



# The Financial Lives of Government Employees

The Potential of Digital Finance  
in Sierra Leone

## Acknowledgements

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# EXECUTIVE SUMMARY

Financial inclusion is a key driver of equitable economic growth. Financial literacy, access to financial services, credit and formal financial markets are critical components of financial inclusion that can help transition developing countries to accelerated socioeconomic growth paths. Digital financial services (DFS), by leveraging ubiquitous and innovative technologies like mobile phones and point-of-sale (POS) machines, can play a catalytic role in helping developing countries realize financial inclusion.

With Sierra Leone's economy recovering from the twin shocks of civil war and health crisis, the level of financial inclusion in the predominantly rural country is very limited. 87% of the economically active population of the country does not have access to formal and regulated financial systems, while the remaining 13% avails of financial services through a limited number of financial access points such as bank branches and ATMs. Most of these facilities are located in the western region of the country, given the concentration of economic activities in and around Freetown. Limited markets with dispersed populations and low awareness levels deter service providers from expanding their footprint to other parts of the country.

DFS can play a critical role in the economic reconstruction of Sierra Leone by driving financial inclusion. The country has traditionally been a cash-based economy, and thus needs an enabling environment that simultaneously drives universal access to finance along with customer awareness and financial literacy.

## The financial lives survey

There are 80,000 government employees in Sierra Leone who receive salaries digitally in their bank accounts<sup>1</sup>. Most of these government employees also have registered mobile money accounts. Insights about their financial lives can help build a viable business case for DFS to expand access to a wide range of financial services for underserved communities in Sierra Leone. These insights can inform strategies and use cases that the United Nations Capital

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1 A bank account is a requirement as part of the Government of Sierra Leone's reforms under IMF

Development Fund (UNCDF) and the Government of Sierra Leone can develop to promote DFS in the country. The National Strategy for Financial Inclusion 2017 – 2020 also refers to the need to identify and digitize use cases that will lead to habitual usage, and achieve Sierra Leone's commitments to the 'Better Than Cash Alliance'.

Recognizing the need and opportunity, UNCDF supported a Financial Lives Survey of government employees who receive their salaries digitally in Sierra Leone. The survey was designed to understand how government employees utilize salaries transferred into their bank accounts, their awareness of and access to DFS, avenues to use them and their perceptions about financial services and digital financial transactions. The survey aimed to draw insights about potential customers of DFS and recommend use cases that could be piloted as an initial step to improve DFS adoption in Sierra Leone.

As a part of the survey, 302 government employees were surveyed from five districts across Sierra Leone, namely, Kailahun, Tonkolili, Bonthe, Kono and Port Loko. The analysis of survey responses not only highlighted critical challenges that respondents faced in accessing banking services, but also pointed to use cases that could be piloted and developed to promote digital financial services in Sierra Leone:

***Demographic information of the sample highlights the low levels of income and expenditure in Sierra Leone.*** Most respondents in the sample are from the 30-50 age group; they are married and have over 5 years of work experience. Although the average literacy rate of the respondents is higher than the national average, most respondents in the sample earn very low incomes with an average of US\$ 3 per day. The respondents are often the sole earning member in their families. Slightly over a third of the respondents own houses and house ownership increases at higher income levels.

***Respondents' engagement with banks is limited, likely due to the poor access to bank branches and a predominantly cash economy.*** Bank branches are at a distance of 20 miles for 30% of the respondents. 36% of the respondents paid over SLL 15000 (US\$ 1.9) per trip which is high considering that the average income of this sample is around US\$ 3 per day. Most respondents visit bank branches once a month, and around two-thirds of the sample cash out their entire salary each month. Apart from withdrawals, respondents also seek remittance services from banks to send money to their friends and family in Sierra Leone.

***Access to credit from formal sources is limited.*** 50% of the respondents have taken loans in their lifetime, most often from community banks and commercial banks. They repay loans on a monthly basis through auto-debit. Respondents mainly sought credit for housing, education, medical care and business.

***While all respondents recognize the need to save for old age and emergencies, not all have adequate surplus to save.*** Many respondents do however invest regularly in pension funds, Osusu and fixed deposits. Most respondents also have life insurance cover provided by the government. Insurance premium is mostly paid digitally through auto debit from their salary accounts.

*Most respondents are aware of and use mobile money.* Respondents perceive mobile money as a means to conduct financial transactions. While leading mobile service providers offer customers a range of services, respondents predominantly use mobile money for remittances, buying airtime and bill payments. Buying data, savings and storing money are some of the emerging uses of mobile money. Respondents are willing to pay for remittances, bill payments and cash withdrawals. They primarily depend on agents for cashing out, and are concerned about agent liquidity and poor connectivity.

*Challenges to financial inclusion in Sierra Leone include access to banking services, mobile network connectivity and agent dependency.* Access and quality of mobile services is critical for the uptake of mobile money. Respondents shared that they experience mobile network connectivity issues and call drops. Although most respondents are satisfied with receiving their incomes digitally, they face challenges such as high travel costs to withdraw money, high bank fees associated with withdrawal of salary and agent dependency. They also cited the inability to cash out and fear of transactions getting interrupted as key perceived risks associated with mobile money. While mobile money agents were accessible, they faced issues such as liquidity and long waiting time.

## DFS use case identification and analysis

The Financial Lives Survey and research aimed to identify and analyze use cases that can be developed and tested for acceptance among underserved communities. A three-step approach was adopted to identify use cases that are ideal for pilot testing in Sierra Leone. This included mapping the survey findings (demand for DFS) to potential use cases (supply of DFS), and studying the identified use cases to select those that could be piloted in Sierra Leone.

Survey findings about issues and challenges experienced by respondents were mapped to corresponding use cases that can potentially address them. Seven DFS use cases were identified, namely domestic remittances, international remittances, bill payments, merchant payments, micro and small loans, micro-insurance and micro-savings. These use cases were analyzed for their ability to deliver impact by addressing a critical need and the ease of implementation. Three use cases indicated stronger potential than others, and were recommended for pilot testing:

- » **Remittances** – To develop an innovative and demand-driven mobile based remittance solution and ensuring its uptake amongst government employees in a pilot district.
- » **Payments** – To develop an innovative one-stop-shop payments solution to deliver a range of merchant and bill payment options and driving its uptake amongst government employees in pilot districts.
- » **Micro-savings** – To create an innovative mobile based solution that provides access to a savings product and ensuring up-take of the product among government employees in two target pilot districts.

# INTRODUCTION

Financial inclusion is a targeted outcome in 8 out of the 17 Sustainable Development Goals (SDG) as it leads to more stable economies. Not only does it help accelerate the economic progress of any nation, but also enables equitable distribution of the benefits of development<sup>2</sup>. Access to financial services opens up opportunities for underserved populations to begin saving for the future and make investments in education and health. Access to credit enables business expansion which in turn, leads to greater job creation. Financial literacy and access to formal financial markets help progressively reduce the dependence on informal credit sources. Digital financial services, by leveraging ubiquitous and innovative technology (mobile phones, point-of-sale machines) and networks of mobile money agents are at the forefront of efforts to improve financial services access for all, at scale and within the least cost and time frame.

Sierra Leone's economy is recovering from the twin shocks of civil war and health crisis, which lasted over a decade. After the end of the decade-long civil war in 2002, Sierra Leone began registering consistent GDP growth due to favorable government policies for enhancing public financial management and improving the monetary framework. The discovery of iron ore, economic stability, and improvement in human development parameters supported this overall progress. However, in 2014, the country faced an outbreak of Ebola Virus Disease (EVD) and also saw a significant decline in iron ore prices<sup>3</sup>. While the country has been declared as Ebola-free, the economy is still recovering from the negative impacts of the outbreak. This is evident from the fact that Sierra Leone's GDP contracted by 21% in 2015<sup>4</sup>. In 2017, there was a further setback due to mudslides in the capital following torrential rains. The country went into elections in March 2018 amidst concern over management of aid towards Ebola and mudslides, and the new government has since been formed.

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2 What is Financial Inclusion and Why is it Important? CGAP, last accessed on 30 March 2018 <http://www.cgap.org/about/fag/what-financial-inclusion-and-why-it-important>

3 The Miracle That Became a Debacle: Iron Ore in Sierra Leone, Natural Resource Governance Institute, April 2015, last accessed on 30 March 2018 <https://resourcegovernance.org/blog/miracle-became-debacle-iron-ore-sierra-leone>

4 Sierra Leone Economic Outlook, African Development Bank Group, last accessed on 30 March 2018 <https://www.afdb.org/en/countries/west-africa/sierra-leone/sierra-leone-economic-outlook/>

## Sierra Leone country profile

<b>593.90</b> GDP per capita, current prices 2017 (US\$) <sup>5</sup>	<b>4.1%</b> Real GDP per capita growth <sup>7</sup>	<b>7,092,113</b> Population <sup>9</sup>	<b>2.15%</b> Population growth rate <sup>11</sup>
<b>4.5%</b> Unemployment rate <sup>6</sup>	<b>96.8</b> males per 100 females <sup>8</sup>	<b>14</b> Banks <sup>10</sup>	<b>13</b> MFIs <sup>12</sup>

## Access to financial services

Approximately 60% of the population of Sierra Leone resides in rural areas<sup>13</sup>. 87% of the economically active population of the country does not have access to formal financial systems<sup>14</sup>. There are 14 commercial banks which have a total of 97 branches and 970,000 customers. The number of bank branches and ATMs per 100,000 inhabitants is 4 and 1.5 respectively<sup>15</sup>. In addition, there are 13 microfinance institutions, 17 community banks, and three mobile money operators in the country, which together serve 13% of the economically active population.

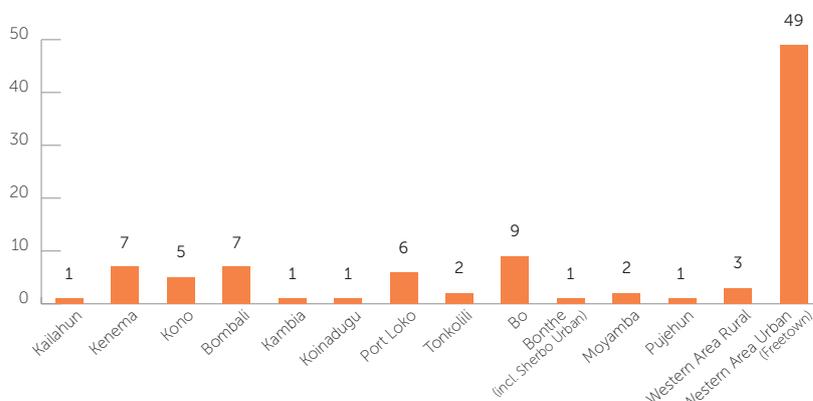
Provision of financial services in Sierra Leone is concentrated in the Western Province; service providers lack incentives to expand their presence and portfolio of services to other locations

- 5 World GDP per Capita Ranking 2017 | Data and Charts | Forecast, Sierra Leone Data Portal, last accessed on 30 March 2018 <http://sierraleone.opendataforafrica.org/sijweyg/world-gdp-per-capita-ranking-2017-data-and-charts-forecast>
- 6 Sierra Leone Unemployment Rate, last accessed on 30 June 2018 <https://tradingeconomics.com/sierra-leone/unemployment-rate>
- 7 World GDP per Capita Ranking 2017 | Data and Charts | Forecast, Sierra Leone Data Portal, last accessed on 30 March 2018 <http://sierraleone.opendataforafrica.org/sijweyg/world-gdp-per-capita-ranking-2017-data-and-charts-forecast>
- 8 2015 Population and Housing Census, Statistics Sierra Leone, last accessed on 29 March 2018 [http://www.sierra-leone.org/Fact\\_Sheet\\_2015.pdf](http://www.sierra-leone.org/Fact_Sheet_2015.pdf)
- 9 2015 Population and Housing Census, Statistics Sierra Leone, last accessed on 29 March 2018 [https://www.statistics.sl/wp-content/uploads/2017/01/final-results\\_-2015\\_population\\_and\\_housing\\_census.pdf](https://www.statistics.sl/wp-content/uploads/2017/01/final-results_-2015_population_and_housing_census.pdf)
- 10 National Strategy for Financial Inclusion, 2017-2020, Bank of Sierra Leone, <https://www.bsl.gov.sl/SL%20FI%20Strategy%202017%20-%202020.pdf>
- 11 Sierra Leone Population 2018, last accessed on 30 March 2018 <http://worldpopulationreview.com/countries/sierra-leone-population/>
- 12 UNDP & UNCDF DFS Ecosystem Assessment in Sierra Leone, May 2016 <https://www.uncdf.org/download/file/127/646/dfsecosystemassessmentsfinalreportpdf>
- 13 National Strategy for Financial Inclusion, 2017-2020, Bank of Sierra Leone, <https://www.bsl.gov.sl/SL%20FI%20Strategy%202017%20-%202020.pdf>
- 14 The UN in Sierra Leone <https://sl.one.un.org/>
- 15 UNDP & UNCDF DFS Ecosystem Assessment in Sierra Leone, May 2016 <https://www.uncdf.org/download/file/127/646/dfsecosystemassessmentsfinalreportpdf>

due to small markets with dispersed populations and limited awareness levels. More than 50% of the bank branches are in the Western Province. Freetown, which is the hub for economic and financial activities in Sierra Leone, also houses 15% of the total population of the country.

Sierra Leone has traditionally been a cash-based economy, and therefore, will require significant customer education and behavior change which can only be brought about by persistent knowledge sharing and awareness generation. The 13 MFIs and 17 community banks primarily serve the rural population, and therefore, help generate financial awareness to some extent<sup>16</sup>. However, their cumulative reach is still limited. With poor access to basic banking services such as savings accounts, the market for other financial products like credit and insurance remains underdeveloped in Sierra Leone.

Figure 1: Financial inclusion rate among different African countries



Source: Annual report and statement of accounts, Bank of Sierra Leone, December 2014

Digital Financial Services (DFS) can play a critical role in driving financial inclusion and the economic reconstruction of Sierra Leone as it emerges from multiple crises. The country needs to build an enabling environment to boost access to finance concurrently with greater financial literacy and awareness, and offer tailored and affordable financial products for all. DFS channeled through mobile phones and other supporting technology can help in achieving these goals quickly<sup>17</sup>.

## Demand for digital financial services

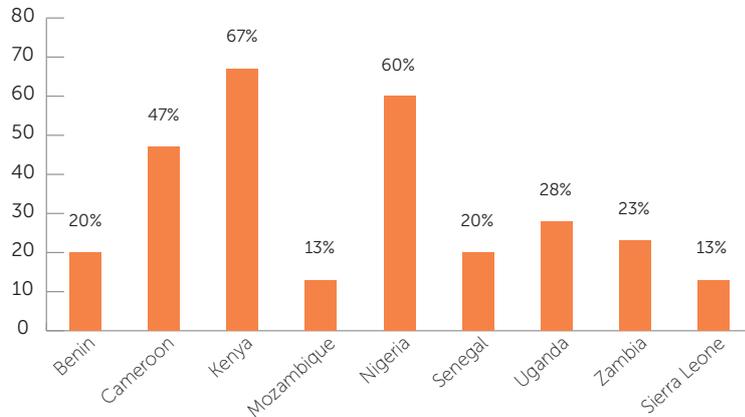
Sierra Leone lags behind its African counterparts in financial inclusion. Kenya exhibits one of the highest levels of financial inclusion at 67%. Nigeria (60%) and Cameroon (47%) are other leading countries in the region. The success of M-Pesa in Kenya was largely due to enabling regulatory policies, customer readiness, good network of agents, high mobile penetration and customer dissatisfaction with existing financial services. Innovative and incentive-driven services also

16 UNDP & UNCDF DFS Ecosystem Assessment in Sierra Leone, May 2016 <https://www.unCDF.org/download/file/127/646/dfsecosystemassessmentsfinalreportpdf>

17 National Strategy for Financial Inclusion, 2017-2020, Bank of Sierra Leone, <https://www.bsl.gov.sl/SL%20FI%20Strategy%202017%20-%202020.pdf>

contributed to the success of M-Pesa. In Nigeria, banks led the initiative by providing traditional services via mobile networks<sup>18</sup>.

Figure 2: Financial inclusion rate among different African countries



Source: Digital Financial Services in Africa: Beyond the Kenyan Success Story, European Investment Bank, Dec 2014

Figure 3: Drivers and challenges of demand for digital financial services

<b>Drivers</b>	<ul style="list-style-type: none"> <li>» Sierra Leone has traditionally been a cash-based economy, and the poor coverage of formal transaction channels has resulted in high dependence on informal sources and personal networks for credit and savings.</li> <li>» With 90% of Sierra Leone's population owning mobiles, there is a strong case for driving mobile financial services in the country. Given the limited presence of banks in rural areas, rural populations present an attractive market for DFS.</li> <li>» As per government estimates, remittances by overseas Sierra Leoneans constitute 20-25% of the country's GDP. Most of these funds enter the economy through unofficial remittance agents<sup>18</sup>.</li> </ul>
<b>Challenges</b>	<ul style="list-style-type: none"> <li>» Literacy levels constrain mobile phone usage. Even though most people in Sierra Leone have mobile phones, they use them primarily to make and receive calls. Even SMS usage is low because of poor literacy levels<sup>19</sup>.</li> <li>» Many consumers cite security concerns such as frauds for not using DFS. Therefore, DFS providers will have to invest in ensuring security and communicating this effectively to their potential customers<sup>20</sup>.</li> <li>» Over 90% of the total electricity is supplied to four cities - Freetown, Kenema, Bo and Makeni, while rural access to electricity is extremely low at 1%. Unreliable telecom network coverage can also significantly limit DFS uptake<sup>21</sup>.</li> </ul>

18 Overview of Digital Financial Services Ecosystem in Sierra Leone, 2017

19 Remittances Strategy Framework for Sustainable Development in Sierra Leone

20 UNDP & UNCDF DFS Ecosystem Assessment in Sierra Leone, May 2016

21 UNDP & UNCDF DFS Ecosystem Assessment in Sierra Leone, May 2016

22 Voltage in Sierra Leone, Ashley Edison, last accessed on 30 March 2018

## Supply of digital financial services

In 2016, Sierra Leone had a mobile penetration rate of 85% while mobile broadband penetration was 20%<sup>23</sup>. Mobile penetration grew from 57%, representing 3.5 million connections at the end of 2012 to 6 million in May 2018<sup>24,25</sup>. In terms of network coverage, 80% of the population and 65% of the land area are covered by at least one of the MNOs<sup>26</sup>.

The mobile financial service (MFS) model prevalent in Sierra Leone involves partnerships between banks and MNOs. In 2016, there were two leading MFS providers in Sierra Leone – Orange and Africell Mobile Money. As of October 2017, Orange is the second largest MFS provider in Sierra Leone with 1.6 million customers, while Africell leads with a total customer base of 3.7 million<sup>27</sup>. They offer P2P and P2B payments such as money transfer, utility bill payments including electricity and satellite television services, and payments at gas stations. Splash, a fintech company, offers a mobile payment system, while GT SimPay is a product offered by GT Bank which allows the bank's customers to check account balance, transfer funds, make payments and recharge mobile airtime without an internet connection (P2P and P2B)<sup>28</sup>. Other banks have also applied to BSL for permission to roll out credit products and offer cross-border remittances through mobile money platforms. Collaboration between MFS providers and merchants such as the tie-ups between Orange and the satellite TV service DStv and some gas stations allows customers to pay for goods and services through mobile money<sup>29</sup>.

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23 Sierra Leone Profile (Latest data available: 2017), last accessed on 30 March 2018 <https://www.itu.int/net4/itu-d/icteye/CountryProfileReport.aspx?countryID=217>

24 Extending mobile network operators' coverage deep into rural Africa – Sierra Leone, last accessed on 30 March 2018 <http://www.africamobilenetworks.com/our-coverage/sierra-leone>

25 The World Factbook: Sierra Leone, Central Intelligence Agency, last accessed on 30 March 2018 <https://www.cia.gov/library/publications/the-world-factbook/geos/sl.html>

26 Extending mobile network operators' coverage deep into rural Africa – Sierra Leone, last accessed on 30 March 2018 <http://www.africamobilenetworks.com/our-coverage/sierra-leone>

27 Orange brand debuts in Sierra Leone, Mobile World Live, October 2017, last accessed on 28 May 2018 <https://www.mobileworldlive.com/featured-content/top-three/orange-brand-debuts-in-sierra-leone/>

28 GT SimPay, last accessed on 30 March 2018 <http://www.gtb.sl/home/product/e-banking/gt-simpay/>

29 Status of mobile money services in West African countries - Sierra Leone, Bank of Sierra Leone, March 2016, last accessed on 30 March 2018 <https://www.theigc.org/wp-content/uploads/2016/03/Sierra-Leone-1.pdf>

Figure 4: Drivers and challenges of supply of digital financial services

<b>Drivers</b>	<ul style="list-style-type: none"> <li>» BSL, through a partnership with the Sierra Leone Association of Commercial Banks (SLACB) and the World Bank, is involved in the implementation of the National Switch Project.</li> </ul> <p>The project aims to create a single integrated platform for the settlement of interbank electronic payments across channels, and thus can become a key enabler for provision of DFS.</p> <p>The national switch is expected to link transactions originating in ATMs, POS systems, MFS platforms, electronic banking platforms, Visa and Mastercard gateways, and over-the-counter channels to a common network<sup>29</sup>.</p>
<b>Challenges</b>	<ul style="list-style-type: none"> <li>» Poor network coverage in rural areas as well as power outages affects supply of MFS. While agents play a critical role in the distribution of MFS, they are similarly affected by the poor mobile connectivity and power supply in rural areas<sup>30</sup>.</li> <li>» The MFS guidelines mandate that only formal registered businesses can operate as mobile money agents. Agents cannot directly charge a fee to customers; instead they receive agency commission from MFS providers.</li> <li>» In rural areas, as people tend to cash out upon receiving digital payments, agents need to maintain high levels of liquidity. Inadequate liquidity with agents is a major constraint to expanding mobile money uptake.</li> </ul>

## DFS policy and regulatory landscape

The policy environment for DFS in Sierra Leone is currently at a nascent stage and is primarily moderated by the Bank of Sierra Leone (BSL), National Telecommunications Commission (NATCOM) and the Ministry of Finance and Economic Development (MoFED). The Guidelines for Mobile Money Financial Services, developed by BSL in 2015, is the principal regulatory model for MFS which aims to create an enabling environment for the promotion of MFS while helping stakeholders understand their roles and responsibilities<sup>32</sup>. BSL allows both bank-led and non-bank-led MFS operations in the country<sup>33</sup>.

The National Strategy for Financial Inclusion (NSFI) 2017-2020, BSL's initiative to optimize efforts for driving financial inclusion in Sierra Leone, identifies DFS as one of its six key focus areas. While DFS is new to Sierra Leone, it is already the country's second largest channel for providing financial services and makes up over 90% of the access points<sup>34</sup>. BSL has also formed

30 Sierra Leone News: BSL talks on \$5m National Switch Project, Awoko, November 2015; National Switch Project launched, Aynnews, November 2015

31 UNDP & UNCDF DFS Ecosystem Assessment in Sierra Leone, May 2016

32 Status of mobile money services in West African countries - Sierra Leone, Bank of Sierra Leone, March 2016, last accessed on 30 March 2018 <https://www.theigc.org/wp-content/uploads/2016/03/Sierra-Leone-1.pdf>

33 Guidelines for mobile money services, last accessed on 30 March 2018 [https://www.bsl.gov.sl/GUIDELINES\\_MOBILE\\_MONEY2015.pdf](https://www.bsl.gov.sl/GUIDELINES_MOBILE_MONEY2015.pdf)

34 National Strategy for Financial Inclusion, 2017-2020, Bank of Sierra Leone, <https://www.bsl.gov.sl/SL%20FI%20Strategy%202017%20-%202020.pdf>

a DFS Working Group under the NSFI to facilitate discussions among DFS stakeholders, identify opportunities and challenges to scaling DFS and help frame progressive policies<sup>35</sup>.

Unlike BSL, NATCOM's regulatory mandate specific to DFS delivery is yet unclear. NATCOM, as the national telecom regulator, controls the pricing of telecom services and any price increase by MNOs must be approved by it<sup>36</sup>. NATCOM is also a member of BSL's DFS Working Group<sup>37</sup>. The Government of Sierra Leone, through MoFED, has also played an important enabling role in the promotion of DFS in the country and has participated in the Better Than Cash Alliance (BTCA) to enhance the efficiency of payments to government employees and social welfare programs by transitioning from cash to digital payments<sup>38</sup>.

The Sub-Regional Workshop on Mobile Money in West Africa organized by BSL and International Growth Centre (IGC) in March 2016 identified improving consumer protection and financial literacy, encouraging interoperability and growth of agent networks, furthering coordination between stakeholders, and addressing agent liquidity issues as priority areas to advance the uptake of mobile money services in Sierra Leone. The workshop also concluded that Sierra Leone may not yet be ready for more complex mobile money products such as credit and investment while significant potential exists for savings and transfer products<sup>39</sup>.

## The Financial Lives Survey

UNCDF is partnering with the BSL and the Office of the Accountant General at the Ministry of Finance for the planning and implementation of the National Strategy for Financial Inclusion 2017 – 2020 under DFS. The Strategy identifies an opportunity to leverage the volume of government salary payments to build a business case for DFS, thereby expanding access points and ultimately the availability of a wide range of financial services to underserved communities.

An analysis of the financial lives of government employees, who receive their salary digitally in their bank accounts, would help in developing an understanding of how Sierra Leoneans engage with financial products and services, and their experiences and motivations to seek ease in financial transactions. This understanding would inform strategies that the UNCDF and the Government of Sierra Leone can develop to promote DFS in the country. The Financial Lives Survey was developed to meet these objectives, and to help draw insights about potential customers of DFS, and recommendations for improving DFS adoption and financial inclusion in Sierra Leone. It would also identify use cases that could be considered for pilot tests.

35 BSL unveils platform for financial inclusion, last accessed on 30 March 2018 <http://ayvnews.com/AYVNews/index.php/news/item/2303-bsl-unveils-platform-for-financial-inclusion>

36 UNDP & UNCDF DFS Ecosystem Assessment in Sierra Leone, May 2016 <https://www.uncdf.org/download/file/127/646/dfsecosystemassessmentsfinalreportpdf>

37 BSL unveils platform for financial inclusion, last accessed on 30 March 2018 <http://ayvnews.com/AYVNews/index.php/news/item/2303-bsl-unveils-platform-for-financial-inclusion>

38 Sierra Leone Joins Better Than Cash Alliance to Encourage Economic Growth, CGAP, June 2015, last accessed on 30 March 2018 <https://www.microfinancegateway.org/announcement/sierra-leone-joins-better-cash-alliance-encourage-economic-growth>

39 You can pay me through my cell phone: Mobile money in Sierra Leone, IGC, last accessed on 30 March 2018 <https://www.theigc.org/blog/you-can-pay-me-through-my-cell-phone-mobile-money-in-sierra-leone/>

# SURVEY FINDINGS

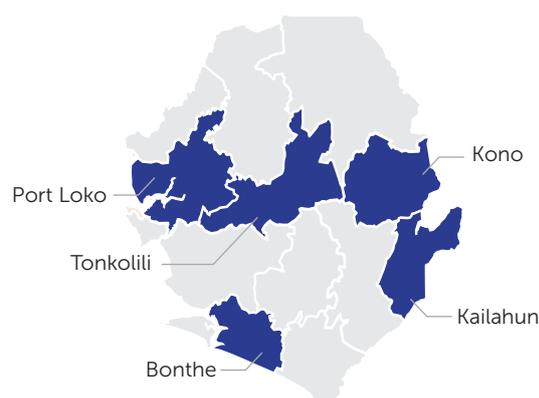
This section presents information and analysis of the financial lives survey of 302 government employees from Kailahun, Tonkolili, Bonthe, Kono and Port Loko districts<sup>40</sup>. It includes a description of the survey respondents in terms of their demographic and income profile; their access to banking services and basic financial transaction behavior; financial assets including savings, investments and credit; and finally, their perception, access, and use of DFS for financial transactions. These findings provide insights about the demand for financial services and thereby, support recommendations of use cases that can be pilot-tested in the next phase of this project.

## Sample districts

The survey included 302 respondents across five districts in Sierra Leone, with a representation of eastern, northern, and southern regions of the country. The five districts are Kailahun and Kono in the Eastern region, Tonkolili and Port Loko in the Northern region, and Bonthe in the Southern region of Sierra Leone.

**Kailahun**, located in the eastern region of Sierra Leone, is a major business and commercial center. It was also one of the first locations in Sierra Leone to experience the worst impacts of the Ebola outbreak with more than 80 new cases per week at its peak in late June 2014<sup>41</sup>.

Figure 5: Surveyed districts in Sierra Leone



40 In Sierra Leone, there are nearly 80,000 government employees who receive their salaries in their bank accounts; of which around 50% recipients are based in rural and hard to reach areas where there is limited or no banking infrastructure.

41 Sierra Leone: How Kailahun district kicked Ebola out, WHO, December 2014, last accessed on 30 March 2018 <http://www.who.int/features/2014/kailahun-beats-ebola/en/>.

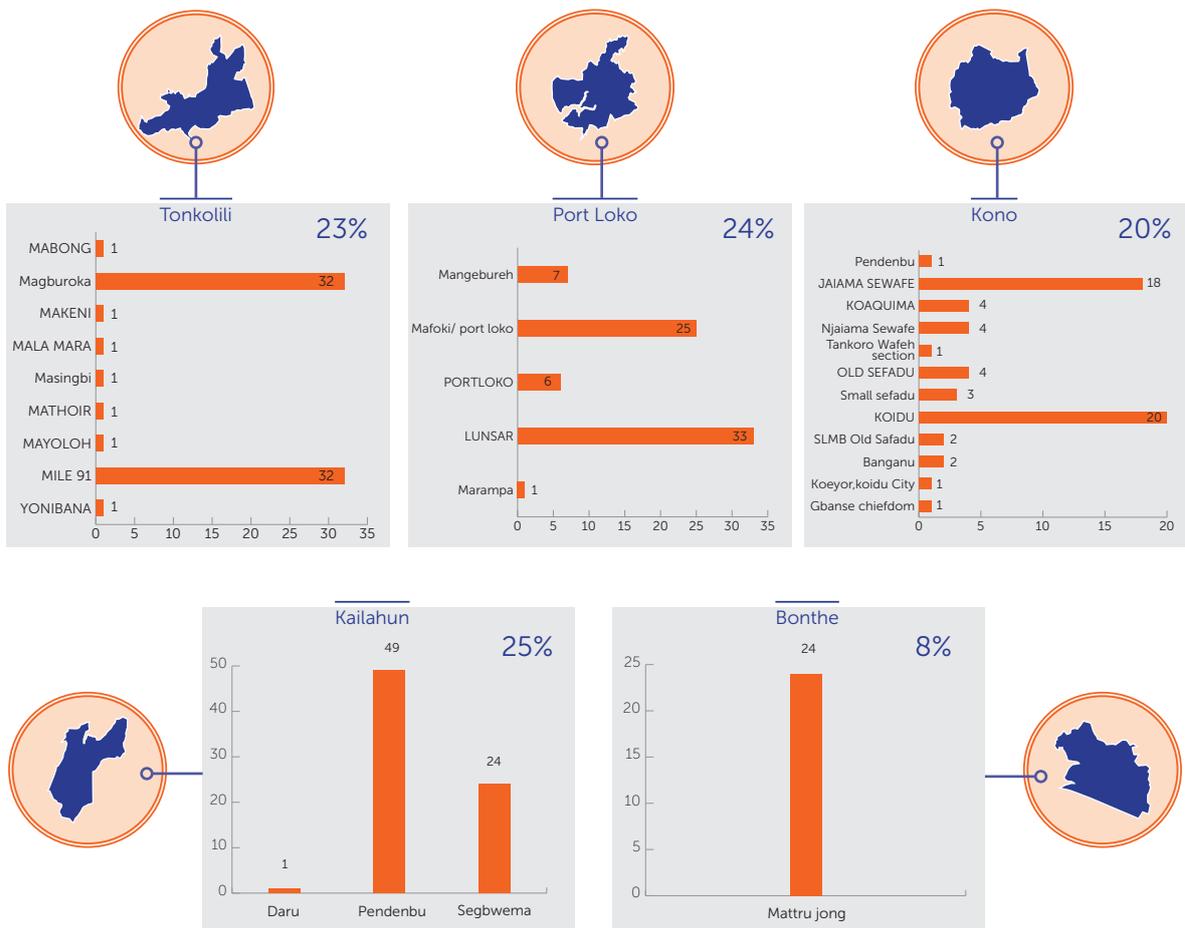
**Kono**, also located in the eastern region, is the largest producer of diamonds in Sierra Leone. It is one of the most ethnically diverse districts in the country and is home to a large population of many of Sierra Leone’s ethnic groups, with no single ethnic group forming a majority<sup>42</sup>.

**Tonkolili**, in the northern region of Sierra Leone, has the biggest iron ore deposit in Africa and the third largest in the world. It has the largest sugar factory in Sierra Leone which is also one of the largest in West Africa. The district therefore, has a large concentration of industrial workers.

**Port Loko**, located in the northern region, is a major bauxite mining and trade centre. The first international airport in Sierra Leone was commissioned at Kaffu Bullom, Lungi, Port Loko in 1947. The second international airport was also commissioned at Port Loko in March 2018<sup>43</sup>.

**Bonthe**, located in the southern region, has one of the world’s largest deposits of titanium ore (rutile) in the world. The district has a high incidence of poverty, and the main economic activities include fishing, rice cultivation and palm oil plantation<sup>44</sup>.

Figure 6: Work location of respondents



42 Sierra Leone: Kono District Profile, Reliefweb, 19 December 2015, last accessed on 17 May 2018 <https://reliefweb.int/report/sierra-leone/sierra-leone-kono-district-profile-19-december-2015>.

43 Sierra Leone News: We need to take bold decision to transform the country-Pres. Koroma, March 2018, last accessed on 30 March 2018 <https://awoko.org/2018/03/02/sierra-leone-news-we-need-to-take-bold-decision-to-transform-the-country-pres-koroma/>.

44 Sierra Leone News: Mining narrative.... An illusion for Bonthe District, February 2018, last accessed on 30 March 2018 <https://awoko.org/2018/03/06/sierra-leone-news-mining-narrative-an-illusion-for-bonthe-district/>.

**85%**  
are married

**76%**  
are in the 30-50  
years age group

**79%**  
are male and most have over 5 years  
of work experience

Most belong to households with  
an average family size of  
**6 members**,  
which is same as the national average



high average  
literacy rate



all are proficient  
in English

most earn very low incomes  
with an average

**US\$ 3** per day



often sole earning member  
in family

Slightly over a third own houses  
and house ownership increases  
with an increase in income levels



Food, education and  
transportation are the key  
expenses

## Sample description

### Demography

In Sierra Leone, 56% of the total population is of working age ranging from 15 to 64 years<sup>45</sup>. 41% of the population is less than 15 years of age, while only 4% is above 65 years<sup>46,47</sup>.

The financial lives survey targeted government employees. 76% of the respondents are in the age-group of 30-50 years. 85% of the respondents are married and 79% are male.

Figure 7: Marital status of respondents

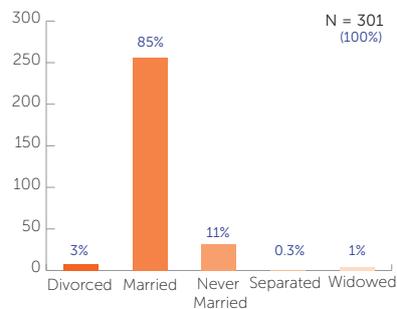
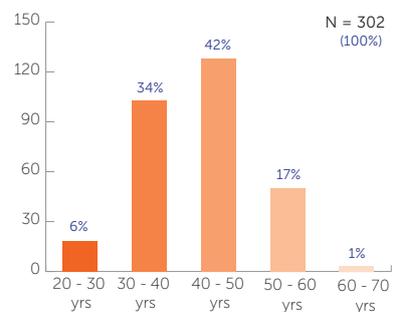


Figure 8: Age-wise break-up of respondents



- 45 2015 Population and Housing Census, Statistics Sierra Leone, last accessed on 29 March 2018 [https://www.statistics.sl/wp-content/uploads/2017/01/final-results\\_-2015\\_population\\_and\\_housing\\_census.pdf](https://www.statistics.sl/wp-content/uploads/2017/01/final-results_-2015_population_and_housing_census.pdf).
- 46 2015 Population and Housing Census, Statistics Sierra Leone, last accessed on 29 March 2018 [https://www.statistics.sl/wp-content/uploads/2017/01/final-results\\_-2015\\_population\\_and\\_housing\\_census.pdf](https://www.statistics.sl/wp-content/uploads/2017/01/final-results_-2015_population_and_housing_census.pdf).
- 47 2015 Population and Housing Census, Statistics Sierra Leone, last accessed on 29 March 2018 [https://www.statistics.sl/wp-content/uploads/2017/01/final-results\\_-2015\\_population\\_and\\_housing\\_census.pdf](https://www.statistics.sl/wp-content/uploads/2017/01/final-results_-2015_population_and_housing_census.pdf).

The average literacy rate in Sierra Leone is 51%. Literacy is higher among males (59%) than among females (44%)<sup>48</sup>. 45% of the population can read and write English<sup>49</sup>. The younger generation in the country has improved access to education, while more than half of the working population (57%) cannot read and write<sup>50</sup>.

The literacy rate was significantly higher among the survey respondents. All respondents reported to read and write in English, which is not surprising as the sample consists of government employees (see Figure 10). Figure 11 shows the ministries the respondents are employed by. With 68%, the largest share of the respondents work in the Ministry of Education, Science and Technology, followed by the Ministry of Internal Affairs/Sierra Leone Police (27%).

The most commonly reported highest completed level of education is 'diploma level certificate' (67%)<sup>51</sup>. 19% of the sample reported 'senior secondary and junior secondary school levels' as the highest completed level of education. 13% of the sample has completed bachelors' level of education or higher.

In Port Loko and Kono, a higher share of respondents reported diploma level certificates and bachelors' level or higher qualifications as highest completed level of education.

61% of the respondents have between 6 and 15 years of experience in working for the government of Sierra Leone. 4% of the respondents had less than 5 years of experience.

48 Sierra Leone 2015, Population and Housing Census, Thematic Report on Gender, Statistics Sierra Leone, October 2017, last accessed on 29 March 2018 <http://sierraleone.unfpa.org/sites/default/files/pub-pdf/Gender%20report.pdf>.

49 Sierra Leone 2015, Population and Housing Census, Thematic Report on Gender, Statistics Sierra Leone, October 2017, last accessed on 29 March 2018 <http://sierraleone.unfpa.org/sites/default/files/pub-pdf/Gender%20report.pdf>.

50 Sierra Leone 2014 Labor Force Survey Report, World Bank Group, International Labor Organization, Department of Statistics of Sierra Leone, September 2015 [https://www.statistics.sl/wp-content/uploads/2016/06/sierra\\_leone\\_labour\\_force\\_survey\\_report\\_2014.pdf](https://www.statistics.sl/wp-content/uploads/2016/06/sierra_leone_labour_force_survey_report_2014.pdf).

51 Diploma level certificates are awarded by educational establishments to candidates who complete 2-3 year technical and vocational training courses in Sierra Leone. Students are eligible for this course after higher secondary school certification.

Figure 9: Gender Break-up

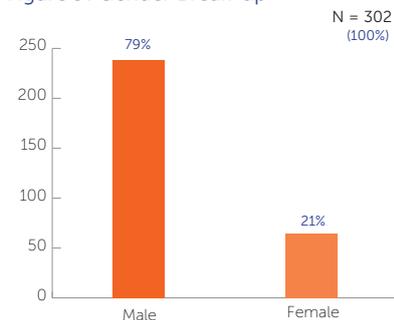


Figure 10: English proficiency

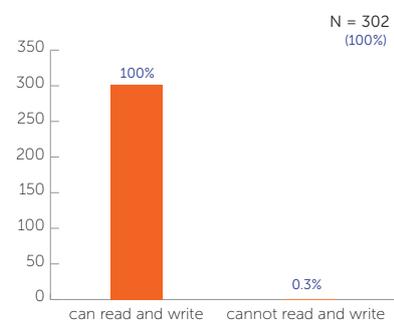


Figure 11: Ministry/ Department

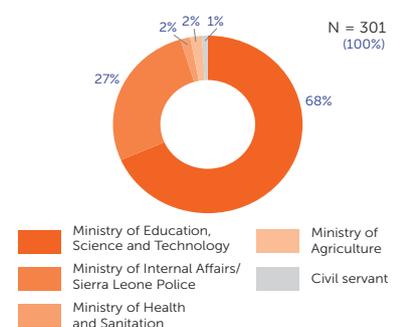


Figure 12: Education

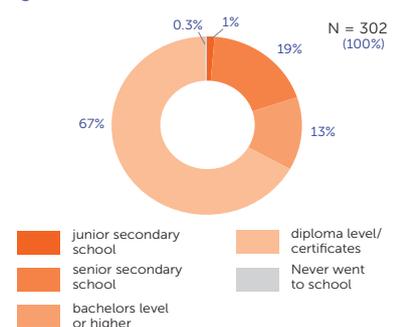


Figure 13: Education by district

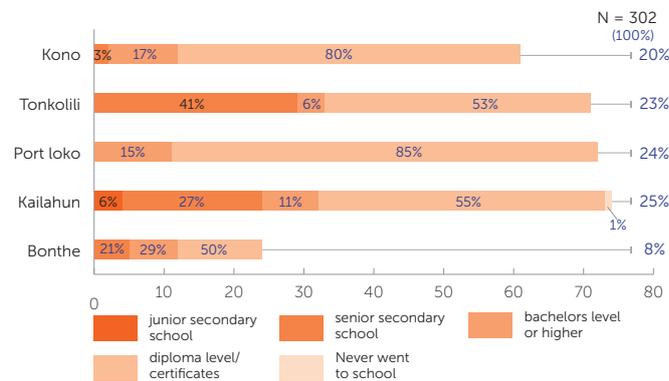
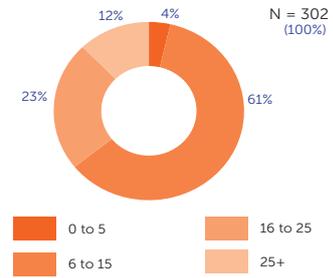


Figure 14: Years in Service



Income

84% of the working population in Sierra Leone is self-employed, while 6% is engaged in government jobs<sup>52</sup>. Only 4% of the work force is employed in the private sector<sup>53</sup>. Agriculture and livestock are the main occupations in Sierra Leone and provide employment to 59% of the labor force followed by services at 31%<sup>54</sup>. Two-thirds of the population owns agricultural land and half of households own farm animals<sup>55</sup>. Since 2015, the minimum wage in Sierra Leone has been SLL 500,000 (US\$ 65) per month or SLL 6,000,000 (US\$ 780) annually. The country ranks 120 out of 197 countries in terms of minimum wage level<sup>56</sup>.

82% of respondents earn between SLL 600,000 (US\$ 76) and SLL 1,200,000 (US\$ 153), and 11% of respondents earn below SLL 600,000 (US\$ 76).

Figure 15: Monthly government salary (in SLL)

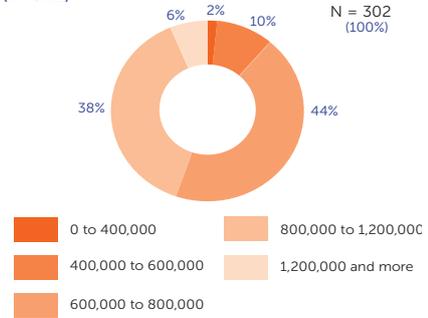
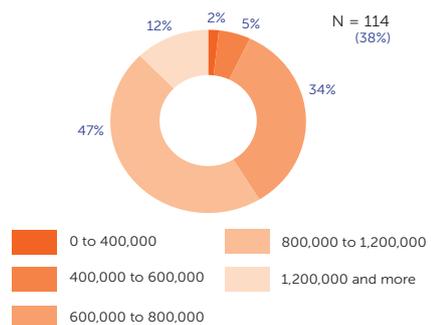


Figure 16: Home-owners by income group



52 Sierra Leone 2015, Population and Housing Census, Thematic Report on Gender, Statistics Sierra Leone, October 2017, last accessed on 29 March 2018 <http://sierraleone.unfpa.org/sites/default/files/pub-pdf/Gender%20report.pdf>.

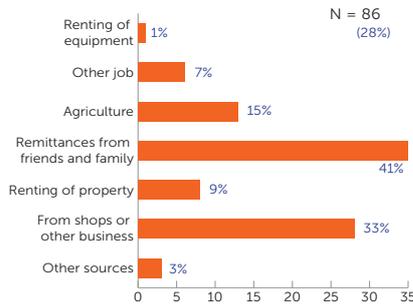
53 Sierra Leone 2015, Population and Housing Census, Thematic Report on Gender, Statistics Sierra Leone, October 2017, last accessed on 29 March 2018 <http://sierraleone.unfpa.org/sites/default/files/pub-pdf/Gender%20report.pdf>.

54 Sierra Leone 2015, Population and Housing Census, Thematic Report on Gender, Statistics Sierra Leone, October 2017, last accessed on 29 March 2018 <http://sierraleone.unfpa.org/sites/default/files/pub-pdf/Gender%20report.pdf>.

55 Sierra Leone Demographic and Health Survey 2013, <https://dhsprogram.com/pubs/pdf/fr297/fr297.pdf>.

56 Sierra Leone Minimum Wage, Labor Law, and Employment Data Sheet, Sierra Leone Minimum Wage Rate 2018 <https://www.minimum-wage.org/international/sierra-leone>.

Figure 17: Income from other sources



37% of the sample owns a home. Home ownership is higher among respondents with income levels above SLL 800,000 (US\$ 102). 29% of respondents with an income between SLL 600,000 and SLL 800,000 own a home, compared to 46% of the respondents who earn between SLL 800,000 and SLL 1,200,000. 73% of respondents with an income higher than SLL 1,200,000 own a home.

28% of the sample reported income from other sources. The most common reported source of income is remittances (41%), followed by income from shops or other business (33%).

70% of the respondents earning a salary of more than SLL 600,000 (US\$ 76) have diploma level certificates with 14% being qualified at the bachelor's level or higher.

38% of the respondents reported that they were the only household member with an income. Of this set, 50% of the households have 6 to 10 members. Port Loko and Kailahun had the most households with just one household member with an income (the respondent).

Most respondents reported that they seek financial advice from family members, specifically spouses (37%) and parents (26%). 3% of the respondents seek financial advice from their bankers.

Figure 18: Single earning member families by district

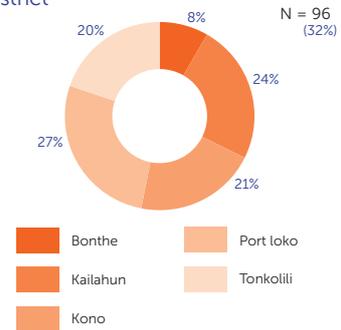


Figure 19: Single earning member families by HH size

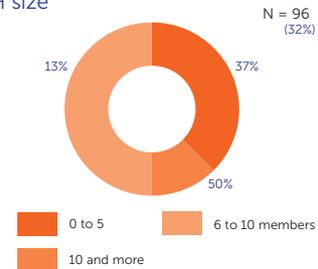


Figure 20: Who advises respondents on financial decisions

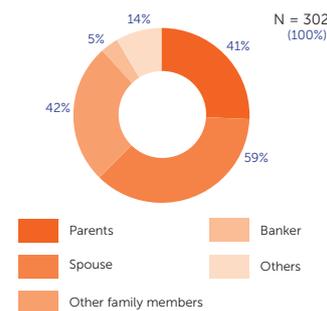


Figure 21: Number of family members

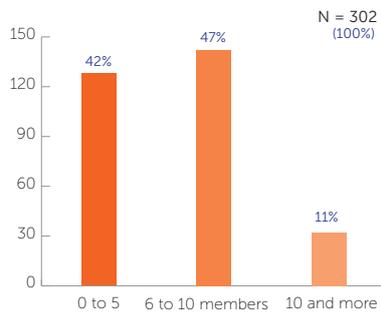


Figure 22: Number of family members by district



### Family size

The average household size in Sierra Leone is 6 members<sup>57</sup>. Among the survey sample, 47% of the respondents are from households with 6-10 members, and 42% respondents reported households with 5 or fewer members. Among the districts, Tonkolili has 65% respondents with smaller family sizes (0 to 5 members), while Kailahun, Kono and Port Loko have 58%, 62%, and 75% respondents with larger families (more than 6 members).

### Expenditure

Respondents spend most on food, education and transportation. On average, the monthly household expenditure on food is SLL 435,000 (US\$ 55) and SLL 221,000 (US\$ 28) on education.

Food expenses form the largest component of expenditure for respondents, with 90% spending more than SLL 200,000 (US\$ 26) per month. 75% of the sample spends more than SLL 100,000 (US\$ 13) on education, which is another significant expense. 83% of the respondents spend more than SLL 50,000 (US\$ 6) on transportation and 54% of the respondents spend more than SLL 50,000 (US\$ 6) on healthcare per month.

Figure 23: Percentage mix of average monthly expenditure

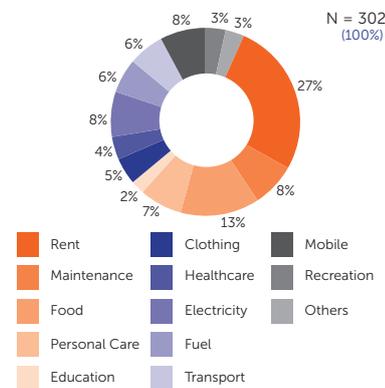
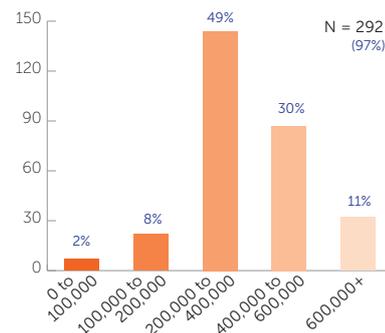


Figure 24: Monthly food expense (in SLL) decisions



57 Sierra Leone 2015, Population and Housing Census, Thematic Report on Gender, Statistics Sierra Leone, October 2017, last accessed on 29 March 2018 <http://sierraleone.unfpa.org/sites/default/files/pub-pdf/Gender%20report.pdf>.

Figure 25: Monthly health expense (in SLL)

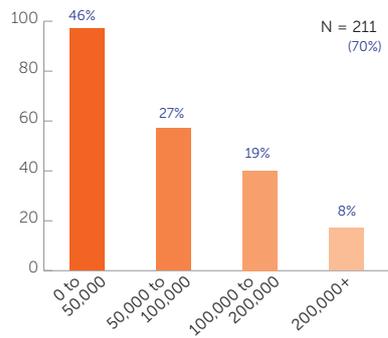


Figure 26: Monthly education expense (in SLL)

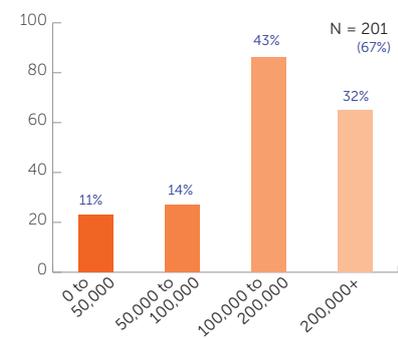


Figure 27: Monthly transportation expense (in SLL)

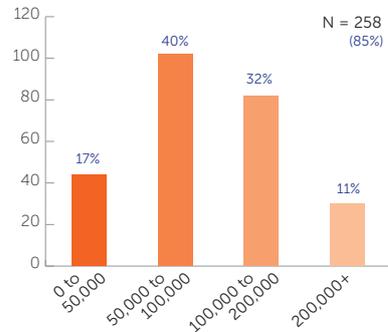
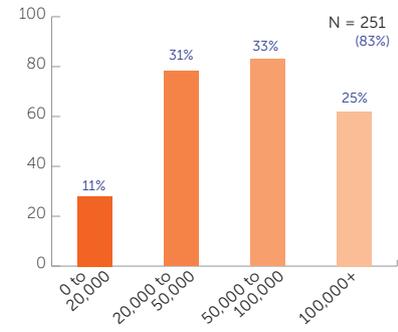
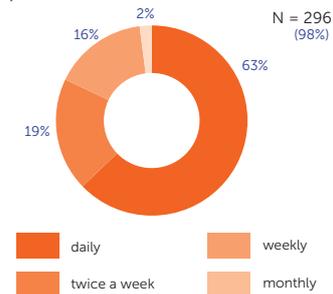


Figure 28: Monthly mobile expense (in SLL)



The cost of mobile phone calls in Sierra Leone ranges from SLL 350 (US\$ 0.05) to SLL 697 (US\$ 0.09) per minute.<sup>58</sup> 62% of survey respondents buy airtime daily. Monthly mobile expenses for buying airtime are higher than SLL 20,000 (US\$ 3) for 89% of the respondents. The average monthly mobile expense for buying airtime for this sample is SLL 61,000 (US\$ 8).

Figure 29: Monthly mobile expense (in SLL)



58 Communication in Sierra Leone: An Analysis of Media and Mobile Audiences, Research Report, BBC Media Action, May 2016, last accessed on 29 March 2018 <http://downloads.bbc.co.uk/rmhttp/mediaaction/pdf/research/mobile-media-landscape-sierra-leone-report.pdf>.

## Basic banking services

Respondents' engagement with banks is limited, likely due to the poor access to bank branches and a predominantly cash based economy, among other reasons. Bank branches are at a distance of 20 miles for 30% of the respondents. 36% of the respondents paid over SLL 15000 (US\$ 1.9) per round trip which is high considering that most respondents earn around US\$ 3 per day. Most respondents visit bank branches once a month, and around two-thirds of the sample cash out their entire salary each month. Apart from withdrawals, respondents also seek remittance services from banks to send money to their friends and family in Sierra Leone.

### Access to bank branches

Sierra Leone's 14 commercial banks serve 970,000 customers through 97 branches. The number of bank branches and ATMs per 100,000 inhabitants is 4 and 1.5 respectively<sup>59</sup>. As there are very few bank branches and ATMs, especially in rural and remote locations, access to banking services is poor.

Of the total population in Sierra Leone, only 9% uses an account at a financial institution to receive their salaries<sup>60,61</sup>. The country is predominantly a cash-based economy, but banks are gradually transitioning to more digitized systems. In 2017, Sierra Leone Commercial Bank (SLCB), one of the major banks in the country, began offering internet banking to both

59 UNDP & UNCDF DFS Ecosystem Assessment in Sierra Leone, May 2016 <https://www.uncdf.org/download/file/127/646/dfsecosystemassessmentsfinalreportpdf>.

60 Sierra Leone - Deposit interest rate, Trading Economics, last accessed on 8 May 2018 <https://tradingeconomics.com/sierra-leone/deposit-interest-rate-percent-wb-data.html>.

61 According to Findex 2017 data, 3% of the adult population (15 years+) in Sierra Leone received wages in a financial institution account.

Figure 30: Distance from branch

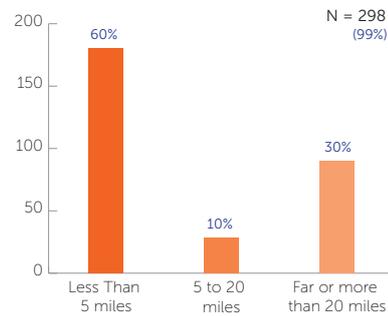


Figure 31: Frequency of bank branch visit

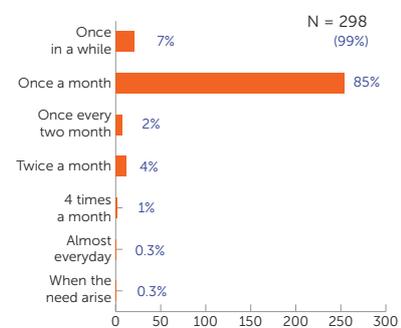


Figure 32: Cost of travel to bank branch (in SLL)

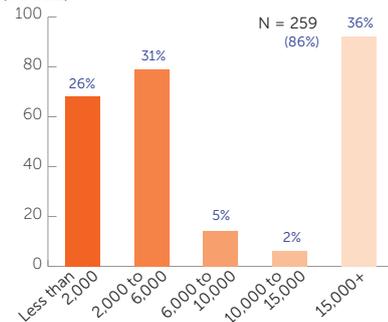
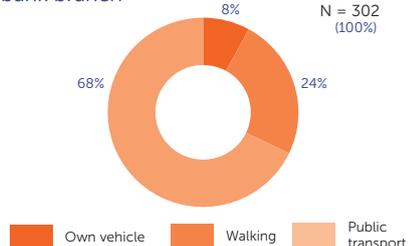


Figure 33: Transportation used to travel to bank branch



local and international customers<sup>62</sup>. Ecobank is also leveraging mobile technology to develop an all-in-one payment/ cash withdrawal tool<sup>63</sup>.

In the survey, 30% of the respondents reported that their bank branch was more than 20 miles away, while for 60% of the respondents their branch was 5 miles from their homes. 85% of the respondents visit their bank branches once a month, primarily to withdraw salaries that are credited to their accounts. 9% of respondents visit bank branches less than once a month. Distance alone does not appear to be a deterrent, as 60% respondents with bank branches less than 5 miles away also visited their branches once a month.

68% of the respondents avail of transport to travel to bank branches. 24% walk, while 8% use their own vehicle to travel to the branch. 36% of the respondents spend more than SLL 15,000 (US\$ 2) for a round trip to the bank branch, while 57% spend below SLL 7,500 (US\$ 1) for a round trip to the bank.

### Deposits & withdrawals

60% of the respondents (156 out of 258) withdraw between SLL 400,000 (US\$ 51) and SLL 800,000 (US\$ 102) from their bank account per month. In the month preceding the survey, 95% of the respondents withdraw more than half of the salary, and 65% withdraw their entire salary.

27% of the total respondents reported depositing money every month. 51% of the respondents (42 out of 82) deposited up to SLL 400,000 (US\$ 51) per month. 34% of the respondents deposit between SLL 400,000 and SLL 800,000. Deposits could include additional incomes from remittances, agriculture and small shops or businesses.

62 Sierra Leone News: SLCB upgrades banking system, Awoko, April 2017, last accessed on 29 March 2018 <https://awoko.org/2017/04/07/sierra-leone-news-slcg-upgrades-banking-system/>.

63 Sierra Leone News: Ecobank takes the power of mobile banking to new heights, Awoko, September 2017, last accessed on 29 March 2018 <https://awoko.org/2017/09/27/sierra-leone-news-ecobank-takes-the-power-of-mobile-banking-to-new-heights/>.

Figure 34: Portion of salary withdrawn last month

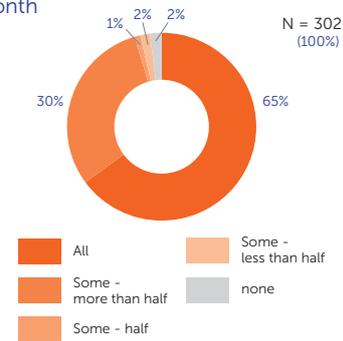


Figure 35: Average amount withdrawn from bank each month

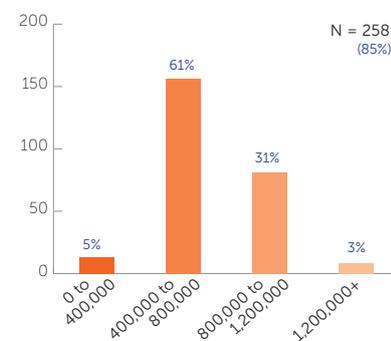
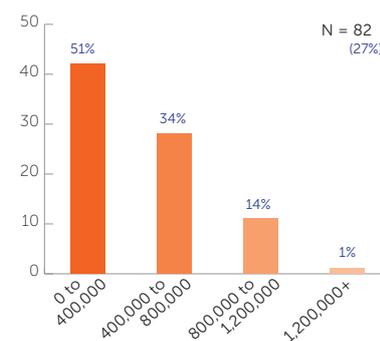


Figure 36: Average amount deposited in bank each month



## Remittances

According to a report published in May 2016, total annual domestic remittances in Sierra Leone amounted to SLL 1200 billion (US\$ 156 million), of which 92% are through informal channels<sup>64,65</sup>. Annual international remittances through formal channels (mobile money transfers, money transfer companies, and banks) are between SLL 840 billion (US\$ 109 million) and SLL 2000 billion (US\$ 260 million)<sup>66</sup>. According to a 2009 UNDP report, 86% of Sierra Leoneans that worked abroad sent money to the home country regularly<sup>67</sup>.

76% of the survey respondents send money to family and friends in Sierra Leone. Almost half of the respondents who remit (47%) send money once a month. Among respondents that reported 'others' for the frequency of remittance, 94% remit money when the need arises. 65% of the respondents who remit use mobile money for domestic remittances. 75% respondents in the age group of 20-30 years remit through mobile money as against 50% respondents in the age group of 40-50 years who use mobile money for remittance. 55% of the respondents send money in cash through other people who might be traveling to the recipient's destination.

64 DFS Ecosystem assessment of Sierra Leone, May 2016, UNDP & UNCDF, last accessed on 29 March 2018 <https://www.uncdf.org/download/file/127/646/dfsecosystemassessmentsfinalreportpdf>.

65 These include people going in the same direction, dollar boys (young boys that facilitate informal money exchange), and informal exchanges.

66 DFS Ecosystem assessment of Sierra Leone, May 2016, UNDP & UNCDF, last accessed on 29 March 2018 <https://www.uncdf.org/download/file/127/646/dfsecosystemassessmentsfinalreportpdf>.

67 Remittances Strategy Framework for Sustainable Development in Sierra Leone, UNDP, October 2009 [http://www.sl.undp.org/content/dam/sierraleone/docs/focusareadocs/undp\\_sl\\_remittances.pdf](http://www.sl.undp.org/content/dam/sierraleone/docs/focusareadocs/undp_sl_remittances.pdf).

Figure 37: Whether respondents remit (send) money

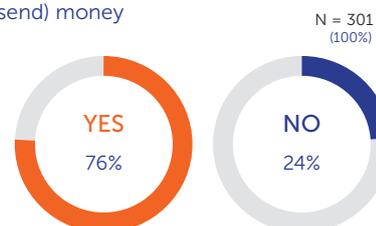


Figure 38: Frequency of remittance (sending) money

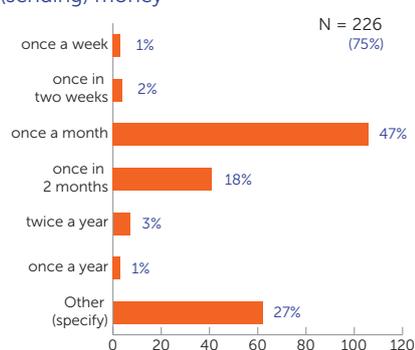


Figure 39: Channels of remittance

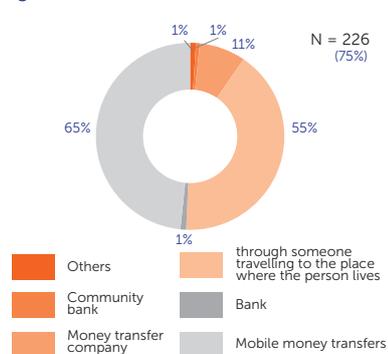
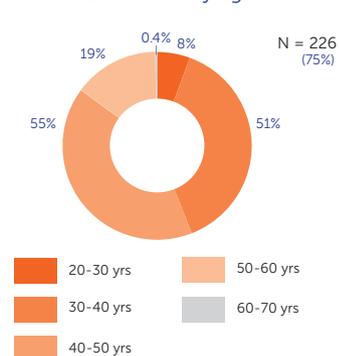


Figure 40: Remittance by age



## Loans, Savings, Investments and Insurance

Access to credit from formal sources is limited. 47% of the respondents have taken formal or informal loans at some point in their lifetime, predominantly from community banks and commercial banks. Respondents mainly sought credit for housing, education, medical care and business. They repay loans on a monthly basis through auto-debit. While all respondents recognize the need to save for old age and emergencies, not all have adequate surplus to save. However, many respondents do invest regularly in pension funds, Osusu and fixed deposits. Most respondents also have life insurance cover provided by the government. Insurance premium is mostly paid digitally through auto debit from their accounts.

### Loans

According to a report, 50% of the adult population in Sierra Leone is excluded from formal financial channels<sup>68,69</sup>. According to Global Findex data, only 7% have received loans from formal financial institutions as of 2017<sup>70</sup>. Interest rates for credit from formal sources range from 8% to 21%<sup>71</sup>. Also, 86 out of 191 Chiefdoms in Sierra Leone do not have financial service access points.<sup>72</sup> In the chiefdoms with financial

68 Sierra Leone News: Over six million people are financially excluded, Awoko, February 2018, last accessed on 29 March 2018 <https://awoko.org/2018/02/14/sierra-leone-news-over-six-million-people-are-financially-excluded/>.

69 Adult population is 4.2 million. Sierra Leone 2015, Population and Housing Census, Thematic Report on Gender, Statistics Sierra Leone, October 2017, last accessed on 29 March 2018 <http://sierraleone.unfpa.org/sites/default/files/pub-pdf/Gender%20report.pdf>.

70 Global Findex Database 2017 <https://globalfindex.worldbank.org/>

71 Department Of Loans, Sierra Leone Finance, last accessed on 29 March 2018, <http://www.mofaic-sl.org/loan-department.htm>.

72 Sierra Leone News: Over six million people are financially excluded, Awoko, February 2018, last accessed on 29 March

Figure 41: Formal/ informal loans taken (at any point in time) by income

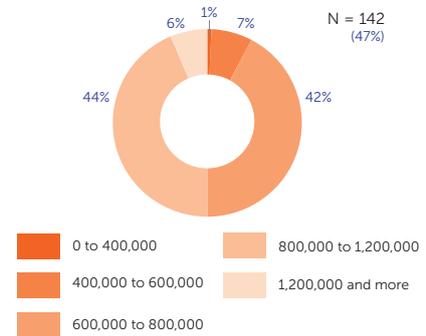


Figure 42: Factors considered by respondents in selecting sources of credit

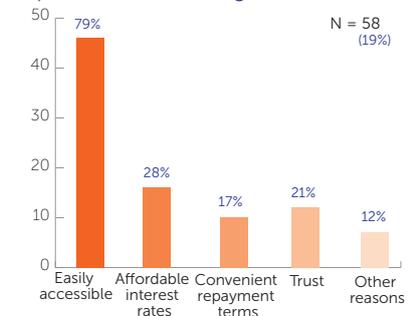


Figure 43: Loan outstanding

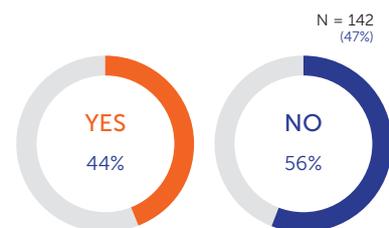
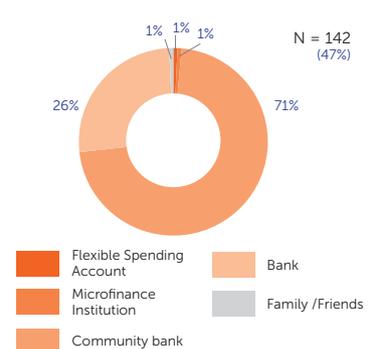


Figure 44: Sources of credit



service access points, 75% of access points are mobile money operators and 7% are commercial banks<sup>73</sup>.

47% of the survey respondents reported to have taken a formal or informal loan at some point in their life time, while 44% of these respondents had outstanding debt at the time of the survey. Of all respondents who ever took a loan, 72% accessed the credit through community banks, and 26% through commercial banks. Of the total respondents that have ever taken a loan, 92% have salaries above SLL 600,000.

In the survey, community banks are the most preferred sources of credit, followed by commercial banks. Ease of access is a critical factor for selecting a source of credit.

Of the respondents who currently have loans outstanding (62 respondents), 45% took a loan for housing purposes, while 36% used the credit for financing education. Some respondents have taken loans for medical care, and others for their business (6% each). All respondents repay their loan monthly, primarily through auto-debit from their bank accounts.

Savings

Only 27% of the respondents are able to save. However, all respondents recognize the importance of saving for a variety of reasons such as financial support during old age and during crises.

Figure 45: Purpose of taking loan

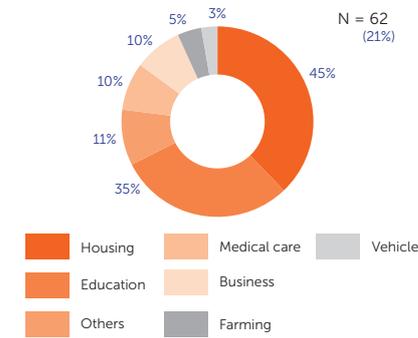


Figure 46: Method of repayment of loan installments

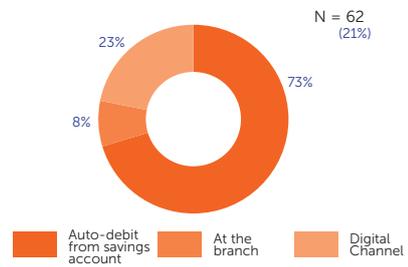


Figure 47: People who save

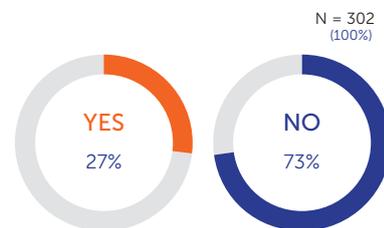


Figure 48: Importance of saving

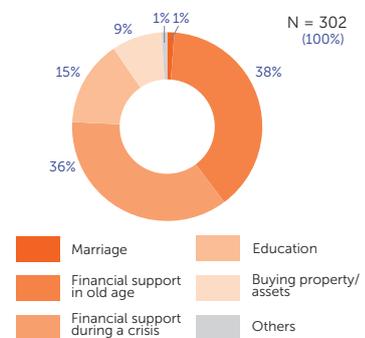
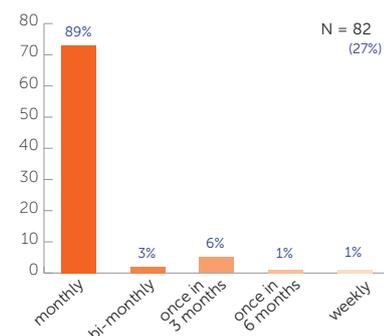


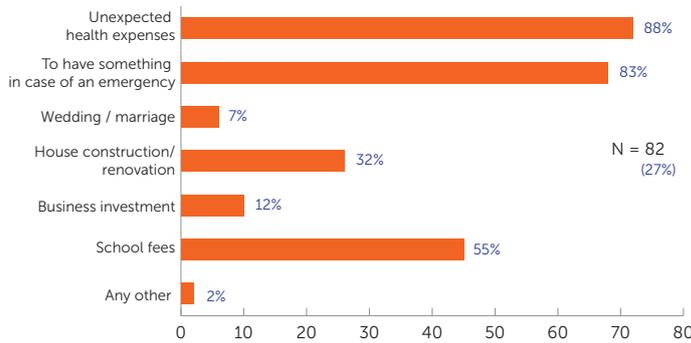
Figure 49: Frequency of saving



2018 <https://awoko.org/2018/02/14/sierra-leone-news-over-six-million-people-are-financially-excluded/>.

73 Sierra Leone News: Over six million people are financially excluded, Awoko, February 2018, last accessed on 29 March 2018 <https://awoko.org/2018/02/14/sierra-leone-news-over-six-million-people-are-financially-excluded/>.

Figure 50: Purposes of saving



Among the respondents who save, unexpected health expenses and emergencies are the most reported purposes for savings. Other frequently reported purposes include education and purchasing property. Of the people who save, 96% keep their savings at formal financial institutions including community banks, while 4% keep them with informal savings groups. 89% of the respondents that reported to save do so monthly, while 6% save once in three months.

### Investments

79% of the total respondents reported that they invest in instruments such as pension funds, insurance premiums, fixed deposits and Osusu<sup>74</sup>. Of these, 47% invest in informal instruments such as Osusu. Pension funds are popular among older age groups, and offer benefits such as old-age pension and old-age grant. The minimum old-age pension in Sierra Leone is 50% of the national minimum wage. The old-age grant is 1.5 times the average monthly earnings of the eligible person for each 12-month period of contribution<sup>75</sup>.

The most common reported reason for not investing was *not having sufficient surplus funds*. Other reasons for not investing include the *risk of losing the principal* and *lack of awareness of investment options*.

74 A popular informal thrift collection and lending mechanism in West Africa

75 Social Security Programs Throughout the World: Africa, Sierra Leone, 2011, last accessed on 29 March 2018 <https://www.ssa.gov/policy/docs/progdsc/ssptw/2010-2011/africa/sierraleone.html>.

Figure 51: Those who save by income

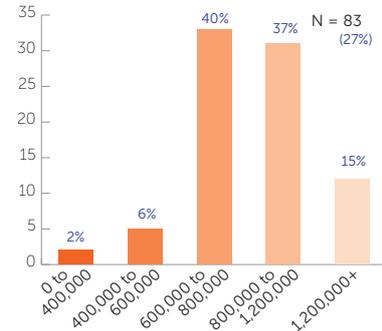


Figure 52: Those who invest

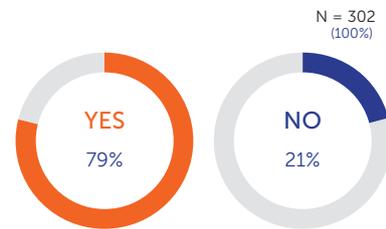


Figure 53: Reasons for not investing

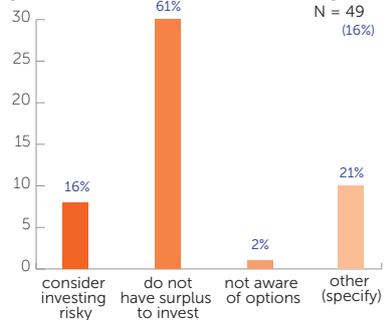
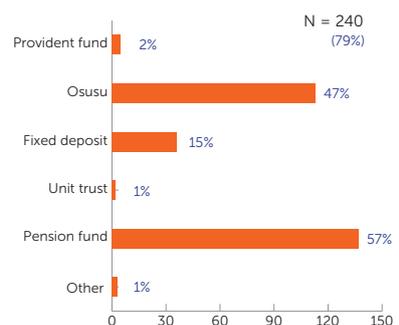


Figure 54: Preferred Investment Instruments



### Insurance

Insurance companies offer a broad range of services such as life, car and health insurance to Sierra Leoneans. In 2017, an MNO partnered with an insurance company to launch the first mobile life insurance in the country. However, with less than 1% of the population covered by micro-insurance, Sierra Leone’s insurance industry continues to be under-developed<sup>76</sup>.

98% of the survey respondents are aware of insurance, and 90% of the respondents have insurance cover. It should be noted that digital insurance premium payments may be relatively high among government employees because the government provides insurance cover, and deducts the premium automatically from employees’ salary accounts when they are due. 54% of the respondents received insurance cover provided by the government. Most of them receive life insurance, while a few also receive health insurance. 97% of the respondents with insurance pay the premium digitally.

Minimizing losses and protection against risks are key reasons for insurance uptake.

Figure 58: Channel of payment for insurance premium

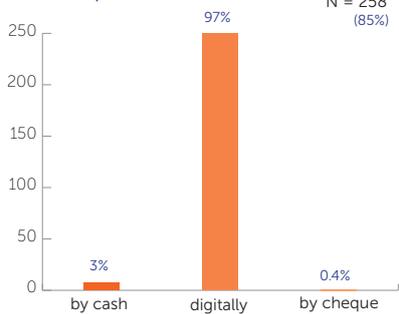


Figure 55: People who own insurance

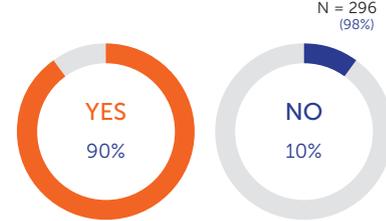


Figure 56: Percentage of respondents receiving Insurance from employer (government)

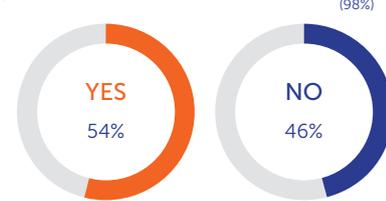


Figure 57: Type of Insurance coverage provided by employer (government)

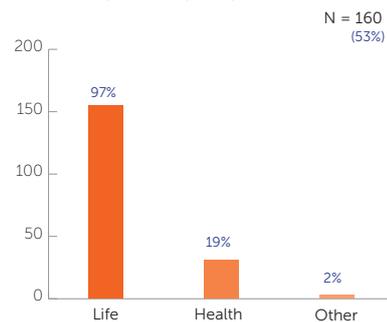
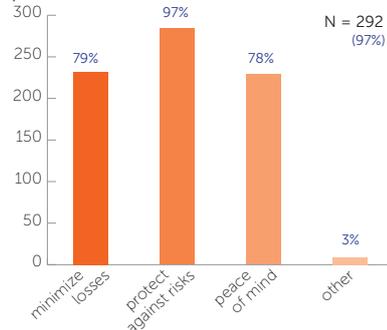


Figure 59: Reported reasons for insurance uptake



76 The Insurance Industry in Sierra Leone, Key Trends and Opportunities to 2017 [https://www.researchandmarkets.com/research/m2j6wd/the\\_insurance](https://www.researchandmarkets.com/research/m2j6wd/the_insurance).

## Mobile Money & Digital Financial Services

All respondents own phones and SIM cards, and most of them are aware of mobile money. Respondents use mobile money to remit funds to their family and friends in Sierra Leone, buy airtime, and bill payments. Emerging uses include buying data, savings and storing money. Respondents are willing to pay for remittances, bill payments and cash withdrawals. Access and quality of mobile services in terms of network connectivity and call quality, and ease of cash-out facilities are critical for the uptake of mobile money. Most respondents are satisfied with receiving their incomes digitally, but face challenges such as high travel costs to withdraw money, high bank fees associated with withdrawal of salary and agent dependency. They depend on mobile money agents primarily for cash-in and cash-out services, and cited the lack of connectivity, liquidity and long waiting time as key challenges in dealing with mobile money agents. Respondents also cited the inability to cash out and fear of transactions getting interrupted as key perceived risks associated with mobile money.

### Phone ownership and usage

83% of the households in Sierra Leone own at least one mobile phone<sup>77</sup>. The country has a mobile phone penetration of 42%, and 2.8 million unique mobile subscribers<sup>78</sup>. 300 out of 302 respondents have access to mobile phones. 70% of the sample does not have access to internet (not including mobile internet) and only 22% use mobile phones to access internet.

77 Communication in Sierra Leone: An analysis of media and mobile audiences, BBC Media Action, May 2016, last accessed on 7 June 2018 <http://downloads.bbc.co.uk/rmhttp/mediaaction/pdf/research/mobile-media-landscape-sierra-leone-report.pdf>

78 The Mobile Economy, Sub-Saharan Africa 2017, GSMA, last accessed on 29 March 2018, <https://www.gsmaintelligence.com/research/?file=7bf3592e6d750144e58d9dcfac6adfab&download>.

Figure 60: Number of respondents owning a mobile phone



Figure 61: Number of respondents owning a SIM



Figure 62: Mobile use

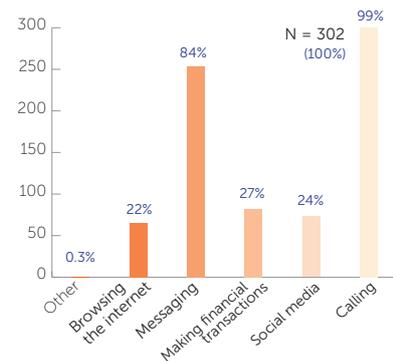
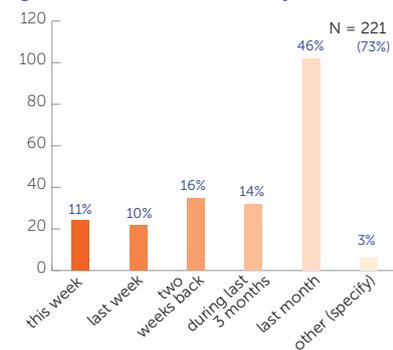


Figure 63: Number of respondents using internet



Figure 64: Last mobile money transaction



### Mobile money usage

Most respondents are aware of mobile money. 90% of the survey respondents have a registered mobile money account, 44% have an active mobile money account, and 87% have used mobile money services. Of the respondents who use mobile money, 46% reported their last mobile money transaction in the month preceding the survey, and 37% reported the last transaction in the two weeks preceding the survey.

Respondents use mobile money for purposes such as airtime purchase, sending/ receiving remittances, and bill payments. Purchase of data bundles, savings and storing money are emerging uses among this sample.

Respondents in the 30 – 50 years age group (who form the majority in the sample) also predominantly use mobile money to send and receive remittances. However, more respondents in age groups over 40 years tend to use mobile money for bill payments, and lesser for air time purchase and data. For users in the 30-40 years age group, buying air time is the second key use.

The survey attempted to understand if customers would be willing to pay for certain mobile money services. Most respondents indicated that they are willing to pay for remittances and for drawing cash. 185 (61%) respondents are willing to pay less than SLL 50 (US\$ 0.01), while 74 are willing to pay above SLL 500 (US\$ 0.1) for these services.

Figure 65: Mobile money usage

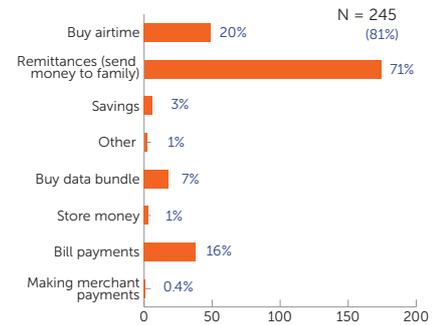


Figure 66: Awareness of mobile money

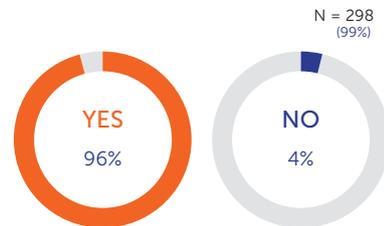


Figure 67: Percentage of respondents with a registered mobile money account

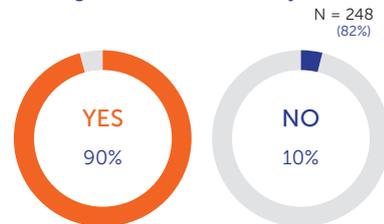


Figure 68: Willingness to pay for mobile money services

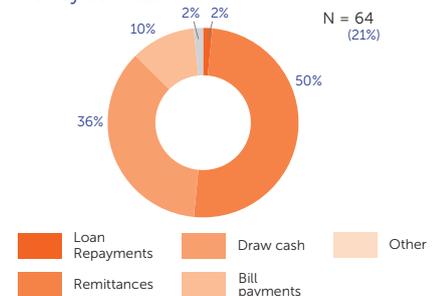


Figure 69 (a): Mobile money usage by age – 30-40 years

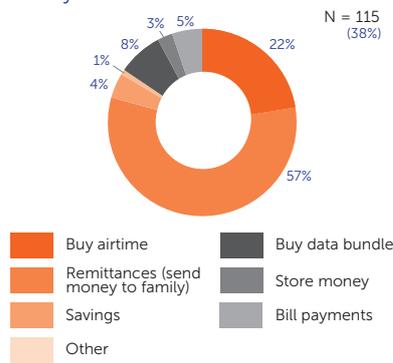
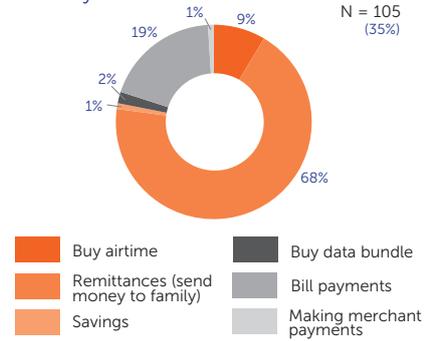


Figure 69 (b): Mobile money usage by age – 40-50 years



## Challenges

### Access and quality of mobile services:

40% of the respondents reported that mobile network is sometimes available, as compared to 60% that specify that it is always available. 49% of the respondents report experiencing call drops. The quality of the mobile network is better in Kailahun and Port Loko, than that in Tonkolili and Bonthe.

### Digital receipt of salary:

93% of the respondents reported to be satisfied with receiving their government salary in their bank account. They do face challenges, including high bank fees associated with withdrawal of salary and agent dependency. Travel to bank branches to cash out adds extra travel expense, particularly since they have to travel considerable distances to withdraw their salary.

Figure 70: Availability of mobile network

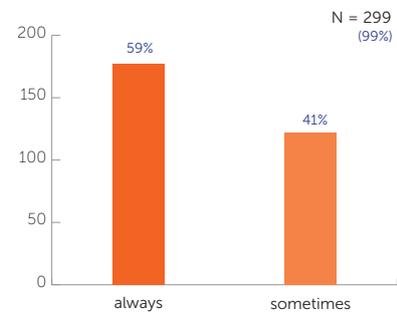


Figure 71: Call quality\*

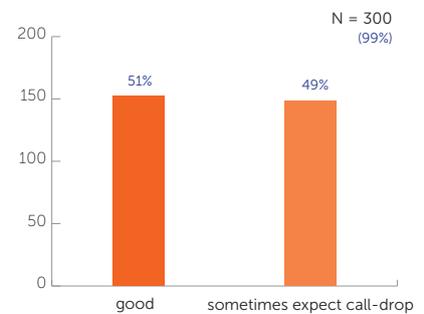


Figure 72: Availability of mobile network by district

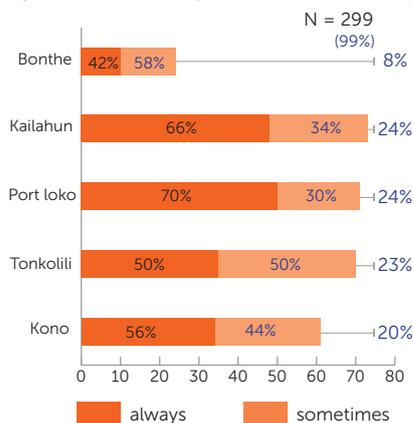


Figure 73: Challenges in receiving salary digitally

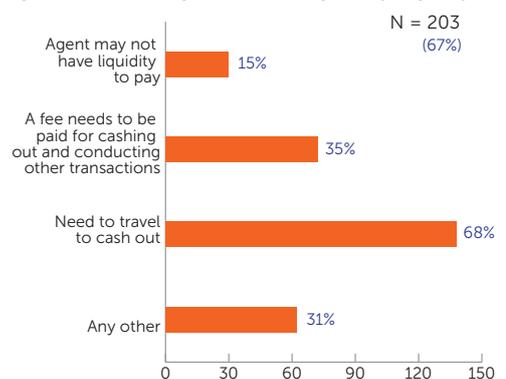
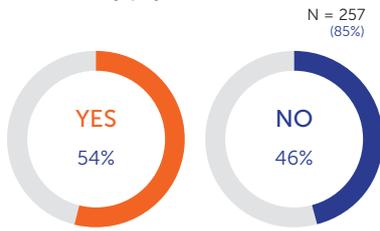


Figure 74: Whether nearby vendor accept mobile money payments



Acceptance of mobile money for transactions:

54% of the respondents with mobile money accounts reported that vendors in their locality do not accept mobile money payments.

Perception of risks in mobile money:

58% respondents report concerns over the possibility of being unable to cash out when they need to do so. Given their experience with poor network connectivity, 56% respondents feel that there are high chances of mobile financial transactions getting interrupted resulting in loss of funds. 16% of respondents reported a lack of trust in technology, most respondents who marked "Other" reasons also cited similar concerns over money getting transferred to wrong accounts or numbers.

Role of mobile money agents

Respondents mainly engaged with mobile money agents for cash-in and cash-out services. Agents also provide remittance services. 62% of the respondents using mobile money report to have access to an agent within 1 km.

Almost all respondents (238 out of 239) reported that the mobile money agent services are either very helpful or somewhat helpful.

The most commonly reported challenges with respect to mobile money agents include lack of connectivity, liquidity and money sent to wrong recipient. These are followed by other challenges such as technological failure, transfer of money to wrong recipient, poor availability of agents, and fear of fraud. 79% respondents reported experiencing agent liquidity issues sometimes, and 21% reported facing this issue very often or always.

Figure 75: Perceived risks in mobile money usage

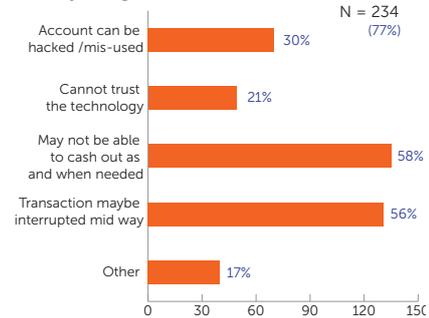


Figure 76: Agent distance

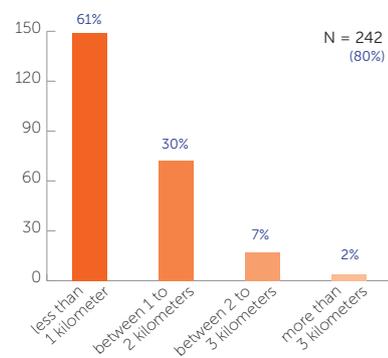


Figure 77: Usage of agent services

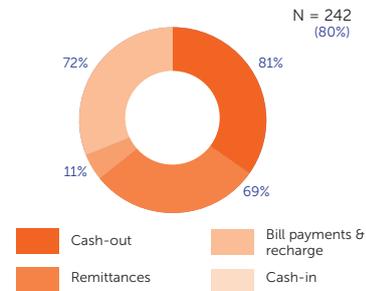


Figure 78: Agent service satisfaction

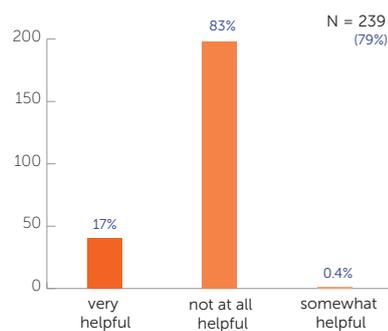


Figure 79: Agent specific challenges

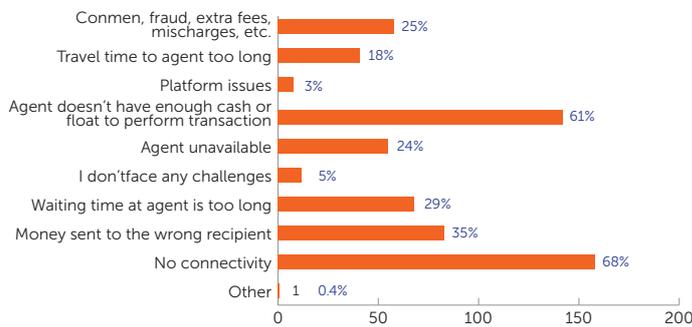
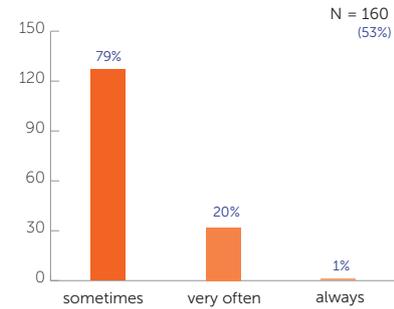


Figure 80: Agent liquidity challenges



## Gender Focus

21% of the survey sample comprised female respondents. 67% worked with the Ministry of Education, Science & Technology (MOEST). 77% of female respondents were in the age group of 30-50 years.

The average literacy rate among women in Sierra Leone is 44%<sup>79</sup>. All 64 female respondents can read and write and 72% has diploma level/certificates. 94% have worked for over 5 years.

Figure 81: Gender break-up

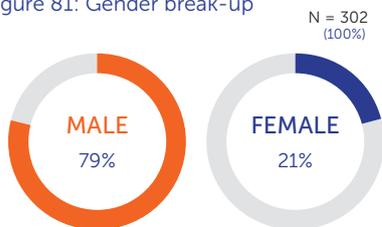


Figure 82: Ministry/ Department - Female population

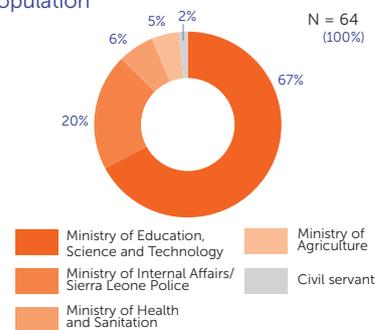


Figure 83: Age-wise break-up of respondents

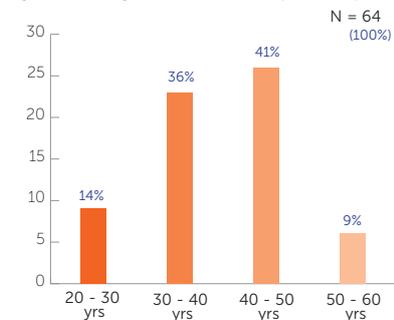


Figure 84: Education

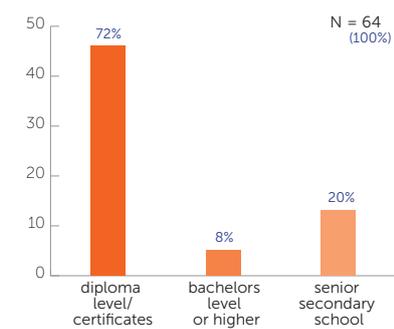
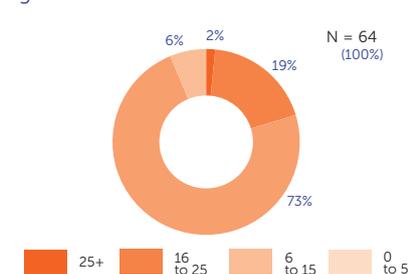


Figure 85: Years in service



79 Sierra Leone 2015, Population and Housing Census, Thematic Report on Gender, Statistics Sierra Leone, October 2017, last accessed on 29 March 2018 <http://sierraleone.unfpa.org/sites/default/files/pub-pdf/Gender%20report.pdf>.

Income

39% earned a salary higher than SLL 800,000 (US\$ 102), and 17% have income from other sources, mainly remittances. The average salary of female respondents is SLL 785,000 (US\$ 100). In comparison, in the overall sample, 44% respondents earned a salary above SLL 800,000 (US\$ 102) and average monthly salary is SLL 817,471 (US\$ 103.7). 28% have income from other sources, of which 41% is from remittances, and 33% is from shops and business.

Figure 86: Income from other sources

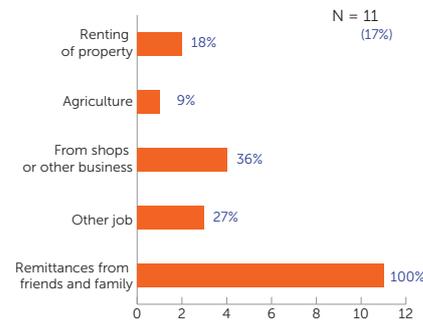
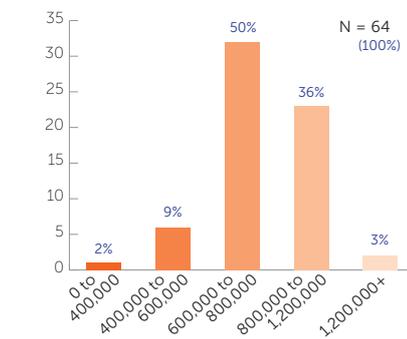


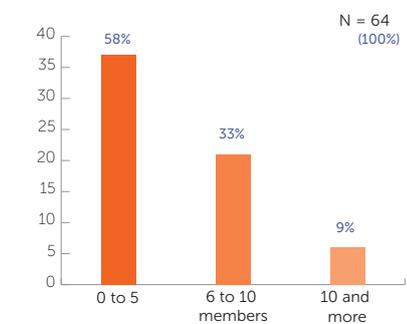
Figure 87: Salary (in SLL)



Family size and financial inclusion

58% of female respondents had fewer than 5 family members while 33% had larger families with 6-10 members. 25% of the female respondents were the sole earning members in their families, and of these 44% support families of more than 6 members.

Figure 88: Number of family members



Basic banking services

68% of the female respondents reported bank branches at a distance of less than 5 miles. 90% of the women respondents visit bank branches once a month. The overall sample exhibited a similar pattern, with 60% of the respondents specifying that the bank branches are less than 5 miles away. Overall, 85% of the sample visits bank branches once a month.

Figure 89: Single earning member families by HH size

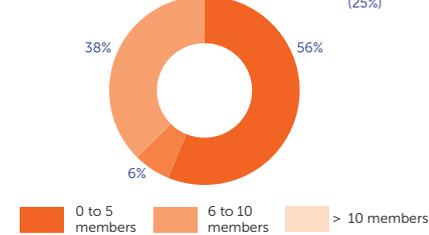


Figure 90: Distance from branch

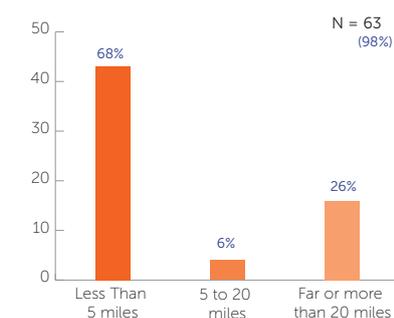
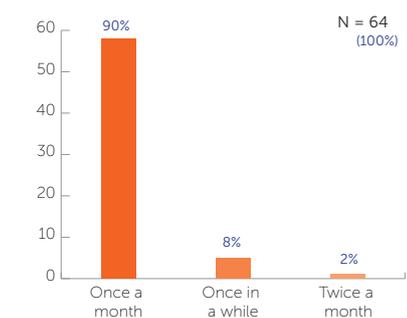


Figure 91: Frequency of branch visit



70% of the female respondents remit money to family and friends in Sierra Leone. 31% of female respondents remit money once a month. 13% remit once in two months, while 17% remit at varying frequencies. They mainly remit money through mobile money accounts or send it with people travelling to the same destination.

Figure 92: Whether respondents remit (send) money

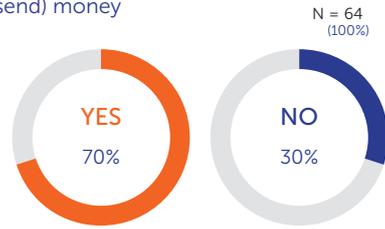
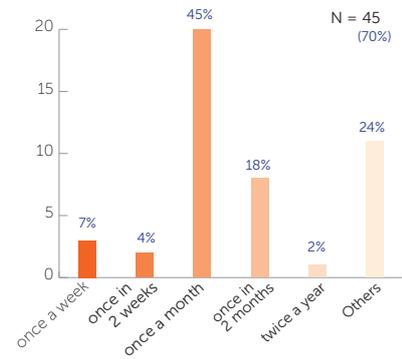


Figure 93: Frequency of remittance



**Loans, savings and investments**

45% of female respondents have taken loans, mainly from community banks. Accessibility is a key factor in their preference for community banks. Most female respondents repay loans through auto-debit to their accounts.

Figure 94: Loans taken (at any point in time)

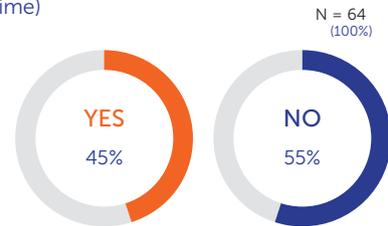


Figure 95: Reason for preferring a credit source

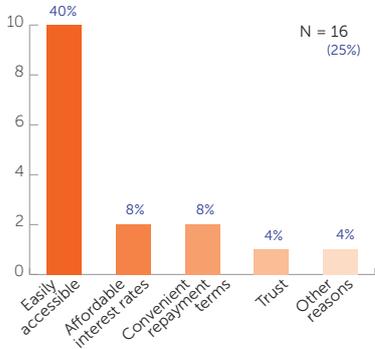


Figure 96: Sources of credit

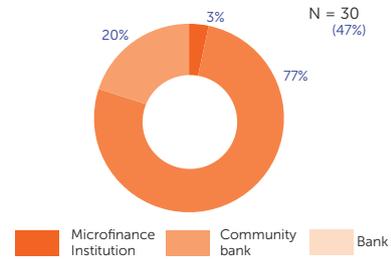


Figure 97: Mode of repayment of loan installments

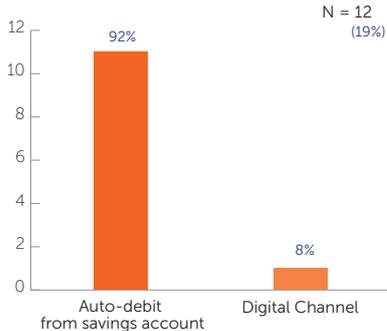
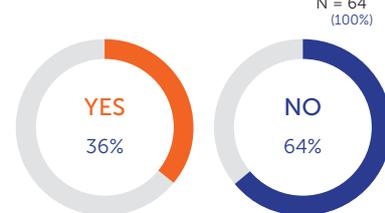
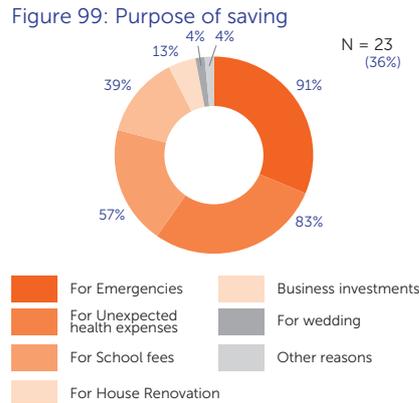


Figure 98: People who save



36% of the female respondents save. In comparison, 27% of the overall sample reported that they save. All survey respondents, as well as exclusively female respondents usually save every month. Female respondents (36%) shared that they mainly save to for emergencies, unexpected health expenses and school fees. The overall sample also reported the same purposes for saving.



73% of female respondents invest in a variety of instruments, similar to 79% of the overall sample. Pension funds and Osusu are the most popular options with female respondents as well as the overall sample.

**Mobile money & digital financial services**

66% female respondents have registered mobile money accounts, while 42% have active accounts. All female respondents own mobile phones and SIM cards. They use mobile phones predominantly for calls and messages. Accessing social media and browsing the internet are emerging uses among female respondents.

As in the overall sample, most female respondents are aware of mobile money. 66% of women respondents have registered mobile money accounts, which is lower than 90% in the overall sample. Most female respondents use mobile money for remittances and buying airtime. As in the case of the overall sample, bill payments and buying data are emerging uses of mobile money.

Figure 100: Frequency of saving

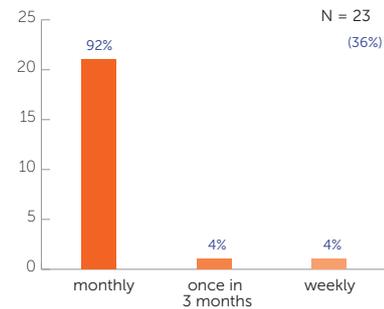


Figure 101: People who invest

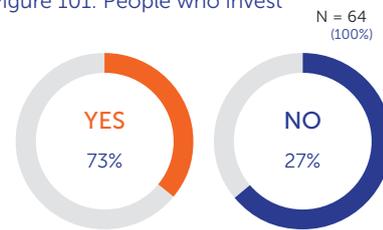


Figure 102: Preferred investment instruments

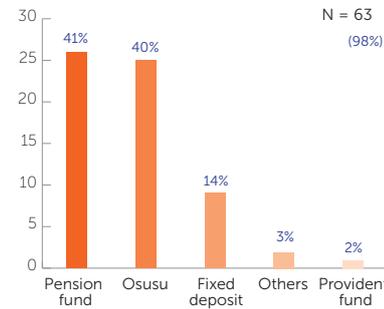
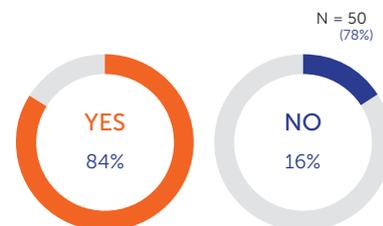


Figure 103: Respondents with a registered mobile money account



Female respondents face similar challenges as seen in the overall sample. The need to travel to cash out and high costs in terms of fees to banks and agents are key challenges cited with respect to receiving salary digitally. Similarly, perceived risk of inability to cash out and fear of mobile transactions being interrupted are key barriers to mobile money usage among female respondents.

Figure 104: Mobile money usage

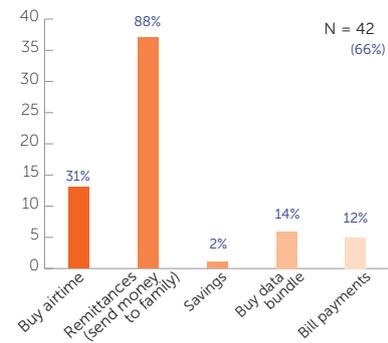
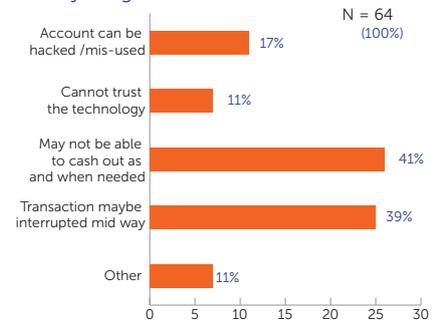


Figure 105: Perceived risks in mobile money usage



# USE CASE IDENTIFICATION AND ANALYSIS

The Financial Lives Survey highlights several areas where government employees who receive their salaries in bank accounts can be encouraged to use digital financial services (DFS) instead of cashing out. Given the significant discomfort they face with existing solutions to access their salaries and conduct financial transactions, there is interest in basic banking services offered through digital means. The survey also indicates that respondents are aware of the importance of savings and investment, and use mobile money for limited purposes.

As the market is nascent, this survey and research aimed to analyze and identify transactions or 'use cases' that can be developed and tested for acceptance among underserved customers. This was done through a three-step approach that involved mapping survey findings (demand for DFS) to potential use cases (supply of DFS), studying the identified use cases and using a framework to select use cases that should be piloted in Sierra Leone.

Figure 106: Use case identification and analysis

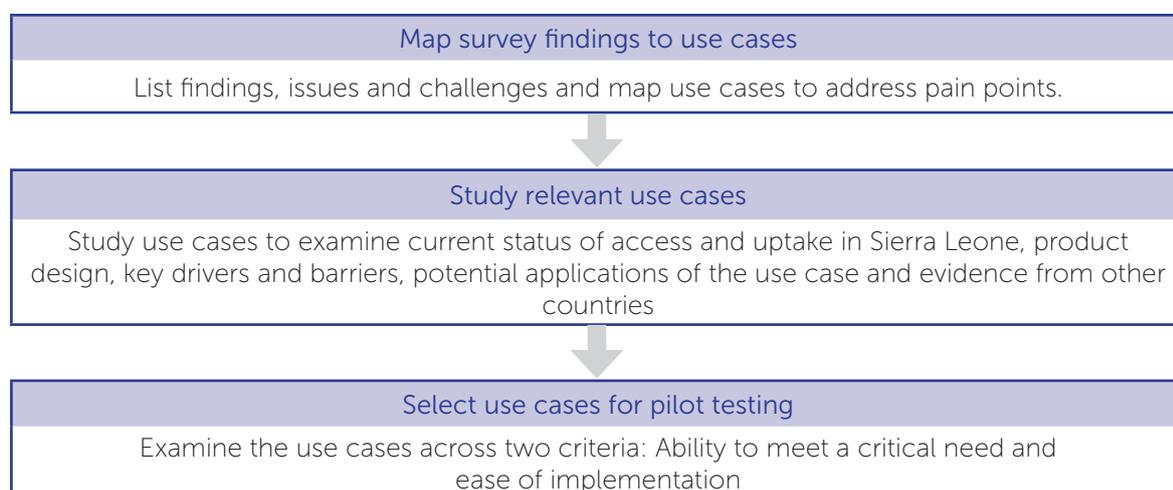
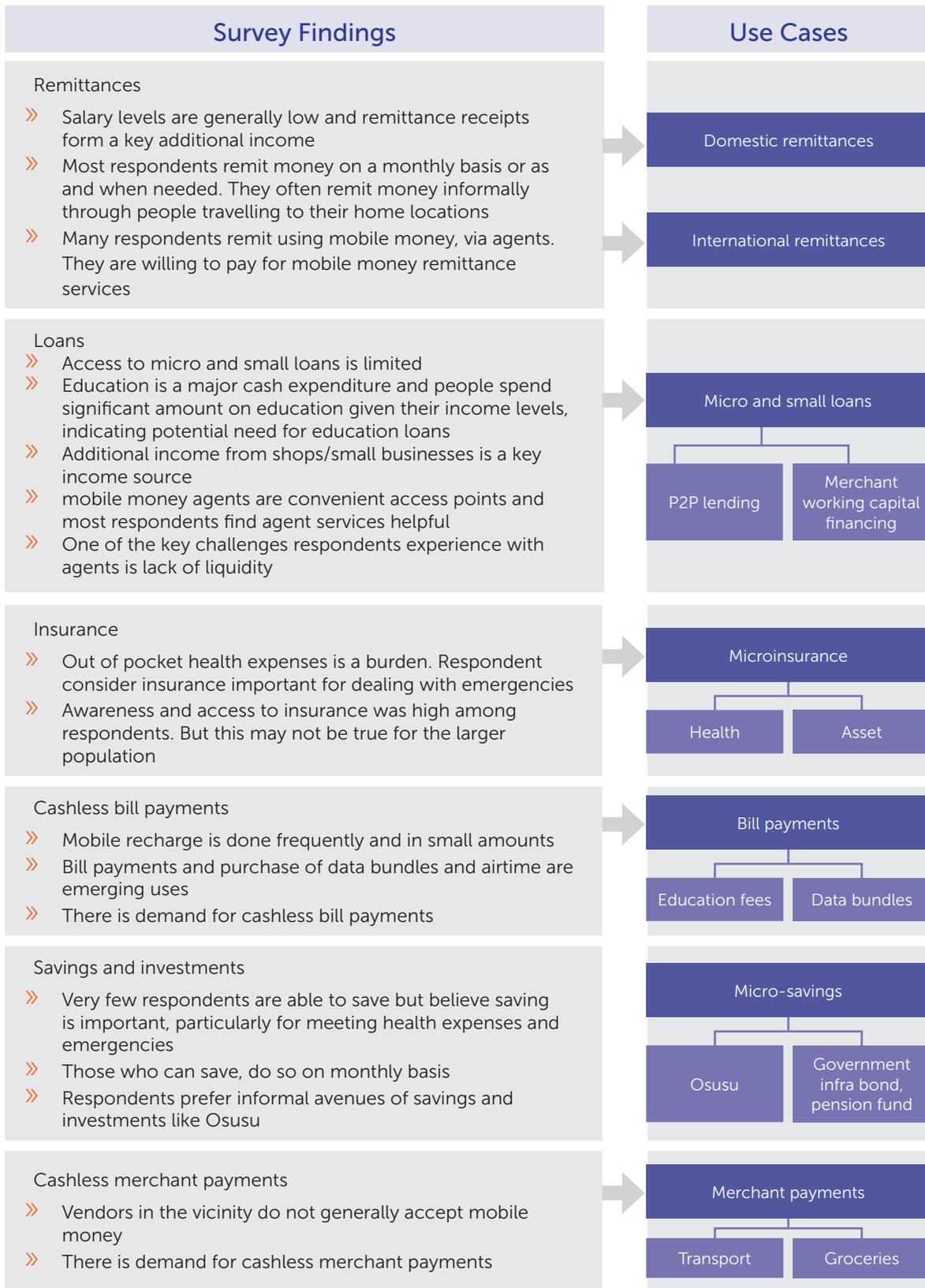


Figure 107: Mapping of survey findings to potential use cases



## Use case 1: Domestic remittances

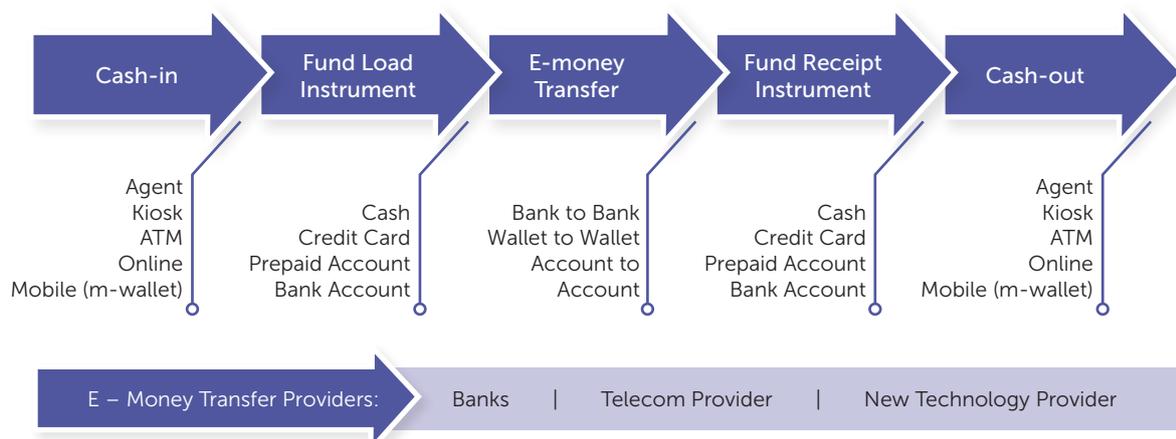
Digital domestic remittances through channels such as mobile wallet transfers are less expensive due to lower transaction costs to customers. Mobile based domestic remittances also allow for secure storage of money which helps recipients to build resilience to financial risks. In Sierra Leone, domestic remittances are primarily made by migrant workers employed in urban areas to their family and friends in rural areas. They also include person-to-person payments within the country.

### Domestic remittances in Sierra Leone

Most of the economic activities in Sierra Leone are concentrated in Freetown and a few other cities such as Kenema and Makeni, resulting in migration of workers from rural areas to cities for work. These migrant workers regularly remit money to their families. Annual domestic remittances are an estimated SLL 1200 billion (US\$ 156 million) in the country, of which 92% are through informal channels<sup>80</sup>. According to the Financial Lives Survey, 75% of the respondents remit money to family and friends on a monthly or bi-monthly basis, mainly through mobile money transfers or informally through other people traveling to their home locations. 90% of the respondents have registered mobile money accounts that they primarily use for funds transfer.

Orange and Africell, the key providers of domestic remittance services in the country, together have more than 1 million customers, and offer an array of mobile money services including remittances. Some commercial banks and financial institutions such as MFIs, community banks, forex bureaus and financial service associations in the country also provide domestic mobile money transfer services<sup>81</sup>.

Figure 108: Process flow: Domestic remittances



80 DFS Ecosystem assessment of Sierra Leone, May 2016, UNDP & UNCDF, last accessed on 29 March 2018 <https://www.uncdf.org/download/file/127/646/dfsecosystemassessmentsfinalreportpdf>

81 National Strategy for Financial Inclusion, 2017-2020, Bank of Sierra Leone, <https://www.bsl.gov.sl/SL%20FI%20Strategy%202017%20-%202020.pdf>

## Potential DFS applications for domestic remittances

Collaboration and interoperability between MNOs and other service providers can facilitate seamless digital domestic remittance services. Other factors such as direct and indirect financial incentives through campaigns and promotions such as cash-backs, discounts and referral rewards; regulatory support and clear guidelines that outline licensing procedures, roles and responsibilities of stakeholders; and easy and affordable access can encourage people to adopt digital remittance services.

Innovative digital domestic remittance use cases have emerged in several developing countries. These can provide insights for the design and development of products for the pilot test phase:

- » In Kenya, M-Pesa emerged as an alternative affordable remittance channel that saves effort, travel costs and time for both, senders and receivers<sup>82</sup>.
- » In 2017, Visa launched a mobile based domestic remittance solution called mVisa in India, Kenya, Rwanda, Egypt and Nigeria<sup>83</sup>, with plans to expand to Ghana, Indonesia, Kazakhstan, Pakistan and Vietnam<sup>84</sup>.
- » Uganda's large migrant population in urban areas has driven the increasing adoption of domestic mobile money transfers provided by Airtel Money, MTN and Africell. Uganda had over 21 million mobile money accounts and 132,937 agents providing mobile money services in 2016<sup>85</sup>.
- » In Tanzania, the four leading MNOs – Airtel, Vodacom, Tigo and Zantel - mutually decided to become interoperable in 2015 without a regulatory mandate for interoperability<sup>86</sup>. In the same year, Vodafone and MTN decided to become interoperable in East Africa.
- » In South Africa, MTN's mobile money service allows customers to transfer money without requiring a bank account.

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82 Ignacio Mas and Dan Radcliffe, Mobile Payments Go Viral M-PESA in Kenya, World Bank, last accessed on 29 March 2018 [http://siteresources.worldbank.org/AFRICAEXT/Resources/258643-1271798012256/YAC\\_chpt\\_20.pdf](http://siteresources.worldbank.org/AFRICAEXT/Resources/258643-1271798012256/YAC_chpt_20.pdf)

83 mVisa to Expand to 10 Countries, Visa News, February 2017, last accessed on 12 February 2018 <https://investor.visa.com/news/news-details/2017/mVisa-to-Expand-to-10-Countries/default.aspx>

84 Visa Launches Its Mobile Payment Platform, Mvisa In Nigeria, VenturesAfrica, last accessed on 12 February 2018 <http://venturesafrica.com/visa-launches-mvisa-its-mobile-payment-platform-in-nigeria/>

85 Hundreds tap into mobile money as transactions hit Shs44 trillion, Daily Monitor, March 2017, last accessed on 29 March 2018 <http://www.monitor.co.ug/Business/Prosper/Hundreds-tap-mobile-money-transactions-hit-Shs44-trillion/688616-3866590-101bimu/index.html>

86 Omoneka Musa, Charles Niehaus, Martin Warioba, Is Tanzania Ready for Interoperability in Mobile Money?, CGAP, July 2014, last accessed on 29 March 2018 <http://www.cgap.org/blog/tanzania-ready-interoperability-mobile-money>

### mVisa's global payment network

mVisa is a QR code-based digital payment platform which allows customers to seamlessly transfer money across different banks without incurring any transaction fees. The platform works on smartphones as well as feature phones and enables secure, convenient and affordable card-less transactions.

In Kenya, mVisa users need to have a bank account to avail of digital transfer services<sup>87</sup>. Banks such as Barclays, Cooperative Bank, Ecobank, Family Bank, KCB Bank, National Bank of Kenya, National Industrial Credit (NIC) Bank, Prime Bank and Standard Chartered Bank have partnered with mVisa to enable customers to transact and send domestic remittances for free. mVisa enables the sender and receiver to transact despite being associated with different MNOs and having accounts with different banks<sup>88</sup>.

The remittance transactions are processed through VisaNet, Visa's global mobile payments network<sup>89</sup>. mVisa is also accepted across Kenya and therefore, facilitates merchant payments and bill payments. mVisa is already available to customers in India, and had plans to expand to Rwanda, Uganda, Tanzania and Nigeria by 2017<sup>90</sup>.

## Use case 2: International remittances

Digital international remittances not only add to domestic disposable incomes, but also positively contribute to the gross domestic product (GDP) of a country. Mobile money services can boost the formal international remittances market given that mobile penetration far outweighs ATM or physical bank branch penetration in many recipient emerging markets.

### International remittance in Sierra Leone

86% of Sierra Leoneans who reside overseas send money home regularly, and total remittances flowing in to the country contribute 12% of its GDP<sup>91</sup>. There are various channels through which money is sent back to Sierra Leone and most of them are informal, complicated and expensive

87 Kenyans Can Now Make Free Domestic Mobile Money Transfers Using MVisa, Payment Week, <https://paymentweek.com/2017-7-14-kenyans-can-now-make-free-domestic-mobile-money-transfers-using-mvisa/>

88 Visa is taking on the world's largest mobile money platform on its home turf ,Quartz Africa, <https://qz.com/781365/visa-has-launched-a-mobile-money-platform-to-challenge-m-pesa-in-kenya/>

89 Kenyans Can Now Make Free Domestic Mobile Money Transfers Using MVisa, Payment Week, <https://paymentweek.com/2017-7-14-kenyans-can-now-make-free-domestic-mobile-money-transfers-using-mvisa/>

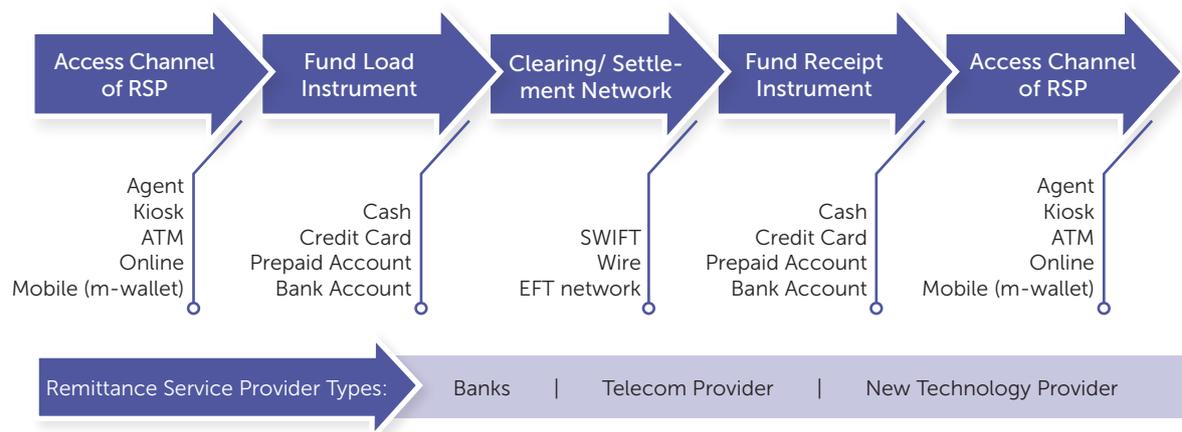
90 Visa is taking on the world's largest mobile money platform on its home turf ,Quartz Africa, <https://qz.com/781365/visa-has-launched-a-mobile-money-platform-to-challenge-m-pesa-in-kenya/>

91 Remittances strategy framework for sustainable development in Sierra Leone , UNDP & UNCDF, 2009, last accessed on 29 March 2018, [http://www.sl.undp.org/content/dam/sierraleone/docs/focusareadocs/undp\\_sl\\_remittances.pdf](http://www.sl.undp.org/content/dam/sierraleone/docs/focusareadocs/undp_sl_remittances.pdf)

for customers. MFIs in Sierra Leone are currently prohibited from dealing in foreign currency, and are therefore unable to extend these services to their client base of 140,000<sup>92</sup>.

Formal channels include banks and money transfer agencies like Western Union Money, and informal channels include foreign exchange bureaus, sending money with people traveling to home country and street money changers called dollar boys. Money is also often transferred by crediting the mobile phone accounts of recipients.

Figure 109: Process flow: International remittance



### Potential DFS applications for international remittance

Factors that can accelerate digital international remittances include adequate mobile phone penetration, setting up of regional economic corridors and enabling regulatory policies and frameworks. Regional economic corridors such as the West African Economic and Monetary Union (WAEMU) spur cross-border remittances due to high transaction volumes within regions, and promote single unified currency, common central banks and common mobile money platforms. Clear licensing frameworks and compliance mandates by governments are also critical for scaling mobile money based remittances.

Emerging evidence from developing countries highlight the critical role played by regulatory, licensing and control measures to encourage adoption and scaling of digital international remittances:

- » The Kenyan diaspora actively leverages mobile money platforms to send remittances back home. According to a WorldRemit report on transactions conducted on its platform, 93% of mobile money transfers are to Kenya<sup>93</sup>. The Government of Kenya recognizes the

92 Sierra Leone – Mobile Money Transfer Market Study Cordaid, March 2013, last accessed on 29 March 2018, [https://www.cordaid.org/nl/wp-content/uploads/sites/2/2013/07/Sierra\\_Leone\\_Mobile\\_Money\\_Transfer\\_Market\\_Study\\_PHB\\_for\\_Cordaid\\_DEF.pdf](https://www.cordaid.org/nl/wp-content/uploads/sites/2/2013/07/Sierra_Leone_Mobile_Money_Transfer_Market_Study_PHB_for_Cordaid_DEF.pdf)

93 Mobile money dominates diaspora remittances to Kenya, CNBC Africa, April 2017, last accessed on 29 March 2018 <https://www.cnbcfric.com/videos/2017/04/03/mobile-money-dominates-diaspora-remittances-to-kenya/>

importance of diaspora remittance inflows for economic development, and also features it in the Vision 2030 projects.<sup>94</sup>

- » In Rwanda and Ghana, mobile money operators are allowed to procure licenses for international remittances<sup>95</sup>. Such systems allow for a unified reporting system, reduced timeframe for launching a new service and efficient processes.
- » In Pakistan, MNOs are required to partner with banks as all remittance related services are provided strictly by banks and the MNO provides the distribution channel<sup>96</sup>. Similarly, only banks are permitted to provide international remittance services in Jordan<sup>97</sup>.

### WorldRemit platform

WorldRemit is an online platform to send money across borders without having to visit an agent or a bank. The WorldRemit platform allows senders to conduct secured transactions from their homes. It offers payment and receipt options through different channels including cash pick-up, direct bank account credit, mobile money and air-time top-up<sup>98</sup>.

WorldRemit provides competitive exchange rates and fees because its virtual operations do not incur the overhead costs associated with brick-and-mortar banks and agents<sup>99</sup>. Money can be transferred from 50 countries to more than 148 destination countries using the WorldRemit platform. By December 2017, the platform had significantly grown its share in the US\$ 600 billion (SLL 4,710 trillion) remittance market. Its transaction volume has grown by 400% since 2015, when it received funding<sup>100</sup>.

94 The impact of diaspora remittance on Kenyan Economy, Nyambura Ngugi, April 2, 2015, last accessed on 29 March 2018, <https://hapakenya.com/2015/04/02/the-impact-of-diaspora-remittance-on-the-kenyan-economy/>

95 Licensing mobile money remittance providers: Early lessons, GSMA Intelligence, February 2017, last accessed on 29 March 2018, <https://www.gsma.com/mobilefordevelopment/programme/mobile-money/licensing-mobile-money-remittance-providers-early-lessons-2/>

96 Licensing mobile money remittance providers: Early lessons, GSMA Intelligence, February 2017, last accessed on 29 March 2018, <https://www.gsma.com/mobilefordevelopment/programme/mobile-money/licensing-mobile-money-remittance-providers-early-lessons-2/>

97 Licensing mobile money remittance providers: Early lessons, GSMA Intelligence, February 2017, last accessed on 29 March 2018, <https://www.gsma.com/mobilefordevelopment/programme/mobile-money/licensing-mobile-money-remittance-providers-early-lessons-2/>

98 Worldremit.com, <https://www.worldremit.com/en/how-it-works>

99 An Upfront Review of WorldRemit Money Transfer Services, Pulse, LinkedIn, <https://www.linkedin.com/pulse/upfront-review-worldremit-money-transfer-services-dave-o-neill>

100 Worldremi.com, News, <https://www.worldremit.com/en/news/worldremit-raises-40m>

### WAEMU's intra-regional corridor for cross border mobile money remittances

Existence of a common mobile money operator, Orange Money, in West African Economic and Monetary Union (WAEMU) has helped spur cross-border remittance transfers among member countries. Within the (WAEMU) region, Côte d'Ivoire has the largest and most urbanized population as well as the strongest economy, making it a destination for regional migrant workers and a key market for intra-regional remittances. Most of the migrant workers come to Côte d'Ivoire from the rest of the WAEMU region, primarily Burkina Faso and Mali, which are among the world's poorest nations.

Remittances are increasingly being sent and received via mobile money platforms such as Orange Money International Transfer which connects Côte d'Ivoire, Mali and Senegal, and offers a real time international money transfer solution. Money received as remittance is either deposited in the bank account or delivered by an Orange Money agent as cash at the receiver's home<sup>101</sup>.

Orange Money accounted for 25% of the total remittances reported in the WAEMU corridor by the second half of 2014<sup>102</sup>. Transaction volumes have been doubling every six months with an outbound remittance value of US\$ 53 million between H2 2013 and H2 2014, with an average transfer value of US\$ 86. Key success factors include existence of a mature mobile money operator (Orange Money), high demand for remittance flows, single currency (West Africa CFA franc), a common central bank (the Banque Centrale des Etats de l'Afrique de l'Ouest, BCEAO) and a common mobile money platform<sup>103</sup>.

## Use case 3: Bill payments

Digital bill payments for services such as supply of water, gas, grid electricity and off-grid solar home systems, as well as payments of post-paid mobile bills, school fees, and rent save time, effort and cost for customers. Increased adoption and use of digital finance solutions for repetitive transactions such as bill payments can improve the affordability of such services and also serve as an important indicator of economic progress.

101 Mobile Money Cross-Borders: New Remittance Models in West Africa, GSMA, March 2015, [https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/04/2015\\_MMU\\_Mobile-money-crosses-borders\\_New-remittance-models-in-West-Africa.pdf](https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/04/2015_MMU_Mobile-money-crosses-borders_New-remittance-models-in-West-Africa.pdf)

102 Mobile Money Cross-Borders: New Remittance Models in West Africa, GSMA, March 2015, [https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/04/2015\\_MMU\\_Mobile-money-crosses-borders\\_New-remittance-models-in-West-Africa.pdf](https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/04/2015_MMU_Mobile-money-crosses-borders_New-remittance-models-in-West-Africa.pdf)

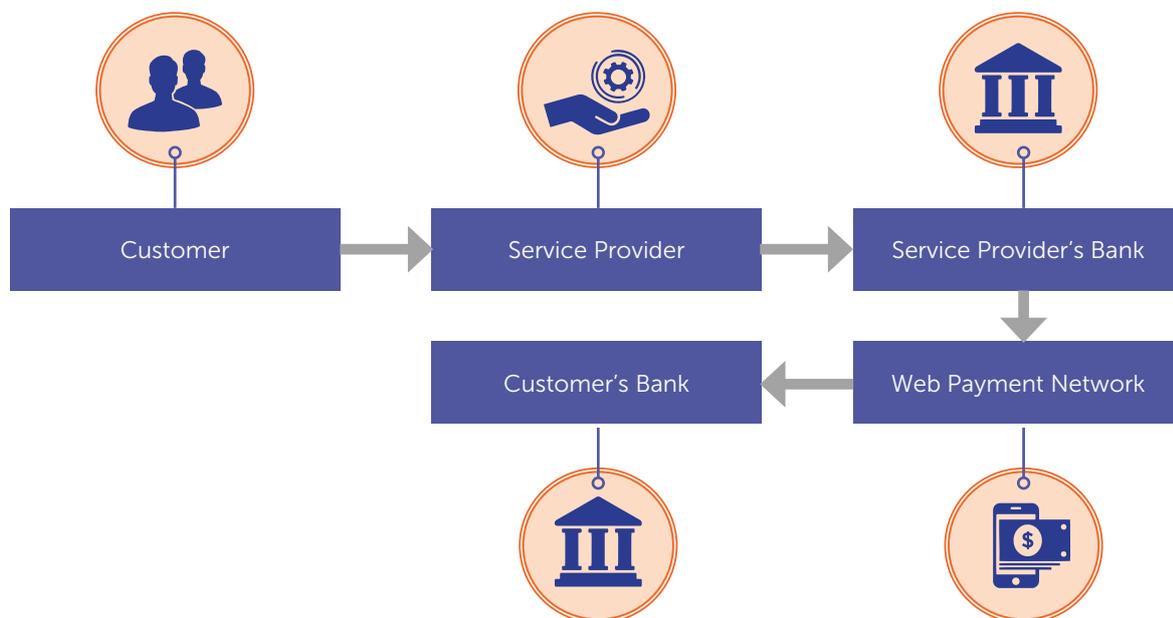
103 Mobile Money Cross-Borders: New Remittance Models in West Africa, GSMA, March 2015, [https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/04/2015\\_MMU\\_Mobile-money-crosses-borders\\_New-remittance-models-in-West-Africa.pdf](https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/04/2015_MMU_Mobile-money-crosses-borders_New-remittance-models-in-West-Africa.pdf)

### Bill payments in Sierra Leone

Sierra Leoneans typically pay bills in cash at utility offices like Electricity Distribution and Supply Authority (EDSA) offices or at designated banks. Similarly, they pay school fees at cash counters located within school premises. They incur additional hidden costs in terms of time lost in travelling to these locations and standing in queues to make the cash payments. The Financial Lives Survey indicated that 40% of the respondents are willing to pay above SLL 500 (US\$ 0.1) for mobile based transactions such as bill payments, while around 15% are willing to pay between SLL 50 (US\$ 0.01) and SLL 100 (US\$ 0.02).

Currently, very few MNOs facilitate digital bill payments in Sierra Leone. The two licensed mobile money service providers, Orange and Africell Money, have 202,000 and 10,000 active subscribers respectively, who use the services to pay their electricity and cable network bills<sup>104</sup>.

Figure 110: Process flow: Bill payments



### Potential DFS applications for bill payments

Poor awareness has limited the adoption of digital bill payments in Sierra Leone. Government acceptance and innovative incentives to promote them, as seen in other developing countries, can motivate Sierra Leoneans to shift to digital bill payments. For instance, in India, a proposal to do away with surcharge and convenience fees (charged on digital payments) is expected to enhance digital bill payment adoption. Likewise in Kenya, the Central Bank has mandated regulations that control digitization of government services and payment platforms.

104 Electricity Distribution and Supply Authority (EDSA), and Digital Satellite Television (DSTV), Overview of Digital Financial Services Ecosystem in Sierra Leone, Better Than Cash Alliance, Bank of Sierra Leone, August 2017 [http://mm4p.uncdf.org/sites/default/files/Download/presentation\\_2\\_-\\_bsl.pdf](http://mm4p.uncdf.org/sites/default/files/Download/presentation_2_-_bsl.pdf)

Several developing countries have adopted and scaled digital bill payments through promotions by MNOs, government schemes, and public private partnerships:

- » In Kenya, digital bill payments have become an everyday activity over the past decade since Safaricom introduced M-Pesa<sup>105</sup>.
- » India is likely to register 40% annual growth between 2015 and 2020 in digital transactions which includes payment of utility bills such as electricity and gas bills<sup>106</sup>. In November 2017, Avenues India, a subsidiary of e-commerce major Infibeam Incorporation launched BillAvenue, a digital bill payments platform which is built on the Bharat Bill Payment System infrastructure<sup>107</sup>. It is interoperable and enables service providers to accept bill payments from customers across the country<sup>108</sup>.
- » In Rwanda, the Smart Rwanda Master Plan (SRMP) aims to digitize all government financial transactions by 2018. This will facilitate digital bill payments through debit/ credit cards and net-banking for services in health care, finance and education<sup>109</sup>.
- » In Egypt, the government has collaborated with MasterCard and the Egyptian Banks Company (EBC) for a project that will allow 50 million citizens to use a single mobile payments gateway. The gateway will link national IDs of citizens to a digital system which will allow all stakeholders including service providers, customers and government to transact with each other seamlessly. Similarly, the Nigerian government and MasterCard are planning a national ID program with biometric functionality that citizens can use to pay their bills<sup>110</sup>.
- » Smart Money, a technology company based in Manila, has introduced an SMS-based cashless and automated payment solution for parking fees. Customers with Smart Money accounts can text a code to have their parking fee automatically deducted from their mobile wallets. The SMS is free of charge, and customers receive an acknowledgement text confirming the transaction<sup>111</sup>.

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105 Bitcoin and M-Pesa: Why money in Kenya has gone digital, Daniel Cawrey, July 2013 <https://www.coindesk.com/bitcoin-and-m-pesa-why-money-in-kenya-has-gone-digital/>

106 Digital Payments 2020: The making of a \$500 billion ecosystem in India, [http://image-src.bcg.com/BCG\\_COM/BCG-Google%20Digital%20Payments%202020-July%202016\\_tcm21-39245.pdf](http://image-src.bcg.com/BCG_COM/BCG-Google%20Digital%20Payments%202020-July%202016_tcm21-39245.pdf)

107 The Bharat Bill Payment System (BBPS) is an integrated platform that connects banks and non-banking financial service providers. It was launched by the Government of India to ease digital financial transactions including bill payments in the country. Check the case study on BBPS for details.

108 Avenues India launches BillAvenue for digital bill payments, The Hindu Business Line, November 2017, last accessed on 14 February 2018, <http://www.thehindubusinessline.com/info-tech/avenues-india-launches-billavenue-for-digital-bill-payments/article9967412.ece>

109 SMART Rwanda Master Plan 2015-2020, Republic of Rwanda, last accessed on 4 April 2018 [http://www.minecofin.gov.rw/fileadmin/templates/documents/sector\\_strategic\\_plan/ICT\\_SSP\\_SMART\\_Rwanda\\_Master\\_Plan\\_.pdf](http://www.minecofin.gov.rw/fileadmin/templates/documents/sector_strategic_plan/ICT_SSP_SMART_Rwanda_Master_Plan_.pdf)

110 Africa's quest for a cashless economy gains momentum, Africa Renewal, July 2017, <http://www.un.org/africarenewal/magazine/may-july-2017/africa%E2%80%99s-quest-cashless-economy-gains-momentum>

111 Smart Money introduces an SMS-based payment system for street parking, October 2012 <http://business.inquirer.net/87676/smart-money-introduces-an-sms-based-payment-system-for-street-parking#ixzz4yyPSofz6>

### Case study box: Bharat Bill Payment System (BBPS)

The Bharat Bill Payment System (BBPS) is one of the several initiatives launched by the Government of India to promote digital financial transactions in the country. BBPS was conceptualized by the Reserve Bank of India (RBI) and is implemented by National Payments Corporation of India (NPCI).

BBPS is an integrated platform that connects banks, non-banking financial service providers such as billers, payment service providers and retail bill outlets. BBPS transactions can be processed through multiple payment channels (internet banking, mobile banking, POS, mobile wallets, M-POS, and ATM) and payment modes (credit, debit and prepaid cards, Immediate Payment Service (IMPS), United Payments Interface (UPI), and Aadhaar Enabled Payments System (AEPS))<sup>112,113</sup>.

Key success factors include clear guidelines for customer dispute management, guaranteed settlement between different parties and standardized turn-around-time (TAT). Since BBPS is promoted by RBI and NPCI, there is a strong brand connect among customers, which makes it attractive for service providers and billers. In August 2016, BBPS piloted with eight banks, bill payment aggregators and utilities to test the technology platform and build the business case for bill collection through a national platform. By August 2017, the platform had 25 stakeholders, including 3 public sector banks, 10 private banks, 5 cooperative banks and 7 non-bank entities such as bill aggregators (BillDesk, Tech-Process and Euronet)<sup>114</sup>. 26.9 million bills with a total value of US\$ 295 million were processed through BBPS in December 2017<sup>115</sup>. As of January 2018, there were 68 utility billers registered on the platform<sup>116</sup>. Currently the categories of billers using BBPS include electricity, telecommunications (mobile post-paid, landline post-paid and broadband), gas, and water service providers. The BBPS system will gradually expand biller categories to include insurance, mutual funds, school fees, institution fees, credit cards, local taxes, and invoice payments.

112 Aadhaar is a unique ID issued to residents of India by Unique Identification Authority of India (UIDAI), Government of India

113 Bharat BillPay, NPCI, <https://www.npci.org.in/product-overview/bharat-billpay-product-overview>

114 Where there is a bill, there is a way: Why the nationwide payment network NPCI is a revolution in making, Economic Times, August 2017, <https://economictimes.indiatimes.com/industry/banking/finance/banking/where-there-is-a-bill-there-is-a-way-why-the-nationwide-payment-network-is-a-revolution-in-making/articleshow/60135650.cms>

115 Will Bharat Bill Payment System be a game changer for bill payments in India?, MoneyLife, March 2018 <https://www.moneylife.in/article/will-bharat-bill-payment-system-be-a-game-changer-for-bill-payments-in-india/53289.html>

116 Bharat BillPay, NPCI, <https://www.npci.org.in/bharat-billpay-live-members>

## Use case 4: Merchant payments

Digital merchant payments include a wide variety of payment transactions that offer convenience for customers, reduced risk of cash loss for both merchants and customers, and improved transparency and financial governance.

### Merchant payments in Sierra Leone

In 2015, digital transactions accounted for only 16% of the US\$ 930 billion person-to-small-business payments in Sub-Saharan Africa. If this share increases to 50%, DFS providers can earn US\$ 7 billion in revenues, considering an average transaction fee of 1.5%<sup>117</sup>. In Sierra Leone however, the concept of digital merchant payments is yet to gain popularity despite many people having mobile money accounts due to lack of awareness and infrastructure and reluctance of merchants to accept digital payments.

Although 90% of the Financial Lives Survey respondents have registered mobile money accounts, 40% of them shared that merchants in their locality do not accept mobile money payments. This is possibly because merchants are not appropriately incentivized to use digital solutions. Promotional schemes and incentives can encourage merchants to accept digital payments as they usually face challenges in storing cash and making frequent visits to the bank to deposit the same. Leading actors that facilitate digital merchant payments in Sierra Leone include DFS providers such as Pay-World<sup>118</sup>, PayPal<sup>119</sup>, and UnionPay<sup>120</sup>, banks such as Zenith Bank<sup>121</sup>, Rokel Commercial (RC) Bank<sup>122</sup>, and Standard Chartered<sup>123</sup>, and mobile money providers such as Splash<sup>124</sup>, and Africell<sup>125</sup>.

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117 Matthew Soursourian, Benefits and Burdens of Digital Retail Payments, CGAP, November 2017 <http://www.cgap.org/blog/benefits-and-burdens-digital-retail-payments>

118 <http://pay-world.co.uk/Merchant-Account.asp?IN=Sierra%20Leone>

119 <https://www.paypal.com/sl/webapps/mpp/home>

120 [http://en.unionpay.com/englobalization/all\\_globzllization/enafrika/Sierra%20leone/index.html](http://en.unionpay.com/englobalization/all_globzllization/enafrika/Sierra%20leone/index.html)

121 <http://www.zenithbank.com.sl/>

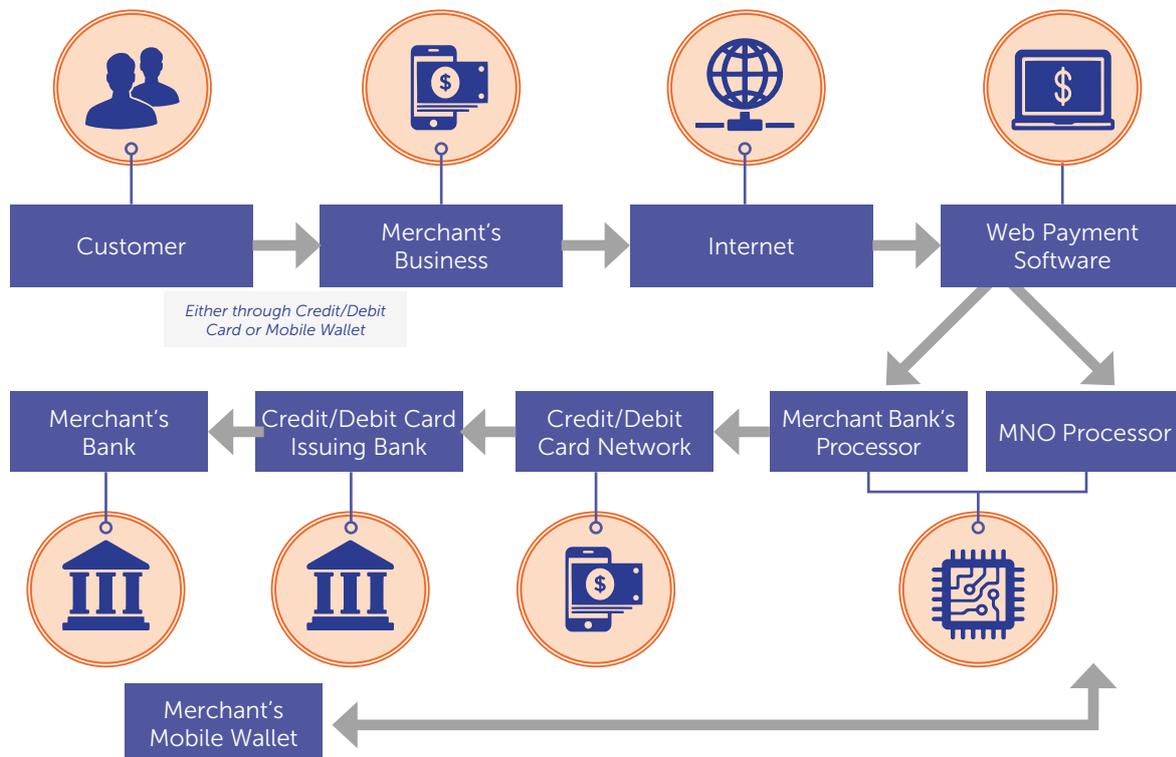
122 <https://rokelbank.sl/our-services/>

123 <https://www.sc.com/sl/>

124 <http://www.splash-cash.com/pdf/release/splash-new-services.pdf>

125 <http://www.africell.sl/afri-money>

Figure 111: Process flow: Merchant payments



### Potential DFS applications for merchant payments

Appropriate incentives for customers and merchants, collaboration between banks and MNOs, and promotion of digital payments by the government are critical for driving adoption of digital merchant payments in Sierra Leone. The government of Sierra Leone considers digital payments a priority and has highlighted the same in its National Strategy for Financial Inclusion 2017-2020. It has also created the DFS Working Group, and launched the Sierra Leone FinTech Challenge 2017 and Government to People Payments Initiative.

Customers can be motivated to adopt digital merchant payments through discounts and cash-back schemes, while merchants need to be similarly encouraged through rewards, incentives and additional support such as access to short term credit based on sales volumes (which can be treated as proxy for collateral or credit history). Collaboration between banks and MNOs is critical to establish the infrastructure necessary for facilitating merchant payments. In several developing countries, strategies for increasing adoption of digital merchant payments focus on improving access and convenience of digital interfaces, and providing incentives for merchants and customers:

- » In India, the government launched the Bharat Interface for Money (BHIM) app in December 2016. It has a merchant interface - BHIM-Aadhaar that facilitates digital merchant payments using the Aadhaar platform. The government has launched two schemes to reward BHIM merchants and customers. Customers receive bonus when they refer the app to other

individuals, while merchants receive cash-back when they use digital mode to receive payments<sup>126</sup>.

- » 'Aadhaar Pay', another innovative model to promote merchant acceptance in India, is based on Aadhaar Enabled Payment System (AEPS). Merchants can accept payments from Aadhaar seeded accounts by installing the app on the phone and attaching a fingerprint scanner. The system does not require cards, mobile phones or POS machines<sup>127</sup>.
- » In Nigeria, there are a number of incentive schemes for both merchants and customers. These include reduction of merchants' service charge (MSC) from 1.25% to 0.75% per transaction, cash-backs, points-based rewards system based on frequency of card usage, and merchant promotional campaigns<sup>128</sup>.
- » In Zimbabwe, over 75% of the total retail transactions are conducted electronically. The government is planning to introduce 50,000 more POS machines by March 2018 to further increase digital merchant payments in the country<sup>129</sup>.

### Case study box: Flutterwave

Flutterwave is a payments application program interface (API) that eases processing of payments for financial institutions and businesses across Africa. It provides technology, infrastructure and services that enable global merchants, payment service providers and banks to accept and process payments on different channels including web, mobile, ATM and POS machines.

In Africa, less than 1% of the total US\$ 380 billion in digital payments are made through cards. There are over 276 mobile wallets, more than 500 banks, and 12 card networks in 54 countries<sup>130</sup>. Merchants therefore, find it unviable to integrate with multiple payment service providers (PSPs) and banks to accept digital payments. Flutterwave integrates banks and payment service providers on its platform, and can help businesses in Africa scale globally by easing the exchange of funds in over 150 currencies<sup>131</sup>.

Flutterwave was founded in May 2016, and has processed US\$ 2 billion worth of payments and 25 million transactions across over 33 African countries<sup>132</sup>. The company has attracted significant investment from Ycombinator Continuity Fund, Greycroft, Greenvisor Capital, Omidyar Network, and Glynn Capital, amongst others. In 2017 Flutterwave was also named Africa's best fin-tech company at the Apps Africa Innovation Awards.

126 BHIM Referral and cash back schemes, last accessed on 13 February 2018, <http://vikaspedia.in/e-governance/digital-payment/policies-and-schemes/bhim-referral-and-cash-back-schemes#section-4>

127 Amitabh Kant, India is in the midst of a major Digital Payment Movement, Press Information Bureau, January 2017 <http://pib.nic.in/newsite/printrelease.aspx?relid=157656>

128 Electronic Payments Incentive Scheme and Awareness Campaign, September 2014 <https://www.cbn.gov.ng/out/2014/bpsd/circular%20on%20incentive%20scheme.pdf>

129 50 000 more POS machines in 100 days, The Herald, January 2018 <http://www.herald.co.zw/50-000-more-pos-machines-in-100-days/>

130 Ameya Upadhyay, Why We Invested: Flutterwave, Omidyar Network, January 2017 <https://www.omidyar.com/blog/why-we-invested-flutterwave>

131 Flutterwave, Crunchbase <https://www.crunchbase.com/organization/flutterwave>

132 Flutterwave, LinkedIn <https://in.linkedin.com/company/flutterwave>

## Use case 5: Microsavings

In developing countries, microsavings programs and schemes encourage families to save for education, unforeseen health expenses and other emergencies. Mobile money can play a significant role in mobilizing microsavings amongst the unbanked and under-banked populations with greater transparency and convenience, while reducing their vulnerability to shocks.

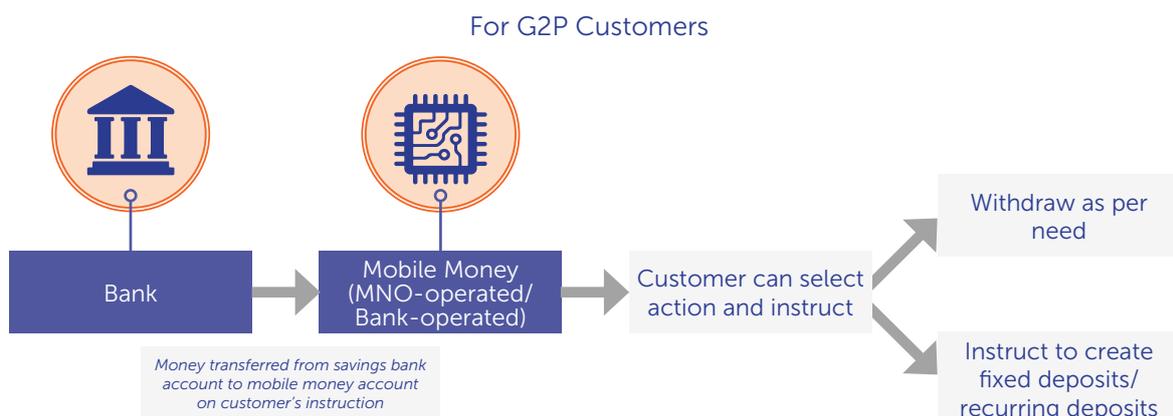
### Microsavings in Sierra Leone

The Financial Lives Survey found that although all respondents understand and acknowledge the importance of saving, less than one-third of the sample is able to save. However, most respondents who are able to save do so regularly on a monthly basis. While there are few formal microsavings products in Sierra Leone, informal microsavings solutions such as Osusu and village savings schemes are popular. The Financial Lives Survey indicated that the key drivers for savings are healthcare, other emergencies and education. Only 27% of the respondents were able to save, notably those having salaries over SLL 600,000. Most of them save for unexpected health expenses, emergencies, future education expenses and for purchasing property.

### Potential DFS applications for microsavings

Mobile money based microsavings products can potentially make saving more convenient for those who already save and encourage those who are currently unable to do so by offering options to save infrequently or in very small amounts. Awareness and promotion campaigns, tailored saving products that are convenient and easy to enrol, and collaboration between different stakeholders are some of the key factors that can drive digital microsavings growth in Sierra Leone.

Figure 112: Process flow: Microsavings



Digitally save-to-win campaigns can motivate people to save in mobile wallets wherein they win prizes like airtime. Bundling of microsavings with other banking products such as government infrastructure bonds (mAkiba in Kenya) and pension schemes (Atal Pension Yojana in India and Mbao in Kenya) allow customers to avail of investment opportunities they might have otherwise missed. A customer can remotely view their bank balance on a dashboard, and cash-in and cash-out with an agent or channelize idle bank balance into the microsavings product.

Several microsavings options, ranging from conventional to modern, innovative schemes, are being offered to customers in different emerging countries. Many of these can be digitized:

- » In India, Cashpor, an MFI offers low-income customers the opportunity to open and operate microsavings accounts using their mobile phones. This easy enrolment process has resulted in opening of 250 new accounts per day. The pilot program for this drive was supported by the Grameen Foundation and the Bill & Melinda Gates Foundation<sup>133</sup>.
- » M-Shwari in Kenya, a combined microsavings and loan product, adopts a client credit-scoring mechanism that analyzes how a person uses telecom services (SMS, calls, M-Pesa). This helps the customers negotiate and avail of better offers<sup>134</sup>.
- » Ajo/ Esusu, the popular microsavings scheme is the earliest form of banking in West Africa. It operates as a savings group, but can also act as an insurance scheme if required<sup>135</sup>.
- » Stokvel is a concept of pooled savings in South Africa where every month millions of people pool their funds for a common purpose such as for a holiday, to purchase a home, or to set up a business<sup>136</sup>.

### Case study box: Cashpor

Cashpor, an Indian MFI offers low-income customers the opportunity to open and save in microsavings accounts using their mobile phones and thereby, build assets, plan for the future, and overcome risks of small and variable income.

133 Mobile-Enabled Savings via the Business Correspondent Model in India, GSMA, July 2012, last accessed on 29 March 2018 <https://www.gsma.com/mobilefordevelopment/programme/mobile-money/mobile-enabled-savings-via-the-business-correspondent-model-in-india/>

134 Michelle Kaffenberger, M-Shwari in Kenya: How is it Really Being used?, CGAP, April 2014, last accessed on 29 March 2018 <http://www.cgap.org/blog/m-shwari-kenya-how-it-really-being-used>

135 It is popular among the Akan of Ghana, the Yoruba in Nigeria and Benin, and the people of African descent in Trinidad and Tobago, Bahamas, Brazil and Cuba. The same scheme is called Adachi by Hausas. How thrift and credit societies can help Africa promote entrepreneurship, Engineering News, November 2015, last accessed on 5 February 2018 <http://engineeringnews.co.za/print-version/how-thrift-and-credit-societies-can-help-africa-promote-entrepreneurship-2015-11-26>

136 Gillian Jones, A stokvel by any other name is still empowering, Businesslive, May 2015, last accessed on 5 February 2018 <https://www.businesslive.co.za/bd/companies/financial-services/2015-05-11-a-stokvel-by-any-other-name-is-still-empowering/>

The MFI initiated the microsavings pilot program (supported by the Grameen Foundation and the Bill & Melinda Gates Foundation) in July 2011. As Indian MFIs are not permitted to accept deposits, Cashpor adopted the bank business correspondent (BC) model to channelize and scale microsavings using mobile phones. Its partners included ICICI Bank and Eko Technologies.

Cashpor customers can open no-frills accounts (NFA) and make deposits and withdrawals during weekly centre meetings using mobile phones. They can also check their balance and repay loans through SMS. Cashpor has partnered with a number of MNOs to maximize the outreach of its mobile-based microsavings model.

In order to promote microsavings, the MFI conducts awareness campaigns on mobile phone literacy amongst its customers, who are mainly women<sup>137</sup>. By April 2012, over 60,000 savers had opened accounts, with an average of 250 people opening new microsavings accounts per day. The average savings balance was US\$ 7.50, which had been increasing at the rate of 15% per month<sup>138</sup>.

## Use case 6: Microinsurance

Microinsurance can help low-income populations build resilience to unexpected events such as loss of life, illness or loss of an asset. Globally, in addition to commercial insurers, mutual, cooperative and community-led models have emerged to meet microinsurance needs. These models can leverage digital mediums such as mobile phones and the internet.

### Microinsurance in Sierra Leone

Although microinsurance coverage in Sierra Leone grew 76% from 2011 to 2014, the country had a miniscule microinsurance coverage ratio (percentage of population covered) of 0.03% in 2014<sup>139</sup>. The microinsurance market in Sierra Leone is nascent with very few established players such as National Insurance Company, Reliance Insurance Trust Cooperation, Aureole Insurance Company, Marine and General Insurance Company<sup>140</sup>. The first microinsurance product in the country was introduced in 2011<sup>141</sup>.

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137 Three Stories (and Lessons) about Saving through the Mobile Phone, Grameen Foundation, November 2012 <https://grameenfoundation.org/blog/three-stories-and-lessons-about-saving-through-mobile-phone/#.WsRyp4hubIU>

138 Mobile-Enabled Savings via the Business Correspondent Model in India, GSMA, July 2012 <https://www.gsma.com/mobilefordevelopment/programme/mobile-money/mobile-enabled-savings-via-the-business-correspondent-model-in-india/>

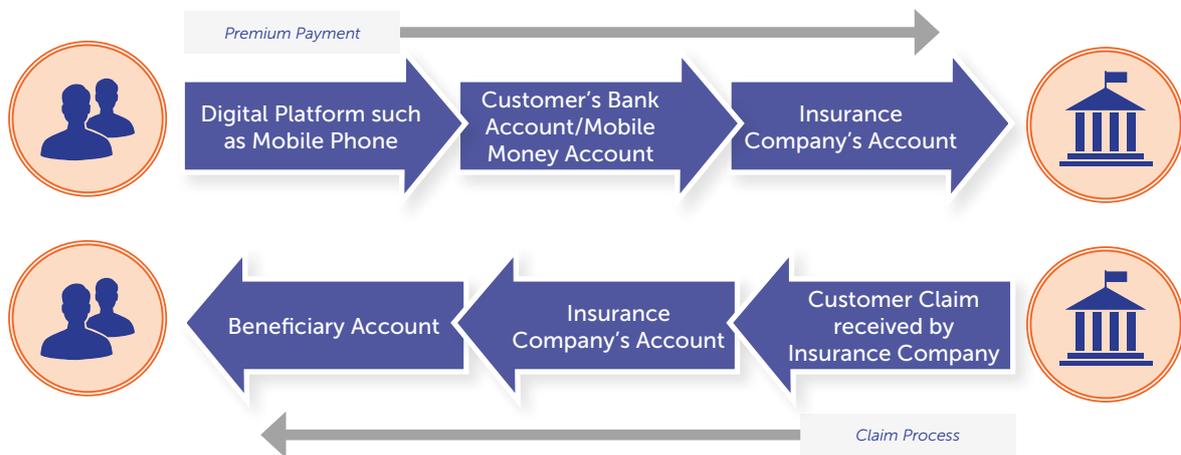
139 Note on Sierra Leone, Microinsurance Network, last accessed on 29th March 2018, [https://microinsurancenet.org/sites/default/files/Sierra%20Leone\\_Country%20Profile.pdf](https://microinsurancenet.org/sites/default/files/Sierra%20Leone_Country%20Profile.pdf)

140 Improving Micro Insurance For Low-Income Market in Sierra Leone, Business World, Aug 2007, last accessed on 29th March 2018, [http://www.standardtimespress.org/artman/publish/article\\_1778.shtml](http://www.standardtimespress.org/artman/publish/article_1778.shtml)

141 Note on Sierra Leone, Microinsurance Network, last accessed on 29th March 2018, [https://microinsurancenet.org/sites/default/files/Sierra%20Leone\\_Country%20Profile.pdf](https://microinsurancenet.org/sites/default/files/Sierra%20Leone_Country%20Profile.pdf)

Over 95% of the respondents in the Financial Lives Survey understand the need for insurance and also own insurance products that are mostly provided by the government. Life insurance is the most common form of insurance owned by survey respondents.

Figure 113: Process flow: Microinsurance



### Potential DFS applications for microinsurance

High cost of formal insurance products and lack of awareness results in poor uptake, with people taking loans from family, friends or money lenders during crises, making them even more vulnerable. Suitable and affordable products, significant market demand and supportive regulatory mechanisms can help increase the provision as well as uptake of digital microinsurance products in Sierra Leone.

In several developing countries, MNOs bundle microinsurance services with telecom services to facilitate increased availability and adoption of microinsurance:

- » In Pakistan, Telenor, the second largest MNO, offered a microinsurance product in partnership with a microfinance bank in 2012. The product was a simple mobile wallet wherein customers must hold a minimum balance of US\$ 21 in order to be eligible for accidental death insurance coverage worth US\$ 1,039. The product was successful owing to the already existing large customer base of Telenor<sup>142</sup>. In March 2016, Telenor completed 100% acquisition of the microfinance bank. This highlights Telenor's expansion in digital financial services, and the role that its mobile money service, Easypaisa played in improving financial inclusion in Pakistan<sup>143</sup>.
- » Tigo in Ghana offered free life insurance coverage for customers and one of their family members, proportionate to the amount of airtime purchased. According to an article

142 Microinsurance to reward mobile money wallet activity: Examples from Pakistan and Tanzania, GSMA, November 2012, last accessed on 29 March 2018, <https://www.gsma.com/mobilefordevelopment/programme/mobile-money/microinsurance-to-reward-mobile-money-wallet-activity-examples-from-pakistan-and-tanzania/>

143 Telenor announces 100% ownership of Tameer Microfinance Bank, Telenor, March 2016, last accessed on 23 May 2018 <https://www.telenor.com/telenor-announces-100-ownership-of-tameer-microfinance-bank/>

by UNSGSA<sup>144</sup>, a similar product in Ghana and Tanzania was able to tap over a million customers of which 80% were new to insurance products<sup>145</sup>.

- » Vodacom Tanzania's loyalty-based microinsurance product Faraja rewards customers for transaction volumes. Customers who make ten M-Pesa transfers per month are eligible for free insurance cover (funeral benefit) of US\$ 126 for the following month<sup>146</sup>.
- » India's Rashtriya Swasthya Bima Yojana (RSBY), a national health insurance program helps the low income population to afford healthcare services. RSBY is one of biggest insurance programs in Asia and is now included under the government initiative 'Ayushman Bharat', the national health protection scheme for universal health coverage (UHC) for an estimated 500 million beneficiaries in the country<sup>147,148</sup>. All RSBY beneficiaries receive smart cards that enable cashless treatment in empanelled hospitals and are portable across the country.

### Case study box: EasyPaisa Khushaal

Easypaisa Khushaal is a mobile wallet linked life insurance product in Pakistan which covers customers for accidental and natural death. The product was launched in partnership with Tameer Microfinance Bank<sup>149</sup>.

Easypaisa Khushaal is an innovative product where customers do not have to invest any additional funds. In order to be eligible for insurance cover in the next month, customers need to maintain a minimum wallet balance of PKR 2,000 (US\$ 21)<sup>150</sup>. The coverage amount offered to customers is linked to their wallet balance. This service has made it possible for the unbanked segment to gain access to insurance services in Pakistan, where 87% of the population does not have a bank account while 62% own mobile phones<sup>151</sup>.

By March 2015, Easypaisa had established 65,000 outlets that offered cash withdrawal services. According to a study by the Boston Consulting Group, Easypaisa will help improve financial inclusion in Pakistan by 20%. This in turn is projected to lead to 3% increase in the country's GDP<sup>152</sup>.

144 UN Secretary-General's Special Advocate for Inclusive Finance for Development <https://www.unsgsa.org/>

145 The key to successful microinsurance for the poor, UNSGSA, last accessed on 29th March 2018, <https://www.unsgsa.org/resources/impact-stories/scale-key-success-and-sustainability-microinsurance-poor/>

146 Microinsurance to reward mobile money wallet activity: Examples from Pakistan and Tanzania, GSMA, November 2012, last accessed on 29 March 2018, <https://www.gsma.com/mobilefordevelopment/programme/mobile-money/microinsurance-to-reward-mobile-money-wallet-activity-examples-from-pakistan-and-tanzania/>

147 About RSBY, Government of India, last accessed on 29th March 2018, [http://www.rsby.gov.in/about\\_rsby.aspx](http://www.rsby.gov.in/about_rsby.aspx)

148 The criticality of costs & resources, Financial Express, May 2018, last accessed on 23 May 2018 <https://www.financialexpress.com/opinion/the-criticality-of-costs-resources/1165832/>

149 Telenor.com, <https://www.telenor.com.pk/help-support/faq/KB>

150 Telenor.com, <https://www.telenor.com.pk/help-support/faq/KB>

151 Pakistan's Easypaisa makes banking popular and accessible, Mobile Transaction, <https://www.mobiletransaction.org/easypaisa-pakistan/>

152 Pakistan's Easypaisa makes banking popular and accessible, Mobile Transaction, <https://www.mobiletransaction.org/easypaisa-pakistan/>

## Use case 7: Micro & small loans

Digital or mobile microloans offer quick and convenient access to funds most often used by low-income customers for business purposes, financial assistance in health emergencies, education expenses, agriculture and life events such as marriage and death. They are particularly useful for small businesses and individuals who lack credit history or do not meet banks' lending criteria to access microloans conveniently and securely.

### Micro & small loans in Sierra Leone

In Sierra Leone, people access micro and small loans mostly from informal sources for several reasons. The cost of loans from formal sources is very high (~8% to ~21%), and access is a challenge as 45% of the chiefdoms lack formal financial service access points<sup>153,154</sup>. Lack of knowledge on ways to access formal credit, and absence of required guarantees (borrowers' bank accounts) and security (collateral) are other reasons for the limited uptake of micro and small loans from formal institutions<sup>155</sup>. Informal sources include money lenders, friends and relatives, and credit and savings associations including Osusu.

Mobile money agents account for 75% of the access points, while MFIs and commercial banks comprise 7% and 6% respectively<sup>156</sup>. There are 10 MFIs registered with the Sierra Leone Association of Microfinance Institutions<sup>157</sup>. BRAC has 37,615 borrowers, and a total outstanding of US\$ 6.07 million (SLL 47.6 billion), with a repayment rate of 70%<sup>158,159</sup>. These MFIs offer microloan products to small and medium enterprises and individuals to meet their business and household needs. According to the Financial Lives Survey, 53% of the respondents took loans for various purposes including education and marriage. Most respondents availed these loans from community banks.

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153 Department Of Loans, Sierra Leone Finance, last accessed on 29 March 2018, <http://www.mofaic-sl.org/loan-department.htm>

154 Sierra Leone News: Over six million people are financially excluded, Awoko, February 2018, last accessed on 29 March 2018 <https://awoko.org/2018/02/14/sierra-leone-news-over-six-million-people-are-financially-excluded/>

155 Applied study of credit and financing opportunities for farmers in urban and peri-urban Freetown, Ministry of Agriculture, Forestry and Food Security (MAFFS), November 2010, last accessed on 23 May 2018 <https://www.ruaf.org/sites/default/files/Credit%20and%20finance%20opportunities%20for%20UPA%20households%20in%20Freetown%20Sierra%20Leone.pdf>

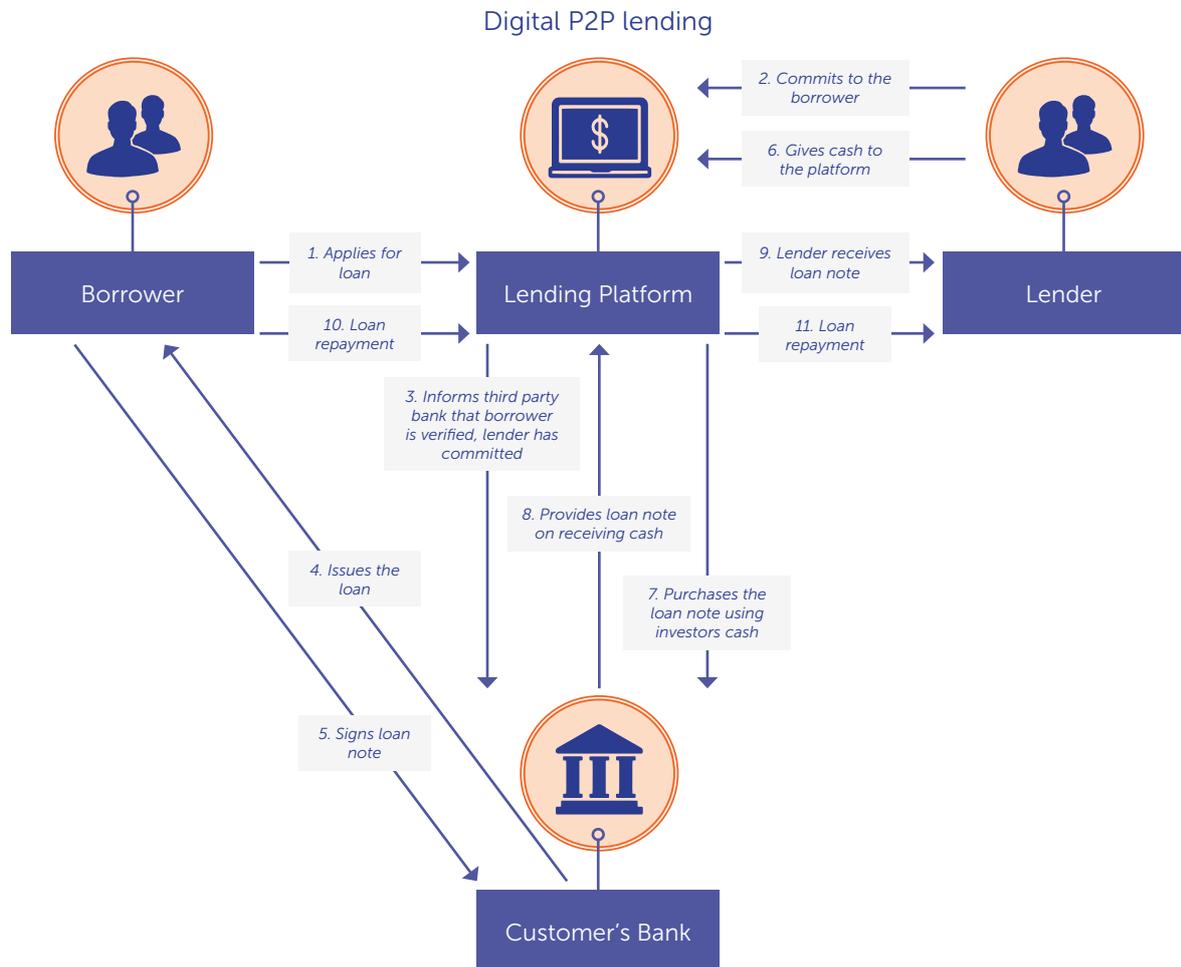
156 Sierra Leone News: Over six million people are financially excluded, Awoko, February 2018, last accessed on 13 March 2018 <https://awoko.org/2018/02/14/sierra-leone-news-over-six-million-people-are-financially-excluded/>

157 Sierra Leone Association of Microfinance Institutions, last accessed on 29 March 2018 <http://slamfi.sl/>

158 Empowerment and livelihood for adolescents, BRAC, Sierra Leone, last accessed on 30 May 2018 <http://www.brac.net/brac-sierra-leone>

159 Financial Inclusion and Resilience: New Case Study Traces How BRAC's Microfinance Program Recovered from the West Africa Ebola Crisis, November 2017 <http://www.globaldeliveryinitiative.org/blogs/financial-inclusion-and-resilience-new-case-study-traces-how-bracs-microfinance-program>

Figure 114: Process flow: Micro and small loans



### Potential DFS applications for micro & small loans

Affordability and ease of access for borrowers, availability of alternate credit data, and adequate agent network are important drivers for the adoption of digital micro and small loans in Sierra Leone. Digital micro and small loans can be offered at lower interest rates as they save on investments in physical infrastructure. Since these products typically support the financially excluded, most borrowers are unable to provide collateral. MFIs address this challenge by structuring group loans to draw on peer motivation and look for alternate parameters like clients' character, environment, and level of poverty. Digital providers will need to similarly draw on alternate credit data, which improves with growing smart phone usage. Agents are critical for last mile delivery and follow-up for repayment in digital microloans.

DFS players provide quick and easy access to collateral-free micro and small loans for personal and business purposes in several developing countries:

- » In Philippines, BPI Direct BankKO, Inc. (Banko) was formed by the merger of two specialized thrift bank units of the Bank of the Philippine Islands: BPI Direct Savings Bank (Philippines' first internet bank), and BPI Globe Banko (Philippines' first mobile savings bank)<sup>160</sup>. Banko provides convenient and affordable microloan products to small businesses and self-employed micro entrepreneurs (SEMEs).
- » L-Pesa provides digital collateral-free microloans ranging between US\$ 5 and US\$ 3000 to individuals and SMEs in 13 countries including Fiji, India, and Kenya<sup>161</sup>.
- » In India, Qbera.com is a fintech startup that offers quick and short-term loans to salaried individuals that do not meet the eligibility criteria required by banks. The loan sizes range from US\$ 769 – US\$ 7,688, and the annualized percentage rate of interest (APR) ranges between 14% and 24%<sup>162</sup>. IndiaLends is a similar lending platform that facilitates unsecured loans to individuals and small businesses that do not meet the eligibility criteria of banks, through its connections with a number of financial institutions<sup>163</sup>.
- » In Kenya, Maisha Microfinance Bank partnered with Airtel Money and BlueSky Consultants to launch M-Fanisi which is a mobile money-based loan and savings solution. It helps registered Airtel Money subscribers to access loans at affordable rates. Maisha is the first MNO-backed MFI to launch a mobile money loan and savings product in the country<sup>164</sup>.

#### Case study box: L-Pesa

L-Pesa is a mobile based microloan service that provides digital collateral-free loans to families and small business owners to meet their immediate needs including business expansion and education expenses. The fin-tech company is present in a number of developing countries in Africa and Asia including Kenya, Tanzania, South Africa, Burundi, Uganda, Rwanda, Mozambique, and India among others.

160 BPI Direct BankKO, Inc. or 'Banko' is formed by the merger of two specialized thrift bank units of the Bank of the Philippine Islands: BPI Direct Savings Bank (Philippines' first internet bank), and BPI Globe Banko (Philippines' first mobile savings bank).

161 L-Pesa offers fast micro loans to any mobile money customer in 10 African countries, October 2015, last accessed on 29 March 2018 <http://www.dignited.com/15242/l-pesa-mobile-money-micro-loans/>

162 Malavika Velayanikal, A fintech startup risks quick loans to salaried folks that banks overlook, March 2017, last accessed on 29 March 2018 <https://www.techinasia.com/qbera-fintech-startup-risks-quick-personal-loans-salaried-employees>

163 <https://indialends.com/>

164 Maisha Microfinance, Airtel Kenya to launch new mobile money service, September 2017, last accessed on 29 March 2018 <http://aptantech.com/2017/09/maisha-microfinance-airtel-kenya-to-launch-new-mobile-money-service/>

Customers can avail L-Pesa microloans through a one-click registration process using their mobile number. To qualify, applicants must have minimum of 6 months financial history with any one of L-Pesa's mobile banking partners and a minimum of 10 transactions performed through their mobile banking account<sup>165</sup>. L-Pesa prefers to develop long term relationships with its customers using L-Pesa credit score. Customers can build credit history and become 'L-Pesa preferred customers' to avail of higher value loans (over US\$ 100) at lower interest rates and longer credit periods.

L-Pesa leverages a range of technologies such as big data, artificial intelligence and blockchain, alternative credit data, mobile technology, and biometric identity. This has helped the fin-tech keep its loss ratio below 10%. L-Pesa has partnered with a number of mobile money service providers such as M-Pesa, Airtel Money, Tigo Pesa, and MTN for funds transfers.

Since its inception in March 2016 in Tanzania and a total investment of US\$ 500,000 by its founders, L-Pesa has issued over 38,000 loans. It has a registered user base of 170,000 solely based on social marketing campaigns run on minimal budgets<sup>166</sup>.

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165 Mobile Banking: It's Money, It's Global, It's Easy access, L-Pesa Microfinance <http://www.l-pesa.com/in/pages/quality-assurance>

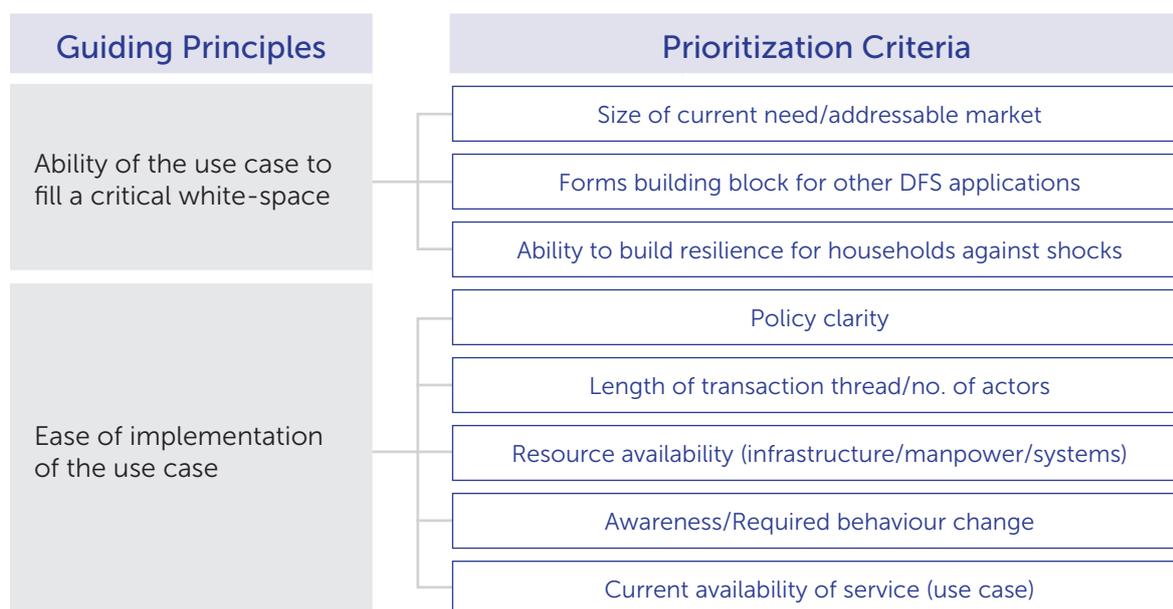
166 L-pesa (PreICO) <https://icobench.com/ico/l-pesa>

# RECOMMENDATIONS - PROPOSED USE CASE PILOTS

Given the limited financial inclusion in Sierra Leone, the ability to deliver impact by filling a critical whitespace and ease of implementation were used as two key criteria or guiding principles to select the use cases for pilot testing. The ability of a use case to fill a critical need gap can be examined across dimensions such as addressable market size, whether a particular use case forms a building block for other DFS applications and whether it helps build resilience against shocks. Similarly, the ease of implementation of a use case can be examined across parameters like policy clarity, number of actors involved, resource availability, awareness levels and current availability of the solution in Sierra Leone. Three use cases that score relatively high on both guiding principles are:

- » Remittances (domestic and international)
- » Payments (bill payments and merchant payments)
- » Microsavings

Figure 115: Criteria for prioritization of use cases



## Pilot 1: Remittances

*Develop an innovative and demand-driven mobile based remittance solution and ensure its uptake amongst government employees in pilot districts.*

This pilot test involves a remittance solution developed through collaboration between a bank and an MNO (with a fintech partner). A customer using this service can transfer money to her mobile wallet after receiving salary in the bank account, and then transfer on to the recipient's mobile wallet. The recipient can either store money in her wallet or cash out with an agent. This pilot can be conducted in two districts amongst 2000 government employees. Kono, Kailahun and Port Loko, which had significant number of survey respondents who remit money informally through people travelling to their home locations could be likely pilot districts.

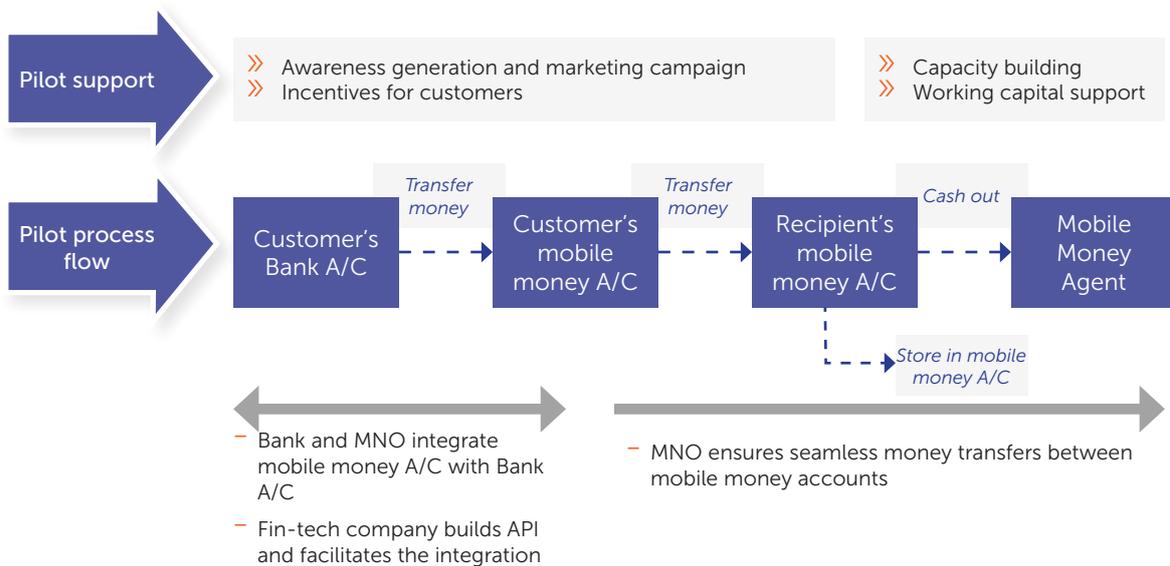
The key objectives of the pilot are to test and refine collaboration between commercial and/or community banks and MNOs. It also seeks to incentivize mobile money agents to deliver mobile based remittances in order to transition target customers from cash based remittances to mobile money based transfers. Finally, the pilot will help refine the model and build evidence for further replication across Sierra Leone.

The pilot will aim to deliver financial and technical assistance and capacity building of 10 mobile money agents. It will also transition 2000 government employees to adopt the digital remittance solution, and conduct at least 2 transactions per month for 4 months using the solution, amounting at least 16,000 transactions by the end of the pilot.

### Collaborative design

The pilot calls for facilitating and building partnerships between banks (1-2 commercial and community banks in the pilot districts), an MNO and a fin-tech company to develop the API/tech infrastructure for offering an SMS-based domestic remittance service to government employees and their families/friends. As a part of the pilot, the mobile money agent networks in the two selected districts also need to be supported with working capital finance to facilitate the cash-in and cash-out of mobile remittances at agent locations. The pilot design also needs to consciously keep costs and documentation requirements low in order to make it a seamless experience for target customers. Product design must consider the fact that most people in Sierra Leone use basic feature phones without internet or apps, primarily for calling and messaging. The pilot will need to target customers that have mobile money accounts and know how to use them.

Figure 116: Pilot overview: Remittances

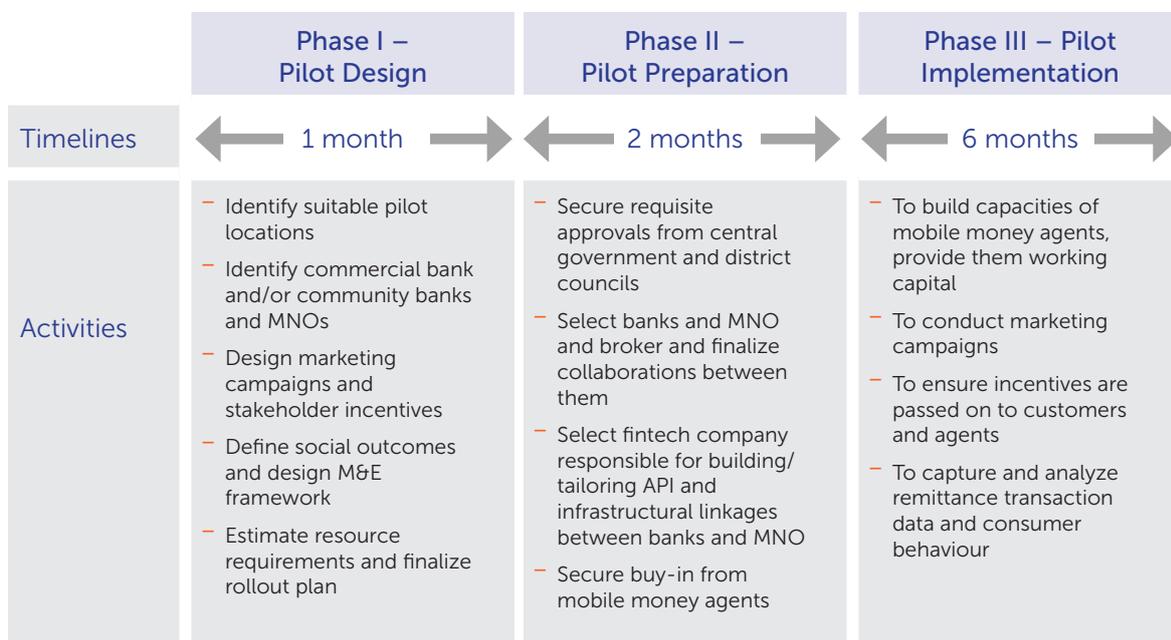


### Market development

As a part of the pilot, targeted awareness and marketing campaigns will need to be conducted to facilitate financial literacy, compare cost of the product with that of other available modes of remittance and encourage the transition from cash to digital remittances. The campaigns should focus on highlighting lower cost and build incentives for higher value transactions, easy documentation and the innovative, safe and exciting service mobile money offers, particularly for small remittance amounts.

### Proposed activities and timeline

Figure 117: Proposed activities and timeline: Remittances

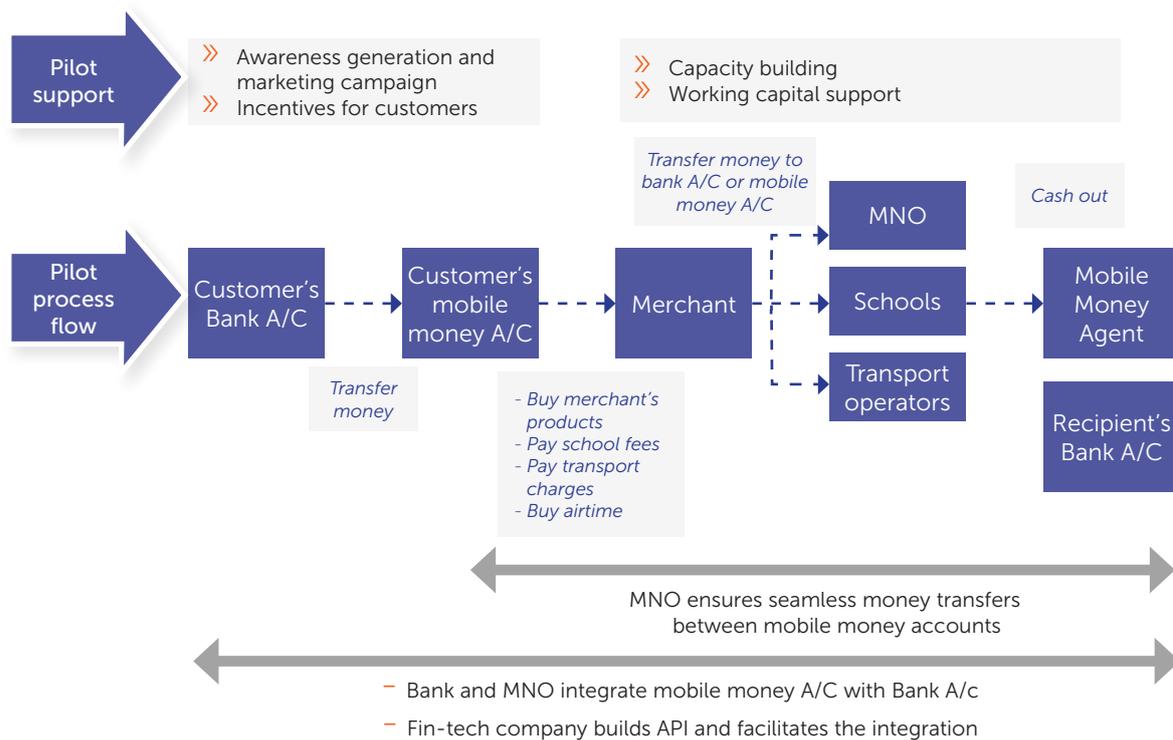


## Pilot 2: Payments

*Develop an innovative one-stop-shop payments solution to deliver a range of merchant and bill payment options and drive its uptake amongst government employees in the pilot district.*

This pilot involves a mobile money-based one-stop-shop payments solution to be tested in one district by bringing together key stakeholders to facilitate a range of merchant and bill payment options for 500 government employees. A customer using this service can transact with a local merchant not only for merchandise, but also to buy airtime, make routine payments like transport charges for commute to work and school fees. The merchant in turn, pays his suppliers, the MNO, schools and transport operator either in their bank accounts or mobile wallets, and they can choose to cash out with agents. Kailahun can be chosen as the pilot district as it reflects the maximum number of survey respondents who have used mobile money for bill payments and merchant payments, but not through a one-stop solution and not on a frequent basis.

Figure 118: Pilot overview: Payments



The key objectives of the pilot include testing and refining collaboration between commercial and/or community banks and MNOs, and encouraging schools and transport operators to accept mobile money payments. It will also aim to incentivize local merchants to accept cashless payments and deliver other merchant and bill payment services. Finally, the pilot will transition target government employees from cash based recurring transactions to mobile money based payments, while refining the model, building evidence for further replication across Sierra Leone and adding more merchant and bill payment options to the solution.

The pilot aims to provide financial and technical assistance and capacity building of 10 local merchants, and encourage 500 government employees to test the digital payment solution. Each of the government employees will, on an average, conduct at least 5 payment transactions per month for 4 months using the solution, resulting in at least 10,000 transactions by the end of the pilot.

### **Collaborative design**

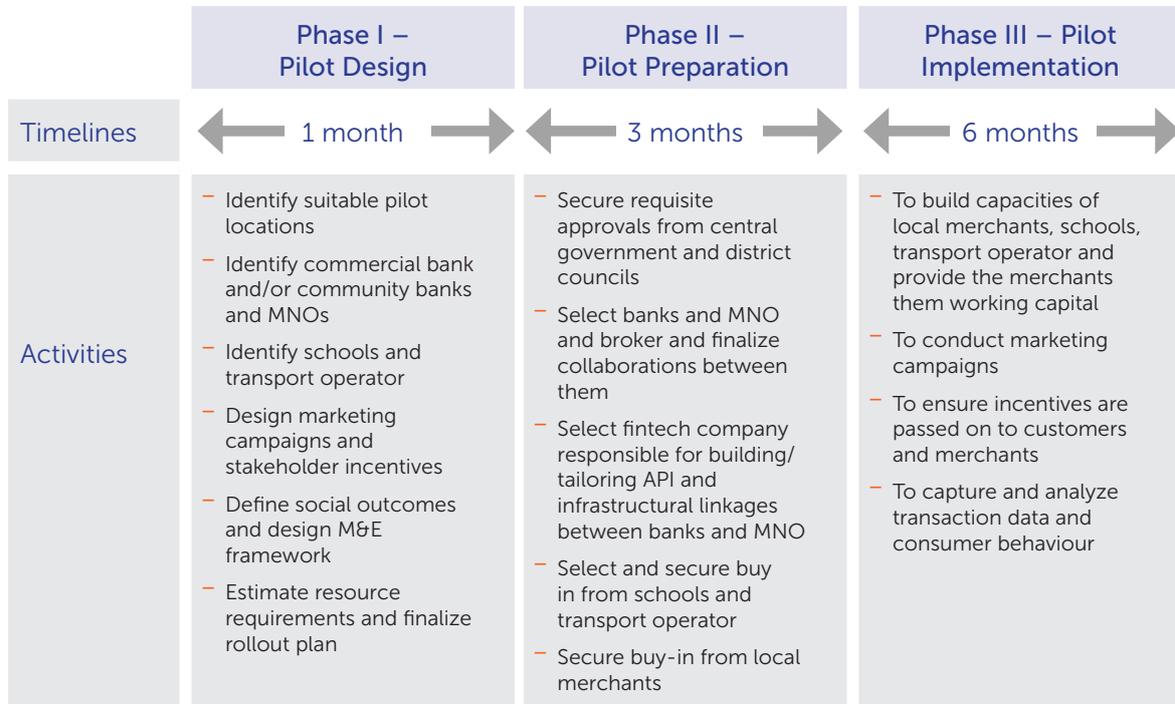
The pilot requires facilitating and building partnerships between banks (one commercial bank and/or a community bank in the target district), an MNO, a transport operator, three to five schools in the district, local merchants and a fin-tech company to offer a one-stop merchant payment and bill payment service to target government employees. The pilot will need to support a selected set of local merchants in the pilot district through training and working capital finance to facilitate the merchant and bill payments. The pilot design must ensure that target customers, the selected transport operator, vendors and suppliers have bank accounts and mobile money accounts. The district must have a reasonably large mobile money agent network for the suppliers and the transport operator to be able to cash out.

### **Market development**

A transport operator and a few schools in the target district need to be on-boarded on the bill payment system. Targeted awareness and marketing campaigns need to be conducted to encourage adoption of the one-stop-shop solution by customers, merchants, schools (convenience), transport operator (convenience) and vendors. The campaigns should focus on the innovative, safe, and convenient bouquet of services mobile money offers, particularly for small recurring transactions. Incentives need to be developed for customers (discounts, reward points, cash back), merchants (credit based on volume of transactions), schools (convenience), transport operator (convenience) and vendors.

## Proposed activities and timeline

Figure 119: Proposed activities and timeline: Payments

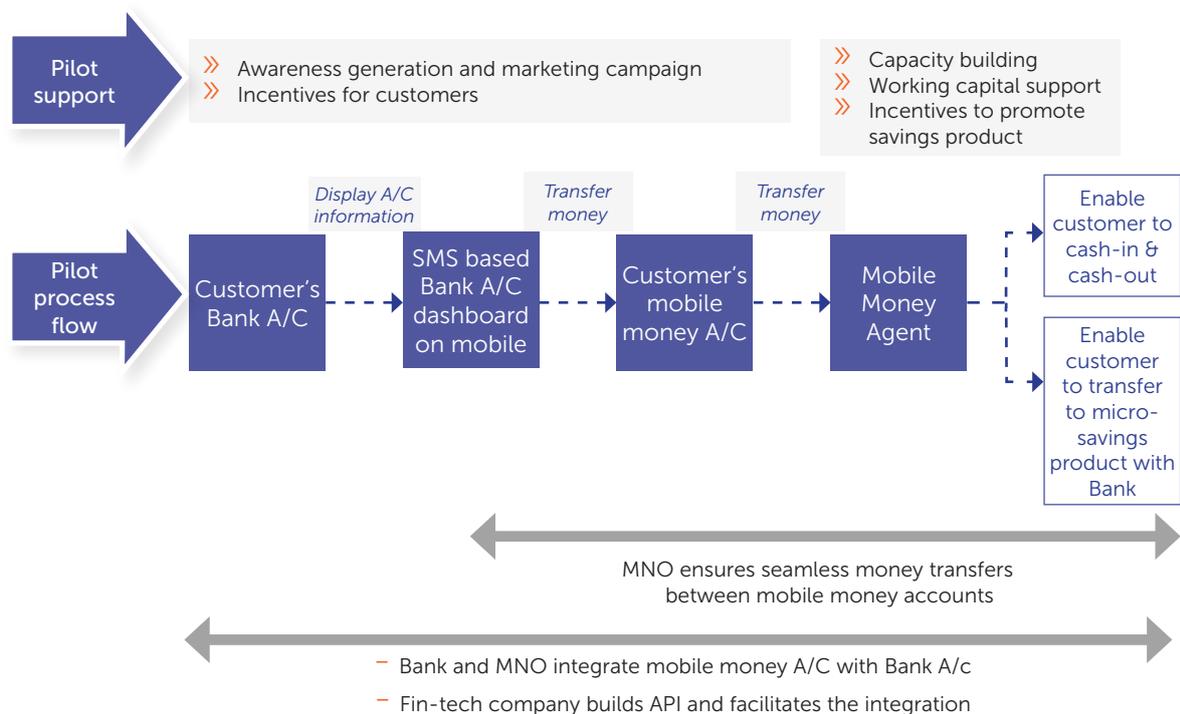


### Pilot 3: Microsavings

*Create an innovative mobile based solution that provides access to a savings product and ensure up-take of the product among government employees in two target pilot districts.*

A mobile-money based microsavings solution will be piloted in two districts by bringing together key stakeholders to support 1,000 government employees. A customer using this service can remotely view their bank balance on a dashboard, and cash-in or cash-out with an agent or channelize idle bank balance into the microsavings product. Kailahun and Tonkolili can be chosen as the two pilot districts as they had the maximum number of respondents who said they are able to save on a monthly basis.

Figure 120: Pilot overview: Micro-savings



The key objectives of the pilot are to facilitate collaboration between commercial and/or community banks and MNOs, and incentivize mobile money agents to popularize and drive uptake of mobile based savings. The pilot will encourage target government employees to adopt mobile money based savings, while also refining the model, building evidence for further replication across Sierra Leone and adding more savings products to the portfolio.

The pilot will provide financial and technical assistance to 20 mobile money agents, and encourage 1,000 government employees to test the microsavings solution. Each government employee will, on an average, conduct at least 1 savings transaction per month for 4 months using the solution, adding to 4,000 transactions by the end of the pilot.

### Collaborative design

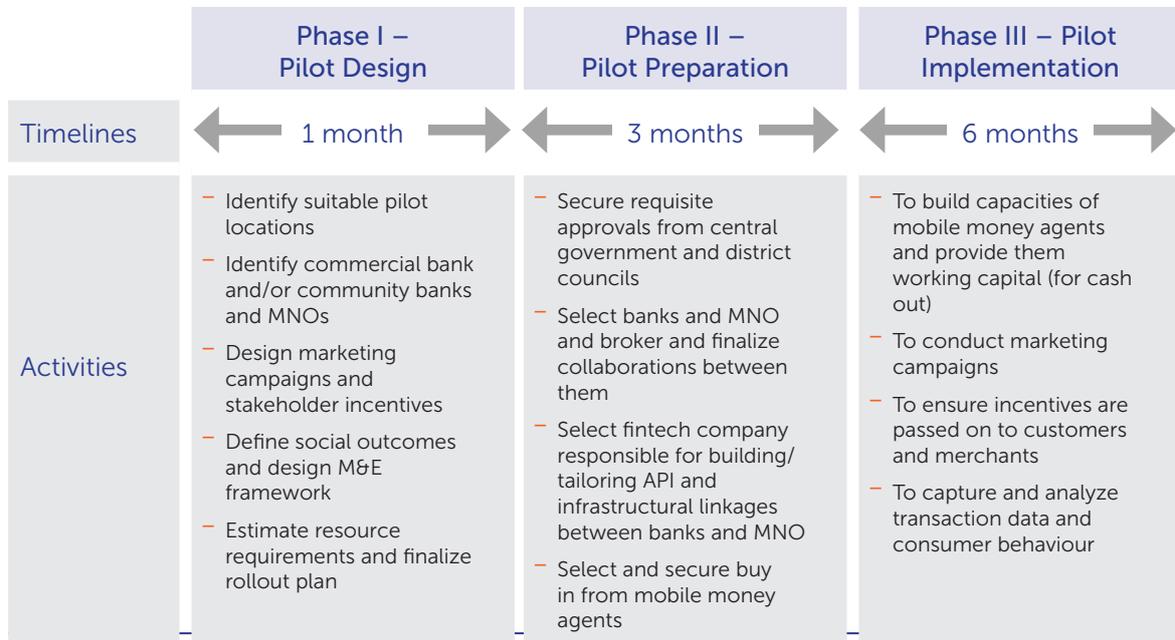
The pilot requires partnerships between banks (one commercial bank and/or community banks in target districts), an MNO, mobile money agents and a fin-tech company to offer a microsavings product such as short term fixed or recurring deposits to the target government employees. A dashboard/interface will need to be developed whereby the customers will be able to remotely view their bank accounts, and channelize idle funds into the savings product. Agents will receive training, working capital support (for cash-out) and marketing collateral. The pilot must factor in the need for feature phone compatibility and allow for SMS-based cash-in/cash-out and savings and investment transactions. Target customers should have mobile money accounts and the solution needs to integrate these with their bank accounts.

### Market development

Targeted awareness and marketing campaigns should focus on savings needs like health and other emergencies and educate customers about how idle money can grow. The campaigns should focus on the innovative, safe, and convenient (easy access, limited documentation) savings services that mobile money offers to enable customers gain more control over their finances and how to deploy them and generate returns. The pilot design also needs to incorporate incentives for the customers (save-to-win prizes like airtime) and mobile money agents (commission incentives for new FDs/RDs).

### Proposed activities and timeline

Figure 121: Proposed activities and timeline: Microsavings



# WAY FORWARD

Communities are transitioning from physical to virtual wallets across the world, as governments, financial and telecommunication sector stakeholders make a concerted effort to bank the unbanked through DFS. According to a 2011 study by McKinsey and Co., there were over 100 mobile money solutions launched in emerging markets in recent years, of which at least 84 emerged since 2008<sup>167</sup>. This trend has gained momentum since then, although scale seems elusive in emerging markets for a variety of reasons. Given their potential to not only impact economic development, but also address social and welfare issues, there is an urgent need to gather data and analyze the information to draw insights to seed, promote and scale mobile money solutions.

The Sierra Leone G2P Financial Lives Survey highlights the potential to encourage government employees to avail of DFS for a variety of financial transactions, ranging from basic banking services like deposits and withdrawals to remittances, savings and bill payments. The survey indicates respondents' awareness of the importance of savings and investment, as well as mobile money, which they use for limited purposes. The survey helped to identify three use cases that can be developed and tested for acceptance among underserved and un-served rural communities – remittances, payments and micro-savings. Globally and in Sierra Leone, there are four critical components of developing and promoting mobile money services, namely, the agent network, product development and design, collaboration among stakeholders and customer education.

## Agent network

Last-mile reach agents are critical for DFS roll-out and uptake in emerging and nascent markets; they also are a significant component of the cost structure of mobile money service providers, who must balance the cost of their agent networks (training, commissions, e-float, and cash float) and market demand. Too small a network, spread over an unviable area will result in negative customer experience, while too many agents can bloat costs. Several established and

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<sup>167</sup> Mobile money getting to scale in emerging markets, McKinsey, last accessed 09 Apr 2018, <https://www.mckinsey.com/industries/social-sector/our-insights/mobile-money-getting-to-scale-in-emerging-markets>

successful companies match network size to business, such as 30 – 50 transactions per day or around 1000 transactions per agent per month.

## Product selection and design

Insights and knowledge is being developed from the experiences of service providers who have rolled out different services in emerging markets. For instance, a significant number of digital transactions are for cash-outs as digitization has not completely percolated to all financial transactions. Cash-in and cash-out transactions tend to be agent dependent, and agent-led or over-the-counter solutions are a good starting point for promoting DFS in nascent markets. Experts also suggest planning a range of connected products in advance, in order to be able to invest in infrastructure and build internal capabilities for their roll-out over time.

Service providers must anticipate complexities and resolve them at the pilot test stage. At the stakeholder workshop conducted for this research, NASSIT shared that they make door-to-door pension payments to customers living in remote areas every month. They are looking into using DFS to improve the delivery of pensions, but noted that pension payments have different categories which could make bulk transfers complex. Similarly, merchant payments, despite being one of the most complex use cases in mobile money services, is a priority for many service providers across the world. Most service providers are currently grappling with ways to build business models where costs borne by the merchants and customers are low.

## Collaborations

Third party collaborations are critical for the growth of mobile money providers as they scale through more billers, more organizations for bulk disbursements, more merchants and more banks. According to studies, popular transactions other than cash-in, cash out include bill and merchant payments as well as other P2P transactions. Several mobile money solutions now offer savings, pensions and investments. All these services need multiple stakeholders to work together to enable successful transactions for customers.

## Awareness and adoption

Convenience is often the trigger for DFS uptake, while trust is a major barrier. A study by Digital Impact Awards Africa in Uganda found that regular users of mobile financial services save a minimum 12 hours that would have been spent in traveling to and from financial institutions and waiting in queues. As customers experience this convenience, they are more open to testing different services.

Strong customer engagement and education, and incentives to promote trial and registration are some of the ways mobile money service providers increase uptake. At the stakeholder

workshop for this research, Ayani recommended that DFS providers should learn from the popular Osusu model for inspiration on how to build trust amongst the end-users. Osusu providers usually visit the end users at their doorsteps, and could be engaged as mobile money agents in their local communities. Ayani also shared that lack of awareness about technology can result in people being duped by agents who do not transfer the exact amount to recipients. Such issues need to be resolved to build trust for digital systems amongst end users.

This study provides a first step in identifying need gaps and potential mobile money services that can be tested in Sierra Leone. Further research and pilot tests could study specific use cases, for instance, the nature of domestic remittances and whether savings, investments and insurance services could be bundled along with remittance services. Such research could also help refine the products (quantum of savings, price points, user interface experience) further. Research-backed pilot tests will enable MNOs, banks and other stakeholders build a DFS portfolio that will meet with customer expectations and drive financial inclusion. With strong commitment by the government and support from development stakeholders, DFS can thus support a host of banking, savings, investment and e-commerce in Sierra Leone.

# ANNEXURES

## Methodology: Financial Lives Survey

### Sample Selection

The sampling process included the following:

**District selection:** Focus districts were selected based on assessment of population density, rural-urban population ratio and factors such as mobile penetration, presence of bank branches and presence of MFIs which indicate the existing level of financial inclusion and financial services available in a particular district. The districts with highest rural-urban population ratio were first identified, within which the districts with highest population density were shortlisted. The shortlisted districts were normalized to ensure representation across the different regions of Sierra Leone. Based on this approach, five districts were selected namely, Kailahun and Kono in Eastern region, Port Loko and Tonkolili in Northern region and Bonthe in Southern region of Sierra Leone.

**Selection of final sample of government employees:** The Bank of Sierra Leone helped in accessing lists of government employees in the sample districts who receive their salaries digitally in bank accounts with regional community banks. The sample was drawn randomly from the list, and contacted to set up the survey interviews.

**Estimated Sample Size:** Working with a confidence level of 95% and a confidence interval of 5% for a population of 80,000 government employees, an ideal representative sample should have 383 elements. However, given that the study exclusively focuses on government employees, creating a level of homogeneity in the population, a much smaller sample could be taken to get robust results. Hence for this study, the confidence level (the confidence at which the sample can be claimed to be representative of the population) was a much more important parameter than the confidence interval (deviation of sample choice from population choice). Working with a 99% confidence level and a 10% confidence interval, the ideal sample size was 167 elements. 500 government employees contacted with requests for survey interviews, of which 302 respondents successfully completed the survey.

## Formulation of Financial Lives Questionnaire

For developing the questionnaire for the Financial Lives Survey, five key components of the survey were identified, namely, socio-economic profile of government employees, financial assets and services, financial loans, opportunities around insurance products, and consumer perceptions about DFS/mobile money. Together, these five components are provided a holistic picture of the financial lives of the respondents.

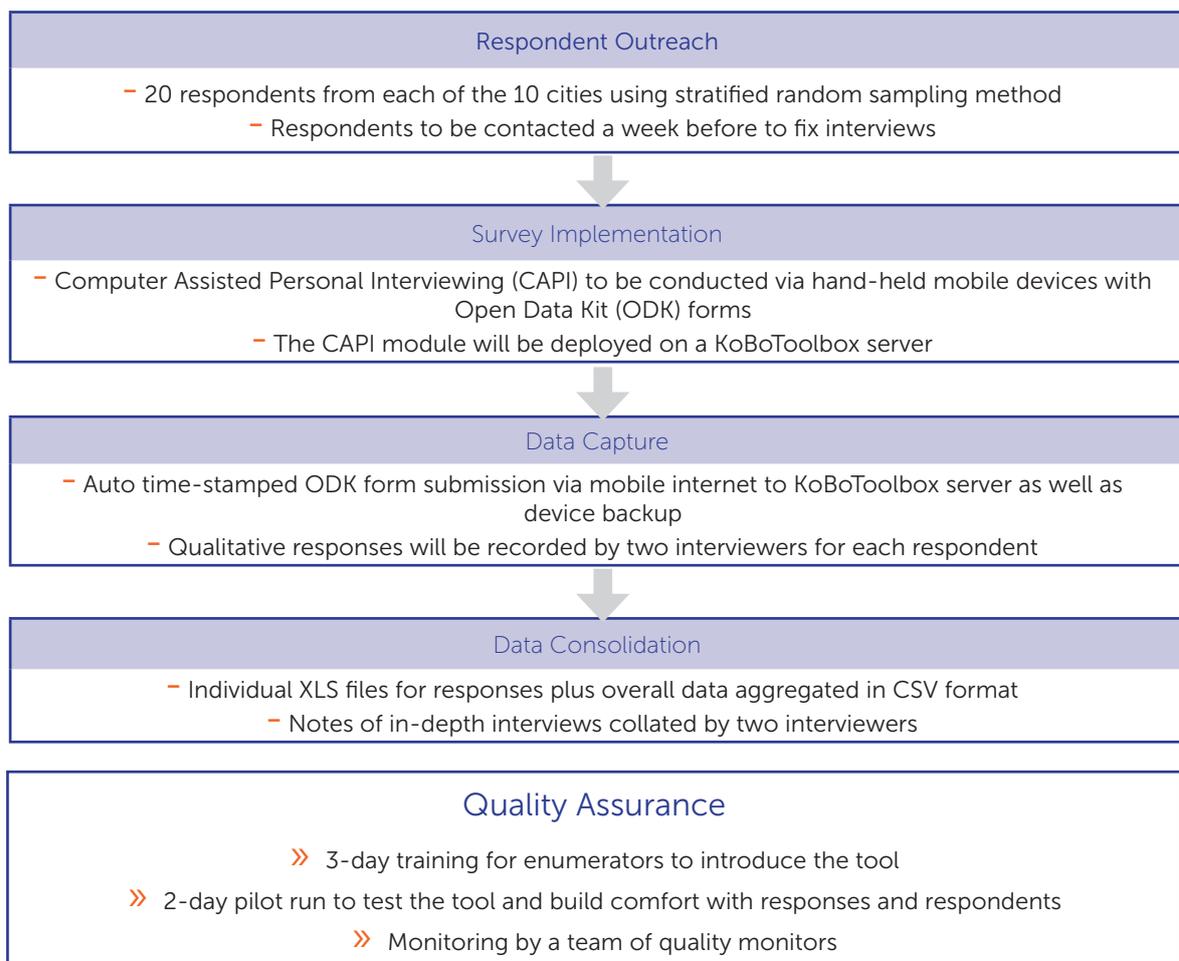
Figure 122: Formulation of financial lives questionnaire

Key Components of Survey	Socio-Economic Profile	Financial Assets & Services	Financial Loans	Opportunities – Insurance Products	Consumer Perceptions
Areas Probed	<ul style="list-style-type: none"> <li>Demographic data of households</li> <li>Sources of income (government job, casual employment, rental, agri, others)</li> <li>Income, savings &amp; expenditure analysis</li> <li>Physical and financial assets</li> <li>Digital financial literacy &amp; access to mobile technology</li> </ul>	<p>Savings &amp; Investment:</p> <ul style="list-style-type: none"> <li>Checking/savings account</li> <li>Long-term investments (pension/provident, others)</li> </ul> <p>Payments:</p> <ul style="list-style-type: none"> <li>Cash at home or other hiding place</li> <li>Rotating saving groups</li> <li>Utility payments and remittances</li> </ul>	<ul style="list-style-type: none"> <li>Informal credit or group borrowing</li> <li>Pawning &amp; money lender borrowing</li> <li>Mortgage, borrowing from friends &amp; family</li> <li>Institutional borrowing &amp; credit card</li> <li>Agriculture credit practices</li> </ul>	<ul style="list-style-type: none"> <li>Life insurance</li> <li>Health insurance</li> <li>Livestock insurance &amp; crop insurance</li> <li>Other insurance products</li> </ul>	<ul style="list-style-type: none"> <li>Perception about DFS, incentives to use and perceived risks</li> <li>Awareness about existing products, features and pricing</li> <li>Current usage of mobile technology</li> <li>Willingness to pay</li> <li>Ease of access</li> </ul>
Indicative Questions Asked	<ul style="list-style-type: none"> <li>What are your family's income sources?</li> <li>How much land do you own?</li> <li>How much do you spend on the following items each month?</li> </ul>	<ul style="list-style-type: none"> <li>How much do you save and where do you keep the money parked?</li> <li>What long-term investment(s) you have?</li> <li>How do you make the following payments?</li> <li>Are there any other merchants accepting digital payments?</li> </ul>	<ul style="list-style-type: none"> <li>Have you ever taken any loans; if yes, for what?</li> <li>Who did you take the loan(s) from?</li> <li>Why do you prefer a particular kind of lender?</li> <li>How do you repay? How frequently?</li> </ul>	<ul style="list-style-type: none"> <li>Do you feel the need to have insurance; if yes, for what?</li> <li>What insurance products are available?</li> <li>Where do/ can you buy insurance from?</li> <li>Does the government take care of your insurance needs?</li> </ul>	<ul style="list-style-type: none"> <li>What alternatives to cash is available to/ used by you?</li> <li>What are the risks of digital transactions?</li> <li>What factors will push you to adopt (more) digital transactions?</li> </ul>

## Survey Data Collection and Capture

The survey questionnaire was digitized to enable digital response capture. The digital responses were downloaded, and reviewed for quality. The enumerators were trained to aid respondents in understanding the questions as well as register qualitative responses.

Figure 123: Approach for data collection and capture



## Data Analysis

The analysis of the financial lives survey responses involved tabulation, categorization and pivots to generate insights around specific areas such as demography, income, household expenditure, awareness and access to banking and mobile money services. It also allowed for surfacing patterns in financial behavior such as credit taking preferences and use of mobile money accounts across socio-economic profiles.

As DFS is new to a majority of the population in Sierra Leone, its promotion will involve awareness building and customer education. This could be effectively done through change agents or early adopters. The survey responses were analyzed through pivots as well as qualitatively to uncover factors that could encourage DFS adoption, identify likely customer segments for DFS pilots, and arrive at key conclusions, recommendations and use cases.



## About the Government to People (G2P) Project

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This survey is part of the Government to People (G2P) pilot project, a partnership between the Accountant General's Office at the Ministry of Finance and Economic Development, the Bank of Sierra Leone, and UNCDF-MM4P, with funding from USAID. The Government of Sierra Leone, through the Accountant General Office pays approximately 80,000 Government employees/consultants SLL 150 billion each month via their bank accounts[1]. At least 50% of these payments are made to recipients based outside Freetown (the Capital), in rural hard-to-reach areas with limited or no banking infrastructure. These recipients, many of whom women, have to travel long distances to District Capitals, taking time off their jobs, to check if their salaries have been deposited. Most of them then withdraw their salary in full to avoid the costly journey to the bank for withdrawals or payments. Often, they face thefts and other hardships due to transporting relatively large sums of money.

There is an opportunity to leverage on the volume of Government salary payment to build a business case for digital financial services, expand access points and ultimately the availability of a wide range of financial services to these underserved communities. This opportunity is also identified in the National Strategy for Financial Inclusion 2017 – 2020 under Intervention 3 - Digital Financial Services: 'Identify and digitize routine use cases that will lead to habitual usage, including digitising government programs, both G2P and P2G, to drive inclusion and adoption, and achieve Sierra Leone's commitments to the Better Than Cash Alliance'.

The UNCDF MM4P programme was launched in 2012 because the UN Capital Development Fund (UNCDF) saw that the gains in digital financial services were not reaching the least developed countries. MM4P was created to demonstrate how the correct mix of financial, technical and policy support can build a robust digital finance ecosystem that reaches low-income people in the least developed countries. In doing so, it has helped accelerate growth in several countries, identified some of the levers to help markets develop and supported efforts to reach the last mile.

For more information, visit [mm4p.uncdf.org](http://mm4p.uncdf.org) or follow [@UNCDFMM4P](https://twitter.com/UNCDFMM4P) and [UNCDF MM4P](https://www.uncdf.org)

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