



DIGITAL FINANCIAL SERVICES IN RWANDA

Leveraging technology for maximum use of financial services

The findings are based on the FinScope Survey Rwanda 2016

This paper was prepared by FinMark Trust on behalf of Access to Finance Rwanda (AFR).
AFR would like to acknowledge and appreciate contributions from the following institutions:





DIGITAL FINANCE IN RWANDA





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Acronyms and abbreviations

| | |
|----------------|--|
| AFR | Access to Finance Rwanda |
| ATM | Automated Teller Machine |
| CESS | Centre for Economic and Social Studies |
| BNR | National Bank of Rwanda |
| DFID | Department for International Development |
| EICV | Integrated Household Living Conditions Survey |
| FMT | FinMark Trust |
| FSDP II | Second Financial Sector Development Program II |
| FSP | Financial Services Providers |
| MFIs | Microfinance Institutions |
| MSME | Micro, Small and Medium Enterprises |
| MNO | Mobile Network Operator |
| NGO | Non-Governmental Organisation |
| NISR | National Institute of Statistics Rwanda |
| PPS | Probability Proportional to Size |
| POS | Point of Sale |
| SACCOs | Savings and Credit Cooperative Organisation |
| Telcos | Telecommunications company |
| USSD | Unstructured Supplementary Service Data |
| VSLAs | Village Savings and Lending Associations |

Executive summary

Over the past few years, the Government of Rwanda has been encouraging the financial sector and ordinary Rwandans to embrace electronic platforms to carry out personal financial transactions for efficiency and safety reasons. The drive seeks to discourage people from carrying large sums of cash when conducting business or shopping, amongst others, and hence encourage a cashless economy.

As technological developments advance and extend the delivery of financial services to the masses, there are notable benefits of digital finance to the customer which include, amongst others: easy access to financial services, reducing travel and queuing times when done from the convenience of mobile or computer devices, completing transactions faster and moving large sums of money without carrying cash thus offering secure and safer options.

The Rwanda Payment System has improved in the period under review as witnessed by the operations of Rwanda Integrated Payments Processing System (RIPPS). Significant progress has been observed in the retail payment system especially Mobile Financial Services (MFS) and internet banking services.

The definition from FinMark Trust (2016) considers “digital finance” as methods to electronically store and transfer funds, to make and receive payments including to borrow, save, insure and invest, and to manage a person’s or enterprise’s finances. FinMark Trust further defines Mobile Money (MM) as an electronic representation of conventional money, the value of which is on par with the official currency of the licensing state, which may be transferable, redeemable for cash and is generally an accepted means of payment.

Access to digital finance enabled products and services: About **46%** of Rwandan adults have access to digital financial services (DFS) enabled products and services. This will be referred to as the DFS universe. However, not all these adults actually use these services.

Digital Financial Services: About **15%** are using DFS to facilitate payments and transfers. This segment actively uses their financial transactional accounts and self-originates these transactions themselves – unassisted.

An overview of DFS users:

- **Drivers of DFS** – The leading driver for DFS transactions is remittances which is done by more than **65%** of all DFS users. Transfer and receiving income and payments account for **58%** and **56%** respectively. Other transactions include savings (**41%**) and credit (**8%**).
- **Frequency of use** – **76%** of DFS users are active users as they transact monthly while 23% use it less often and only **1%** are dormant.
- **The transactional account used** – 85% of DFS users make digital payments through a mobile money account while 57% transact through a banking account. These transactional accounts facilitate the DFS payments and transfers.
- **Profile of DFS users** – More than **36%** of adults using DFS are located in Kigali City while usage in other provinces range between **10%** and **14%** (below the national average of **15%**). Usage in the Southern and Northern provinces is at **14%** respectively. The use of DFS is skewed towards males, living in urban areas, having tertiary education and aged between 31 and 50 years of age. DFS is more prevalent among those who receive government salaries/wages (**83%**) and salary/wages from private business/company (**49%**). To further deepen DFS usage, the private sector should be encouraged to make salary payments digitally which will in turn aid employees to embrace digital finance.

Over-the-counter (OTC): Are defined as transactions that the agent conducts on behalf of a customer at branch (e.g. bank branch) or from either the customer’s or agent’s mobile money account. About **31%** of Rwandan adults have access to DFS products and are part of the DFS ecosystem but engage on OTC transactions. It also means that they are either originating or redeeming a transaction in cash.

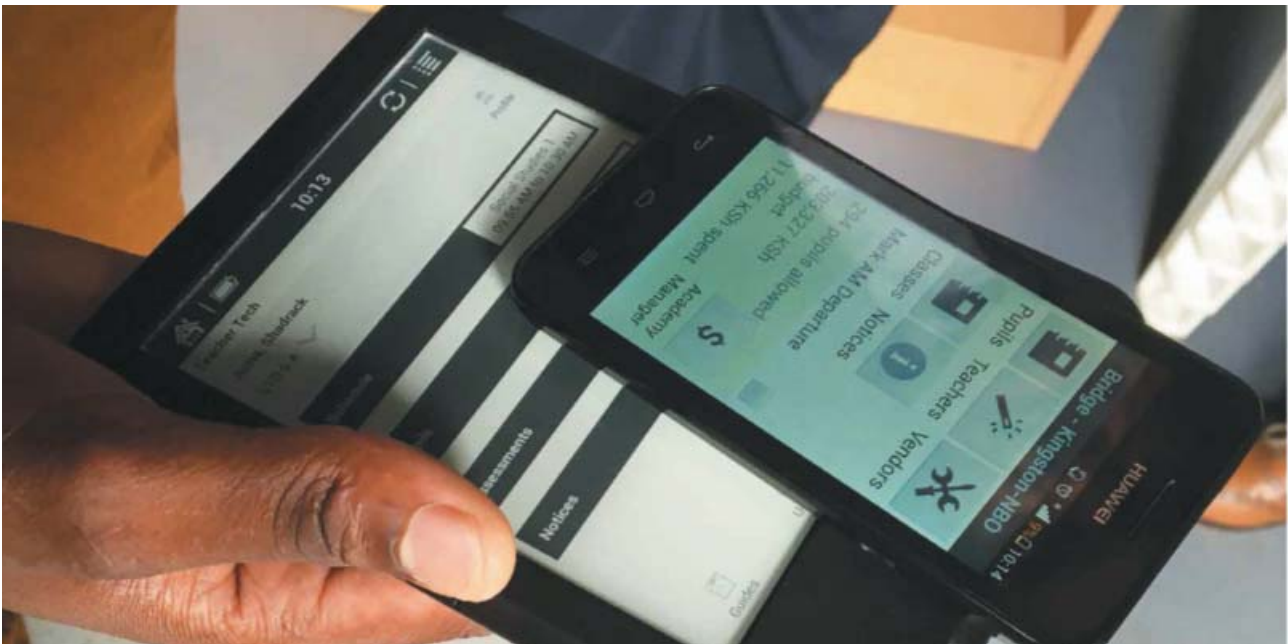
An overview of OTC users:

- **Drivers of OTC transactions** – The leading OTC transactions are remittances, deposits and withdrawals combined at **59%**. Payments, savings and credit are **53%**, **27%** and **6%** respectively.
- **Profile of OTC users** – Kigali City leads with more than **42%** of its adults using OTC transactions. All other provinces range between **27%** and **33%**, while the Eastern and Western province are **33%** and **27%** respectively. The use of OTC transactions is skewed towards males, those in urban areas, with secondary and vocational education and aged between 18 and 50 years of age. Additionally, OTC transactions are mostly prevalent among those who are self-employed (**43%**), salaried individuals (**38%**) and those earning money from farming (**31%**).

Barriers to DFS usage: There is still a high dependency on cash as a means of conducting financial transactions. Of the **54%** of adults that are not part of the DFS ecosystem – neither using DFS nor conducting OTC transactions – **89%** reported that they prefer to pay for goods and services in cash rather than using electronic means, and **74%** prefer to deal with people rather than machines even if machines are quicker. Other barriers include the low uptake of financial products/services such as mobile money and banking accounts. Barriers specific to mobile money are, inter alia, **32%** of adults do not know what mobile money is, **25%** believe that they need a smartphone to conduct digital transactions, while **13%** have reported that they do not know how to use mobile money. These barriers can be overcome by enhancing positive attitudes and knowledge on the broad use and benefits of digital finance. Barriers specific to the low uptake of bank accounts are cost related.

Learnings from other markets: With the evolution of financial technologies, the use of technology to make financial services more efficient is getting traction, more so in East Africa. The advent of products such as M-Pesa, M-Kesho, M-Pawa are assisting adults who have access to mobile phones to take advantage of these developments. These are developments that Rwandan service providers could consider in their development of products and services. The digital insurance payments model from South Africa is yet another example that could be explored to roll-out DFS in Rwanda.

Opportunities to deepen digital finance: Financial literacy and financial education programmes provide an opportunity to enhance and cultivate the uptake of DFS. More so as **77%** of those not part of the DFS ecosystem have stated the willingness to learn how to use technology to manage finances. Other opportunities are that of increasing mobile money awareness, uptake and deepening usage. Furthermore, initiatives by the Rwandan government to deepen financial inclusion through partnerships with the likes of Ericsson, Better Than Cash Alliance, amongst others to showcase the benefits of DFS would indeed go a long way in creating an inclusive society and the better usage of DFS in the long term.



1 Introduction

This dedicated FinScope Insight Note is aimed at highlighting the results of the ecosystem and usage of digital financial services in Rwanda. The FinScope Survey not only enabled the assessment of the landscape of financial access in Rwanda, but also provided a benchmark for repeat surveys that will enable the impact of access related policy interventions to be assessed. The survey was comprehensive in highlighting the prevalence and use of digital financial services (DFS). To view the comprehensive financial inclusion results, see the main report here¹. The summary of the levels of financial inclusion are briefly outlined below.

Total financial inclusion: In total, 89% of adults in Rwanda are financially included (including both formal and informal financial products/services, around 5.2 million individuals). The formally served adults have both formal and informal products/services.

Formal inclusion increased from 42% in 2012 to 68% of adults in 2016, meaning that around 4 million adults have at least one formal financial account. The uptake of both banking products/services and other formal non-bank financial services/products increased among the formally served adults:

- About 26% of adults in Rwanda are banked (around 1.5 million individuals). The growth of bank usage is driven by debit cards, loans from banks and a high uptake of mobile banking. In terms of banking product usage, 52% of bank clients used at least one banking product during the month prior to the FinScope 2016 survey (increasing from 43% in 2012).
- About 65% of adults in Rwanda have/use other formal (non-bank) financial products/services (around 3.9 million individuals). Growth in the non-bank sector was most significantly driven by the uptake of mobile money services and the growing penetration of Umurenge SACCOs.

In total, about 72% of adults in Rwanda **use informal mechanisms** (around 4.2 million adults). The informal sector plays an important role in extending the overall levels of financial inclusion, particularly in rural areas and among women. The level of adults relying only on informal mechanisms has been reduced to 21% in 2016 from 30% in 2012.

Around 11% of adults in Rwanda (around 0.7 million individuals) do not use any financial products or services (neither formal nor informal) to manage their financial lives, i.e. they are **financially excluded**. Traditionally vulnerable groups such as the poor, those residing in remote rural areas, women, and vulnerable age groups (17-18 and older than 60 years) are more likely to be financially excluded.

Rwanda has taken a decisive step and started a conversation about what these figures mean to the ordinary man on the street. Relevant questions related to financial inclusion are asked and are summarised in the following manner:

- Are adults really benefiting from all types of financial accounts that they have?
- What indicators could be made to determine this?
- Are the products meaningfully making life easier and better?
- Does high levels of financial inclusion translate into usage?
- Can digital finance be an enabler in ensuring usage and enhancing the benefits of financial services (quality of financial inclusion)?

This report interrogates these questions by determining the proportion of adults who are conveniently using financial products to make payments/transactions, savings, remittances, borrowing and other activities. Furthermore, the government of Rwanda has initiated interventions to fast-track the roll-out and expansion of financial inclusion as part of Vision 2020 which was announced by the Ministry of Finance and Economic Planning. Additionally, there are financial sector developments aimed at creating an inclusive society in Rwanda.

- The Rwandan government has partnered with Better Than Cash Alliance in a bid to accelerate the use of information and communications technology (ICT) within the country's financial sector. This bid intends to drive Rwanda into a cashless economy and achieve 80% of financial inclusion by 2017². The Minister of Finance and Economic Planning, Mr Claver Gatete said "we understand the crucial role ICT plays in all sectors of the economy, including finance. This is why we have endeavoured to promote a cashless economy by digitising financial transactions. Today the Government of Rwanda conducts its business electronically, including paying salaries. We have put in place policies that encourage payment digitisation and continue to support the private sector, especially financial institutions to embrace the use of ICT to champion financial inclusion".

¹ The National Gender Policy is available online at URL: http://www.migeprof.gov.rw/uploads/media/National_Gender_Policy-2.pdf

² <https://www.betterthancash.org/news/media-releases/rwanda-to-accelerate-digital-payments-by-joining-the-better-than-cash-alliance>

- The Rwandan government partnered with Ericsson to advance social and financial inclusion through new information, technology and software³. Government of Rwanda enacts clear financial and payment services policies to create a neutral, interoperable and viable market place properly supported by the Ericsson Interconnect Solution. Rwanda aims to become Africa's first truly digital economy leveraging Ericsson M-Commerce Interconnect for seamless financial services. Ericsson and the Ministry of Finance and Economic Planning have signed a breakthrough agreement for the launch of a national interoperability switch based on the Ericsson M-Commerce Interconnect solution that will enable financial and payments services providers in the country to connect to one common platform for seamless and real-time payment transactions. The major benefit of this system is that it will allow informal sectors such as savings cooperatives and microfinance players to participate in the mainstream financial sector thereby deepening financial inclusion in the long run.
- WorldRemit and Tigo Rwanda launched instant international money transfers to Tigo Rwanda mobile wallets⁴. Dubbed the 'Whatsapp of money' partnered with Tigo Rwanda enabling over 2.6 million adults to receive international remittances. This is a step in the right direction as more adults are enabled to conduct international transfers – both sending and receiving.

All the above developments support initiatives to drive the Vision 2020 and transform the economy into a cashless society.

1.1 Enabling environment – drivers of DFS usage

In order to drive maximum usage, there ought to be an enabling regulatory environment. The Rwandan government does have supporting policies in place as shown by the following policies.

- Payments systems bills (E-payments)
- Automated transactions by 2018
- Financial education strategy
- Product penetration

In order to complement the policies, there is the need for digital financial services and products. As part of the digital finance eco-system is the presence of financial services that offer branchless services, mobile banking, agent banking, internet banking, mobile money and mobile vans. As of 2016, Rwanda has all the above mentioned financial offerings, services and channels, setting the platform for maximum usage of digital finance.

However other aspects of the environment are necessary in order to make best use of digital financial services:

- Mobile connectivity
- Access to the service points

As stated in the main report, the FinScope results show that there are no significant infrastructural barriers to access to financial services. This is further highlighted in the next section which also illustrates the prevalence of financial access points in Rwanda.

³ <https://www.ericsson.com/news/2012607>

⁴ <https://www.worldremit.com/en/news/worldremit-and-tigo-rwanda-launch-instant-international-money-transfers-to-tigo-cash-mobile-wallets>

Table 1: Average time adults take to reach a financial access point

| Destination | Kigali City | Southern Province | Western Province | Northern Province | Eastern Province | Adult population |
|--------------------|-------------|-------------------|------------------|-------------------|------------------|------------------|
| | Minutes | Minutes | Minutes | Minutes | Minutes | Minutes |
| Umurenge SACCO | 28 | 46 | 49 | 49 | 48 | 46 |
| MFIs | 30 | 54 | 57 | 59 | 56 | 53 |
| Bank branch | 31 | 55 | 58 | 59 | 56 | 53 |
| ATM | 32 | 55 | 59 | 60 | 57 | 53 |
| Bank agent | 28 | 53 | 56 | 55 | 52 | 50 |
| Mobile money agent | 18 | 35 | 33 | 34 | 28 | 31 |

The Table above illustrates that bank and mobile money agents are easily accessible and could be accessed within 28 minutes. This offers an opportunity for financial service providers to serve these areas. Mobile money agents are the most accessible points than any other point nationally. Bank agents are also somewhat accessible, especially in Kigali City as it takes 28 minutes on average to reach the nearest bank agent. Mobile money and bank agents are part of the digital finance eco-system as they reduce the need for cash transactions as far as possible.

Table 2: Number of outlets in Rwanda

| | 2015 | | | 2014 | 2013 | 2012 | 2011 |
|----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | Kigali City | Provinces | Total | Total | Total | Total | Total |
| Number of branches | 68 | 105 | 173 | 171 | 160 | 149 | 142 |
| Number of sub-branches | 42 | 141 | 183 | 182 | 185 | 172 | 151 |
| Number of counters/outlets | 68 | 106 | 174 | 162 | 126 | 117 | 115 |
| Total branches & outlets | 178 | 352 | 530 | 515 | 471 | 438 | 408 |
| Banks' agents | n/a | n/a | 2 555 | 2 499 | 2 047 | 844 | n/a |
| Total network | 178 | 352 | 3 085 | 3 014 | 2 518 | 1 282 | 408 |
| Number of client accounts | 1 150 048 | 1 204 960 | 2 355 008 | 2 232 970 | 2 704 664 | 2 548 287 | 1 782 949 |

Table 2 shows the footprint and increment of branches, outlets and agents over time. The biggest increase is noted for bank agents, from zero in 2011 to 2 555 bank agents in a space of four years. Such developments are crucial in rolling out the use of DFS.

Table 3: Card based payment system

| | 2015 | 2014 | 2013 | 2012 | 2011 |
|---|-------------|-----------|-----------|-----------|-----------|
| | Kigali City | Total | Total | Total | Total |
| Number of instruments | | | | | |
| Number of Automated Teller Machines (ATMs) | 380 | 354 | 333 | 292 | 167 |
| Number of Point of Sale (POS) terminals for merchants | 1 718 | 1 152 | 946 | 566 | 227 |
| Number of Point of Sale (POS) terminals for agents | 1 422 | 1 009 | 491 | – | – |
| Number of debit cards | 650 924 | 638 869 | 487 498 | 389 269 | 115 200 |
| Number of credit cards | 3 485 | 2 540 | 845 | 418 | 516 |
| Number of transactions | | | | | |
| ATM | 7 505 815 | 7 488 707 | 7 774 053 | 5 753 163 | 1 976 376 |
| POS Merchants | 373 029 | 185 441 | 111 570 | 63 757 | 38 440 |
| POS Agents | 827 130 | 482 945 | 298 835 | 22 425 | – |
| Value (Rwandan francs millions) | | | | | |
| ATM | 354 049 | 310 009 | 260 585 | 180 567 | 122 536 |
| POS Merchants | 26 625 | 19 223 | 14 718 | 9 034 | 6 438 |
| POS Agents | 21 963 | 13 069 | 11 235 | 658 | – |

Figure 1: Telcos usage



Access – 6% of adults own landline



About 85% of adults have access to mobile phones



Access – 11% of adults own computer

Further 34% are registered mobile money accounts while 10% are using someone else's mobile phone to access mobile money accounts

Table 4: Product penetration and changes over time

| | 2012 | 2016 | Growth/decline |
|---------------------------|-----------|-----------|----------------|
| Banked population | 1 022 236 | 1 464 541 | 442 305 |
| Savings account | 707 465 | 744 574 | 37 109 |
| Loan with a bank | 103 888 | 219 708 | 115 820 |
| An ATM/Debit card | 96 475 | 207 563 | 111 088 |
| Credit card | 2075 | 5283 | 3 208 |
| Current or cheque account | 570 887 | 588 200 | 17 313 |
| Overdraft | 20 171 | 12 833 | -7 288 |
| Foreign bank account | 1 527 | 3 356 | 1829 |
| Mobile banking | – | 180 493 | 180 493 |
| Internet banking | – | 15 316 | 15 316 |

The table above highlights the growth experienced in the financial sector with an increase in penetration of financial services. The noteworthy increase is on the use of mobile banking as above 180 493 adults are actively using the service.

The next section will define digital financial services.

2 Digital financial services

2.1 Defining the digital finance ecosystem

With 89% of adults in Rwanda financially included, there is a need to establish whether these adults are reaping the benefits of being 'financially included'. As such, the use of digital financial services is a means of assessing whether the products that they have/own are benefiting them. The term 'digital financial services', is meant to denote that Rwandans are converting from a cash-based society to a digital society. It also means that one does not need to travel long distances to complete a transaction at a traditional brick and mortar branch, but one can instead easily conduct transactions from the comfort and convenience of one's mobile device – computer, telephone, mobile phone and/or nearest bank agent, ATM or mobile money agent.

Currently there are a few opinions as to what constitutes digital financial services.

On the other hand, the Consultative Group to Assist the Poor (CGAP)^{5,6}, broadly defines "digital financial inclusion" as digital access to and use of formal financial services by excluded and under-served populations. Such services should be suited to customers' needs, and delivered responsibly, at a cost both affordable to customers and sustainable for providers. There are three key components of any such digital financial services: a digital transactional platform, retail agents, and the use by customers and agents of a device – most commonly a mobile phone – to transact via the platform.

- A digital transactional platform enables a customer to use a device to make or receive payments and transfers and to store value electronically with a bank or non-bank permitted to store electronic value.
- Retail agents armed with a digital device connected to communications infrastructure to transmit and receive transaction details enable customers to convert cash into electronically stored value and to transform stored value back into cash. Depending on applicable regulation and the arrangement with the principal financial institution, agents may also perform other functions.
- The customer device can be digital (e.g., mobile phone) that is a means of transmitting data and information or an instrument (e.g., payment card) that connects to a digital device (e.g., POS terminal).

Figure 2: Consumer flow of funds within digital finance ecosystem

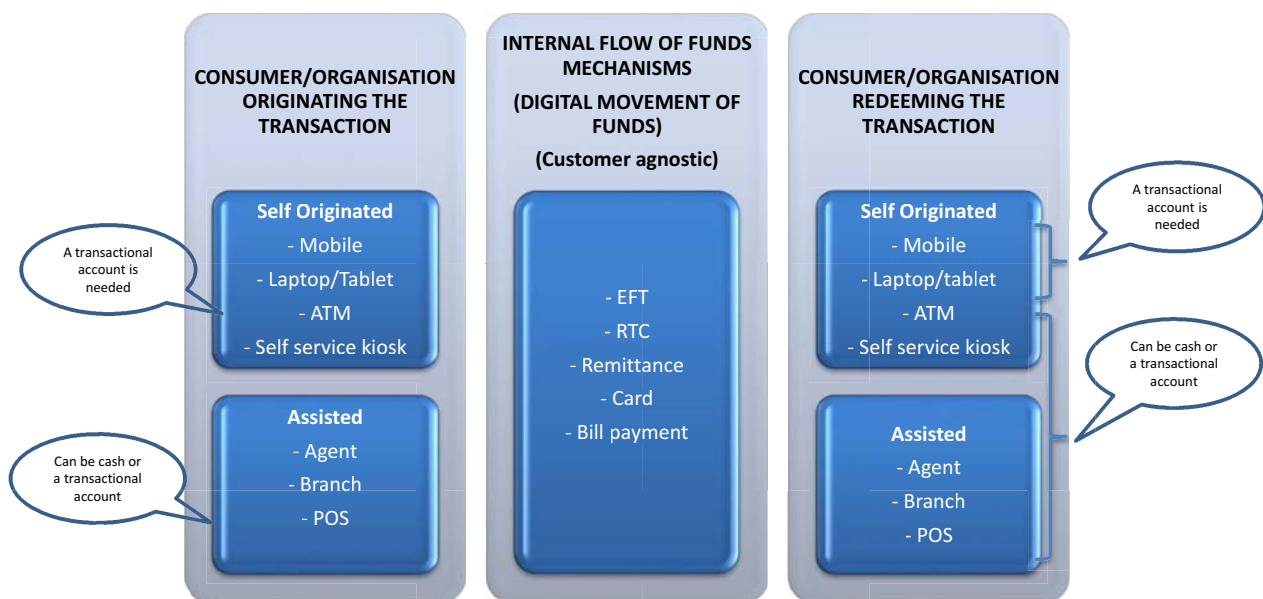


Figure 2 emphasises that part of the objective for DFS is to move consumers into a digitised space for the management of money and to define the individual components of the digitised funds flow in order to ensure that surveys like FinScope assesses these changes correctly.

⁵ <http://www.cgap.org/blog/what-digital-financial-inclusion-and-why-does-it-matter>

⁶ <http://www.cgap.org/topics/digital-financial-services>

As such it is important to consciously note the following:

1. There is the need to constantly separate channels from products – that is separate mobile phone as a channel and financial products that use a mobile platform e.g. mobile banking, mobile money accounts, etc.
2. A mobile money⁷ account and a bank account are as a group defined as a transactional account
3. By transactional account it implies that funds are stored in the account with the main reason being transacting (the issue of interest and savings needs to initially be separated)
4. Pure transactions can be separated into a three groups, viz;
 - a. Cash to account (debatable whether this is a cash originated transaction and therefore should (or should not) be classified as digitised payments)
 - b. Account to cash e.g. sending a remittance from a bank account
 - c. Account to account
5. A need to report on cash-to-cash and cash-to-account transactions – that move the money via digital cash – as it is a step closer to true digitisation
 - a. Over the counter remittances e.g. agent remittances
 - b. Payment of accounts/bill payments using cash at pay-points e.g. telephone accounts paid at a retailer
6. The diagram (Figure 2) gives an overview of the originating channel – digitisation space to move the e-cash and the subsequent redeeming channel
7. A need to look at transactional accounts holistically - just because an individual has an account does not imply he activates (uses) the account. He could sweep (make withdrawal of all money in an account) the account on day 1 and use cash for the rest of the month

The Helix Institute of Digital Finance defines an OTC transaction⁸ as “a transaction that the agent conducts on behalf of a customer from either the customer’s or agent’s mobile money account.” This definition includes both transactions conducted by a teller or an agent from his/her own account on behalf of a customer. The definition also includes agent-assisted transactions that are popular in sub-Saharan Africa, where many users already have mobile money accounts, but are assisted by the agent to make their transactions.

Ideally, digital financial services take away or reduces the need for an individual to travel longer distances to access financial services (thus save costs and time), to stand in queues (save time), to make credit or savings enquiries of their balances or investments at the traditional brick and mortar structures (save time and costs). It enables individuals to make and receive payments from the comfort of their mobile phones or digitally enabled devices available in their vicinity. This is appreciated by those in the remote parts of Rwanda who normally would travel to the nearest financial access points in nearby towns or central business districts to conduct such transactions.

As such, digital finance is another step of making financial markets improve the lives of the poor and the previously marginalised by accumulating all these ‘savings’.

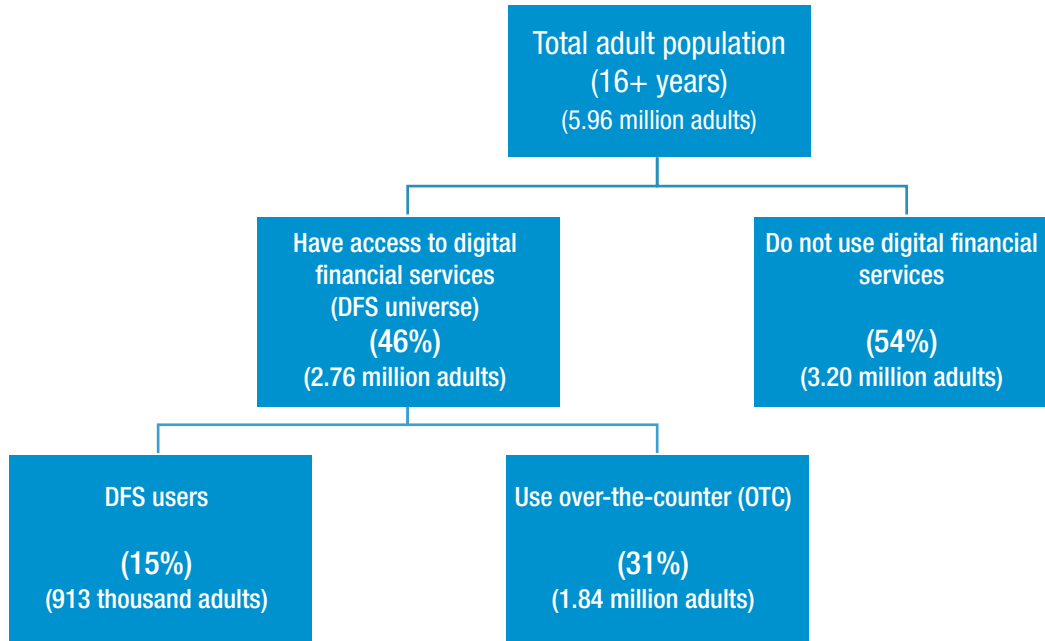
⁷ FinMark Trust (2016) defines mobile money as “an electronic representation of conventional money, the value of which is on par with the official currency of the licensing country, which may be transferable, redeemable for cash and is generally accepted means of payment”.

⁸ <http://www.helix-institute.com/blog/debunking-myth-otc>

3 Usage of digital financial services in Rwanda

Part of the progression of financial inclusion is to enable the account-holders to enjoy the benefits of the accounts that they have. The same applies to digital financial services.

Figure 3: Defining digital finance by category



As shown in Figure 3, there are 5.96 million adult Rwandans. Of the total population, 2.76 million are part of the DFS ecosystem while 3.2 million are not. Further, from the 2.76 million, there are 913 000 adults who actively use digital finance whereas 1.84 million adults use over-the-counter services.

DFS users are individuals who use services such as internet banking, mobile banking, mobile money and card payments for payments and are unassisted. OTC users are individuals who are assisted by agents or tellers on behalf of customer to conduct financial transactions.

As of 2016, 46% of all Rwandan adults were part of the DFS ecosystem as shown in Figure 4. This segment (46% of adults are part of the DFS ecosystem) only reflects those that are using DFS, and excludes those that have the means but are not using DFS. This is a sharp contrast to the 89% of the financially included.

Figure 4: Originating or redeeming a DFS transaction

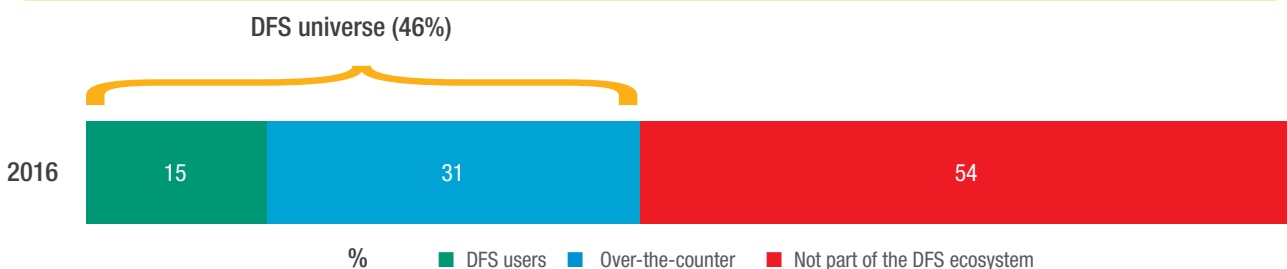


Figure 4 shows that, 46% of adult Rwandans are part of the digital finance ecosystem. However only one in six adults use digital finance for payments and related transactions. The majority (31%) have the DFS enabled products and services but are assisted by agents and tellers.

3.1 Characteristics of the DFS users

As outlined above, only 15% (about 913 000 adults) use digital finance. Their profile and characteristics are outlined below.

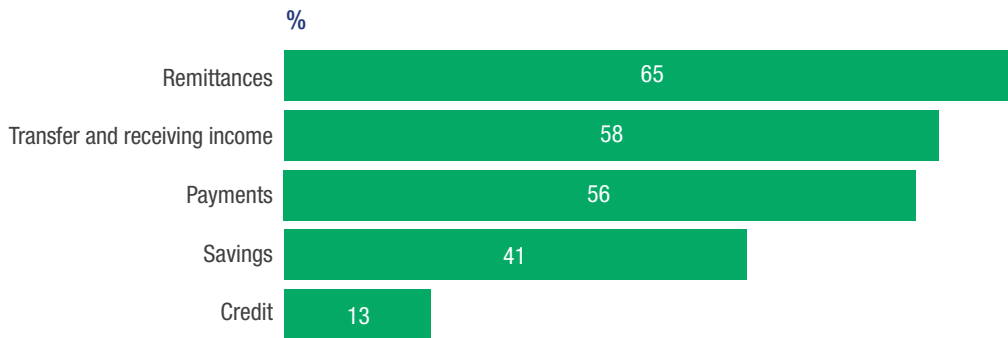
Table 5: Profile of DFS users

| | Population | DFS users |
|----------------------|------------|-----------|
| Province | % | % |
| Kigali City | 13 | 30 |
| Southern province | 25 | 23 |
| Eastern province | 24 | 18 |
| Western province | 22 | 15 |
| Northern province | 16 | 14 |
| Location | % | % |
| Urban | 16 | 37 |
| Rural | 84 | 63 |
| Gender | % | % |
| Male | 43 | 48 |
| Female | 57 | 52 |
| Age categories | % | % |
| 16 – 17 years | 6 | 4 |
| 18 – 30 years | 34 | 35 |
| 31 – 40 years | 23 | 27 |
| 41 – 50 years | 16 | 18 |
| 51 – 60 years | 11 | 9 |
| 61 years and above | 10 | 7 |
| Education levels | % | % |
| No education | 21 | 10 |
| Primary education | 44 | 40 |
| Secondary education | 21 | 37 |
| Vocational education | 1 | 2 |
| Tertiary education | 3 | 13 |
| Sources of income | % | % |
| Salaried | 6 | 25 |
| Wages from farmer | 9 | 11 |
| Money from farming | 50 | 31 |
| Piecework | 37 | 22 |

As expected, those in urban areas have a higher propensity to use DFS services as shown by skews towards Kigali City and other urban areas. The DFS skews are also prominent for males, those aged 31 and 50 years of age, those with higher educational accomplishments and the salaried. This is also consistent with the make-up of those that have the ‘technical know-how’ who fully take advantage and exploit the benefits of digital finance. For a financial education strategy, it can be noted that the content and message would be different for those with different educational achievements and other differentiating demographic features. For example, those earning their livelihoods from farming, the examples given of the DFS transactions would include how to pay suppliers (and agricultural food processors), how to receive payment from customers, how to save money and get credit digitally. Such messaging would effectively ‘hit home’ as the farmers could relate to these transactions.

From the figure above, it is clear that although 46% are using DFS products, only 15% are not cash-based transactions either originating or redeeming the transaction. Assisted transactions include OTC transactions.

Figure 5: Drivers for Digital Financial Services uptake in Rwanda



Based on Figure 5, 65% of adults (based on those using DFS) are using DFS for remittances. This is closely followed by 58% using it to transfer and receive income, and 56% using it for payments. Interestingly, 41% of DFS users are saving digitally – a financial behaviour that should be encouraged. A noteworthy 13% are accessing credit digitally while none are using DFS for insurance premium payments.

Frequency and channel of DFS

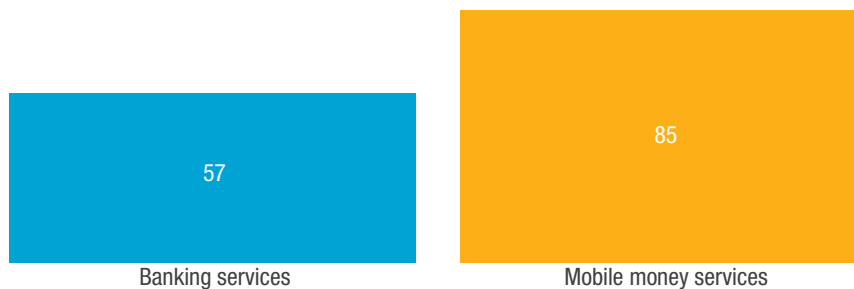
Following from the previous section where it was reported that 15% of all adults are using digital finance, this usage is driven by the purchase of airtime and payments including paying bills, school fees and receiving income/salaries. To further differentiate DFS usage, a distinction is drawn between those that use DFS monthly, less often and dormant as highlighted in Figure 6 below.

Figure 6: Differentiating usage of DFS (% of those that use DFS products)



Though the use of DFS is a step in the right direction, if its use is intermittent it means that the account-holders are not consistently benefiting from this technical advancement. Furthermore, it could be that adults themselves do not fully understand the full benefits of DFS, as only 76% of DFS users are active users while 24% use them inconsistently or intermittently.

Figure 7: DFS transactional account used



As stated earlier, DFS is a function of mainly two transactional accounts – bank accounts and mobile money that are accessed through digital channels. As shown in Figure 7 above, the main channel used for DFS is mobile money (85%), while banking services is less used at 57%. The results show that Rwandans have an appetite for using their mobile based accounts to facilitate payments. This can be viewed as an opportunity since 85% of the adults come from households that own one or more cellphones.

The next section further explores the second segment – those using OTC.

3.2 Characteristics of the OTC users

The study shows that there is a cohort of individuals who have access to DFS enabled products and services but are not using them efficiently and effectively or are assisted when conducting transactions. This cohort constitutes 31% of all Rwandan adults, totalling 1 840 000 individuals.

Table 6: Profile of those who conduct over-the-counter transactions

| | Population | OTC users |
|--------------------------|------------|-----------|
| Province | % | % |
| Kigali City | 13 | 17 |
| Southern province | 25 | 23 |
| Eastern province | 24 | 26 |
| Western province | 22 | 20 |
| Northern province | 16 | 14 |
| Location | % | % |
| Urban | 16 | 22 |
| Rural | 84 | 78 |
| Gender | % | % |
| Male | 43 | 50 |
| Female | 57 | 50 |
| Age categories | % | % |
| 16 – 17 years | 6 | 5 |
| 18 – 30 years | 34 | 29 |
| 31 – 40 years | 23 | 23 |
| 41 – 50 years | 16 | 19 |
| 51 – 60 years | 11 | 19 |
| 61 years and above | 10 | 11 |
| Education levels | % | % |
| No education | 21 | 11 |
| Primary education | 44 | 56 |
| Secondary education | 21 | 30 |
| Vocational education | 1 | 2 |
| Tertiary education | 3 | 2 |
| Sources of income | % | % |
| Salaried | 6 | 4 |
| Wages from farmer | 9 | 8 |
| Money from farming | 50 | 51 |
| Piecework | 37 | 33 |

Over-the-counter users are notably skewed towards Kigali City and somewhat to Eastern province and more evident in the older generation, i.e. those aged between 41 years and 60 years. Contrary to DFS users, OTC users predominantly possess primary and secondary education. This is an important insight that ought to be encapsulated in the financial inclusion strategy in order to bring them into the group of DFS users..

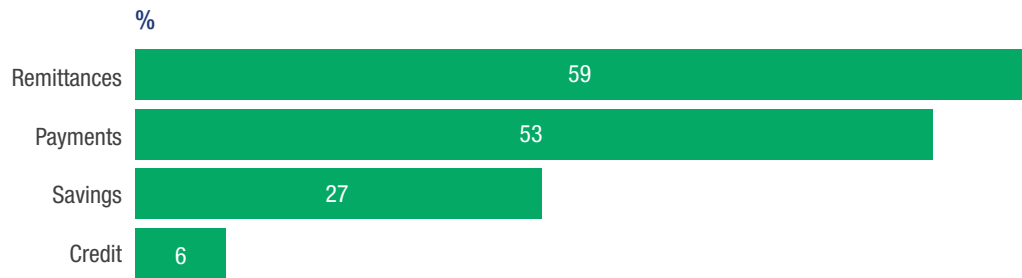
Figure 8: Drivers for OTC transactions

Figure 8 above illustrates that Rwandan adults who conduct OTC transactions are mainly remitting (59%). However, 53% are using it for payments while 27% are saving and only 6% are accessing credit. This means that at some point during either originating or redeeming the transaction, they handle cash. As documented in the main FinScope report, there are instances where adults go to a bank branch to pay school fees and make other payments through the assistance of tellers. About 300 000 adults (17%) take it upon themselves to go to bank branches to queue for school fees payments. Such situations could be tackled through educating them about alternative ways to complete such transactions, a concept known as 'teachable moments'. This simply means that when an opportunity arises for Rwandans to be assisted to complete school fee payments at the teller, it is at that moment that they could be taught the benefits of DFS for similar payments.

There are over 800 000 adults who are assisted by mobile money agents to purchase airtime. This trend of repeat assistance does not empower adults to truly benefit from having the mobile money account. It may be expected of adults to be assisted on the first experience(s), but they ought to be given the 'know-how' to improve the quality of their lives by purchasing airtime themselves.

Such examples highlight why DFS could improve the quality of lives.

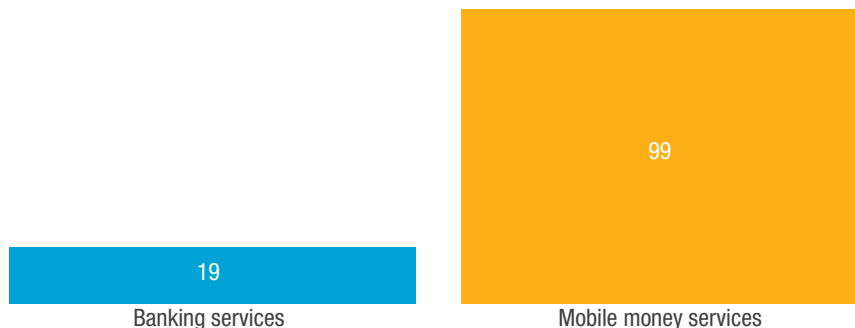
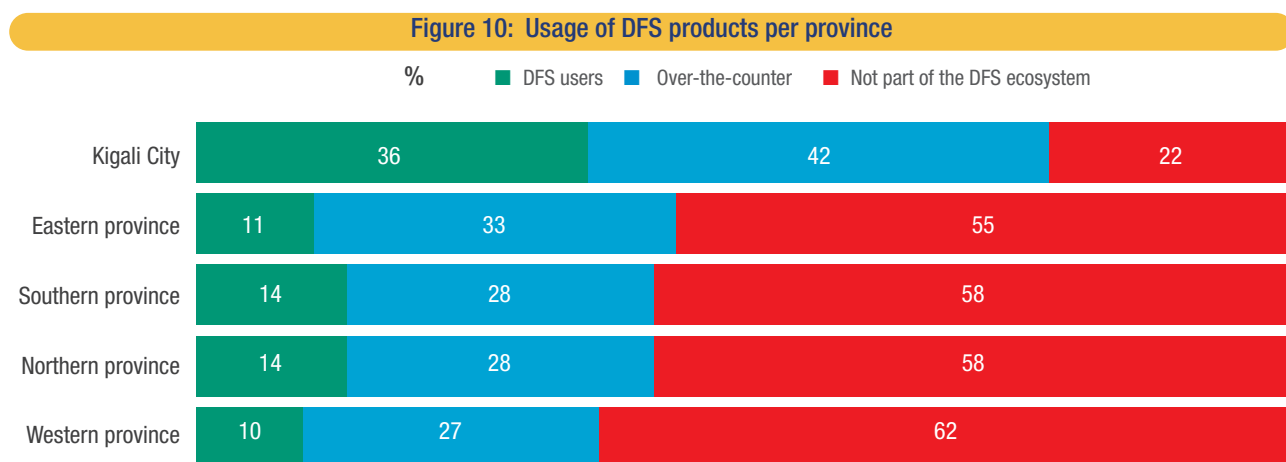
Figure 9: Access to transactional accounts by the OTC users

Figure 9 indicates that Rwandan adults who conduct OTC transactions are mainly using mobile money services (99%), while banking services lag behind with 19%. This preferred channel shows why there is a proliferation of mobile money agents compared to the roll out of banking services.

The next section examines the entire DFS ecosystem using different segmentations variables.

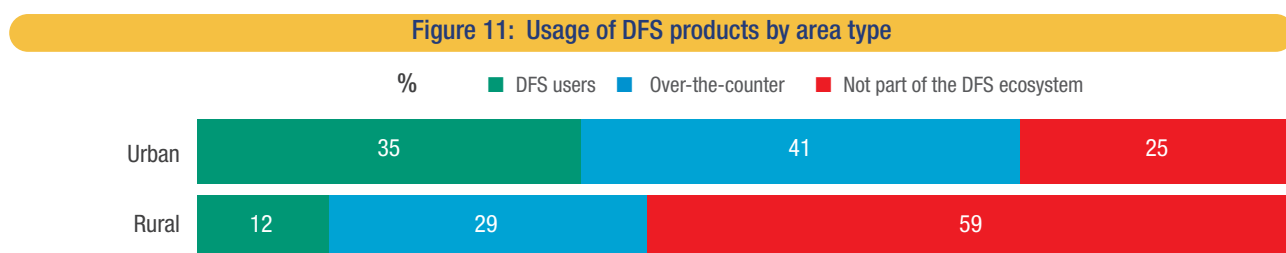
3.3 Overview of the digital finance ecosystem

Although DFS has a broad ecosystem, it is important to highlight whether DFS transactions were self-originated or assisted (OTC). Note that self-originated implies that ‘ideally’ consumers do not use cash either to originate or redeem the transaction. To unpack these further, cross-tabulations were done to view the results by province, gender, age and area type in the next figures below.

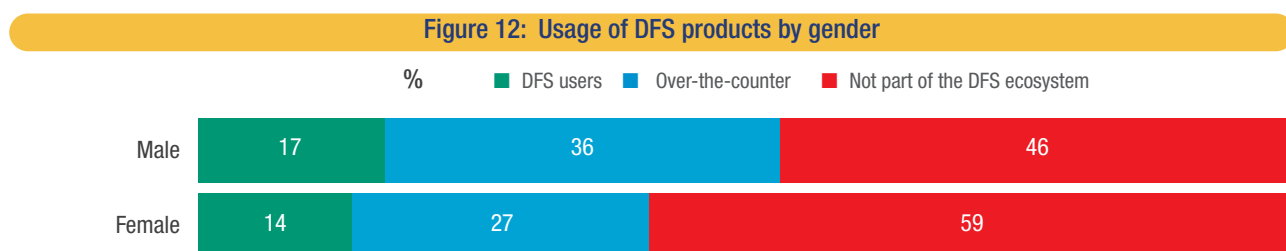


As expected and in line with the main findings of FinScope Rwanda 2016 (see summary report), Kigali City has the highest use of digital services in the country with 36% followed by the Northern and Southern province at 14%. Western and Eastern provinces have the lowest percentage of DFS users.

In most provinces it is worth noting that OTC transactions are almost double for purely DFS transactions, and as much as three times more in the Eastern province. For each of these provinces, OTC transactions are significantly higher than DFS ones.



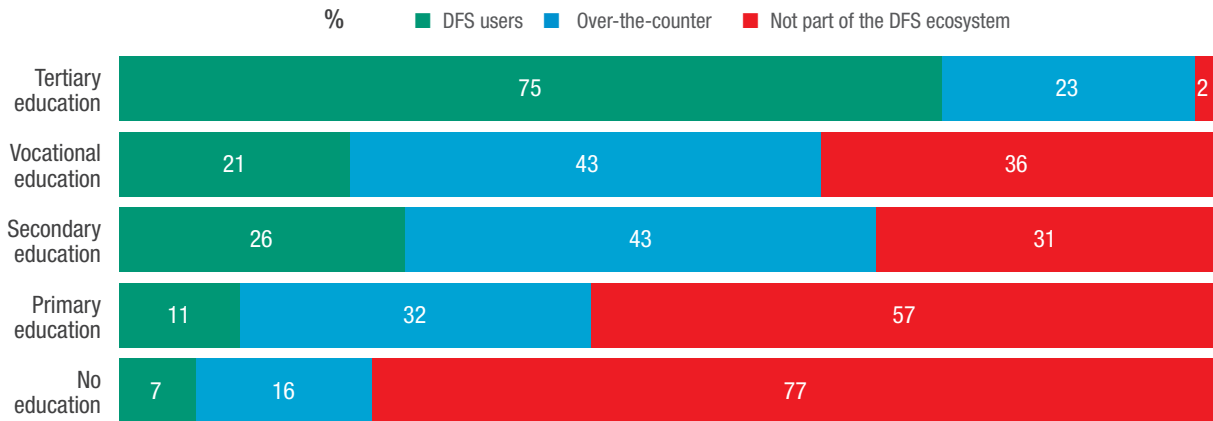
The urban centres have a higher degree of DFS usage compared to rural settings due to infrastructural developments in these areas. The connectivity rates and supporting digital infrastructure are typically more prevalent in urban areas. Figure 11 above illustrates that 35% of urban adults are using DFS products compared to only 12% for rural adults. Furthermore, DFS prevalence is almost three times more in urban areas compared to rural areas. Moreover, 41% of urban adults use OTC transactions compared to 29% of rural adults.



With regards to gender, males are more active users of digital finance (17%) compared to females (14%). It is evident that more males use both DFS and OTC transactions compared to females.

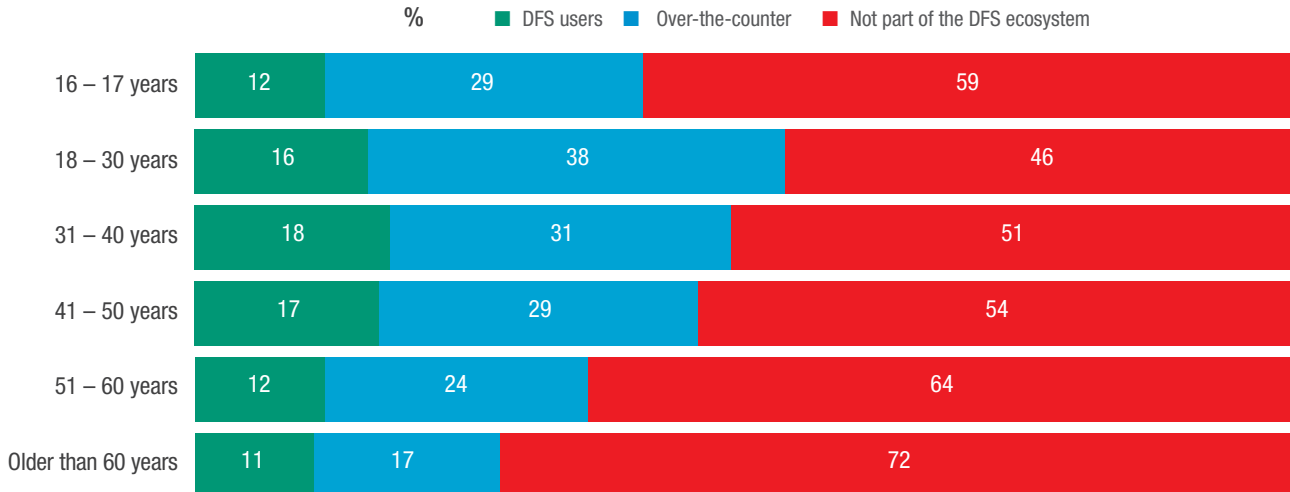
⁹ <http://www.statistics.gov.rw/publication/finscope-rwanda-2016>

Figure 13: Usage of DFS products by education levels



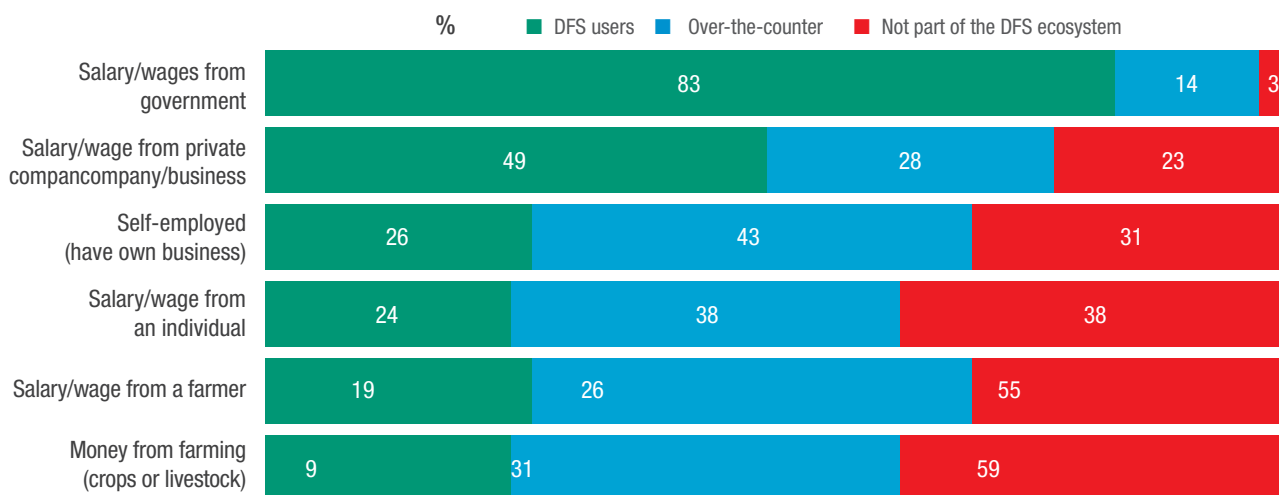
The survey shows that the higher the level of education attained, one is more inclined to use digital financial services. This is shown by the 75% of adults who hold tertiary education using DFS products, while 26% and 21% have secondary and vocational education respectively. Those with no education are less inclined to use DFS products. One can deduce that since DFS is technologically heavy, there is a level of sophistication that is needed to make use of such services. Additionally, financial awareness alone is not enough and there is a need to help individuals 'use and interact' with the products – i.e. experiential learning which involves active experimentation with the DFS products, a role most suited for financial service providers. Also, as individuals attain higher levels of education, they are more likely to use DFS. Similarly, as individuals have lesser levels of education, their appetite for OTC increases. This negative correlation supports why individuals may seek the assistance of an agent or teller to complete a transaction. This suggests that levels of confidence are closely correlated with levels of education which in turn influences the choice of transactional methods.

Figure 14: Usage of DFS products by age categories



Age is another strong indicator for the use of DFS. The age group 18 to 30 years has the higher percentage (54%) of combined DFS and OTC users, followed by 31 years and 40 years with 49%. These age categories have some adults using DFS products and OTC services, suggesting that messaging can be sent across the board. Although DFS is technically-orientated, it is a challenge embraced and well received by the youth and those aged between 31 and 50 years as demonstrated by their appetite for the use of DFS products. Age-wise, Rwandans aged between 18 to 40 years are showing that they are using more OTC and DFS transactions.

Figure 15: Usage of DFS products by source of income



Using sources of income to understand the DFS ecosystem, those who earn a living through salaries from government (97%) and private companies (77%) are the only sources of income with a high penetration of DFS ecosystem above 70%. For those receiving any sort of income from government it would be expected for them to use some form of DFS enabled products as the Rwandan government has endeavoured to make salary payments digitally. To maximise DFS usage, other institutions should be encouraged to make electronic payments to recipients (specifically the private sector) – this will simultaneously deepen financial inclusion. It can be noted that most DFS users obtain income from government related sources, while those receiving income from farming related activities, are self-employed, receive salary from individual and money from farming, mostly use OTC transactions. Other than the government, other sectors are more cash-based, but show an opportunity to migrate the OTC users to DFS, low hanging fruits.

3.4 Strategy of deepening usage for digital finance

Recently, literature has been well documented that digital finance has the potential to deepen financial inclusion. As such, it is encouraging that 46% of Rwandans are within the DFS ecosystem even though only 15% are active users. Any strategy to deepen financial inclusion would primarily involve two important steps, that is, setting targets and outlining the required interventions and actions.

Phase 1: Setting targets

The suggested targets could be set as:

- By 2018 – increasing the pool of active users to 25% of adults (currently 15%)
- By 2018 – upgrading those who use assisted DFS services to self-initiate. This means that adults would improve the quality of their lives by minimising travel costs and time of going to financial access points to conduct transactions.
- By 2018 – reduce the pool of those outside the DFS ecosystem to 40% (currently 54%). Though the focus will remain on increasing the DFS users' pool, monitoring those outside the ecosystem will inform what strategic interventions are needed over time.

Phase 2: Strategic interventions

Within the financial education community, there are currently competing interests on who should champion 'financial education programmes within the financial sector. Policy makers do not have enough reach to consumers to implement these, while on the other hand financial service providers have the reach. For financial service providers there is no clear guidelines to make a distinction between marketing and financial education. Therefore, there is the likelihood that financial service providers would market their products as opposed to provide financial education. Some models that have been used in some markets include:

Some models that have been used in some markets include:

- Industry levy – introducing an industry levy where financial service providers pay levies to sponsor the implementation of financial education programs by an independent organ/entity under the supervision of policy makers.
- Teachable moments – teachable moments refer to an unplanned opportunity that arises where a teacher has an ideal chance to offer insight to a student. In the DFS context, it means an opportunity where a consumer could be exposed to alternative ways of conducting financial transactions using digital financial services and the benefits that accrue through such use. For example, a consumer walks into a bank branch to transfer money between own accounts, presents an opportune moment to introduce and 'teach' the consumer how to do the same transaction from the convenience of their mobile device or computer.
- Nuanced programs – for maximum use of DFS, there is an underlying expectation that adults are willing to use technology and are technically capable to do it themselves. As such, there will always be a need for nuanced research and interventions for various segments of society. For example, youth respond differently to technology than the older generation. As such the message delivery mechanism would vary. Edutainment (a combination of education done through entertainment models like theatre, plays or drama) is more suitable for the youth than the older generation.
- Continuous research into DFS – another underlying foundational requirement is that for adults to take advantage of DFS, other than for USSD (Unstructured Supplementary Service Data) enabled transactions, the minimum capability a device/channels needs is internet connection capability. This includes smartphones, laptops, tablets and computers and access to data, wifi or internet connection to access internet banking. Such requirements may be limiting and possible solutions need to be found.

In order to deepen both the frequency and the channels of DFS use, a possible two-pronged financial education strategy could be adopted:

- Phase 1: Build awareness campaigns for financial services that have digital functionality such as bank accounts and mobile money accounts. For this phase, it is mostly relevant for adults who do not have such types of financial products and therefore the benefits of such accounts need to be made clear. The ideal champions of such campaigns would be Non-Governmental Organisations (NGOs) and developmental agencies supported by government agencies as part of the financial inclusion drive.
- Phase 2: Migrating from a cash-based mind-set to a digital mind-set – these financial education campaigns are targeted at those adults who have bank accounts and mobile money accounts but still prefer to use cash. This means that Rwandan adults are not deriving maximum benefits from the products that they have. The ideal champions of such campaigns could be the financial service providers as it is within their ambit. .

From the results above, it was important to understand the perceptions of those adults who do not have or use DFS products (3.2 million adults). Note that the results below are based on those that do not use/have DFS enabled products.

4 Motives and barriers for not being part of the DFS ecosystem

Since 46% of all adults are part of the DFS ecosystem (15% DFS users and 31% OTC users), it is equally important to understand the perceptions and barriers of the 54% of adults not part of the DFS ecosystem. Understanding their perceptions regarding the use of technology, their preference for cash, trust related issues and barriers to usage and uptake is outlined below.

Preference for cash

Figure 16: Percentage of adults who answered 'true' to the statement

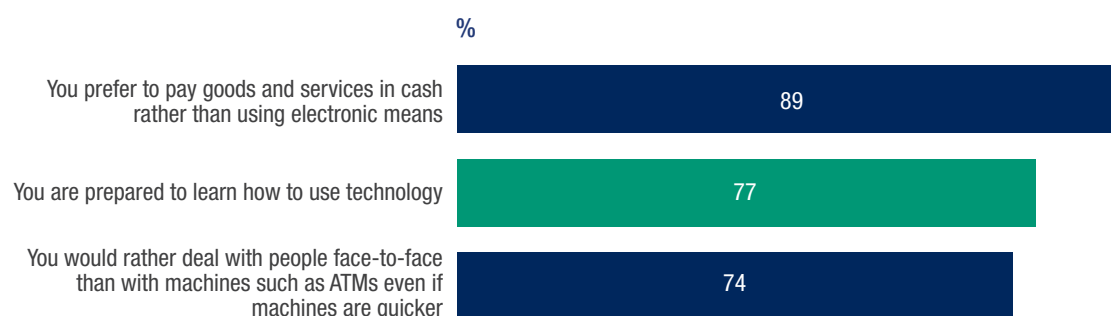
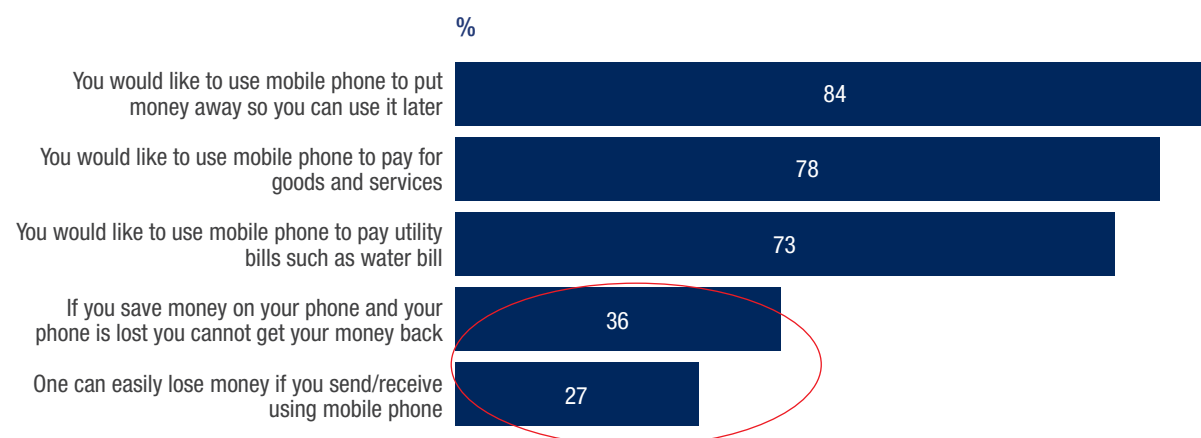


Figure 16 shows that based on the 54% of adults who do not form part of the DFS ecosystem, 89% prefer cash as a means of payment, while 74% claimed to prefer human interaction. These are important points to consider when developing a digital finance strategy. Moreover, 77% of adults report that they are prepared to learn how to use technology reaffirming that there is the opportunity for DFS dedicated financial education programmes.

Perceptions on mobile money

Figure 17: Percentage of adults who agree with statements (% of adults not part of DFS ecosystem)



Apart from willingness to learn how to use technology, adults also reported their willingness to use mobile phones (i.e. mobile money) to save (84%), to pay for goods and services (78%) and for utility payments (73%). Rwandan adults also demonstrated an understanding of concepts regarding mobile money. For example 64% understood that when one loses a mobile phone, one does not lose ones mobile money. Similarly, 73% understood that one does not easily lose money when transacting using a mobile phone. However, for reassurance, this message needs to be re-emphasised.

Of the 54% not part of the DFS ecosystem, the study sought to understand where they source their financial advice from. This information is a good indicator of the level of financial sophistication that adults are exposed to.

Figure 18: Main sources of financial advice (% of adults not part of DFS ecosystem)

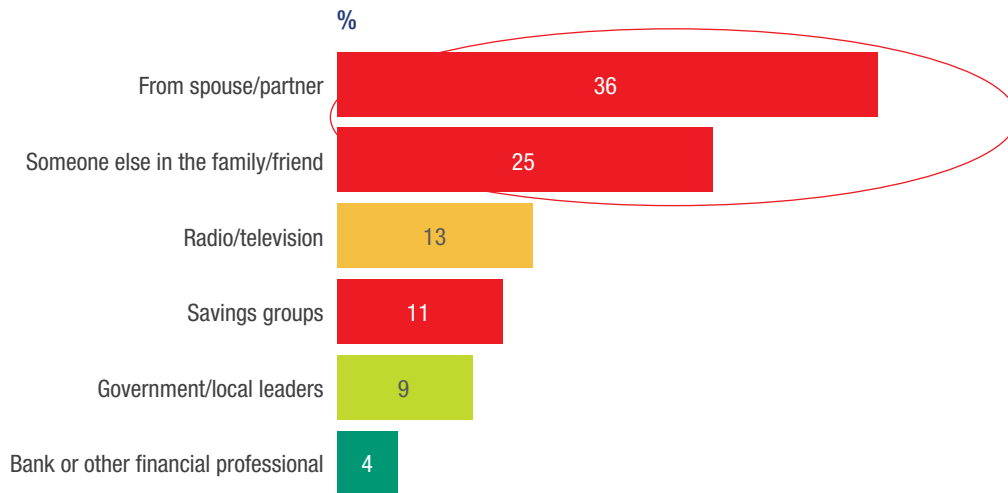
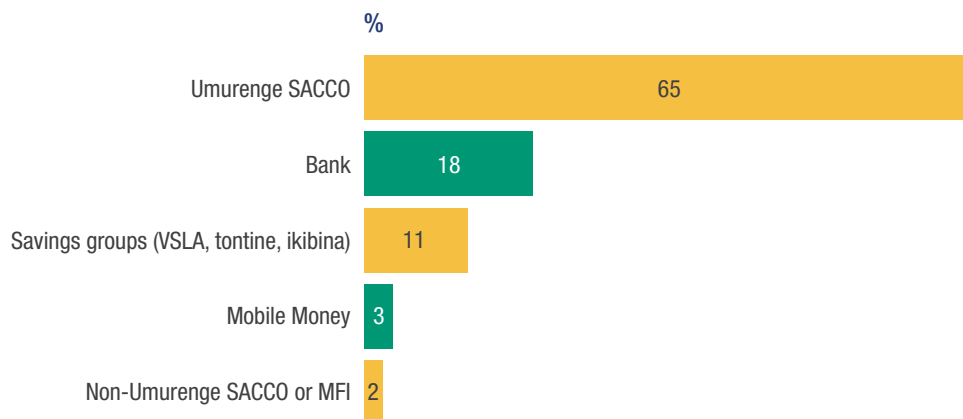


Figure 18 shows that 36% of adults source their financial advice mainly from their partners or spouse, and 25% source advice from someone else within the household or a close friend. This means that the closest environment serves as a source of financial information which is risky as one is 'only as good as one's source'. This highlights the need for more reliable sources of information to be put forward and made accessible for the meaningful transfer of accurate and reliable financial information.

Trust issues

Figure 19: Institutions adults trust to save money with



Although some DFS enabled products have the functionality to save money, most adults who do not form part of the DFS ecosystem still prefer to use Umurenge SACCO as an institution of choice. However, there are small pockets of opportunities as 18% of the adults who are inclined to save do so through banks, and 3% may save through mobile money accounts. Since the element of trust is present, these segments are an opportunity for presenting digital savings offerings.

Figure 20: Institutions adults trust to borrow money from

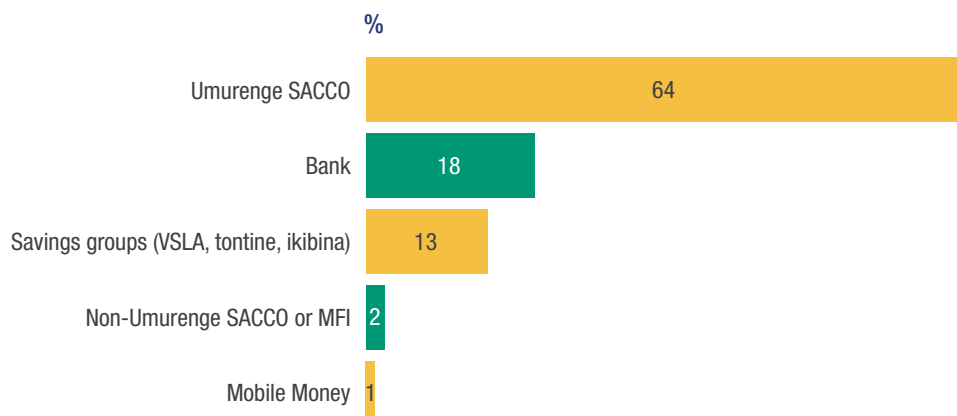
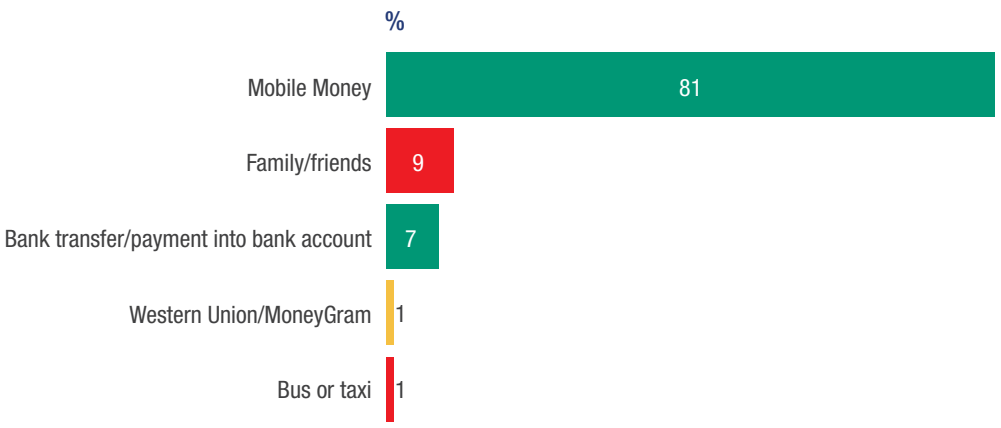


Figure 20 illustrates that adults do not trust DFS enabled products to borrow money from and this will always be a limiting factor.

The study indicates that trust is a barrier that should be reversed in order to make any significant progress with the active use of DFS products. The ideal solution is dedicated financial education with focused financial literacy content on DFS and its merits. DFS products could also be actively used for remittances as the next figure shows.

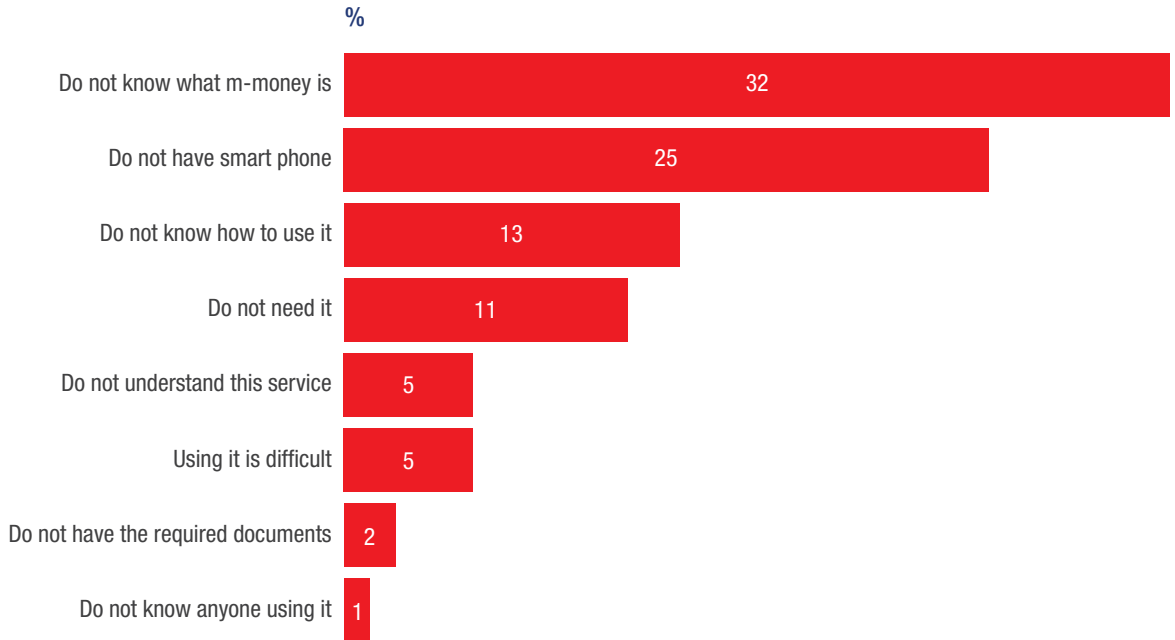
Figure 21: Institutions adults trust to remit through (% of adults not part of DFS ecosystem)



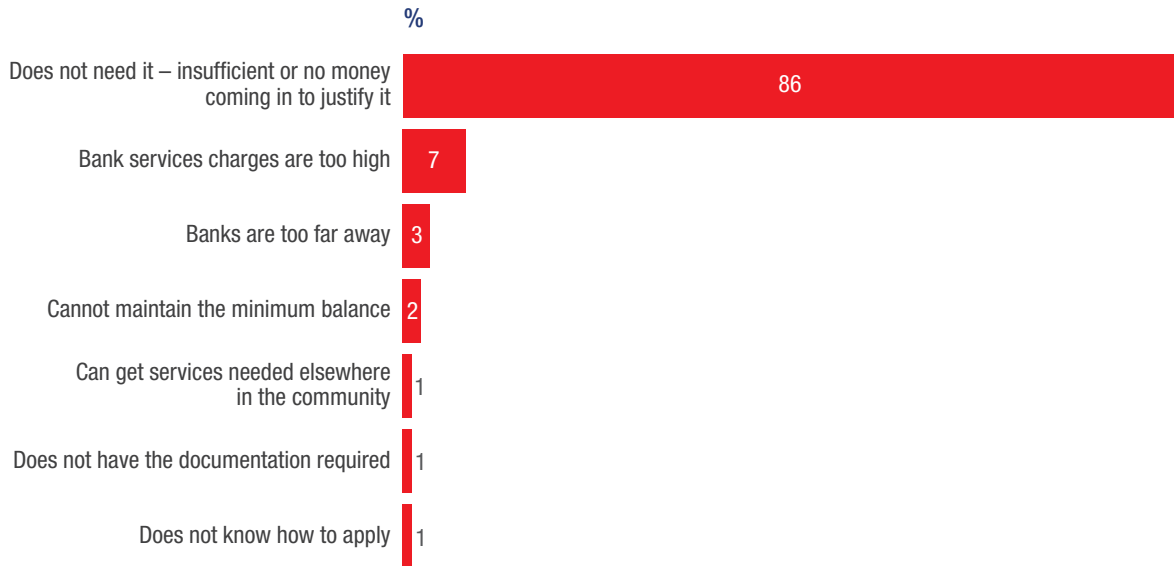
Since adults trust bank transfers and mobile money services for remittances purposes, this could be leveraged to justify the merits of digital transactions. These would also pave the way for the piloting of experiential learning – where knowledge is derived through experience.

Barriers to being part of DFS ecosystem

Figure 22: Barriers to using mobile money (% of adults not part of DFS ecosystem)



Of those not part of the DFS ecosystem, 32% claimed that they do not know what mobile money is. Furthermore, 25% indicated that they do not have smartphones, and 13% claimed to not know how to use it. These are indicative of limited financial knowledge which could be resolved with DFS financial literacy campaigns.

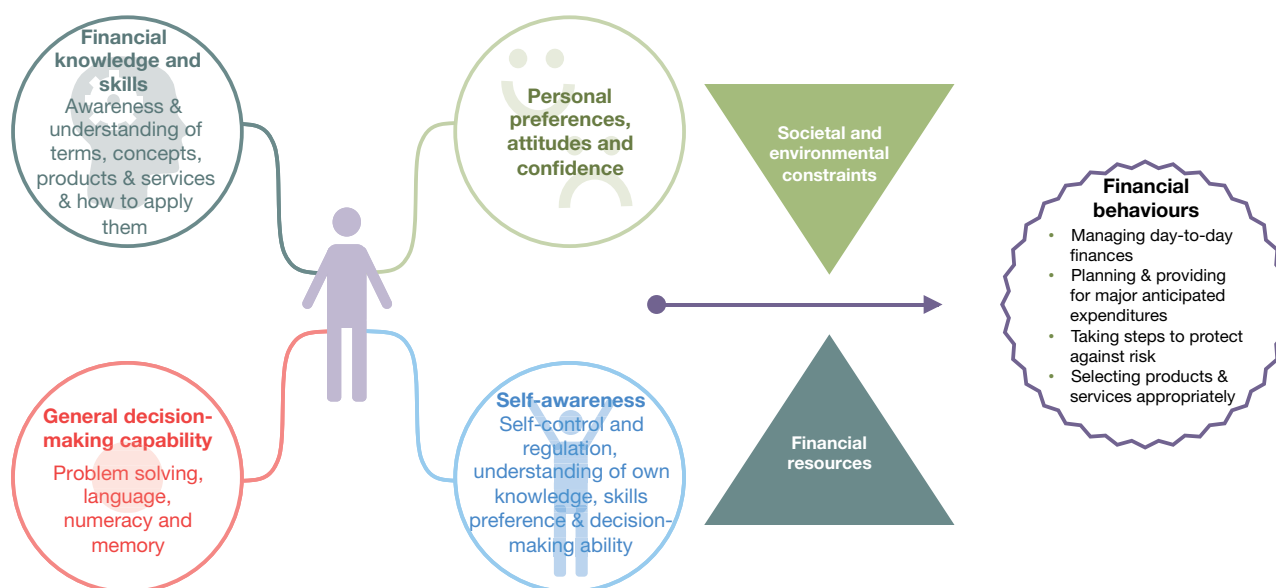
Figure 23: Barriers to using bank accounts (% of adults not part of DFS ecosystem)

Having a bank account is necessary to conduct digital transactions. About 86% of adults do not conduct digital transactions due to insufficient money to justify having a bank account, while 7% reported that bank service charges are too high. Part of the financial inclusion mandate is to enable adults to have transactional products like bank accounts – a mandate championed by policy makers, developmental agencies and NGOs such as AFR.

5 Financial capability

The objective of this report is to encourage the use of digital finance with the intention of benefiting consumers. The findings of the FinScope Rwanda 2016 survey will be used to determine areas of financial literacy that require increased focus when developing a DFS strategy. However, it is important to understand that improving financial literacy in itself is not sufficient to influence behaviour change. There are various factors that influence a person's financial capability which are important when considering and designing programmes to support a strategy. For example, there is a *minimum or superficial* level of technical sophistication that adults need to have in order to efficiently operate mobile devices and computers, laptops, or tablets. In the absence of technical know-how, this could be a hindrance for people to effectively use these devices for financial management.

Figure 24: A conceptual model of financial capability¹⁰

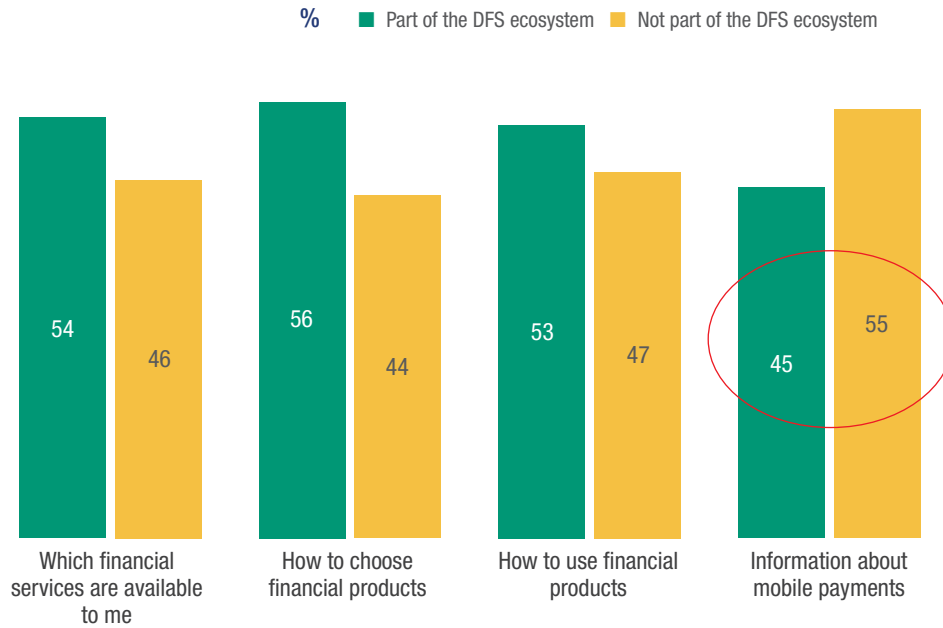


The diagram above illustrates the internal and external factors that contribute to building financial capability. Financial knowledge and skills; personal preferences, attitudes and confidence; general decision-making capability; and self-awareness and regulation are those internal factors which contribute to how a person may conduct their personal finances. In addition there are external factors that influence behaviour. Lack of access to appropriately priced financial services is an example of external factors that could prevent a consumer from utilising certain products and services. This example demonstrates how external factors could impact a person's financial behaviour.

Factors such as cost of smartphones, technical astuteness of adults and the prevalence of points-of-sale influence the use of digital finance in Rwanda. However, these were not covered in the FinScope Rwanda 2016 survey. Despite that, a few questions were posed to adults and their results are presented below.

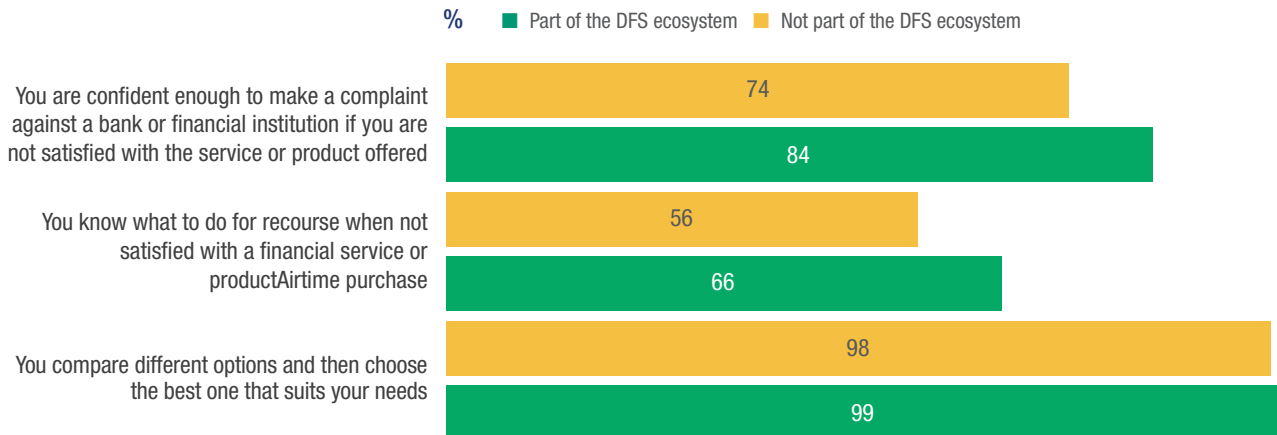
¹⁰ Adapted from: World Bank Financial Literacy and Education, Russia Trust Fund, 2013

Figure 25: Desired financial education



Adults were asked about the type of information that they require on financial products. The table above illustrates the results of those who wanted information which is segmented by whether they are DFS users or not. Of those who require information about the types of financial products that are available, 46% are part of the DFS ecosystem, while 54% are not. Of those who wanted information about mobile payments, the majority (55%) are not part of the DFS ecosystem. This is a reassuring first step in that although they may not be using digital finance, they are still interested in it.

Figure 26: Level of agreement on financial statements (%)



As part of the perception assessment, the survey found that adults showed a high level of agreement with statements such as 'you compare different options and then choose the best one (financial product) that suits your needs'. On the other hand, those not part of DFS ecosystem reported a low level of agreement with statements about their confidence to complain against a financial institution or any recourse when dissatisfied.

The next section will use learnings from other markets for consideration and application in Rwanda.

6 Learning from other markets

Digital finance has been a tremendous success in East African markets and the introduction of M-Pesa in the late 2000's has transformed the financial sector landscape in the region. The growing interest and demand of the population has seen financial technology companies (FinTechs) innovating their offerings to meet the needs.

Below are examples of what an enabling regulatory environment can do to fast-track financial inclusion and the change to a cashless society.

- **M-Pesa** – a mobile payments service in Kenya operated by Safaricom, mobile operator. As of 2015, M-Pesa was available in nine African countries and will allow its 19.5 million users to send and receive money from 19 African countries¹¹.
- **M-Kesho**¹² – is a full savings account issued by Equity Bank in Kenya marketed as an “M-Pesa Equity Account”. Like M-Pesa accounts, M-Kesho have no account opening fees, minimum balances or monthly charges and are linked to limited emergency credit and insurance facilities. M-Kesho is a co-branded product jointly founded by Safaricom and Equity Bank mostly targeted at unbanked users. This account is available on the M-Pesa user interface on customers’ mobile phones and also accessible through Equity Bank’s own mobile services. The account operates on the transactional rails of M-Pesa and account holders can also use loan and insurance facilities.
- **M-Pawa**¹³ – another mobile savings account from Vodacom Tanzania and the Commercial Bank of Africa. The Commercial Bank of Africa replicated the concept branded M-Shwari in Kenya.
- A drive towards **branchless banking** – in South Africa¹⁴, there has been a steady increase in the use of automated teller machines (ATMs) in a bid to drive branchless banking. The same applies to China¹⁵ as well. The need for branchless banking is the first step in familiarising consumers to reduce the use of brick and mortar structures.
- **Point-of-sale points with cash-back option** – South Africa's big banks are leading their global peers in innovating new delivery channels and taking advantage of the growing convergence between mobile and banking technology¹⁶. Some points-of-sale (POS) devices have a cash-back (cash withdrawal) option through retailers like Pick n Pay and Shoprite Checkers. This cash-back option is supported by all major banks.
- **Insurance premiums and pay-outs paid digitally** – It has been noted that there are no linked transactions in Rwanda that are insurance related. In South Africa, insurance premium collections are done digitally through the use of debit orders that go through a bank account monthly on a specified date. This aids adults to not have to; (1) mentally remember to effect the transaction, (2) not miss a payment since insurance works under the premise of being covered if payments are received, (3) having to deal with cash to facilitate the insurance payment. Moreover, pay-outs are also paid digitally to the insured bank account.

¹¹ <http://www.nation.co.ke/business/eMoney/Safaricom-MTN-partnership-Africa/1625712-2694198-yc82wo/index.html>

¹² <http://www.financialaccess.org/blog/2015/7/16/m-kesho-in-kenya-a-new-step-for-m-pesa-and-mobile-banking>

¹³ <https://www.vodacom.co.tz/mpesa/mpawa/welcome>

¹⁴ <http://paycorp.co.za/news-views/the-rise-of-branchless-banks-and-the-need-for-public-service-atm-solutions/>

¹⁵ <http://www.cgap.org/publications/china-new-paradigm-branchless-banking>

¹⁶ <http://www.bdlive.co.za/articles/2012/07/17/fnb-clients-can-draw-cash-at-pick-n-pay-and-shoprite>

7 Conclusions and implications for stakeholders

7.1 Conclusions

The study found that only 15% (913 000) of adults actively use digital financial services, driven by 65% who are using DFS products for remittances purposes, and 58% who are using it for transfers and receiving income. 58% are using DFS for payments, 41% are saving digitally, and only 13% use it to access credit.

Note the absence of adults using DFS for insurance related transactions (whether by design or by systemic constraints).

Characteristics of digital finance users

- Skewed towards Kigali City
- Skewed towards urban areas
- Skewed towards those who attained higher levels of formal education
- Skewed towards males

Additionally, about 31% (1 840 000) of adults are part of the DFS ecosystem but use over-the-counter transactions. These adults are assisted to originate or redeem a financial transaction at the branch or by an agent. These OTC transactions are driven by remittances (59%), payments (53%) and savings (27%).

Characteristics of OTC users

- Skewed towards Kigali City
- Skewed towards urban areas
- Skewed towards males
- Skewed towards those aged between 41 and 60 years

Linkages between financial inclusion indicators and digital finance indicate that DFS could be leveraged to increase financial inclusion and to improve the quality of lives of the account holders.

Financial education campaigns

A possible two-pronged financial education strategy could be adopted:

- **Phase 1:** Migrating from a cash-based mind-set to digital mind-set – these financial education campaigns are targeted at those adults who have bank accounts and mobile money accounts but still prefer to use cash. This means that they are not deriving maximum benefits from the products that they have. Targeted at the 1.8 million adults who are within the DFS ecosystem – the ideal champions of such campaigns could be the financial service providers.
- **Phase 2:** Building awareness campaigns for financial services that have digital functionality such as bank accounts, and mobile money accounts. This phase is relevant for adults who do not have such types of financial products and therefore the benefits of such accounts need to be made clear. The campaigns should be targeted at the 3.2 million adults who are not part of the DFS ecosystem. The ideal champions of such campaigns would be Non-Governmental Organisations (NGOs) and developmental agencies supported by government agencies.

Learning from other markets

The East African block has revolutionised and advanced digital finance with innovative offerings such as M-Kesho. The lessons from other African markets offer invaluable lessons for Rwanda on the impact of DFS in the financial sector for the country.

7.2 Implications for stakeholders

7.2.1 Recommendations for policy-makers and regulators

Deepening financial inclusion

The survey shows that 54% of adults are not part of the DFS ecosystem. For policy makers, the strategies that could be employed are as follows:

- **Increasing the formally served** – The first step could entail graduating the informally served only into the formal sector through creating initiatives to aid this process. The second step is to include the excluded by enabling adults to have at least

one transactional account and participate in the mainstream economy. Over time, as more adults have exposure to financial accounts it would be easier to incentivise the use of digital platforms.

- **Supporting transformation suitable for digitisation** – in order for digital finances to be prevalent, the environment has to be conducive. The Rwandan government has partnerships to support digitisation in the financial sector, and such efforts require support and sustainability.

Develop a national financial education strategy

Inherent in the use of DFS, there is a need for Rwandan adults to understand the benefits of DFS before they can adopt these services. There is an expectation for a local champion to roll out these educational programs and also be informed by evidence. A thorough investigation has to be made to determine if the information in the Rwanda FinScope Survey is sufficient or whether there is a need for a dedicated survey to inform Rwanda's financial education strategy.

More and more countries around the world are developing 'National Financial Literacy Strategies' that would also address the role of financial service providers in delivering such programmes. FinMark Trust has recently completed a Baseline Financial Literacy Survey for Seychelles for which the evidence will be used to inform their National Strategy.

A national financial literacy strategy is ideal to unpack the approaches that can be used in order to deliver messages to various segments of the population.

7.2.2 Recommendations for NGOs and other development agencies

Financial access mapping

Geographic information services (GIS) are useful to map the infrastructure layout and locations of financial access points in order to paint an accurate picture of where points-of-sale (POS) are located. An example of such a resource is found on FSPmaps¹⁷ in Uganda. This is an important resource for financial service providers to identify gaps and to obtain a financial inclusion overview. The potential and gaps shown by financial access maps will aid NGOs and developmental agencies to monitor progress and illustrate that their funds are used to drive a developmental agenda.

7.2.3 Recommendations for financial service providers (FSPs)

Innovative offerings

FinTechs offer the flexibility of being innovative and acting as market disruptors for positive change. In Rwanda, about 3.2 million adults do not use any DFS enabled products and thus do not form part of the DFS ecosystem, indicating that a potential market exists.

Experiential learning

Experiential learning is a process of learning through 'doing and reflecting'. By design, digital financial services enabled products require a level of financial and technical sophistication, and as such financial service providers need to view this offering through the use of experiential learning. The suggested 'experiential learning' theory is based on Kolb's Experiential Learning Cycle with the following premises:

- **Concrete experience** – would involve adults (consumers) to be given an opportunity to test or trial DFS products to complete few transactions with assistance
- **Reflective observation** – adults would reflect on the transaction(s) they may have completed and weigh the pros and cons themselves
- **Abstract conceptualisation** – adults conclude for themselves based on both the experience and the reflections they had. This may be a critical stage where a decision may be taken to 'use or not to use DFS products'. It may also be an opportunity to reinforce or influence them or to test again if necessary

¹⁷ [http://fspmaps.org/#/map@1.301768,31.994934,7\(dark,cicos_uganda\),Uganda](http://fspmaps.org/#/map@1.301768,31.994934,7(dark,cicos_uganda),Uganda)

¹⁸ <http://www.simplypsychology.org/learning-kolb.html>

- **Active experimentation** – those who have decided to actively use DFS products would actively experiment and ultimately result in informed use and a learned account holder
- **Interoperability amongst mobile network operators (MNOs) and banks** – In order to drive digital finance, it is important for MNOs and commercial banks to seek solutions for interoperability and share a common payment and settlement switch/platform.

Encouraging OTC transactions

Of the 54% who are not part of the DFS ecosystem, 74% claimed to prefer to deal with a person as opposed to machines – this is in line with OTC or assisted transactions. As such, consumers could be exposed to various ways to complete financial transactions using this model as a first step towards bringing them into the DFS ecosystem.

7.2.4 Recommendations for Access to Finance Rwanda (AFR)

Full study on supply-side

This report has reported on the digital finance ecosystem based on the responses of the consumers. The other missing part is to complement the demand-side information with supply-side information to create a holistically and sound intervention based on the complete information. Supply-side study would include regulatory and private sector contexts. This recommendation is suitably aimed for AFR since they champion financial inclusion and their advocacy role makes them ideal to interact with different stakeholders from private sector and the regulators.

Furthermore, there are other dynamics at play inhibiting more use of digital finance as illustrated with an example.

According to Mwai (2016), “traders are putting away their points-of-sale machines which facilitate cashless payments using debit cards, you will realise that most of them are dropping out because, in the long, they are finding it expensive to embrace development”. The other aspect mentioned by Mwai (2016) was that at some retailers and shops, debit card transactions are only allowed for amounts more than Rwf 10,000 meaning that a basic commodity like bread will have to be bought using cash.

Such supply-side practices need a dedicated supply-side study to understand their justifications and map possible interventions. The limitation with this report is that it only dealt with demand-side perspectives as per the objectives.

Digital financial services in Insurance

The use of digital services within insurance is non-existent due to a number of potential factors, such as regulatory constraints, the unwillingness on the part of consumers or unavailable facilities for insurance transactions through digital platforms. As such, unearthing the reasons for this can be done through an insurance-focused study.

Undertaking a holistic financial inclusion studies

Through the Making Access Possible (MAP^{19,20}) programme developed by FinMark Trust in conjunction with UNCDF and Cenfri, a combined demand-side study (in this case FinScope Rwanda 2016) and a supply-side study creates a roadmap for a country to develop a comprehensive and holistic financial inclusion strategy. A supply-side study comprises detailed research on a country's regulatory environment and financial service providers. As such a roadmap is developed which may similarly serve as a useful monitoring and evaluation tool for Rwanda and to justify and motivate for funding a specific developmental area.

The advocacy for improved ‘quality of life’

The study showed that approximately 300 000 adults go to bank branches regularly to queue for the payment of school fees. On the other hand, there are about 800 000 adults who are assisted by mobile money agents to purchase airtime. This indicates that such financial transactions could be completed using DFS effortlessly. However, there is possibly a financial literacy gap. AFR is well positioned to champion the advocacy for better quality of life by further exploring the ‘teachable moments’ concept. Teachable moments empower adults to effectively engage and utilise the financial products that they may have resulting in transformation from cash to digital.

¹⁹ <http://www.finmark.org.za/what-we-do/financial-inclusion/making-access-possible/>

²⁰ <http://map.uncdf.org/>

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