia) also have specific competition regulations, such as the Fair Competition Act (2003) in Tanzania.

Five countries (Bangladesh, Brazil, India, Indonesia, and Pakistan) have specific regulatory documents that outline customer service or alternative dispute resolution mechanisms for financial services, and are found in the form of guidelines, resolutions, and circulars. Although these regulations are not typically DFS- or finance-specific, they offer specific consumer protection guidelines, particularly for dispute resolution.

Nine countries have banking and/or financial institution regulations in addition to national payment system regulations that appear to be applicable to DFS. These regulatory documents typically come in the form of an act, bill, or law that specifically governs financial/banking institutions and payment systems for a given country. Although these regulations are not usually specific to DFS services or consumer protection, often these regulations reference consumer protection for customers of financial services and appear to be applicable to customers of digital financial services. Pakistan is unique in that its National Payment System law, “Payment Systems and Electronic Fund Transfer Act,” (2007) is specific to digital financial services.

Other reviewed regulatory documents pertaining to DFS and consumer protection included legislation for product/service transparency, fees and tariffs, licensing, and IT data protection. In particular, Pakistan has legislation that ensures financial inclusion for those who are visually impaired/blind. The diversity of regulations outside of the aforementioned categories demonstrates the complexity of consumer protection regulations for digital financial services.

DFS Pricing

In 2011, concerns over DFS pricing made headlines in Kenya. Then Central Bank of Kenya Governor Njuguna Ndung’u pressured Kenyan MMO operators to lower transaction fees. “They must bring down the cost of their money transfer services,” he said, adding that “there is no way” one can pay a 35-shilling transaction fee to send 50 shillings. The Governor warned that if MMOs refused to do so, the Central Bank would in turn refuse to approve a change desired by MMO operators: higher limits on the amount of money that can be transferred over networks (Ondari, 2011).

The incident highlights regulators’ concern over high fees, and/or charges that are perceived to be unfair to consumers. In this section, we look broadly at how at how regulations may try to protect customers from high costs and where regulators power to do so derives from in the regulations. *Table 2*. summarizes our top-level findings across 22 countries.

Table 2. Coverage of Issues Related to DFS Pricing in Regulatory Documents

Do regulations cover:	Anti-competitive practices by DFS providers	Monitoring DFS provider prices, fees, and other terms imposed on customers	Transaction fees or taxes to be applied to DFS	Charging of additional fees by DFS agents	Dealing with dormant consumer accounts
Bangladesh			Tax	Yes	
Brazil	Yes			Yes	
Colombia	Yes	Yes	Tax (planned)	Yes	Yes
DRC		Yes			

Ecuador			Fees		
Egypt	Yes	Yes		Yes	
Ghana				Yes	Yes
India			Fees	Yes	Yes
Indonesia	Yes	Yes			Yes
Kenya		Yes	Tax	Yes	Yes
Lesotho					Yes
Malaysia					Yes
Nepal					
Nigeria	Yes	Yes	Tax	Yes	
Pakistan	Yes	Yes		Yes	Yes
Peru			Tax exemption	Yes	Yes
Rwanda					
Sierra	Yes			Yes	Yes
South Africa	Yes				
Tanzania	Yes	Yes	Tax	Yes	Yes
Uganda	Yes	Yes	Tax	Yes	Yes
Zambia					Yes
Total	**10**	**9**	**9**	**13**	**13**

Protecting Consumers from Anti-Competitive Practices

Anti-competitive practices can occur at multiple points in the DFS value chain, giving one provider or another an edge over competitors. For instance, in bank-led models, MNOs may restrict access by banks to the USSD channels over which mobile money transactions flow, either openly or using high prices as a disincentive. A provider may sign exclusivity contracts with its agents, prohibiting use of the extensive agent networks it has built out by other providers (Sitbon, 2015).

While acknowledging that regulating specific issues such as these may help ensure that providers cannot exert pricing or other pressures though dominant market positions, we do not attempt to catalog which regulations prevent these specific uncompetitive practices. Instead, we examine broad language within regulatory documents that concerns anti-competitive behavior and pricing.

We find that nine countries (Brazil, Colombia, Egypt, Indonesia, Nigeria, Pakistan, Sierra Leone, Tanzania, Uganda) out of the 22 in our review have regulations concerning the pricing of DFS services and products, or language protecting against anti-competitive practices. Of these nine countries, seven (Brazil, Colombia, Indonesia, Nigeria, Sierra Leone, Tanzania, and Uganda) have regulations that contain very general language about requirements to maintain competitive practices and/or affordable pricing for DFS products and services. For instance, Sierra Leone's Guidelines for Mobile Money Services state that "pricing policies shall take into account affordability of the services to a wider market outreach" and that "mobile money services shall not engage in anti-competitive contracts, arrangements or understanding that would be likely to substantially inhibit competition in the market (Bank of Sierra Leone, 2015, p. 7/14). Others indicate that pricing policies should be "affordable" or "reasonable" (Bank of Tanzania, 2007, p. 7; Bank Indonesia, 2014b, p. 5).

Pakistan's regulations go further by implementing criteria that providers must meet when setting prices:

> "Charges should be reasonable, commensurate with the service being provided and fall within proximity of what other banks charge for the same service. There should be some empirical analysis which substantiates the fixation of charges. Charges should be determined on the basis of cost of doing business plus a reasonable margin. The practice of fixing charges on expert judgment or a percentage rise over previous year charges should be avoided" (State Bank of Pakistan, 2015d, p. 3).

Finally, Egypt's regulations go beyond general calls for markets to be 'competitive' and instead specify types of competition abuses that are prohibited. DFS providers are required to provide affordable basic services and facilities, to not cross-subsidize services by offering one service well below cost and raising prices on other services, and to not price services below cost with the intention of dumping (National Telecommunications Regulatory Authority, n.d).

Collecting and Monitoring Information on DFS Provider Prices and Fees

In order to monitor provider fee structures**, nine of the 22 countries in our review have regulations mandating that providers send information to regulators regarding prices and fees charged to customers.**

Four of these countries (DRC, Kenya, Nigeria, Tanzania) require DFS providers to include information regarding pricing, fees, and other terms imposed on customers when the provider applies for a license to issue e-money from their respective central bank.[5] For example, in Kenya regulations specify: "The application under this regulation shall further be accompanied by…documents detailing the following operational arrangements— (v) fees and charges imposed by the payment service provider" (Government of Kenya, 2014, p. 718).

Three countries (Colombia, Indonesia, Uganda) require providers to submit regular reports in which fees are one element that must be included. In Indonesia, DFS providers must report prices and fees to authorities on an annual basis. In contrast, Bank of Uganda's (2013) Mobile Money Guidelines state that DFS providers are required to report prices and fees monthly.[6] In Columbia, regulations require DFS providers to report prices of products and services to the Superintendencia de Banca, however, regulations do not specify when or the frequency with which DFS providers are required to do so.

Finally, in Egypt and Pakistan, providers must notify the regulatory authority when their pricing structures change. Central Bank of Egypt's (2010) Regulations Governing Provision of Payment Orders read: "The bank must inform the CBE in case of revising service fees or changing terms and conditions in the agreement between the bank and system user/service provider" (p. 3). In Pakistan, bank providers only have to notify the central bank if a fee change for a service increases by 25 percent or more (State Bank of Pakistan, 2015d).

The majority (8 of 9) of countries that have regulations for collecting and monitoring information from providers specify that the country's respective central bank is responsible for reviewing information that providers send. Colombia is the exception. There, regulations indicate that a separate financial regulator, the Superintendencia Financiera de Colombia, is responsible.

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[5] In each of these countries we do not find information that specifies that providers are required to submit information on fees after a license has been issued.

[6] Appendix A of these Guidelines contains a template that outlines information that is required to be reported monthly (e.g., applicable fees, number of registered customers, agents' balances, number and value of suspicious transactions, etc.).

Finally, even where we do not find formal regulations for monitoring of DFS pricing, such monitoring may occur in practice. For instance, a Bangladesh Bank regulator reported in an interview that transaction fees are a big concern of the central bank, and that it monitors the fees imposed by DFS providers. The regulator noted that the Bank uses “moral suasion” to keep the service charges and fees at a “reasonable” level (EPAR, 2016a).

Mandated DFS Transaction Fees or Taxes

In some countries, regulatory frameworks give regulators the authority to set fees in order to protect customers from high costs. For instance, the Brazilian Payment System Law gives the Central Bank the power to set transaction fees (McQuerry, 2013) and Bangladesh Bank “may fix up charges” for mobile banking products and services (Bangladesh Bank, 2011).

While direct regulation of fees may protect consumers, it may also affect providers’ business models (Lal & Sachdev, 2015). Provider fee structures reflect cost considerations to remain profitable, but also to incentivize uptake of mobile money services. Fee structures may be “used to a) reduce friction to prospective customers trying the service (e.g. reducing upfront fees), and b) [to encourage] those behaviors by customers which will be accretive to the service developing over the long-term” (*ibid.*, p. 40). Direct interventions by regulators can therefore reduce a provider’s freedom to tailor its fee structures to customer growth.

In practice, within the countries we review **we find only one country (Ecuador) in which transaction fees are directly set by a central regulatory authority, though India has placed a cap on transaction fees. Six other countries (Bangladesh, Kenya, Nigeria, Peru, Tanzania, Uganda) have regulations that specify certain taxes that are to be applied to Digital Financial Services**, and we find evidence that Colombia is likely to join this group soon given plans to implement tax rules for agents. *Table 3* summarizes specific fees, taxes, or tariffs to be applied to digital financial products or services, including the authority responsible for determining charges.

Table 3. Countries that Designate Fees, Taxes, Or Tariffs for DFS Products or Services

	Fees or taxes to be applied to DFS	Authority that determines charge, tax, or tariff for DFS
Bangladesh	**Tax levied on consumers - 15% value added tax on mobile money services (EPAR, 2016a)**	National Board of Revenue
Colombia	**Planned tax levied on agents**: Tax rules for agents (Sanin, 2015).	Dirección de Impuestos y Aduanas Nacionales (DIAN) [Tax authority]
Ecuador	**Increasing transaction fees -** 2 cents for transactions up to 10.99; 4 cents for transactions up to $50 (La Junta de Política Y Regulación Monetaria y Financiera, 2014, p. 15)	Financial regulator - La Junta de Política Y Regulación Monetaria y Financiera [Board of Monetary and Financial Regulation]
India	**Limit on transaction fees -** TRAI enacted a **tariff ceiling of Rs1.50;** This is the maximum amount that MNO providers can charge mobile money customers each time they conduct a transaction using the MNO’s USSD channel (Telecom Regulatory Authority of India, 2014, p. 3-4).	Telecom Regulatory Authority of India
Kenya	**Tax levied on providers - A 10% excise tax** is collected on a provider’s transaction fees (Muthiora, 2015, p. 24).	The National Treasury
Nigeria	**Tax levied on consumers - 5% value added tax** on mobile money services (GSMA, 2015b, p. 34)	Government of Nigeria

Peru	**Tax exemption -** Electronic money is exempted from the general sales tax for a period of three years following the issuance of the 2013 Law on Electronic Money (Government of Peru, 2013, Article 7)	Government of Peru
Tanzania	**Tax levied on providers – 10% excise duty** on the total amount that providers collect in money transfer fees (Tanzania Revenue Authority, 2014).	Tanzania Revenue Authority
Uganda	**Tax levied on providers - 10%** of the withdrawal fee (Parliament of Uganda,, 2014, Schedule 2 Part 1)	Parliament

Unlike in other countries where mobile money is led by banks and non-banks, Ecuador has a state-sponsored electronic money system with rules, systems, and dispersal all emanating directly from the Banco Centrale del Ecuador (BCE) (see further explanation in *Institutions* section). The BCE is the sole mobile money service provider, and regulations state the Monetary and Financial Regulation board determines the interest rates and the fees that the BCE charges for DFS services, and specifies that the BCE cannot charge additional fees to consumers. As of 2014, transaction fees (in US Dollars) range from $0.015 for transactions up to $0.99 to $0.15 for transactions from $2001-$9000 (La Junta de Política Y Regulación Monetaria y Financiera, 2014). In addition, to incentivize uptake of the new mobile money system and foster financial inclusion, customers can open an account for free and the first four transactions occur at no cost (NextBillion Financial Inclusion, 2015).

India is the only other country where regulations mandate specific amounts for DFS provider fees. The Telecom Regulatory Authority of India (TRAI) placed a tariff ceiling on the amount that customers can be charged by MNOs for accessing the MNO USSD channel when making mobile money transactions. In its 2014 annual report, TRAI cited the ceiling as an effort to promote financial inclusion: “A ceiling rate of 1.50 [rupees] per USSD based session has been prescribed as the customer (retail) tariff for the use of the USSD based channel for mobile banking by mobile subscribers, so that mobile banking becomes universally available at an affordable tariff” (Telecom Regulatory Authority of India, 2014, p. 4).

Taxes on mobile money can be an attractive revenue source for governments (Herbling, 2014; The Economist, 2016). In East Africa, mobile money deployments represent massive parts of state economies[7] and “low rates of formal employment in the region mean that policymakers favour indirect taxes such as import duties and VAT over increases in income tax. Targeting telecoms is simple and efficient” (The Economist, 2013). We find that five countries’ DFS regulations mandate taxes on DFS transactions. In Bangladesh and Nigeria, the tax is levied on consumers, but in Kenya, Tanzania, and Uganda it is levied on providers. Peru has so far taken the opposite tack by limiting taxation. When the country launched its new mobile money regulatory framework in 2013, regulations exempted electronic money from the general sales tax until 2016, allowing the market to operate unfettered during its nascent years (Government of Peru, 2013, Article 7).

In Kenya, financial inclusion was an issue after the National Treasury enacted a 10% excise tax on providers’ mobile money fees, as providers immediately moved to shift tax incidence (burden) to consumers. Safaricom increased costs by 10% for customers transferring upward of 101 Kenyan shillings, and other providers that did not charge transaction fees, such as Airtel and yuCash, raised withdrawal charges (The EastAfrican, 2012; Herbling, 2013). The value of mobile payments dropped by 1% during the month the transaction tax was enacted and by 5% after three months (The Economist, 2013). Eight months later, however, Central Bank of

[7] Safaricom has been Kenya’s largest taxpayer for eight years: 2008-2015 (Herbling, 2014; The Economist, 2016). When Kenya’s excise tax was levied in 2013, the government expected it would raise 2.5 billion Kenyan shillings annually (Herbling, 2013).

Kenya data showed mobile payment values had grown 21% over the previous year, overcoming any dampening effect the tax may have had (Herbling, 2013). CEOs of Safaricom and Mobile Pay speculated that the continued overall growth was the result of continued growth in new users, the launch of new products, and mobile money's relative affordability compared to other more traditional banking channels (*Ibid.*). Still, some experts remain concerned that an additional tax would decrease the sector's overall profitability, depress network expansions, and disincentivize uptake by customers, especially those with low-incomes (Muthiora, 2015). We do not find any empirical studies that seek to isolate the true impact of Kenya's tax, or other countries' taxes, on mobile money usage.

Prohibition on Agents Charging Additional Fees to Consumers for DFS Services

The primary business model for agent networks calls for agents to be paid commissions for the number of transactions or services provided (Mas & Siedek, 2008). In addition to—or in place of—commissions, however, alternate business models may allow agents to set their own fee. For instance, the Philippines regulatory framework allows agent contracts to contain clauses that allow them to charge transaction fees ranging from 1-5 percent (Wright, 2015b). If there is sufficient competition, then customers can consider cost against the level and quality of service received from different agents (Mas & Siedek, 2008). However, if the environment is not competitive, then customers may be vulnerable to agent's levying high charges that they cannot avoid. For instance, if an agent holds a monopoly location there may be no alternative transaction point for customers to go to if an agent charges exorbitant fees (Wright, 2015a).

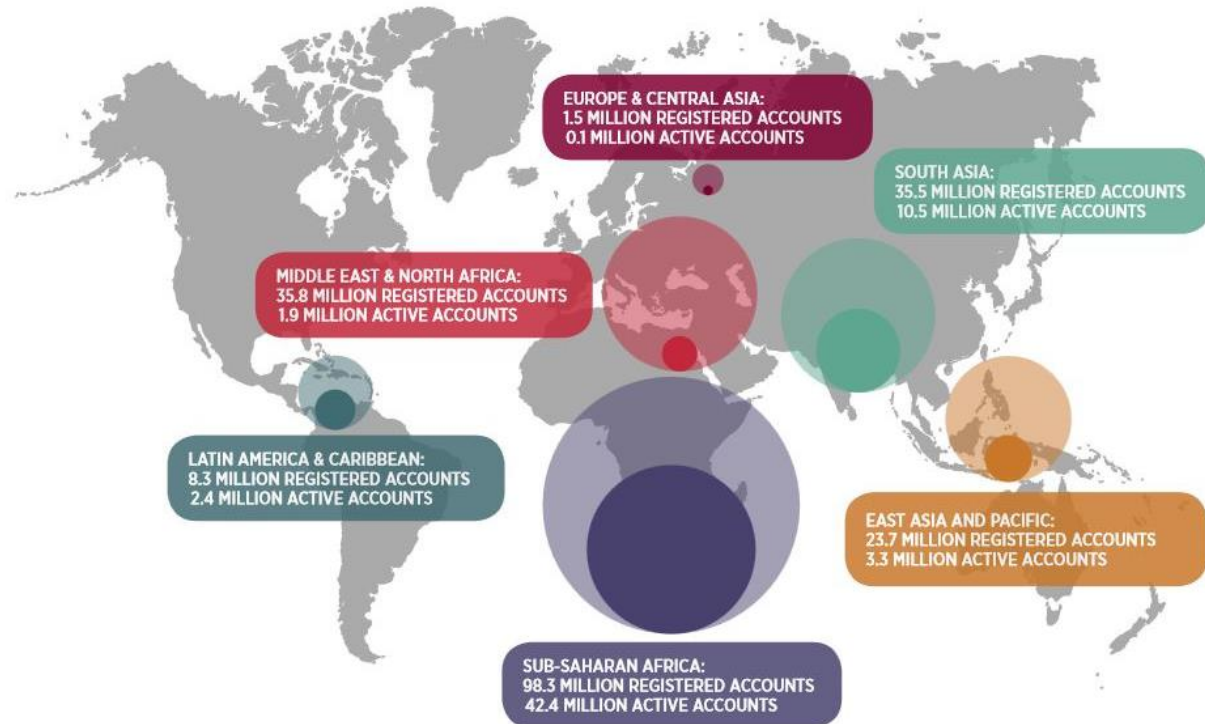
In order to help protect against this kind of vulnerability, many countries prohibit agents from charging additional fees to consumers for DFS services. **Thirteen of the countries in our review have regulations on DFS consumer fees (Bangladesh, Brazil, Colombia, Egypt, Ghana, India, Kenya, Pakistan, Peru, Rwanda, Sierra Leone, Tanzania, Uganda).** For example, Bangladesh Bank's (2009) Guidelines on Agent Banking for the Banks states: "Customers should not be charged directly by the agents for providing services to them" (Bangladesh Bank, 2009, p. 4).

Among the countries that prohibit DFS agents from charging additional fees to consumers for DFS services, five (Bangladesh, Ghana, Kenya, Nigeria, and Tanzania) countries articulate these regulations in their respective Agent Banking Guidelines—the most commonly found source for this regulation. Other regulations that prohibit agents from charging additional fees to consumers for DFS services can be found in other various Central Bank regulations, circulars, and mobile money guidelines for the remaining countries that prohibit agents from charging additional fees.

Regulations on the Management of Dormant Accounts

In 2015, the number of registered mobile money accounts increased by 31 percent globally, bringing the total number to 411 million accounts (GSMA, 2015a). Despite high growth rates that suggest user interest in mobile money, once opened, accounts are not always accessed consistently. *Figure 2* illustrates that inactive users, meaning those who have not conducted a transaction for 90 days, make up a significant portion of mobile money users. Worldwide, about 70 percent of all mobile money accounts are classified as inactive, with the highest proportion in the Middle East and North Africa, where about 95 percent of accounts are inactive (Pémocaud & Katakam, 2013).

Figure 2. Registered versus Active Accounts by Region: June 2013



Source: Pémocaud & Katakam, 2013, p. 22

When accounts are not accessed for an extended period of time, regulations can require that they be classified “dormant.” We reviewed regulations specifying how providers should deal with dormant accounts, including whether providers may charge fees to a dormant account in order to recoup costs and what is done with funds in accounts that have been dormant for a long time. **We find regulations in 11 countries (Ghana, India, Kenya, Lesotho, Malaysia, Pakistan, Peru, Sierra Leone, Tanzania, Uganda, Zambia) that specify how DFS providers should manage dormant accounts.** Specific timeframes after which accounts are considered abandoned or dormant range from 1-15 years. *Table 4* provides a breakdown of how time frames vary across countries.

Table 4. Countries that Designate a Timeframe for Dormant Accounts

	Timeframe for Accounts to be Considered Dormant
Ghana	**1 year -** An e-money account with no activity is considered dormant after one year of inactivity. The account is then suspended, and if no activity ensues in the following twelve months, the account is terminated and funds must be transferred into a separate account with a bank and held there for **no less than 5 years**. During this time, banks holding these accounts are permitted to intermediate the funds and retain the proceeds. After the five year mark, however, funds must be turned over to the Bank of Ghana (Bank of Ghana, 2015b, p. 10).
India	**10 years** – After ten years, funds will be redeposited to the Depositor Education and Awareness Fund with the Reserve Bank of India. “Nothing…shall prevent a depositor or any other claimant to claim his deposit or unclaimed amount” (Parliament of India, 1949, p. 54).
Indonesia	**6 months** – We do not find regulations specifying when an account is considered *dormant*. However, a provider may impose fees on an e-money account if it is *inactive* for six consecutive months (Bank Indonesia, 2014, p. 19).

Kenya	**5 years** - If account holders have not conducted any activity within their account nor communicated in any manner with the bank about their account within a period of five years, accounts are considered abandoned. Funds must then be transferred to the central bank (Parliament of Kenya, , 2011, Part 2.1 a-c).
Lesotho	**5 years** - After two years with no activity, a customer cannot access their account except with permission from two senior officers of the financial institution. Any applicable service charges may be levied up until the two-year mark, but afterwards must cease. After two years, funds are transferred to a separate account. If they remain there for three more years, funds are transferred to the "Commissioner" who shall use funds to offset costs of supervising financial institutions (Government of Lesotho, 2012, p. 419).
Malaysia	**7 years** – An account is considered dormant after seven years, after which point it must be placed in a consolidated trust account. After an additional 15 years (22 in total), funds are placed in a consolidated revenue account (Parliament of Malaysia, 1965, p. 9 - 12)
Pakistan	**10 years** - If no activity has occurred within ten years, the provider must transfer funds to State Bank of Pakistan for safe holding, and arrange for return of deposits in the year following (State Bank of Pakistan, 2015c).
Peru	**10 years** - When 10 years have passed without an electronic money account having any movement and without a claim during this period, funds are sent to the Directorate General of Debt and Treasury Ministry of Finance to be allocated to financial inclusion programs. (Government of Peru, 2013, Article 5a).
Sierra Leone	**10 years -** "29.2 Mobile money service providers shall identify dormant e-money accounts and report the particulars of such accounts, including the names of customers and their individual account balances to Bank of Sierra Leone" (Bank of Sierra Leone, 2015, p. 20).
Tanzania	**5 years** – Tanzania's Electronic Money regulations specifically point to different regulations for bank and non-bank providers. Non-banks "shall submit to the Bank the balances in the electronic money account that has been dormant consecutively for a period of five years" while banks are subject to provisions of the Banking and Financial Institutions Act which specifies that dormant accounts are those not accessed for **15 years** (Bank of Tanzania, 2015, p. 12).
Uganda	**2 years -** After two years an account is considered unclaimed and must be sent to a separate account. After three more years **(five years** in total), still unclaimed balances are transferred to the Central Bank who shall use funds to offset costs of supervising financial institutions (Parliament of Uganda, , 2004, p. 134-135).
Zambia	**1 Year -** An account is considered unclaimed at 12 months and funds must be sent to the central bank 30 days later. Customers may reacquire their funds for a period of six years afterward, but funds are lost forever thereafter (Parliament of Uganda, , 2004, p. 134-135).

In four countries (Lesotho, Malaysia, Uganda, Zambia) we find that regulations include two components: 1) amount of time after which accounts are considered dormant, and 2) amount of time account holders have to claim dormant accounts before the funds in the account are remitted to the Central Bank or other specified authority. For instance, in Uganda regulations state: "Whenever any current or savings account has not been operated for a period of two years or a time deposit account has not been operated for a period of two years after the date of maturity of the deposit, no withdrawals shall be allowed on the account except with the signatories authorized to grant the permission […] Unclaimed balances shall after a period of five years from the date of the advertisement be transferred to the Central Bank and the Central Bank shall employ them to offset costs of supervising financial institutions or as may be prescribed" (Parliament of Uganda, 2004, p. 134-135).

In order to track down and notify customers of dormant accounts, regulations require providers to undertake several different kinds of outreach. For instance, some regulations require notice or attempt to contact customers at their last known address when an account becomes dormant (e.g., Ghana). Lesotho and Uganda

require that notification be placed in the media to alert customers that funds will soon become completely inaccessible.

Inactive accounts lead to higher costs for provider (McKay, 2011). The root of costs for providers is in the expenditures incurred when customers are first acquired. Among other costs, customer sign-up includes administrative costs to upload customers into systems and to process 'Know Your Customer' credentials, and payment of commission bonuses to agents for each new customer (*ibid.*). Given these costs, we reviewed regulations to understand whether providers can recoup costs on inactive or dormant accounts.

We find that four countries (Kenya, Lesotho, Pakistan, Uganda) have regulations that specify whether financial institutions are allowed to charge additional fees to consumers with dormant accounts, and a fifth (Indonesia) with regulations on whether providers can charge for an "inactive" account. With the exception of Indonesia, these regulations serve to limit the fees that may be levied on dormant accounts. Pakistan is the only country that completely prohibits any "service charge" to customers for dormant accounts (State Bank of Pakistan, 2015d, p. 14). Lesotho and Uganda prohibit charges to a degree; they allow charges on inactive accounts, but only until they become classified as dormant at two years (Government of Lesotho, 2012; Parliament of Uganda, 2004). In Kenya, customers are only partially protected from charges, depending on a given banks terms and conditions agreement. Regulations prohibit additional charges for dormant accounts unless there is a mutually agreed upon contract between the financial institution and account holder stating that the provider may impose a charge or cease payment of interest. In Indonesia, regulations state: "The issuer may impose an administration fee […] if the electronic money is not used (inactive) within a period of 6 (six) consecutive months" (Bank Indonesia, 2014a, p. 19).

Responsibility for Consumer Losses or Other Harm

Human error, system malfunctions, security weaknesses and other vulnerabilities present opportunities for funds to be diverted or stolen (AFI Mobile Financial Services Working Group, 2014). In this section, we examine how regulations specify who bears responsibility or liability[8] for loss of funds and other harm to consumers in four specific instances (*Table 5*): failure or malfunction of technological systems; erroneous transactions (e.g., transfers to the wrong recipient, duplicate transactions); agent misconduct; and provider losses (e.g., bankruptcy, hacking/fraud).

Table 5. Regulations on Liability for Loss of Funds or Other Consumer Harm

Regulations contain information on who bears liability in the event of:	System errors or malfunctions	Erroneous transactions	Agent misconduct	Bankruptcy (for non-bank models)	Hacking/fraud
Bangladesh	Yes	Yes	Yes	N/A	
Brazil	Yes		Yes	Yes	
Colombia			Yes	Yes	
DRC			Yes	Yes	
Ecuador				N/A	Yes
Egypt				N/A	
Ghana			Yes	Yes	
India			Yes	Yes	Yes
Indonesia	Yes	Yes	Yes	Yes	

[8] The terms "responsibility" and "liability" appear to be interchangeable based on the language of regulatory documents found in this review.

Kenya		Yes	Yes	Yes	
Lesotho	Yes			Yes	
Malaysia	Yes			Yes	
Nepal				N/A	Yes
Nigeria			Yes	Yes	Yes
Pakistan	Yes	Yes	Yes	N/A	
Peru			Yes	Yes	
Rwanda	Yes	Yes	Yes	Yes	Yes
Sierra Leone				Yes	
South Africa			Yes	N/A	
Tanzania			Yes	Yes	
Uganda			Yes	Yes	Yes
Zambia			Yes	Yes	
TOTAL	**7**	**5**	**16**	**16**	**6**

System Malfunctions

Complicated technological systems facilitate mobile money transactions. These networks are often comprised of several different backend channels and may be managed by third party software providers. Breakdowns at any point in the chain can result in transaction failures (Lake, 2013).

In seven of the 22 countries reviewed (Bangladesh, Brazil, Indonesia, Lesotho, Malaysia, Pakistan, Rwanda) we find regulations that place responsibility for losses or harm due to system failure on the provider. For instance, Rwanda's Regulation on Electronic Fund Transfers and Electronic Money Transactions states: "A bank or other payment service provider shall be liable to its customer for a loss caused by the failure of an electronic fund transfer system or equipment to complete a transaction...where there is a malfunction" (National Bank of Rwanda, 2010b, p. 58). Lesotho and Malaysia's regulations state that providers should refund mobile money balances if a customer is wrongly charged due to technical discrepancies (Bank Negara Malaysia, 2008; Central Bank of Lesotho, 2013).

Erroneous Transactions

Both providers and customers can create erroneous transactions. Regulations set parameters for resolving two types of erroneous transactions: transfers to wrong recipients and accidental duplication of transfers. **We find regulations in five countries (Bangladesh, Indonesia, Kenya, Pakistan, Rwanda) that specifically address at least one of these scenarios.**

Entering the wrong phone number when one mobile money user transfers funds to another can lead to loss of funds. In this scenario, the transferred money ends up in the account of a stranger. Without processes in place to correct such mistakes and reverse—or 'repudiate'—transactions, the windfall becomes the property of the owner of the incorrectly entered number. Even when there is recourse available to customers, if the recourse mechanism is slow there is a chance the receiver can withdraw the funds before any solution occurs (Mudiri, n.d.).

In practice, fair repudiation processes are difficult to put in place. Erroneous transactions to wrong recipients can occur in high volumes, taxing provider's ability to address them, and it can also be difficult for providers to judge whether repudiation requests are genuine or part a fraudulent scheme (Mudiri, n.d.).

The only regulation we find that mandates liability in the event of transfers to wrong recipients by consumers is Bangladesh Bank's (2014b) Regulations on Electronic Fund Transfer. It states: "The payer may not revoke a payment instruction once it has been received by the payer's payment service provider, unless otherwise provided by agreement. It is mandated that the revocation of payment instructions be provided in writing by the agreement of the payer and the payer's payment service provider" (p. 5). Thus, a consumer who sends a transfer to a wrong recipient does not have the right to request revocation of that payment unless provided for in the user contract. This regulation appears to tilt liability for wrong transfers onto the consumer when they make an error in their transfers.

A particular issue that regulations describe for assigning liability for wrong transfers is burden of proof, which places the responsibility for demonstrating whether a transfer was erroneous on a particular party. Pakistan's Payment Systems and Electronic Fund Transfer Act includes an example of 'burden of proof' regulation. The regulation states that the provider must prove a transaction was truly authorized by a customer in order for the customer to be liable for the transfer (State Bank of Pakistan, 2007, Article 41). The Government of Kenya's (2014) National Payment System Regulations also discuss proof, though in less detailed terms: "Liability [for payment transactions] may be contractually excluded in circumstances where the payment service provider—(a) proves an element of fault on the side of the customer in the use of the service; or (b) demonstrates at first glance that the payment instruction was carried out by the legitimate customer" (p. 707).

Some regulations mandate that technical systems have built-in 'non-repudiation' capabilities, meaning that technical systems must have to have the capacity to determine who initiated and authorized a transaction.[9] This may occur through the customer being required to enter one or more forms of identification—e.g., entering a PIN number or other kind of authentication—as a form of digital signature (SEALED – Trust Service Architects, 2007). Bank of Lesotho's (2013) Mobile Money Guidelines state that "the technology used for mobile payments must be secure and ensure…non-repudiation" and it requires that a pin passcode be entered prior to any transaction (p. 29). In Uganda, we learn from regulators that "There is no easy answer on what 'burden of proof' is required" (EPAR, 2016b). Providers are required to ensure that the customer can see and confirm the name of the recipient to whom they are sending money before they initiate a transaction. But, this capability has only been implemented for transactions that occur within a single network. For interoperable transactions, customers enter a PIN number to send funds and if the recipient does not cash out the funds within 14 days the funds are automatically returned to the mobile wallet of the sender (*Ibid.*)

Regulations in Indonesia and Rwanda protect consumers in the event that an error *by the provider or the payment system* causes a wrong transfer (Bank Indonesia, 2012; Bank of Rwanda, 2010b). For instance, Indonesia's regulations state that when providers transfer funds to a wrong beneficiary, "the Provider shall make corrections in no later than 1 (one) business day after the known occurrence of the mistake" (Bank Indonesia, 2012, p. 12-13). Thus, while few regulations specifically address liability in the event of wrong transfers, in cases where there are regulations the aim is to ensure that liability lies with the party that initiated or authorized the transaction.

We also examine regulations to determine who is liable for losses when providers—or the provider payment system—are responsible for duplicate transfers. Only Bangladesh Bank's Regulations on Electronic Fund Transfers mention 'duplicate transfers' by name, though regulations in Indonesia and Kenya also seem

[9] For additional information on authorization requirements, see section on Security Policies for DFS Providers to Reduce the Risk of Loss of Funds or Data.

applicable. In Bangladesh, if “the payment systems service provider…erroneously transmitted a duplicate of a payment instruction previously sent by the sender…the sender is not obliged to pay the instruction and the receiving payment service provider is entitled to recover from the payee any amount paid to the payee to the extent allowed by law” (Bangladesh Bank, 2014b, p. 6-7). Bank Indonesia’s (2012) regulations protect the customer against “error in delivering an amount of funds that is not in accordance with the transfer order” (p. 12) by designating that all such orders shall be canceled. Kenya’s regulations protecting customers against “defective execution” of transactions would appear to protect them from liability in the case of duplicate transactions (Government of Kenya, 2014).

Agent Misconduct

International guidelines for consumer financial protection generally include provisions for the level of accountability that DFS providers should have for overseeing the conduct of agents, though precise language differs. The OECD (2011) states that providers should be held responsible and accountable for agents’ actions while the World Bank (2012b) states that providers should be held liable for any action undertaken by agents. A third guideline states that providers are responsible for agents’ actions but that “agents and third-party service providers may also, when appropriate, be made individually accountable for violations they have committed or facilitated” (Microfinance CEO Working Group, 2015, p. 10). In practice, in countries where regulations only specify that providers are “responsible” for agent actions, providers still sometimes interpret this as “implying more than retaining the provider’s liability for regulatory compliance,” and understand it instead to designate their full liability (Dias & McKee, 2010, p.10).

In 16 of the 22 countries reviewed[10] we find language that explicitly states that providers are either responsible or liable for agent actions. Four of these countries (Ghana, Kenya, Rwanda, Tanzania) also include more extensive language specifying that providers are responsible even for actions that the provider may have specified as off limits in a contract. For instance, Banks of Ghana’s Agent Guidelines (2015a) read: “A standard agency agreement shall, at a minimum…specify that the principal is wholly responsible and liable for all actions or omissions of agents providing services on its behalf, even If said actions have not been authorized in the contract, as long as they relate to agency business or matters connected therewith” (p. 5).

More commonly, regulations assign liability to both providers and agents. For example, in South Africa regulations state: “If an employee or agent of a person is liable in terms of this Act for anything done or omitted in the course of that person’s employment or activities on behalf of their principal, the employer or principal is jointly and severally liable with that person” (Republic of South Africa, 2008, p. 168).

Bankruptcy

Within the banking sector, prudential regulations that regulate the stability of deposit taking financial institutions and cover bankruptcy allow regulators to liquidate an insolvent bank, and usually provide guidelines to protect depositor interests and specify how their holdings should be returned. In cases where prudential regulation does not exist, depositors may be unable to access funds for years while they wait for corporate bankruptcy processes to conclude, or their funds may be lost forever (Polizatto, 1990). To

[10] Bangladesh, Brazil, Colombia, DRC, Ghana, India, Indonesia, Kenya, Nigeria, Pakistan, Peru, Rwanda, South Africa, Tanzania, Uganda, Zambia

examine what specific prudential regulations are issued for mobile money, we review regulations in the 16 countries that allow non-bank DFS models.

In five countries with non-bank models (Brazil, India, Indonesia, Nigeria, Uganda), DFS provider funds are held in accounts other than trusts. India and Indonesia allow funds to be held in regular deposit accounts. Nigeria requires them to be in a payment/settlement system account and Uganda in escrow accounts. In Brazil, customers' funds are kept separated, but we do not find the regulation specifying the mechanism (Central Bank of Brazil, 2013). The regulations in these countries include various diversification requirements and insurance protections (*Table 7*). In addition, Bank of Uganda's Mobile Money Guideline's (2013) explicitly address bankruptcy: "The arrangement governing the escrow account must ensure the licensed institution's authority to distribute the funds in the escrow account to mobile money account holders in case of insolvency or bankruptcy of the mobile money service provider" (p.8).

We find evidence that 11 countries with non-bank models (Colombia, DRC, Ghana, Kenya, Lesotho, Malaysia, Peru, Rwanda, Sierra Leone, Tanzania, Zambia) require non-bank DFS providers to place all deposits received by customers in trusts, providing a measure of protection if the provider becomes insolvent. A trust is "a legal relationship whereby a person, the settlor, gives legal title in property to a 'trustee', who must then hold the property …on behalf of a third person—the beneficiary" (Greenacre & Buckley, 2014, p. 8). The intermediary (e.g., a bank) receives and holds the funds. The arrangement provides legal protections in the event of bankruptcy. Specifically, it allows customers (beneficiaries) to retain ownership of the funds, which ensures that if the MMO goes bankrupt its creditors cannot lay claim (*Ibid*).

Even funds held in trusts can be vulnerable. If the bank holding funds becomes insolvent then customers are at risk to lose—or at least not receive 100 percent of—their funds (GSMA, 2016) depending on existing prudential regulation. Regulations in Peru and Ethiopia specify the priority of claims in the event of insolvency (*Table 6*). In Peru, if a bank becomes insolvent Peru's Ley General del Sistema Financiero (General Law of the Financial System) ranks paying back depositors the second highest priority (Superintendencia de Banco y Seguros Y AFP, 2013). In Ethiopia, however, depositors are fifth. By the time higher priority claims are made there is no guarantee enough is left to pay out the full amount that depositors have in the system (GSMA, 2016).

*Table 6***.** Peru and Ethiopia: Order of Claims in the Event of Bank Insolvency

Peru (Superintendencia de Banca, Seguros, Y AFP, 1998, Article 117)		Ethiopia (Government of Ethiopia, 2008, Article 45)	
I.	Unpaid labor costs (wages and benefits)	I.	Secured claims
II.	**Deposits** and insured credit	II.	Remuneration of the receiver and expenses incurred by him;
III.	Social Insurance obligations and Taxes	III.	Creditors who extended new credit to the bank
IV.	Debts	IV.	Outstanding salaries and other benefits of non-managerial staff of the bank for three months prior to insolvency;
V.	Other obligations	V.	Deposits
		VI.	Taxes owed to the Federal and Regional governments
		VII.	Other claims against the bank;
		VIII.	Interest on claims

There are multiple ways that regulators can mitigate the risk to consumers of provider losses. These mechanisms include, but are not limited to: 1) making the bank that holds the funds the account trustee; 2) covering mobile money accounts with deposits or other forms of insurance; and 3) diversifying funds across multiple institutions (GSMA, 2016). *Table 6* displays evidence across these mitigation methods for 16 countries that allow non-bank models to operate.

Table 7. Where Countries Designate That Mobile Money Funds Must Be Held

Country	Regulation or Source	Where are funds placed?	Customer funds can be held by the trust in what form?	Regulations specify diversification?	Deposit insurance applies to mobile money?
Brazil	"The resources held in payment accounts: I) constitute separate assets, and they shall not be merged with normal payment institution's assets; II) cannot be pledged, and shall not be subject to any judicial restraint, such as attachment, search and seizure, due to debts undertaken by the payment institution; III) are not part of the payment institution assets, for the purpose of bankruptcy; and IV) cannot be pledged as collateral for debts assumed by the payment institution" (Sistema de Pagamentos Brasileiro, 2013, Article 12).				
Colombia	GSMA, 2016	**Trust account** (fiduciary agreement)	Account at Central Bank or other FI		Yes
DRC	Di Castri, 2013	**Trust account** (fiduciary agreement)	Account at bank		
Ghana	Guidelines for E-Money Issuers in Ghana	**Trust account**	Account at bank	If provider's funds exceed 15% of the net worth of the bank for three straight months, excess must be placed in another bank	
India	Guidelines of Licensing of Payment Banks	**Deposit account** (current/fixed), and government securities/Treasury bills	DFS provider funds are held in accounts other than trusts	A minimum of 75% of deposits must be invested in government securities/treasury bills. A maximum of 25% can be maintained in current and time/fixed deposits (p. 5)	"Eligible deposits mobilized by the payments bank [are] covered under the deposit insurance scheme" (p.3)
Indonesia	Circular Letter 11/11/DASP Concerning Electronic Money	**Deposit account** - Savings, current, or time deposit accounts	DFS provider funds are held in accounts other than trusts		
Kenya	The National Payment System Regulations	**Trust account**	Account at bank	A trust account below KES 100 million can be held in one strong rated bank. If trust account above KES 100 million, funds must be held in at least four institutions with a	

				maximum of 25% in each, and at least two of the banks must be "strong rated" (p.739)	
Lesotho	Guidelines on Mobile Money	**Trust account**	Account at bank		
Malaysia	Guideline on Electronic Money	**Trust account**	Account at bank, debt securities		
Nigeria	Guidelines on Mobile Money Services in Nigeria	**Nominee/Settle-ment account**	DFS provider funds are held in accounts other than trusts		
Peru	Resolución 6285	**Trust account**	Account at bank, treasury bonds or securities, other authorized liquid assets	The Superintendencia de Bancos Seguros has the power to require diversification, but does not mandate that it occur. Max of 30 percent of funds in treasury bonds or securities	
Rwanda	Argent, Hanson, & Gomez, 2013	**Trust account**	Account at bank, government bonds	"Additional means of risk management include diversification of the aggregate deposit across banks" (p.2)	"Bank of Rwanda has required that the MNO take out a deposit insurance policy for RWF 200 million for the aggregate deposit (p.2)
Sierra Leone	Guidelines for Mobile Money Services	**Trust account**	Account at bank		
Tanzania	The Electronic Money Regulations	**Trust account**	Account at bank		
Uganda	Mobile Money Guidelines	**Escrow account**	Account at bank	"Bank of Uganda may require diversification of the escrow account over several licensed institutions as and when deemed necessary" (p. 8)	Deposit insurance applies but does not cover the full value of escrow fund (EPAR, 2016b)
Zambia	The Payment Systems Directives on Electronic Money Issuance	**Trust account**	Account at bank – Refunds cannot be invested or intermediated		

Of the 11 countries that designate that customer mobile money funds must be put in trusts, ten make the bank that holds the funds the trustee. The exception is Peru, whose regulation reads that funds can

be placed with "companies that are authorized to act as fiduciaries according to legislation," but we do not find the regulation that specifies who these companies are (Superintendencia de Banca, Seguros, Y AFP, 2013, p. 11 [translated]).

Three countries (India, Indonesia, Malaysia) additionally stipulate how those institutions can store or invest the money. For example, Malaysia's Guideline on Electronic Money states that "funds may only be invested in high quality liquid ringgit assets which are limited to deposits placed with licensed institutions; debt securities issued or guaranteed by the Federal Government and Bank Negara Malaysia; Cagamas debt securities, and other instruments as may be specified by the Bank" (Bank Negara Malaysia, 2008, p. 9-10).

Six of the countries reviewed (Ghana, India, Kenya, Rwanda, Peru, Uganda) have regulations on diversifying funds or the way funds are held. In addition, we find regulations stating that deposit insurance applies to mobile money in three countries (Colombia, India, Rwanda), and in an interview with Ugandan regulators we learn that deposit insurance applies in Uganda but would not sufficiently cover the full value of the funds held in escrow (EPAR, 2016b).

Hacking/Fraud

Six out of the 22 countries reviewed (Ecuador, India, Nepal, Nigeria, Rwanda, Uganda) have regulations that describe how losses from fraud or hacking should be allocated between customers and providers. Regulations in three countries (Ecuador, Nigeria, Rwanda) articulate various degrees to which the provider is accountable. In Ecuador, providers are liable for fraud where weaknesses or defects in a provider's system lead to loss of customer information (National Assembly of the Republic of Ecuador, 2014). Upon official adoption of Nigeria's Consumer Protection Framework, providers will have to refund customers for losses due to fraud with interest, unless the customer's own negligence caused the loss (Central Bank of Nigeria, 2015a). In Rwanda, customers "shall not be liable for loss: a) not attributable to or not contributed by the customer; b) caused by the fraudulent or negligent conduct of officers or agents" (National Bank of Rwanda, 2010b, pg 38).

India, Nepal, and Uganda leave it up to providers to determine how to allocate liability in cases of fraud or hacking. India's Master Circular-Mobile Banking Transactions in India states:

> Currently, the rights and liabilities of customers availing of mobile banking services are being determined by bilateral agreements between the banks and customers. Taking into account the risks arising out of unauthorized transfer through hacking, denial of service on account of technological failure etc. banks providing mobile banking would need to assess the liabilities arising out of such events and take appropriate counter measures like insuring themselves against such risks (Reserve Bank of India, 2014c, p.13).

Nepal's Information Technology Guidelines contain similar regulations. The guidelines indicate that providers must publish clear information in terms and conditions about who bears losses—between customers and providers—in particular situations related to security breaches (Nepal Rastra Bank, 2011). Finally, Uganda's Mobile Money Guidelines state that "terms and conditions should include an indemnity clause in case the customer is defrauded" (Bank of Uganda, 2013). It is unclear exactly who the indemnity clause would protect, and that decision appears to be left to the provider.

Transparency of DFS Terms and Protection from Costs/Consumer Harm

The G20 principles on financial consumer protection includes transparency as an objective for financial consumer protection, and emphasize the importance of providers and agents providing consumers with

information on the benefits, risks, and terms of financial services (OECD, 2011). Without having full information, consumers are more vulnerable to risks such as agent misconduct and price fraud (CGAP, 2015). In addition, inaccurate or inadequate information can lead to consumer errors being made during registration and transaction stages of mobile financial services (AFI, 2014).

In this section, we review how regulations in the 22 countries mandate transparent communication to consumers, including communication of charges and fees in terms and conditions (T&Cs). We also examine the extent to which regulatory oversight exists to protect consumers from costs and harm by prohibiting T&Cs that waive consumer rights, and by ensuring that provider terms and conditions are in compliance with regulations. We also review regulations related to security policies and data management for DFS providers, and seek to understand the conditions in which consumer information may be shared or disclosed. Finally, we review regulations pertaining to agent conduct. We examine whether or not training is mandated for agents to protect against fraud, loss of funds, or data; whether or not agents are prohibited from conducting transactions when transactions in real time is not possible; and the extent to which agents should be monitored through regular checks by providers or regulators. Coverage of these issues in regulatory documents is summarized in *Table 8*.

Table 8. Summary of Regulations for Transparency of DFS Terms and Protection from Consumer Costs/Harm[11]

Do regulations:	Mandate transparent communication of costs to consumers (Table 9)	Prohibit T&Cs that waive consumer rights	Mandate regulators regularly review of provider T&Cs	Mandate security policies for DFS providers (Table 10)	State whether customer data may be shared with third parties	Mandate training for agents	Prohibit provider agents or employees from conducting DFS transactions when transaction in real time is not possible	Specify that providers or regulators should carry out regular checks on agents
Bangladesh	Yes	Yes		Yes		Yes	Yes	Yes
Brazil	Yes					Yes		
Colombia	Yes	Yes					Yes	
DRC			Yes	Yes		Yes		
Ecuador		Yes		Yes				
Egypt			Yes	Yes	Yes			
Ghana	Yes			Yes	Yes		Yes	Yes
India	Yes			Yes			Yes	Yes
Indonesia	Yes	Yes		Yes	Yes			
Kenya	Yes		Yes	Yes		Yes	Yes	Yes
Lesotho	Yes			Yes				Yes
Malaysia	Yes			Yes	Yes			Yes
Nepal				Yes				
Nigeria	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Pakistan	Yes			Yes	Yes			
Peru	Yes		Yes			Yes		
Rwanda	Yes	Yes	Yes	Yes	Yes		Yes	
Sierra Leone	Yes			Yes		Yes	Yes	
South Africa	Yes	Yes		Yes	Yes			
Tanzania	Yes		Yes	Yes		Yes	Yes	Yes
Uganda	Yes			Yes	Yes	Yes	Yes	
Zambia	Yes					Yes		
Total	**18**	**7**	**6**	**18**	**9**	**10**	**10**	**8**

[11] In addition to these categories, we also looked for whether regulations specify minimum liquidity requirements for agents, and whether regulations state that consumers can name a spouse or next of kin to have a joint account and probate in the event of consumer's death or disability. We do not find evidence for these across countries.

Transparent Communication with Consumers

When customers lack full information about fees and risk, they may be vulnerable to misunderstandings that can lead them to choose a product or service that does not fit their needs (AFI, 2014). In addition, customers who are uniformed, confused by product choices, or perplexed by dense terminology, are more susceptible to exploitation by agents or providers who may advantage the situation for gain (Ardic, Ibrahim, & Mylenko, 2011).

In this section, we review how regulations attempt to ensure customers acquire full information by examining whether they mandate certain disclosure requirements. We first examine whether regulations explicitly state that consumer charges (fees or rates) must be communicated to customers within provider T&Cs. Next, we look at how regulations may seek to protect illiterate individuals or other populations that cannot access information through customary channels, for example by specifying that fees must be communicated to customers verbally or mandating equity provisions for minority groups.

Table 9. Regulations for Communicating Costs Associated with DFS to Customers

Do Regulations:	State that T&Cs must explicitly list charges	State whether fees must be communicated In-writing, Verbally, or Both	Contain equity provisions for diverse population groups	Specify particular terms that must be communicated besides consumer charges
Bangladesh	Yes	In-writing	Yes	Yes
Brazil	Yes	In-writing		
Colombia	Yes	In-writing		
DRC				
Ecuador				
Egypt				
Ghana		In-writing	Yes	Yes
India		In-writing		
Indonesia	Yes	In-writing	Yes	Yes
Kenya	Yes	In-writing		Yes
Lesotho	Yes	In-writing		
Malaysia	Yes	In-writing		Yes
Nepal				
Nigeria	Yes	In-writing	Yes	Yes
Pakistan	Yes	In-writing	Yes	
Peru	Yes	In-writing		Yes
Rwanda				Yes
Sierra Leone	Yes	Both	Yes	Yes
South Africa	Yes	Both		Yes
Tanzania		In-writing		
Uganda	Yes	Both	Yes	Yes
Zambia		In-writing		Yes
TOTAL	**13**	**17**	**7**	**12**

Thirteen[12] out of 22 countries have regulations that mandate that DFS T&Cs include explicit mention of charges (e.g., fees, rates, taxes, penalties). Of these, six countries (Bangladesh, Brazil, Kenya, Malaysia, Rwanda, Sierra Leone) instruct that customers should be notified if fees and charges change. For example, Bank Negara Malaysia requires that any applicable charges and fees should be communicated during a pre-contractual stage, and that they must be communicated again to customers at least 21 days prior to any change in fees taking effect (Bank Negara Malaysia, 2010).

In three countries (Ghana, Tanzania, Zambia), regulations do not specifically mandate transparency of charges in T&Cs but do address transparency in a wider sense. The Bank of Ghana, for example, mandates "Transparency and the disclosure of clear, sufficient and timely information on the fundamental benefits, risks and terms of any product or service offered in an objective and accessible form" (Bank of Ghana, 2015a, p. 15).

Seventeen[13] out of 22 countries have regulations that specify how DFS charges should be communicated to customers. All **17 countries mandate that charges should be communicated in writing, and four (Ghana, Sierra Leone, South Africa Uganda) have provisions for oral explanations.** Twelve[14] mandate fees be displayed in **postings or displays** at financial institutions, agent locations, or other points of service. Seven countries (Colombia, Lesotho, Malaysia, Nigeria, Pakistan, Peru, South Africa) state that fees should be published on a **website**, and four countries (Bangladesh, India, Lesotho, and Malaysia) mention the use of **brochures or schedule sheets**.

Bangladesh Bank covers these various mechanisms in a list: "As the financial service provider, Banks/FIs shall, for all charges and fees to be levied at the time of service rendered or on request, 1) provide the customers with a schedule of charges, fees, commissions payable for the products or services that the customers have chosen; 2) display prominently their standard fees and charges at all branches, 3) inform the customers of any additional charges or expenses that the customers have to pay, such as searching fees to retrieve available past records etc." (Bangladesh Bank, 2014, p. 11).

At least four countries (Ghana, Sierra Leone, South Africa, Uganda) mandate that fees should be verbally communicated, protecting illiterate populations. Bank of Uganda's (2011) Financial Consumer Protection Guidelines read: "A financial services provider shall…where a consumer is unable to understand written information, explain orally to the consumer the written information" and "the consumer shall have a third party to countersign as evidence that an oral explanation has been given" (p. 13). South Africa's regulation requires "a provider other than a direct marketer…to make a full and frank disclosure of any information that would reasonably be expected to enable the client to make an informed decision" (Republic of South Africa, 2002b, p.8).

DFS is widely seen as a potential mechanism for increasing financial inclusion. A concern as services expand to new population groups is that DFS terms and conditions be communicated in multiple ways so that particular groups are not excluded based on language, literacy, or other characteristics (World Bank, 2012b). **Seven out of 22 countries (Bangladesh, Ghana, Indonesia, Nigeria, Pakistan, Sierra**

[12] Bangladesh, Brazil, Colombia, Indonesia, Kenya, Lesotho, Malaysia, Nigeria, Pakistan, Peru, Sierra Leone, South Africa, Uganda
[13] Bangladesh, Brazil, Colombia, Ghana, India, Indonesia, Kenya, Lesotho, Malaysia, Nigeria, Pakistan, Peru, Sierra, Leone, South Africa, Tanzania, Uganda, Zambia
[14] Bangladesh, Colombia, Ghana, India, Indonesia, Kenya, Nigeria, Pakistan, Peru, Tanzania, Uganda, and Zambia

Leone, Uganda) have regulations that include provisions for making information accessible for different population groups.

Three countries (Bangladesh, Nigeria, Sierra Leone) require provisions to facilitate communication with **non-primary language speakers**. For example, Bank of Sierra Leone's (2015) Mobile Money Guidelines read that "where a consumer is unable to understand English, [an] agent shall provide an oral explanation in a language the consumer understands" (Bank of Sierra Leone, 2015, pg. 18). In addition, though we do not find the requirement in the regulatory documents we were able to access, an interview with Ugandan regulators reveals that Bank of Uganda requires that customers are informed of changes within terms and conditions in English and, if necessary, in any of the local languages that a customer may speak (EPAR, 2016b).

Indonesia and Pakistan discuss specific requirements to serve the **elderly or populations with a disability**. The State Bank of Pakistan (2014) released a circular for guidelines to follow when serving blind populations. One requirement states, "The banks/MFBs should... arrange printing of all related stationary, forms/documents, etc. in Braille Script within the period of three months from the date of issuance of the circular" (State Bank of Pakistan, 2014, p.1). In Indonesia, the Bank of Indonesia specifies in its Regulation on Consumer Protection Payment System Services (2014b) that a provider must give equal access to all consumers, including those with "special needs", who are defined as the blind, the deaf, and elderly who are sixty years old or older (p. 4).

Four regulators (Kenya, Lesotho, Peru, Sierra Leone) issue less specific regulations that simply mandate the need for accessible documents, without targeting specific populations. The Central Bank of Lesotho, for example, instructs, "The terms and conditions for the use of mobile money must be easily accessible, equitable, and understood" (Central Bank of Lesotho, 2013, p. 13).

Twelve[15] countries specify particular terms other than charges that must be explicitly communicated to customers. Of these, nine (Indonesia, Kenya, Malaysia, Peru, Rwanda, Sierra Leone, South Africa, Uganda, Zambia) mandate the explicit communication of consumer rights, responsibilities, liabilities, or obligations. For example, the Bank Negara Malaysia mandates that "an issuer of e-money must ensure that the rights and responsibilities of all its stakeholders (e.g. users and merchants) are clearly set out in the relevant contractual documents" (Bank Negara Malaysia, 2008). Additionally, Bank of Uganda regulates that "the terms and conditions provided by the mobile money service provider shall highlight to the consumer the relevant fees, charges, penalties and any other consumer liabilities or obligations in the use of mobile money services" (Bank of Uganda, 2013).

Risks associated with DFS must be disclosed in four countries (Bangladesh, Ghana, Indonesia, Malaysia, and Zambia). For example, the Bank of Ghana requires the "transparency and the disclosure of clear, sufficient and timely information on the fundamental benefits, risks and terms of any product or service offered in an objective and accessible form" (Bank of Ghana, 2015b).

Only five of these countries (Indonesia, Kenya, Malaysia, Nigeria, and Rwanda) specify that providers must explicitly inform customers on redress mechanisms.[16] Bank Indonesia, for example, mandates that "The issuer shall provide information to prospective holders and current holders, in writing, in

[15] Bangladesh, Ghana, Indonesia, Kenya, Malaysia, Nigeria, Peru, Rwanda, Sierra Leone, South Africa, Uganda, Zambia

[16] This does not include less explicit modes of communication, such as website postings or displays. The next section on Dispute resolution provides further detail on how redress procedures are mandated through other communication channels, such as these.

complete and clear Indonesian… the procedure for filing complaints related to the use of Electronic Money and the estimated duration of complaint handling" (Bank Indonesia, 2014a, pg. 18, [translation]).

Monitoring Provider Terms & Conditions

Seven countries reviewed (Bangladesh, Colombia, Ecuador, Indonesia, Nigeria, Rwanda, South Africa) have regulations that prohibit T&Cs that waive consumer rights. For example, Bangladesh Bank regulates that "no agreement in writing between a customer and a bank or other payment service provider may contain any provision that constitutes a waiver of any right conferred or cause of action created by this Regulation" (Bangladesh Bank, 2014b, p. 18).

Within its Draft Consumer Protection Framework, Central Bank of Nigeria addresses this issue by prohibiting unfair contracts. Among other things, the draft states that an unfair term within a contract would be one that allows "the operator the possibility of transferring his rights and obligations under the contract, where this may reduce the rights of the consumers, without their agreement (Central Bank of Nigeria, 2015a, p. 25). It also prohibits "excluding or limiting the right of any consumer to take legal action" (*Ibid.*). In the event that a provider has an unfair contract the central bank can nullify the contract, apply sanctions, and take legal action to ensure operators cease using such terms. While we do not include Uganda as a country with regulations that prohibit the waiver of consumer rights, its Financial Consumer Protection Guidelines, state that financial service providers shall not "include an unconscionable term in an agreement" (Bank of Uganda, 2011, p. 4).

Six countries (DRC, Egypt, Kenya, Peru, Rwanda, Tanzania) have regulations that mandate regulator reviews of DFS provider T&Cs. All six except Egypt require a review to take place when institutions apply to become an issuer of electronic money. For instance, the Central Bank of Congo states that prior to performing any electronic money activity, institutions must provide [the Central Bank] with three copies of the various draft agreements to be entered into with the various parties, in particular with electronic money distributors, acceptors, holders, or subscribers (Central Bank of Congo, 2013). Regulators in Egypt and Kenya mandate that T&Cs be submitted for review when any changes are made.

In two other countries (Nigeria, Sierra Leone), the central banks do not mandate a regulator review unless they have reason to believe that contract terms are not in compliance. In Nigeria, consumers or other stakeholders are responsible for reporting contract terms that are in conflict with regulations, and in such cases, the Central Bank "shall nullify the contract terms, apply appropriate sanctions and obtain an undertaking from the operators to desist from using such terms" (Central Bank of Nigeria, 2015a, p. 25). In Sierra Leone, the Bank of Sierra Leone (BSL) will take action if they have reason believe that the operations of the mobile money service are being conducted in a manner that is detrimental to the interest of mobile money or in contravention of the terms and conditions imposed (Bank of Sierra Leone, 2015, p. 19). BSL also stipulates the proper to conduct an "inspection report" and ask for information from any provider (*Ibid.*). Additionally, BSL mandates providers to provide periodic reports to the BSL and audited financial statement, although there is no specific mention of compliance with consumer protection (*Ibid.*).

Security Policies for DFS Providers to Reduce the Risk of Loss of Funds or Data

Recent high profile cases of fraud demonstrate the importance of putting in place sound security to protect funds and data. In 2012, employees of MTN Uganda exploited security and procedural gaps to

steal $3.5 million from an account that held funds from disputed transactions that occurred within its mobile money service. The theft was enabled by a system that allowed unauthorized employees to have access to the account (Morawczynski, 2015).

Mandating strong PINs or passwords, securing data, and ensuring that data is only accessible by credentialed employees are a few security policies that can be put in place to protect funds (*Table 10*).

Table 10. Regulations that Mandate Security Policies to Reduce Risk of Loss of Funds or Data

Do regulations:	Specify PIN or password requirements	Specify data storage requirements	Mandate levels of authorization for access to consumer funds or data
Bangladesh	Yes	Yes	
Brazil			
Colombia			
DRC			
Ecuador	Yes		
Egypt	Yes	Yes	
Ghana	Yes		
India	Yes	Yes	Yes
Indonesia		Yes	
Kenya	Yes	Yes	
Lesotho		Yes	Yes
Malaysia		Yes	Yes
Nepal		Yes	Yes
Nigeria	Yes	Yes	Yes
Pakistan	Yes	Yes	Yes
Peru			
Rwanda	Yes		
Sierra Leone	Yes	Yes	
South Africa			
Tanzania			
Uganda	Yes	Yes	
Zambia			
Total	**11**	**12**	**6**

Eleven[17] countries specify PIN or password requirements, with some requiring a second level of authentication. For example, the Central Bank of Nigeria (2013) considers mobile telephone numbers a second factor authorization: “All transactions on an account shall be allowed only after authentication of the mobile number and the PIN associated with it… All accounts activated by the consumer on the mobile application are linked to the mobile phone number. This mobile phone number shall be used as the second factor authentication for mobile transactions” (p. 13).

Twelve[18] countries specify data storage requirements, and six (India, Lesotho, Malaysia, Nepal, Nigeria, Pakistan) mandate levels of authorization for access to consumer funds or data. For data

[17] Bangladesh, Ecuador, Egypt, Ghana, India, Kenya, Nigeria, Pakistan, Rwanda, Sierra Leone, Uganda
[18] Bangladesh, Egypt, India, Indonesia, Kenya, Lesotho, Malaysia, Nepal, Nigeria, Pakistan, Sierra Leone, Uganda

storage, the Reserve Bank of India (2014) mandates the implementation of network encryption, firewalls, intruder detection systems, data file and system integrity checking. It is also stated that "appropriate physical security measures to protect the system gateways, network equipment, servers, host computers, and other hardware/software used from unauthorized access and tampering" (*Ibid, p. 11.*) Some countries regulate that internal controls of providers by requiring that only certain employees can have access to data. For instance, Nepal Rastra Bank's (2011) Information Technology Guidelines state that access to data and information systems should be on a "need to know" basis (p. 6). It further states that any individual with access to the system should be closely monitored, including through recorded logs of their system activity.

Countries also vary in their regulations for how long consumer data may be maintained. We find evidence that regulators broadly distinguish two types of records: transaction records and customer information. In countries we reviewed, transaction records may include electronic money cash-ins and cash-outs; payments of salaries, benefits, and pensions; and other types of domestic money transfers, including to and from bank accounts. Customer information may include personal or identification data that were obtained through application or account forms, and other types of account files.

Nine countries (Bangladesh, DRC, Ghana, Lesotho, Nepal, Nigeria, Tanzania, Uganda, Zambia) specify a length of time on transaction records. In these countries, the length of time that transaction records should be maintained ranges from 5-10 years. We find evidence that regulators in five countries (Pakistan, South Africa, Tanzania, Uganda, Zambia) mandate a length of time to maintain customer information, ranging from 5-10 years (*Table 11*).

Table 11. Regulations that specify how long data may be maintained

	Transaction Records	Customer Information
Bangladesh	**Six years** from the origination date of the entry (Bank of Bangladesh, 2011, p. 3)	
DRC	**Ten years** (Central Bank of Congo, 2013)	
Ghana	**Six years** (Bank of Ghana, 2015b, p. 11)	
Lesotho	At least **ten years** (Central Bank of Lesotho, 2013, p. 29)	
Nepal	At least **five years** from the date of such transactions (Government of Nepal, 2008).	
Nigeria	A log should be maintained online for a minimum period of **three months** and subsequently archived for a minimum period of **seven years** (Central Bank of Nigeria, 2013, p. 18).[19]	
Pakistan		A minimum **of ten years after** the business relationship is ended (State Bank of Pakistan, 2015a, p. 13).[20]
South Africa		"The data controller must, for as long as the personal information is used and for a period of **at least one year** thereafter, keep a record of the personal information and the specific purpose for which the personal information was collected …" (Republic of South Africa, 2002b, p. 48).

[19] Exception: "If a complaint arises before the expiration of the seven (7) years, the log in respect of such pending complaints shall be maintained until the case is completely resolved or discharged" (Central Bank of Nigeria, 2013, p. 18).
[20] Exception: "Banks/DFIs shall, however, retain those records for longer period where transactions, customers or accounts involve litigation or it is required by court or other competent authority" (State Bank of Pakistan, AML & CFT Regulations for Banks and DFIs, 2015a, p. 13).

		"A provider must have appropriate procedures and systems in place to…keep client records and documentation safe from destruction. All such records must be kept for a period of **five years after termination**, to the knowledge of the provider, of the product concerned or, in any other case, after the rendering of the financial service concerned" (Republic of South Africa, 2002a, p. 4-5).
Tanzania	Not less than **ten years** from the date of the transaction (Bank of Tanzania, 2015, p. 16).	The minimum period for retaining records is **5 years**" (The World Bank, 2013e, p. 17).
Uganda	"The mobile money service provider shall maintain accurate and complete records … transactions undertaken by mobile money customers... These records shall be kept for a period of **at least ten years**" (Bank of Uganda, 2013, p. 18).	"The mobile money service provider shall maintain accurate and complete records of … the identity of mobile money customers… These records shall be kept for a period of **at least ten years**" (Bank of Uganda, 2013, p. 18).
Zambia	**Ten years** from the date on which the record was created (Republic of Zambia, 2015, p. 412).	**Ten years** from the date on which the record was created (Republic of Zambia, 2015, p. 412).

Three countries (DRC, South Africa, Tanzania) do not have specific requirements for a PIN or password, data storage, or authenticity requirements, but still recognize the need for appropriate security policies to be in place. For example, the South African Reserve Bank provides a general mandate of security, as well as a requirement to abide by requirements of international standard bodies: "The technology used in e-money must be secure and ensure confidentiality, integrity, authenticity and non-repudiation. Furthermore, the e-money security and operational services should meet the requirements of international standard bodies" (South African Reserve Bank, 2009, p. 8).

Protection of Customer Data/Personal Information

In several countries, regulations specifically address the conditions in which providers can use or disclose consumer data, consumer rights concerning their data, and privacy or confidentiality requirements. Appendix 5 contains a country-by-country report with further details to supplement the text in this section.

In ten countries (Ghana, Indonesia, Kenya, Malaysia, Nigeria, Pakistan, Peru, Rwanda, South Africa, Uganda), providers require consumer consent to disclose consumer information. For example, in Kenya, providers must keep consumer information confidential, but may disclose customer information when authorized, in writing, by the customer (Government of Kenya, 2014, p. 714). Similarly, Parliament of the Republic of Ghana's (2012) Data Protection Act states that an entity in control of data may not provide, use, obtain, procure, or provide information related to the consumer without written consent from the customer. Additionally, the customer may request the provider to correct or delete personal data that is "inaccurate, irrelevant, excessive, out of date, incomplete, misleading or obtained unlawfully" (*Ibid*., p. 19).

In Nigeria and Pakistan, regulations require consumer consent to divulge consumer information, we also noted other language specifying exceptions to when disclosure of information is permitted. In Pakistan, for example, the State Bank of Pakistan's (2007) Payment Systems and Electronic Fund Transfer Act states that "A Financial Institution or any other Authorized party shall…not divulge any information relating to an Electronic Fund Transfer, affairs or account of its consumer, except in circumstances in which, according to the practice and usage customary among bankers, it is necessary or appropriate for

a Financial Institution to divulge such information, or the consumer has given consent therefore" (Article 70). In Nigeria, the Central Bank's Draft Consumer Protection Framework (2015a) states that "Financial operators shall not reveal consumers'/customers' information to a third party without the express permission of the customer, except ... upon request by the CBN and other regulatory bodies; where there is a valid court order; or in pursuance of public duty/interest" (p. 24-25).

Two countries (Egypt, Sierra Leone) have regulations that mandate privacy or confidentiality, or specifically prohibit disclosure of information, but they do not mention the need for consent by consumers. The Bank of Sierra Leone's (2015) Guidelines for Mobile Money Services, for example, mandates the following under a Data Protection requirement: "(i) A mobile money service provider, as well as its agents, shall uphold privacy and confidentiality of customer information and data; (ii) The conditions under which customer information and data will be kept shall be disclosed before the customer enters into agreement with the mobile money service provider; and (iii) Provisions of data protection including confidentiality shall be in accordance with all relevant laws" (Bank of Sierra Leone, 2015).

In one country (Brazil), regulations simply guaranteed privacy, confidentiality, and security of personal data, but did not specify any requirements for providers to uphold (Central Bank of Brazil, 2013).

In Ecuador, the Central Bank has the right to ask for, store, and use personal data that are considered public-access, data that aids in product support (location), data needed for security reasons, commercial purposes, or any other service related to the electronic money system (Central Bank of Ecuador, 2015d, p. 2). We find no indication that the Central Bank requires consumer consent in any form.

While we did not find regulations that specifically discuss allocation of consumer information between providers and consumers, we did find regulations that specifically allocate ownership of such data between providers and agents. **Regulations in four countries (Bangladesh, Ghana, Kenya, Nigeria) state that, between providers and agents, customer data belongs to the providers**. For example, Bangladesh Bank (2009) mandates a service level agreement between banks and agents that specify that "all information/data that the agents collect in relation to agent banking services, whether from the customers or banks or from other sources, is the property of the banks" (p.6). In Tanzania, the regulations mandate contracts that contain provisions pertaining to confidentiality and security of customer information (Bank of Tanzania, 2008, PartV.16.m).

Nine countries (Egypt, Ghana, Indonesia, Malaysia, Nigeria, Pakistan, Rwanda, South Africa, Uganda) have regulations that state whether customer data may be shared with third parties. Of these nine countries, regulators in all countries except Egypt specify that data can be shared if consumer consent is given, and all except Egypt and Ghana permit disclosure if required by a legal order. The Bank of Uganda (2011), for example, regulates that, "A financial services provider shall not disclose any information about a consumer to a third party except where: (i) the financial service provider is compelled by law to disclose the information; or (ii) the disclosure is made with the express consent of the consumer" (p. 11). In addition to cases of consumer consent and legal obligations, the State Bank of Pakistan states that financial institutions may divulge information "in circumstances in which, according to the practice and usage customary among bankers, it is necessary or appropriate for a Financial Institution to divulge such information" (State Bank of Pakistan, 2007).

None of the 22 countries reviewed have regulations stating that consumers can name a spouse or next of kin to have a joint account and avoid probate in the event of a consumer's death or disability. The

Central Bank of Kenya, however, does specify that providers should include in the terms and conditions "details on how accounts of deceased persons are handled" (Central Bank of Kenya, 2014, p. 713). The Guidelines also state that in the case of a deceased persons' account, providers should comply with laws laid out in the Succession Act.

Regulations on DFS Provider Agents or Other Employees

Mudiri (n.d.) writes that certifying agents and providing ongoing training can create a "first line of defense" against fraud (p. 16). Agents' ability to recognize risk, communicate risks to customers, and react to minimize damage when fraud does occur is essential, especially given that agents are front line actors with customers (*Ibid*.).

Ten countries[21] have regulations that mandate training for agents, but only Nigeria, Kenya, Peru, Tanzania, and Uganda explicitly state that agents must be trained on issues related to fraud, loss of funds, or data. Four countries (Bangladesh, DRC, Sierra Leone, Zambia) state that training has to occur, but do not specify what training should involve. Brazil mandates that agents pass a certification test.

Kenya and Nigeria's central banks direct that agents have to be trained on proper identification of customers, customer service, confidentiality of the information, cash security, record keeping, and financial education (Central Bank of Kenya, 2013; Bank of Nigeria, 2013). Peru requires training on "identification of and service to clients, confidentiality, and banking secrecy" (Superintendencia de Banca, Seguros, Y AFP, 2013, Anexo D). Tanzania's regulations include training for agents on internal controls, accounting, risk management, and consumer protection (Bank of Tanzania, 2015), and Uganda mandates training on receiving complaints and handling their resolution and escalation (Bank of Uganda, 2013).

Another concern is agent liquidity, but **we do not find any regulations that set minimum liquidity requirements at the agent level. Several countries place loose prescriptions on agent liquidity with language indicating that agents should have "sufficient" liquidity** (Bank of Lesotho, 2013; Central Bank of Malaysia, 2008; Superintendencia de Banca, Seguros, Y AFP, 2013**), and others mention that providers should be aware of liquidity concerns.**

While no liquidity requirements are specified in regulation, we do find evidence that Ecuador sets minimum liquidity requirements for "macro" agents.[22] The Central Bank of Ecuador states that the necessary level of liquidity (in cash and electronically) is defined in the Agreement of Macro-Agent Membership, with a minimum requirement that varies depending the type of organization (Central Bank of Ecuador, 2014b, p. 10).

Ten[23] out of 22 countries reviewed have regulations that prohibit DFS provider agents or employees from conducting transactions in situations where conducting in real time is not possible. For example, the Bank of Ghana mandates that, "Agents are not permitted to… [transact] when there is communication failure or when the issuance of physical or electronic receipt is not possible" (Bank of Ghana, 2015a, p. 8). The Central Bank of Kenya takes this prescription a step further by also requiring

[21] Bangladesh, Brazil, DRC, Kenya, Nigeria, Peru, Sierra Leone, Tanzania, Uganda, Zambia
[22] The Reglamento de Participantes del Sistema de Dinero defines macro agents as any business organizations or public or private institutions that in their business models use mobile money for their operations. They have a network, and supervise the operational centers in their network.
[23] Bangladesh, Colombia, Ghana, India, Kenya, Nigeria, Rwanda, Sierra Leone, Tanzania, Uganda

the disclosure of this prohibition: “An agent shall disclose to the institution’s customers in a conspicuous place on the agent’s premises… a written notice to the effect that if the electronic system is down, no transaction shall be carried out” (Central Bank of Kenya, 2013b, p. 22).

Eight out of the 22 countries reviewed (Bangladesh, Ghana, India, Kenya, Lesotho, Malaysia, Nigeria, Tanzania) have regulations that include wording to indicate that *regular* or *periodic* checks on agents to ensure compliance with legal/regulatory requirements must occur. In Bangladesh, for example, “the banks… should visit the agent’s outlets at a regular interval to ensure that the agents are working in accordance with the terms and conditions of the agreement and following the rules, regulations and guidelines issued by the regulators” (Bangladesh Bank, 2009, p. 6). However, beyond saying that they should be regular or periodic, none of the regulations specify how often these checks should take place.

Eight other countries (Brazil, Colombia, Indonesia, Pakistan, Rwanda, Sierra Leone, South Africa, and Uganda) mandate that monitoring should take place, but regulations do not specifically require *regular* checks. For instance, the Bank of Uganda states: “In its dealings with mobile money agents, a mobile money service provider must… put in place mechanisms for supervising the mobile money agents to ensure agents conduct business in accordance with these Guidelines and any other relevant regulatory provisions” (Bank of Uganda, 2013, p. 10/11).

Complaints and Dispute Resolution

Recourse mechanisms can build consumer trust in the system if they operate efficiently and respond to consumer concerns and problems (Chapman & Mazer, 2013). By creating a link between consumers and providers, recourse mechanisms also facilitate the flow of information and can reveal patterns so that providers can be made aware of the most salient problems that consumers face and respond accordingly (*Ibid*.).

In this section we review how regulations specify that complaint procedures are communicated and made available to customers. We also examine mandated escalation procedures for complaints and how countries regulate additional avenues for complaints (e.g., arbitration, litigation) in the event that consumers are unsatisfied with—or wholly blocked by—providers’ internal complaint systems.

Table 12. Summary of Dispute Resolution Regulations

Do regulations:	Specify how complaint procedures should be communicated to customers	Mandate specific mechanisms through which to report complaints (Table 13)	Require providers to collect/ report data on complaints	Specify escalation procedures or alternative dispute resolution channels	Specify parameters surrounding arbitration	Specify availability of a small claims or consumer court
Bangladesh	Yes	Yes	Yes	Yes	Yes	
Brazil		Yes	Yes			
Colombia	Yes		Yes	Yes		
DRC			Yes			
Ecuador			Yes	Yes		
Egypt			Yes			
Ghana	Yes	Yes	Yes	Yes		
India	Yes	Yes		Yes		Yes

Indonesia	Yes		Yes	Yes		
Kenya	Yes	Yes	Yes	Yes	Yes	
Lesotho	Yes					
Malaysia	Yes			Yes		Yes
Nepal	Yes					Yes
Nigeria	Yes	Yes	Yes	Yes		
Pakistan	Yes	Yes		Yes		
Peru	Yes	Yes				
Rwanda	Yes		Yes	Yes		
Sierra Leone	Yes	Yes	Yes	Yes		
South Africa	Yes			Yes		
Tanzania	Yes		Yes	Yes		
Uganda	Yes	Yes	Yes	Yes		
Zambia						
Total	**17**	**10**	**14**	**15**	**2**	**3**

Communicating Complaint Procedures to Customers

The DFS customer base is made up of people with varying access to technology, literacy, and languages spoken. In order to ensure that a full range of customers remain knowledgeable about what recourse channels are available, regulations mandate specific and sometimes diverse ways that customers must be informed of their options and also may require providers to accept complaints through multiple channels (Chapman & Mazer, 2013).

Seventeen of the 22 countries reviewed[24] have regulations that specify how complaint procedures should be communicated to customers, all of which mandate that complaint procedures should be communicated in writing. We find no evidence of regulations that state that complaint procedures must be orally communicated to customers.

Publication of complaint procedures occurs in various mediums. Six countries (India, Ghana, Lesotho, Malaysia, Pakistan, and Peru) mandate that they be included on the providers' **websites**. An additional three countries (Indonesia, South Africa, and Uganda) specify websites as one possible mode in which providers may *choose* to communicate complaint procedures to customers. **Brochures** (Malaysia, Indonesia), **user agreements** (Malaysia, Lesotho), and **terms and conditions** (Rwanda, Lesotho) were other commonly mandated modes for communicating complaint procedures to customers.

Of the countries that mandate modes in which complaint procedures are to be communicated to customers, nine (Colombia, Ghana, India, Kenya, Lesotho, Nigeria, Sierra Leone, Tanzania, Uganda) have specific regulations pertaining to agent banking. With the exception of India, all specifically mandate that complaint procedures be **posted in a conspicuous place within the agent outlet**.

Customer Complaint Reporting Mechanisms

Ten countries (Bangladesh, Brazil, Ghana, India, Kenya, Nigeria, Pakistan, Peru, Sierra Leone, and Uganda) mandate *specific* mechanisms through which customers must be able to report complaints

[24] Bangladesh, Colombia, Ghana, India, Indonesia, Kenya, Lesotho, Malaysia, Nepal, Nigeria, Pakistan, Peru, Rwanda, Sierra Leone, South Africa, Tanzania, Uganda

(*Table 13*). **Seven countries mandate customers be able to report complaints by telephone.** Additionally, we find that a few countries mandate either mail, e-mail, short message service (SMS), interactive voice response (IVR), or websites as specific modes through which customers must be able to report complaints.

Bangladesh, Ghana, and Pakistan mandate that providers have at least three open complaint channels. In Bangladesh and Pakistan, customers must be able to submit complaints via mail, telephone, SMS messages, and an IVR system. Bangladesh Bank's (2014a) Guideline for Customer Services and Complaint Management also explicitly protects illiterate customers to ensure that they have channels in addition to writing to submit complaints. Bank of Ghana's (2015b) Guidelines for E-money Issuers states that "E-money issuers shall maintain a functional dispute and complaints resolution desk," which is equipped to receive complaints in person as well as via phone calls and e-mails. Peru leaves options open to providers, stating only that they must provide at least one of the following methods: dedicated telephone line, email, or a web page for complaints (Superintendencia de Banca y Seguros, 2015, art. 11).

Table 13. Specific Complaint Reporting Mechanisms

Regulations mandate:	Any specific complaints reporting mechanism(s)	Specific mechanisms						Complaint channels should be free	Maximum response times
		In-person	Mail	Phone	E-mail	SMS	Other		
Bangladesh	Yes		Yes	Yes		Yes	Yes		Yes
Brazil	Yes			Yes				Yes	Yes
Colombia								Yes	
DRC									
Ecuador									Yes
Egypt									
Ghana	Yes	Yes		Yes	Yes			Yes	Yes
India	Yes	Yes							
Indonesia								Yes	Yes
Kenya	Yes			Yes				Yes	Yes
Lesotho									Yes
Malaysia									
Nepal									
Nigeria	Yes			Yes					Yes
Pakistan	Yes				Yes	Yes	Yes		Yes
Peru	Yes			Yes*	Yes*		Yes*	Yes	Yes
Rwanda									Yes
Sierra Leone	Yes			Yes				Yes	
South Africa							Yes		
Tanzania									Yes
Uganda	Yes			Yes				Yes	Yes
Zambia									
Total	**10**	**2**	**1**	**7***	**2***	**2**	**3***	**8**	**13**

Cost of Complaint Channels

Regulators have to balance the potential benefit to customers, especially low-income customers, of low-cost or free complaint channels, against the effect on whomever bears any cost, such as providers. Toll-free hotline numbers, for instance, are only free to callers. The owner of the receiving phone number covers a bill for all of the incoming calls. In the context of mobile money, this has operating cost implications for MMOs. In the Philippines, for instance, one provider voiced concerns about the affordability of adding a toll-free hotline (Chapman & Mazer, 2013).

We find that eight of the countries (Brazil, Colombia, Indonesia, Kenya, Peru, Sierra Leone, and Uganda) that have regulations specifying specific complaint channels state that they should be free of charge. In addition, a ninth country (Nigeria) has aspirational regulation for free complaint channels, but in its current form it does not mandate them: “It is envisaged that such channels will be toll-free, easily accessible and available to consumers or their agents” (Central Bank of Nigeria, 2015a, p. 29).

Regulations within the eight countries specify “free” in different ways. Four (Brazil, Ghana, Kenya, Peru) state that all complaint channels should be free, and two (Sierra Leone, Uganda) mandate that toll-free hotlines be made available. Kenya leaves some room for providers to charge additional “reasonable” fees if the “investigation of the complaint requires the retrieval of records more than three months old, and where the retrieval results in incremental expense or significant inconvenience to the e-money issuer” (Government of Kenya, 2014, p. 712). We do not find regulations specifying that *channels* should be free in Colombia and Indonesia, but both countries have regulations indicating that customers shall not be charged by providers to *respond* to their complaints.

Maximum Complaint Response Times

Regulations in 13 countries (Bangladesh, Brazil, Ecuador, Ghana, Indonesia, Kenya, Lesotho, Nigeria, Pakistan, Peru, Rwanda, Tanzania, Uganda) specify maximum times that providers have to address customer complaints. We find that regulations cover two aspects of complaint response time: 1) the amount of time that providers have to *respond* to a complaint, and 2) the amount of time that providers have to *resolve* a complaint.

Five countries (Brazil, Ecuador, Pakistan, Rwanda, Uganda) regulate response time, giving providers between 3-15 days to acknowledge receipt of a complaint. Ten countries (Bangladesh, Ghana, Indonesia, Kenya, Lesotho, Nigeria, Peru, Tanzania, Rwanda, Uganda) regulate resolution time frames, giving providers between 2-30 days to resolve a complaint. Rwanda and Uganda’s regulations stipulate time frames for both response and resolution. *Table 14* provides a breakdown of how time frames vary across countries.

Table 14. Maximum Response Times for Providers to Resolve Complaints by Country

Country	Maximum Response Times for Providers to Resolve Complaints
Bangladesh	Bangladesh Bank sets varied resolution times based on the amount of money involved and the amount of investigation required. In general, resolution should occur within **3 days,** but **up to 2 weeks** are allowed for highly sensitive complaints where investigation is required (Bangladesh Bank, 2014a, p. 23).
Brazil	**10 days** to respond to complaints (Central Bank of Brazil, , 2015, Article 6).
Ecuador	**15 days** to respond to domestic complaints (Central Bank of Ecuador, 2015d, p. 52).

Ghana	**5 working days to resolve** after lodging of complaint. An additional **10 working days** is permitted provided the customer is informed (Bank of Ghana, 2015b, p. 20).
Indonesia	**2 days** to resolve verbal complaints (Bank Indonesia, Regulation 7/7/PBI/2005 on Resolution of Consumer Complaints, 2005, p. 4), or **20 days** to resolve for written complaints (Bank Indonesia, 2005, p. 6).
Kenya	**30 days** to address complaints (Central Bank of Kenya, Guideline on Agent Banking, 2015, p. 21). Conflicting regulation states **60 days** (Central Bank of Kenya, 2013a, p. 14).
Lesotho	**7 days** to provide refunds (Central Bank of Lesotho, 2013, p. 15).
Nigeria	**2 days** to resolve complaints or **14 days** to resolve complaints where a dispute arises (Central Bank of Nigeria, 2013, p. 18/19).
Pakistan	**10 days** to respond to complaints (State Bank of Pakistan, 2011, p. 25).
Peru	**30 days** to resolve complaints (The World Bank, 2013d, p. 25).
Rwanda	**5 days** to respond to complaints and **15 days** to resolve them (National Bank of Rwanda, 2010b, p. 69)
Tanzania	Conflicting regulations state that complaints should be resolved before 21 and 30 days. Complaints to be addressed within **30 days** (Bank of Tanzania, 2013, Guidelines on Agent Banking for Banking Institutions, 2013, p. 15-16). Complaints to be addressed within **21 days** (Bank of Tanzania, 2015, p. 15).
Uganda	**3 days** to respond to complainant and **14 days** to resolve (Bank of Uganda, 2011, p. 17).

In addition, we find that three countries (Colombia, Nepal, Nigeria) do not specify exact time frames but still include language that providers should respond to complaints in a timely fashion. For instance, Bank Negara Malaysia's (2008) Guideline on Electronic Money reads: "An issuer should ensure that its client charter, at the minimum, includes its commitment towards...[a] prompt response to enquiries, complaints, refund, and disputes" (p. 8).

Collecting and Reporting Data On Customer Complaints

On the ground, mobile money customers and agents experience technical malfunctions, scams, and other fraudulent activities, but constraints within systems often lead to underreporting, and poor risk monitoring systems or capacity constraints can mean providers never identify problems from the top-down (McKee, Kaffenberger & Zimmerman, 2015). Without ways to collect and analyze information on customer complaints, no data exists to document the extent of problems or to create feedback loops to improve DFS ecosystems.

Many country regulations (e.g., Bank of Uganda's 2013 Mobile Money Guidelines) include specific templates for providers to fill out and submit at specified intervals. These templates often include lines for reporting customer complaints, or giving information on the frequency and types of complaints within a DFS ecosystem. Regulators can use the information to stay alert to problems with a specific provider, improve regulation and monitoring techniques, or redirect resources to monitor specific problem areas (Chapman & Mazer, 2013).

We find that 14 of the 22 countries[25] reviewed require providers to collect data on consumer complaints. Of these, nine countries (Bangladesh, DRC, Ecuador, Egypt, Ghana, Indonesia, Kenya,

[25] Bangladesh, Brazil, Colombia, DRC, Ecuador, Egypt, Ghana, Indonesia, Kenya, Nigeria, Rwanda, Sierra Leone, Tanzania, Uganda

Nigeria, Uganda) mandate that providers must report these data to an in-country regulatory institution.

These nine countries do not always state how often the reports must be submitted. In four countries (DRC, Ghana, Kenya, Nigeria), reports are required monthly, and Indonesian providers are required to submit reports quarterly. Bangladesh states only that reports must be "regular" (Bangladesh Bank, 2009, p. 7), and the remaining three countries do not specify how often reports should be sent.

Reports also vary significantly in the level of detail that must be provided. At the low end, Central Bank of Congo's Directive #24 (2013) only requires electronic money issuers to report the number of complaints that a provider receives. More commonly, country reports include the number of complaints *and* types of complaints. Ghana stands out for requiring reports with significantly more detail. E-money issuers are required to submit "information regarding…[the] number of complaints received, broken down by category and agent location" and "number of complaints resolved and number currently outstanding" (Bank of Ghana, 2015b, p. 16). For each agent station, in addition to the aforementioned requirements, providers must also submit cumulative totals of the number of "incidents of fraud, theft or robbery respectively at any of the agent's points used" and "number and type of material service interruptions and significant security breaches" (Bank of Ghana, 2015a, p. 14).

CUSTOMER COMPLAINTS IN BANGLADESH

Bangladesh has a three-tiered "cell" system for documenting information on customer complaints (Bangladesh Bank, 2014a). Each bank branch shall have a Branch Level Customer Service and & Complaints Management Desk (BLCS & CMD). Above this level, a Zonal Customer Service & Complaints Management Cell shall operate at the regional level (ZCS & CMC). Finally, under the direct supervision of the Managing Director of the CEO of the bank, a Central Customer Service and Complaints Management Cell (CCS & CMC) will preside.

Escalation Procedures or Alternative Dispute Resolution Channels

Fifteen of the 22 countries[26] reviewed have regulations on escalation procedures or alternative dispute resolution channels if customers are dissatisfied with DFS provider internal complaint procedures. Nine of these countries (Bangladesh, Ghana, Indonesia, Kenya, Malaysia, Nigeria, Rwanda, Sierra Leone, Uganda) specify the central bank as an alternative dispute channel in instances where customers are dissatisfied with the outcome of complaints with a digital financial service provider. For example, Sierra Leone's Guidelines for Mobile Money Services (2015) states that "Customers have a right to contact Bank of Sierra Leone in case they are dissatisfied with the way their complaints are being handled by the mobile money service provider" (p. 19).

In some cases, however, regulators and supervisors may be concerned about having the necessary resources and capacity to handle complaints (Chapman & Mazer, 2013). A World Bank review of consumer protection in Rwanda, for instance, states that its central bank does not have the resources to even deal with non-mobile-money financial complaints, which average only about 10 per quarter (The World Bank, 2012c).

[26] Bangladesh, Colombia, Ecuador, Ghana, India, Indonesia, Kenya, Malaysia, Nigeria, Pakistan, Rwanda, Sierra Leone, South Africa, Tanzania, Uganda

We find several recourse channels beyond central banks mentioned in regulations. Tanzania's Electronic Money Regulations, for instance, specify that unresolved complaints can be channeled through the central bank, the Fair Competition Commission, or the Tanzania Communication Regulatory Authority (Bank of Tanzania, 2015). Several countries (Columbia, Ecuador, India, Peru, South Africa) mention ombudsmen as an independent, alternative dispute channel to resolve complaints. In India, DFS customers can submit a complaint to the ombudsman if the DFS provider rejects a customer's original complaint, or if the customer is unsatisfied with the way a complaint has been resolved (Reserve Bank of India, n.d).

In Ecuador, where the Bank of Ecuador provides the national e-money platform, regulations specify that clients have a right to an attorney free of charge, whose primary function is the protection of the client's rights and interests (National Assembly of the Republic of Ecuador, 2014).

Three of the reviewed countries (India, Malaysia, Nepal) have consumer protection legislation that references a small claims or consumer court that is available to consumers. For example, Nepal's Consumer Protection Act states that complainants may take unresolved grievances to a compensation committee. However, we do not find any information that indicates that such courts in these countries could be used for mobile money grievances or even that they are used for financial matters.

An additional four countries (Ecuador, Indonesia, Nigeria, Rwanda) have regulations that specifically permit consumers' right to bring their case to civic or other courts if internal complaint procedures are inadequate. For instance, in Indonesia, regulations state (translation): "In the event that no agreement is reached in resolving a grievance, consumers can dispute through an alternate dispute resolution process or through the courts" (Financial Services Authority, 2013).

A further concern for customer dispute resolution is that provider terms and conditions sometimes embed language about arbitration for complaints. In the United States, for instance, binding arbitration is common practice. A Consumer Reports (2015) article mentions that The National Association of Consumer Advocates claims such clauses are in "hundreds of millions of consumer contracts" (Consumer Reports, 2015). We reviewed regulations for language that prohibits user agreements from containing language that waives consumer rights to pursue options outside arbitration, prevents providers from selecting a single arbiter, or prevents customers from bearing provider fees. We find regulations around at least one of these issues in only two of the reviewed countries (Bangladesh, Kenya).

In Kenya, regulations invalidate terms and conditions that waive consumer's right to pursue options outside arbitration, such as mandating arbitration and preventing consumers from "exercising a right to commence an action in the High Court" (Parliament of Kenya, 2012, Part IX.88). In Bangladesh, regulations permit mediators to facilitate resolutions for consumer complaints. But, they also state that parties have the option to pursue recourse options outside of the mediation by specifying that the mediator's decision is not final (Bangladesh Bank, 2014a).

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Appendix 1. Documents Reviewed by Country

Country	Number of Documents Reviewed [27]					
		The World Bank, Financial Inclusion Data/Global Findex	International Finance Corporation (IFC) Mobile Money Scoping Report	The 2015 Brookings Financial and Digital Inclusion Project Report	The Economist Global Microscope 2015	# Primary Regulatory Documents Reviewed
Bangladesh	17	Yes	Yes	Yes	Yes	6
Brazil	19	Yes	Yes	Yes	Yes	7
Colombia	16	Yes	Yes	Yes		4
DRC	5					1
Ecuador	15	Yes	Yes			6
Egypt	9	Yes				2
Ghana	10	Yes	Yes			3
India	19	Yes		Yes		6
Indonesia	22	Yes		Yes		7
Kenya	14	Yes		Yes	Yes	5
Lesotho	6	Yes				2
Malaysia	14	Yes				3
Nepal	10	Yes	Yes		Yes	3
Nigeria	10	Yes				4
Pakistan	15	Yes		Yes		6
Peru	10	Yes	Yes	Yes		7
Rwanda	14	Yes	Yes		Yes	4
Sierra Leone	4	Yes	Yes			1
South Africa	18	Yes		Yes	Yes	7
Tanzania	17	Yes		Yes		7
Uganda	12	Yes		Yes		2
Zambia	9	Yes				2
TOTAL	**285**	**21**	**9**	**11**	**6**	**95**

[27] Some non-regulatory documents refer to regulations in more than one country.

Appendix 2. Review Framework Questions

Basic Digital Financial Services Information

- General information
    - Does the country's regulation enable a bank led or non-bank led model?
    - Number of Mobile Money (MM) Service Operators
    - Background Summarizing State of CEP Regulation
- Financial Inclusion Indicators
    - Access to Financial Institution Account
    - % of adults with at least one MFS account
    - % of active MFS accounts

Regulatory Institutions

- Questions for each regulatory institution:
    - What is the name of the regulatory institution?
    - When was the regulatory institution introduced?
    - What is the general focus of the regulatory institution (e.g., finance, telecommunications, competition, consumer protection, mobile services)?
    - For what aspects of DFS CEP (e.g., fraud, data privacy, protection of funds, dispute resolution, competition) is the regulatory institutions directly responsible (i.e., as stated in regulatory documents)?
    - Description of responsibilities of the regulatory institution

Regulatory Documents

- Questions for each document:
    - What is the name of the document?
    - What is the form of the document (law, circular, guideline, strategy, other)?
    - When was the document introduced?
    - What is the general focus of the document (e.g., finance, telecommunications, competition, consumer protection, mobile services)?
    - Does the document directly address DFS CEP, as opposed to specifying broader CEP regulations that are applied to DFS?
    - What aspects of DFS CEP does the document cover (e.g., fraud, data privacy, protection of funds, dispute resolution, competition)?
    - Description of the regulatory document

DFS Pricing

- Are there regulations for collecting and monitoring information from DFS providers on prices, fees, and other terms imposed on customers? (Yes/No)
    - If yes, what entity is responsible for monitoring compliance between these terms and existing regulations?
    - Are there regulations on the pricing of DFS, for example protecting consumers from anti-competitive pricing or DFS providers with dominant market share? (Yes/No)
- Do regulations specify transaction charges, taxes, or tariffs to be applied to DFS? (Yes/No)

    - If yes, who determines the transaction charge, tax, or tariff? (Central Bank, Telco regulator, provider, other)
    - If yes, are all DFS transaction amounts subjected to these charges, taxes, or tariffs, or do the charges vary as transaction amounts increase? (Same cost, increasing cost, Decreasing cost, Other)
    - If yes, what is that cost to consumers? (i.e., what percent of transaction value)
- Do regulations state that DFS agents can charge additional fees to consumer for DFS services? (Yes/No)
- Do regulations specify how DFS providers should deal with dormant accounts? (Yes/No)
    - Do regulations state that DFS providers may charge additional fees to consumers with dormant accounts? (Yes/No)

Responsibility for Consumer Losses or Other Harm

- In the event of DFS system malfunctions or other events outside the consumer's responsibility leading to loss of consumer funds or other harm, who bears damages and costs? (Consumer/Provider/Other)
- In the event of DFS provider losses (e.g., bankruptcy, fraud, hacking) leading to loss of consumer funds or other harm, who bears the risk of loss of funds? (Consumer/Provider/Other)
- In the event of erroneous transactions by the DFS provider (e.g., failure of transfers, transfers to wrong recipients, duplicate transfers) leading to loss of consumer funds or other harm, who bears damages or costs? (Consumer/Provider/Other)
- In the event of DFS agent misconduct (e.g., overcharging, non-compliance with data provisions, mishandling of customer data) leading to loss of consumer funds or other harm, who bears damages or costs? (Consumer/Provider/Other)
- Are additional instances named in which providers are specifically said to be exempt from liability for damages or costs?
- Are additional instances named in which consumers are specifically said to be exempt from liability for damages or costs?
- General/Other

Transparency of Terms and Protection from Costs/Consumer Harm

- Are there regulations for transparency in DFS Terms & Conditions, so that consumers are aware of the costs associated with DFS? (Yes/No)
    - Do regulations include provisions for making customer information accessible for different population groups (e.g., non-primary language speakers, illiterate populations, poor individuals, etc.)? (Yes/No)
    - Do regulations specify how DFS fees should be communicated to consumers (e.g. verbally, in writing, posting at shops)? (Yes/No)
    - Do regulations specify that particular terms must be explicitly communicated to consumers (e.g. implications of loans default, consumer redress mechanisms)? (Yes/No)
- Do regulations prohibit Terms & Conditions that waive consumer rights (i.e., to sue, receive information, have complaints addressed, have data protected, or cancel without unfair penalty)? (Yes/No)
- Do regulations mandate regulator reviews of DFS provider Terms & Conditions to monitor whether they comply with consumer protection regulations? (Yes/No)

    - If yes, how frequently do regulators review Terms & Conditions?
- Do regulations mandate security policies for DFS providers to reduce the risk of loss of funds or data? (Yes/No)
    - Pin or password requirements
    - Data storage requirements
    - levels of authorization for access to consumer funds or data
- How do regulations allocate ownership of data/personal information between customers and providers?
- Do regulations state whether consumer data may be shared with third parties? (Yes/No)
- Do regulations specify how long data may be maintained? (Yes/No)
- Do regulations mandate training for DFS provider agents or other employees on protecting against loss of funds or data? (Yes/No)
- Do regulations specify minimum liquidity requirements for agents? (Yes/No)
- Do regulations state that DFS provider agents or other employees may conduct DFS transactions in situations where conducting the transaction in real time is not possible (e.g., due to lack of network service, power outages, or equipment issues), and process the transactions once the issue is resolved? (Yes/No)
- Do regulations state that DFS providers or regulators should carry out regular checks on agents to ensure compliance with laws/regulations? (Yes/No)
- Do regulations state that consumers can name a spouse or next of kin to have a joint account and avoid probate in the event of the consumer's death or disability? (Yes/No)

Complaints and Dispute Resolution

- Do regulations specify how complaint or redress procedures should be communicated to customers? (Verbally/In-writing/Both)
- Do regulations mandate that providers must offer customers specific mechanisms through which to report complaints (in-person, via mail, via telephone, e-mail, SMS, webpage, other)? (Yes/No)
    - Do regulations specify that complaint channels should be free? (Yes/No)
    - Do regulations specify maximum response times for complaints? (Yes/No)
    - Do regulations specify particular channels for complaints (e.g. in person, phone, online)? (Yes/No)
- Do regulations specify that providers are required to collect/report data on complaints? (Yes/No)
- Do regulations specify escalation procedures or alternative dispute resolution channels if customers are dissatisfied with internal procedures? (Yes/No)
- Do regulations specify parameters surrounding arbitration (e.g., Prohibit mandating arbitration/Prevent designation of a sole arbiter/Prohibit customer from bearing provider's legal fees)? (Yes/No)
- Do regulations specify that a small claims or consumer court must be available to consumers for small value claims? (Yes/No)

Appendix 3. Regulatory Institutions by Country

	Central Bank	(Tele)communication Authority	Consumer Protection	Competition	Financial Supervisor	Other
Bangladesh	Bangladesh Bank (BB)	Bangladesh Telecom Regulatory Commissions (BRTC)				
Brazil	Banco Central do Brasil	Agência Nacional de Telecommunicações (ANATEL)	Secretaria Nacional do Consumidor Office of Consumer Protection and Defense, Ministry of Justice*	Administrative Council for Economic Defense	Conselho de Controle de Atividades Financeiras (FIU)	Superintendence of Private Insurance, Securities and Exchange Commission, National Superintendency of Pension Funds
Colombia	Banco de la República	Comisión de Regulación de las Comunicaciones	Superintendencia de Industria y Comercio	Superintendencia de Industria y Comercio	Superintendencia Financiera de Colombia (SFC) Colombia Financial Regulation Agency (URF)	Banca de las Oportunidades Ministries of Finance and Information and Communication
Democratic Republic of the Congo	Banque Centrale du Congo	Telecommunications Regulatory Authority				Ministries of finance, Post, Telephones, and Telecommunications
Ecuador	El Banco Central de Ecuador	Agencia de Regulación y Control de las Telecomunicaciones (ARCOTEL)	Superintendencia de Control del Poder de Mercado	Superintendencia de Control del Poder de Mercado	Superintendencia de Bancos y Seguros (SBS) La Junta de Política Y Regulación Monetaria y Financiera	
Egypt	Central Bank of Egypt (CBE)	National Telecommunication	Egyptian Consumer Protection Agency	Egypt Competition Authority		

	Central Bank	(Tele)communication Authority	Consumer Protection	Competition	Financial Supervisor	Other
		Regulatory Authority (NTRA)				
Ghana	Bank of Ghana	National Communications Authority	The Consumer Protection Agency			
India	Reserve Bank of India (RBI)	Telecom Regulatory Authority of India (TRAI)	Department of Consumer Affairs	Competition Commission of India		
Indonesia	Bank Indonesia (BI)	Indonesian Telecommunication Regulatory Authority	National Consumer Protection Agency	Commission for the Supervision of Business Competition	Financial Service Authority [Otoritas Jasa Keuangan] (OJK)	
Kenya	Central Bank of Kenya	Communication Authority of Kenya		Competition Authority of Kenya		
Lesotho	Central Bank of Lesotho	Lesotho Communications Authority				
Malaysia	Bank Negara Malaysia (BNM)	Malaysian Communications and Multimedia Commission		Malaysia Competition Commission		
Nepal	Nepal Rastra Bank (NRB)	Nepal Telecommunication Authority	Consumer Protection Council			
Nigeria	Central Bank of Nigeria (CBN)	Nigerian Communications Commission	Consumer Protection Council			
Pakistan	State Bank of Pakistan (SBP)	Pakistan Telecommunication Authority		Competition Commission of Pakistan		
Peru	Central Reserve Bank of Peru	Organismo Supervisor de Inversion Privada en Telecomunicaciones (OSIPTEL)	"[The National Institute for Defense of Competition and Protection of	The National Institute for Defense of Competition and Protection of	Superintendencia de Banco Seguros (SBS)	

	Central Bank	(Tele)communication Authority	Consumer Protection	Competition	Financial Supervisor	Other
			Intellectual Property (INDECOPI)]	Intellectual Property (INDECOPI)		
Rwanda	National Bank of Rwanda	Rwanda Utilities Regulatory Authority (RURA)				Ministry of Trade and Industry
Sierra Leone	Bank of Sierra Leone (BoSL)	National Telecommunications Commission (NATCOM)				
South Africa	South African Reserve Bank (SARB)	Independent Communications Authority of South Africa		Competition Commission & Competition Tribunal		
Tanzania	Bank of Tanzania (BoT)	Tanzania Communications Regulatory Authority	Fair Competition Commission	Fair Competition Commission		
Uganda	Bank of Uganda	Uganda Communications Commission				The Ministry of Finance
Zambia	Bank of Zambia	Zambia Information and Communications Technology Authority	Competition & Consumer Protection Commission	Competition & Consumer Protection Commission		

Appendix 4. Primary Regulatory Documents by Country

Regulation Type	Mobile Money/ Electronic Transactions†	Agent /Branchless Banking†	Consumer Protection/ Competition*	Customer Service or Dispute Resolution*	Payment System or Financial Institutions	Other
Bangladesh (Bank-led)	Guidelines on Mobile Financial Services for the Banks (2011) Regulations on Electronic Fund Transfer (2014)	Guidelines on Agent Banking for the Banks (2009)		Guidelines for Customer Services and Complaint Management (2014)		Guidelines on Products & Services of FIs in Bangladesh (2013) Guideline on ICT Security for Banks and Non-Bank Financial Institutions (2015)*†
Brazil (Non-Bank led)		BCB Resolution 3954 (2011)	Decree 7.963 (2013) - Finance Law 8.078, Consumer Defense Code (1990)	CMN Resolution 4.433 (2015)	Law 12,865: The Brazilian Payments System (2013)	CMN Resolution 3.517 (2007) Resolution 3919 (2010)
Colombia (Non-Bank led)	Decree 1491 (2015) Ley 1735 de 2014 (2014)		Estatuto del Consumidor - Law 1480 (2011)			Resolution 4458 of 2014 (2014)
Democratic Republic of the Congo (Non-Bank led)	Directive #24 (2011)					
Ecuador (other)	Regulacion No. 005-2014 - emitida por la Junta de Politica y Regulacion Monetaria y Financiera (2014)		Código Orgánico Monetario Financiero (2014) Código de Transparencia y de Derechos Del Usuario (2010) Ley de Regulacion del Costo Maximo Efectivo Del Credito (2007)			Reglamento de Participantes del Sistema de Dinero (2014) Terminos y Condiciones de Uso de la Cuenta de Dinero Electronico (Terms and Conditions) (n.d.)

Regulation Type	Mobile Money/ Electronic Transactions†	Agent /Branchless Banking†	Consumer Protection/ Competition*	Customer Service or Dispute Resolution*	Payment System or Financial Institutions	Other
Egypt (Bank-led)	Regulations Governing Provision of Payment Orders through Mobile Phones (2010)		Telecommunication Regulation Law – Law No. 10 of 2003 (2003)			
Ghana (Non-bank led)	Guidelines for E-money Issuers in Ghana (2015)	Agent Guidelines (2015)				Data Protection Act (2012)*
India (Non-bank led)	Master Circular – Mobile Banking Transactions in India – Operative Guidelines for Banks (2014)	Guidelines for Engaging of Business Correspondents Payments Act (2010)	Consumer Protection Act (1986)* The Mobile Banking [Quality of Service] (Amendment) Regulations 2013 (2013) - Telecom Regulatory Authority of India		Payments Act (2007)	Guidelines of Licensing of Payment Banks (2014);
Indonesia (Non-bank led)	BI Circular Letter 16/11/DKSP on Implementation of Electronic Money (2014) BI Regulation 11/12/PBI/2009 Concerning Electronic Money (2009)	OJK Regulation 19/POJK.03/ 2014 on Branchless Financial Services in the Framework of Financial Inclusion (2014)	BI Regulation 16/1/PBI/2014 on Consumer Protection in Payment System Service (2014) OJK Regulation 1/POJK.07/2013 on Consumer Protection in the Financial Services Sector (2013)	BI Regulation 7/7/PBI/2005 on Resolution of Consumer Complaints (2005)	BI Regulation 14/22/PBI/2012 on Fund Transfers (2012)	
Kenya (Non-bank led)	Draft E-Money Regulation (2013)	Guidelines on Agent Banking (2010 revised in 2013)	Consumer Protection Guidelines (2014) Consumer Protection Act No. 46 (2012)		The National Payment System Regulations (2014)	

Regulation Type	Mobile Money/ Electronic Transactions†	Agent /Branchless Banking†	Consumer Protection/ Competition*	Customer Service or Dispute Resolution*	Payment System or Financial Institutions	Other
Lesotho (Non-bank led)	Mobile Money Guidelines (2014)				Financial Institutions Act (2012)	
Malaysia (Non-bank led)	BNM/RH/GL 016-3: Guideline on Electronic Money (2008)				Financial Services Act 2013 (2013)	BNM/RH/GL 000-3: Guidelines on Product Transparency and Disclosure (2010)
Nepal (Bank-led)	Unified Directive 2067 (2010)	Circular 11 - Mobile Banking Services (2012)				Information Technology Guidelines (1998)
Nigeria (Non-bank led)	Guidelines on Mobile Money Services in Nigeria (2013) Guidelines on Mobile Payment Services in Nigeria (2013)	Guidelines for the Regulation of Agent Banking and Agent Banking Relationships in Nigeria (2013)	Consumer Protection Framework - Draft for Discussion (2015)			
Pakistan (Bank-led)		Branchless Banking Regulations (2011)		CPD Circular Letter No. 1 of 2010 - on alternative dispute resolution for Banks/ Digital Financial Institutions	Guidelines for Business Conduct of Banks (2015) Payment Systems and Electronic Fund Transfer Act (2007)	Guiding Principles on Fairness of Service Charges (2015) CPD Circular No. 06 of 2014 - Guidelines for Banking Services to Visually Impaired/Blind Persons (2014)

Regulation Type	Mobile Money/ Electronic Transactions†	Agent /Branchless Banking†	Consumer Protection/ Competition*	Customer Service or Dispute Resolution*	Payment System or Financial Institutions	Other
Peru (Non-bank led)	Law No. 29985 (2013) Resolution No. 6283-2013 / Resolución SBS N°4628 - 2015 (2013/2015)		Resolution No. 6285-2013 Consumer Protection Code (law No. 29571) (2013) Consumer Protection Code (law No. 29571) (n.d)		Ley 26702 - Ley General del Sistema Financiero (1996, modified 2013)	Normas Relativas al Acceso de los Emisores de Dinero Electrónico a los Servicios de Telecomunicaciones - Resolución de Consejo Directive No. 126-2013-CD/OSIPTEL (2013)
Rwanda (Non-bank led)	Regulation of the National Bank of Rwanda on Electronic Money Transactions (2010) Law Relating to Electronic Messages, Electronic Signatures, and Electronic Transactions (2012)	Agent Banking Guideline (2012)	Rwanda Competition and Consumer Protection Policy (2010)			
Sierra Leone (Non-bank led)	Mobile Money Guidelines (2015)					
South Africa (Bank-led)	National Payment System Department Position Paper on Electronic Money (2009) Electronic Communications and Transactions Act (2002)	Banks Act Circular 14/2004	Consumer Protection Act (2008)		Financial Sector Regulations Bill (2015) The Financial Advisory and Intermediary Services Act (2002) National Payment System Act (1998)	

Regulation Type	Mobile Money/ Electronic Transactions†	Agent /Branchless Banking†	Consumer Protection/ Competition*	Customer Service or Dispute Resolution*	Payment System or Financial Institutions	Other
Tanzania (Non-bank led)	The Electronic Money Regulations (2015) Electronic Payment Schemes Guidelines (2007)	Guidelines on Agent Banking for Banking Institutions (2013)	The Fair Competition Act (2003)		The Banking and Financial Institutions Act (2006) Outsourcing Guidelines for Banks and Financial Institutions (2008)	The Excise (Management and Tariff) Act-Chapter 147 (2008)
Uganda (Non-bank led)	Mobile Money Guidelines (2015)		Financial Consumer Protection Guidelines (2013)			
Zambia (Non-bank led)	Government Gazette The National Payments Systems Directives on Electronic Money issuance (2015)		The Competition and Consumer Protection Act (2010)			

† Specific to DFS

* Specific to consumer protection

Appendix 5. Control over Customer Data/Personal Information

The following table categories allocation of ownership of customer data in four broad categories:[28] 1) Customers have control of their personal data, 2) The provider has control over consumer data, 3) Ownership of customer information is unclear, and 4) Not found. The following criteria describes these categories:

1) "Customers to have control over their data" in situations where a provider requires consumer consent to disclose information (e.g., to third parties), or when consumer have certain rights concerning their data (Ghana, Indonesia, Kenya, Malaysia, Peru, Rwanda, South Africa, and Uganda). Additionally, we state that customers have control if there was a regulation that mandates secrecy or specifically prohibits disclosure of customer information (Egypt, Sierra Leone). In two countries (Nigeria, Pakistan), customers have control over their information due to customer consent requirements, but other exceptions for disclosure of information are also mentioned.
2) "Providers have control over customer data" when the provider can use or disclose data, and we find no evidence that providers require consumer consent (Ecuador).
3) "Ownership of customer information is unclear" where regulations only discuss ownership of customer data or mandate a confidentiality agreement between agents and providers, and we find no further evidence that consumers have control over their personal data (Bangladesh, Tanzania); where there is a vague "guarantee" of privacy, confidentiality, and security of personal data (Brazil); or where there is a confidentiality requirement on customer accounts, but is unclear whether this includes personal information (India).
4) "Not found" means that we found no evidence in regulations that allow us to classify the country in any of the previous categories.

	How do regulations allocate ownership of data/personal information between customers and providers?
Bangladesh	Ownership of customer information is unclear. However, between providers and agents, customer data belongs to the providers (Bangladesh Bank, 2009, p. 6)
Brazil	Ownership of customer information is unclear. However, Article 6 of Decree 7963 guarantees privacy, confidentiality, and security of personal data (Central Bank of Brazil, 2013).
Colombia	Not found.
DRC	Not found.
Ecuador	The provider has control over customer data. The Central Bank [of Ecuador] has the right to ask for, store, and use personal data that are considered public-access, data that aids in product support (location), data needed for security reasons, commercial purposes, or any other service related to the electronic money system (Central Bank of Ecuador, 2015d, p. 2).
Egypt	Customers have control over their personal data. Providers shall be prohibited from disclosing any customer information (Arab Republic of Egypt, 2003, , p 45-46).

[28] We find evidence of regulations discussing ownership of customer data or confidentiality of consumer information between providers and agents (Bangladesh, Ghana, Kenya, Nigeria, Tanzania). Descriptions of these regulations are also noted.

Ghana	Customers have control over their personal data. Providers may not provide, use, obtain, procure, or provide information related to the customer without prior written consent from the customer (Parliament of the Republic of Ghana, 2012, p. 25-26). Additionally, the customer may request the provider to correct or delete personal data that is incomplete, misleading, or obtained unlawfully (Parliament of the Republic of Ghana, 2012, p. 19). If a customer suffers damage or distress through the contravention by a data controller, the customer is also entitled to compensation (Parliament of the Republic of Ghana, 2012, p. 27). Between providers and agents, the provider owns customer data, and data must be kept confidential (Bank of Ghana, Agent Guidelines, 2015a, p. 5).
India	Ownership of customer information is unclear. Banks are required to maintain secrecy and confidentiality of consumers' accounts, however we find no specific mention of how customer data or information is regulated (Reserve Bank of India, 2014, p.12)
Indonesia	Customers have control over their personal data. Providers may not give consumer's data and/or information to any party, unless the consumer gives written approval (Bank Indonesia, Regulation 16/1/PBI/2014 on Consumer Protection in Payment System Service, 2014, p. 7). Providers must maintain the security and confidentiality of data (Bank Indonesia, 2014, p. 12).
Kenya	Consumers have control over their personal data. Providers must keep consumer information confidential, but may disclose customer information when authorized, in writing, by the customer (Central Bank of Kenya, The National Payment System Regulations, 2014, p. 714). Between providers and agents, providers own customer data (Central Bank of Kenya, 2015, p. 12).
Lesotho	Not found.
Malaysia	Customers have control over their personal data. Providers should ensure the privacy of customer information (Central Bank of Malaysia, Guideline on Electronic Money, p. 8). Additionally, providers wishing to share customer information (excluding information relating to the affairs or account of the customer) with third parties must obtain expressed consent of the customer (Bank Negara Malaysia, 2010, p. 12).
Nepal	Not found.
Nigeria	Customer have control over their personal data - Providers must protect customer information at all times and may not disclose customer information without the consent of consumer, except in cases provided by law (Central Bank of Nigeria, 2015, p. 26). However, the CBN and other regulatory bodies may also request for providers to reveal customer information to a third party: “Financial operators shall not reveal consumers/customers information to a third party without the express permission of the customer, *except* ... upon request by the CBN and other regulatory bodies" (Central Bank of Nigeria, 2015, p. 27-28). Between providers and agents, the provider owns customer data (Central Bank of Nigeria, 2013, p. 9).
Pakistan	Customer have control over their personal data. Providers may not disclose customer information except if it Is ”practice or usage customary among bankers" or if the customer gives consent (SBP, Payment Systems and Electronic Fund Transfer Act, 2007)
Peru	Customers have control over their personal data. “Every person has the right to request, without statement of a cause, information he requires, and to receive it from any public entity within the legal term, at its respective cost”, but “exception is hereby made of information affecting personal privacy” (Democratic Constituent Congress, 1993, Article 2).
Rwanda	Customers have control over their personal data. An institution may not disclose customer information without the consent of a customer (National Bank of Rwanda, 2010b, p. 73).

Sierra Leone	Customers have control over their personal data. However, providers must uphold privacy and confidentiality of customer information and data (Bank of Sierra Leone, 2015, 18).
South Africa	Customers have control over their data. Providers must have written permission from the customer for the collection, collation, and processing or disclosure of any personal information (Republic of South Africa, 2002, p. 44).
Tanzania	Ownership of customer information is unclear. However, between providers and agents, contracts must include provisions pertaining to confidentiality and security of client information (Bank of Tanzania, 2013, Part V.16.m)
Uganda	Customers have control over their data. A provider shall not disclose any customer information except with the express consent of the customer (Bank of Uganda, 2011, p. 11).
Zambia	Not found.