



Kenya's Digital Transformation in Financial Sector

By

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IMF Conference on Financial Inclusion, Grand
Palm Hotel, Gaborone, BOTSWANA

July 9 -10, 2018



OUTLINE

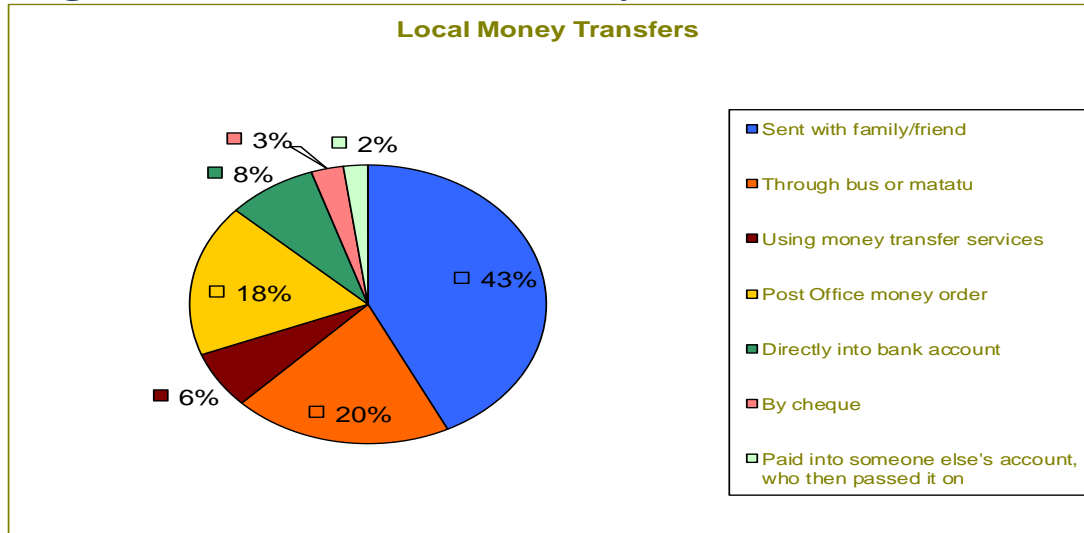
- 1. Prior to 2007...**
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1. Prior to 2007...

- Before the DFS revolution in Kenya, financial sector services were rudimentary;

Figure 1: Mode of local money transfers



- Money remittances were slow, expensive, insecure and inefficient
 - ✓ Local money remittances was; 43% of Kenyans sent money locally through friends; 20% used public transportation; and 18% used local postal office. These channels were hardly secure, efficient or convenient modes of transfers.

- Manual clearing and settlement of cheques took more 14 days; and 21 days minimum for upcountry cheques - fraud, theft and loss of cheques in transit were common.
 - Digitization through Automation Clearing House, adoption of Value Capping, Magnetic Ink Character Recognition (MICR) technology and in 2002 Electronic Funds Transfer (EFT) payments, Cheque Truncation, and shift from magnetic strip based cards to EMV chip enabled cards have addressed all these problems.
- Kenya Electronic Payments and Settlement System (KEPSS), Kenya's local Real Time Gross Settlement System (RTGS) in July 2005 reduced systemic risk



2. Digital Financial Services (DFS) in Kenya

- In 2007, a money transfer platform, M-Pesa was launched to address inefficiencies in the payments space
- 10 years later, this has metamorphosed into a technological powerhouse that has transformed Digital Financial Services (DFS) in Kenya This phenomenon evolved in 4 stages;
 - **Stage One** – mobile phone technological platform for P2P transfers, Payments and settlement.
 - ✓ The novelty of this stage in Kenya is that it was developed without National Payments law
 - ✓ The CBK invoked the Trust law and a Trust Account was developed that was the Transactions Platform.
 - ✓ Partnership with other non-bank players e.g. telcos
 - **Stage Two** – Virtual savings accounts using the mobile phone technological platform – A virtual banking service – a technological platform to manage micro accounts.
 - **Stage Three** - Transactions and savings data used to generate credit scores for use as the basis to evaluate and price short term micro credit.
 - ✓ has changed the collateral technology that for years formed the major obstacle in the credit market.
 - **Stage Four:** cross-border payments and international remittances based on the DFS platform.



...10 Years Later - Mobile Payments Landscape

Area	December 2007	December 2017
Mobile Phone Subscribers	<ul style="list-style-type: none">11.34 millionPenetration rate of 30.5 percent	<ul style="list-style-type: none">42.8 millionPenetration rate of 94.3 percent
Mobile Money Subscriptions	<ul style="list-style-type: none">1.4 million12.35 percent	<ul style="list-style-type: none">30 million70.09 percent
Number of Transactions	<ul style="list-style-type: none">1.3 million	<ul style="list-style-type: none">480.59 million
Value of Transactions	<ul style="list-style-type: none">Ksh. 3.8 billion (USD 37 mn)	<ul style="list-style-type: none">Ksh. 1.22 trillion (USD 12.2 bn)
Active Mobile Money Agents	<ul style="list-style-type: none">1,582 agents	<ul style="list-style-type: none">198,234 agents

Source: CAK (CCK) Reports December 2007 and 2017

- Six (6) mobile money transfer and mobile money commerce operators provided these services at June 2017 – Safaricom (Mpesa), Airtel (Airtel Money), Telkom (T-Kash), Finserve Africa Ltd (Equitel), Mobikash Africa Ltd (Mobikash) and Mobile Pay Ltd (Tangaza).



...From Simple Transfers to a Complex and Dynamic DFS Ecosystem

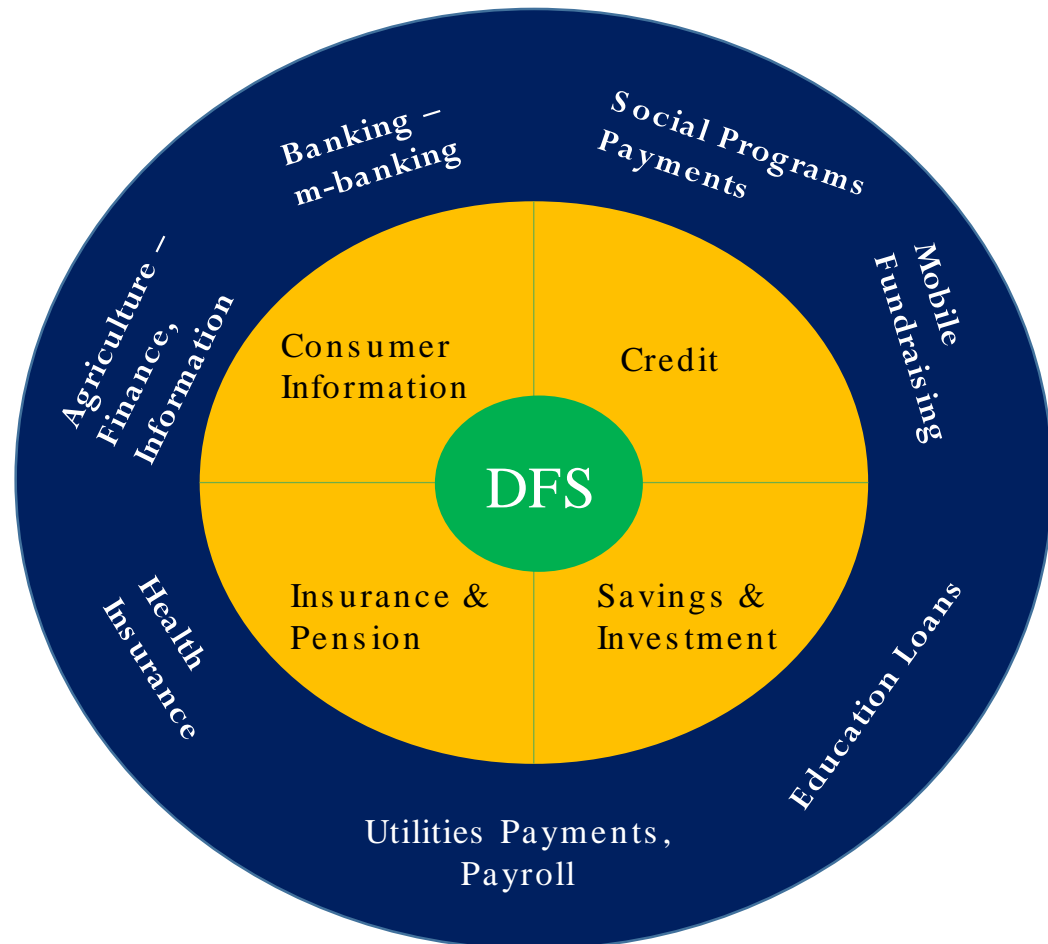
- Kenya has leveraged mobile technology to build a reputable DFS brand - from Person to Person Transfer platform in 2007, mobile payment in Kenya has evolved into a complex, dynamic and robust financial ecosystem comprising of:
 - ✓ **Services:** Transfers, payments, credit, savings, insurance, pension, Savings and Credit Cooperatives Societies (Saccos), utilities.
 - ✓ **Providers:** Financial Institutions, Payment Service Providers incl. Telcos.
 - ✓ **Infrastructure:** Integrated Payments and Banking Platforms, Aggregators and agent networks, cross-border operations.
 - ✓ **Users:** Individuals, Businesses, Merchants, Government, NGOs, Markets.



...complex financial ecosystem

- More menu of financial services and products beyond payments and transfers

Figure 2: Beyond Access



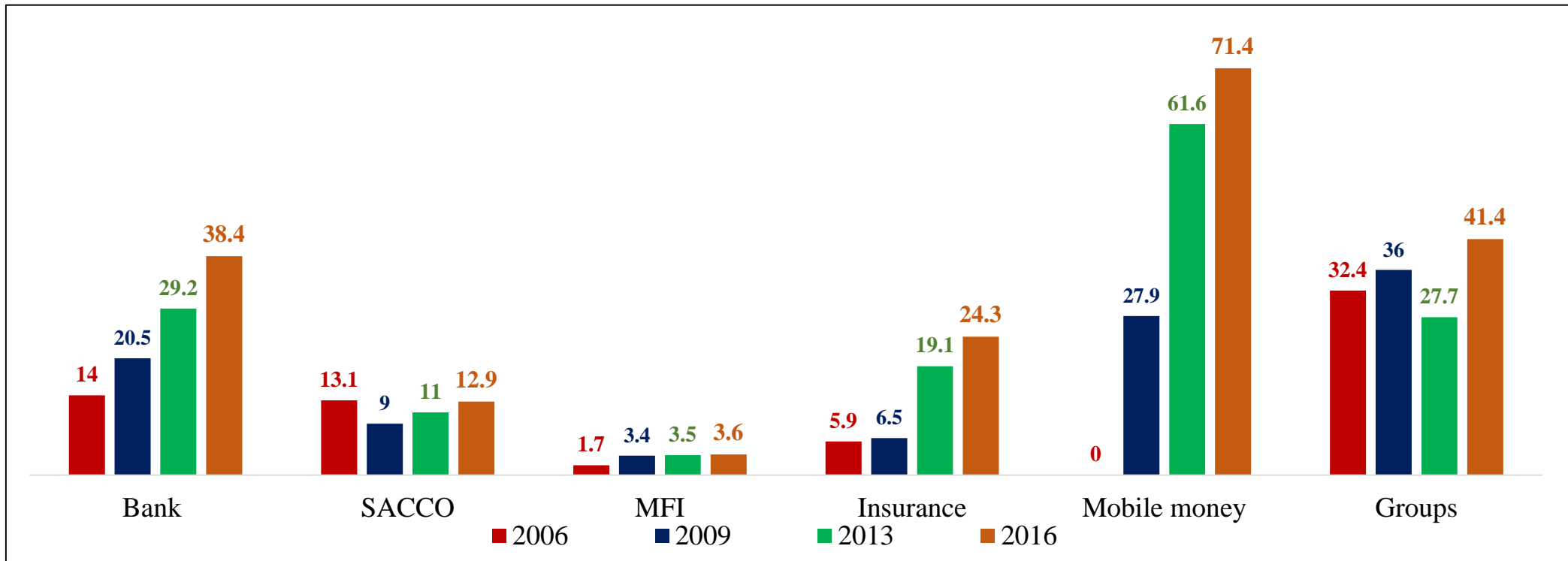
- Kenya's DFS ecosystem is complex and dynamic, with partnerships being formed across sectors.
- Financial sector actors have built on mobile money "rails" to provide value-added products/ services.



...Outcomes - menu of service providers

- Consumers use a menu of financial products/services, both through formal (Saccos, MFIs, Banks, Insurance, and Mobile Money) and informal (Groups) providers

Figure 3: Financial Service Providers Leveraging on Technology



Source: CBK/FSD-Kenya FinAccess Surveys



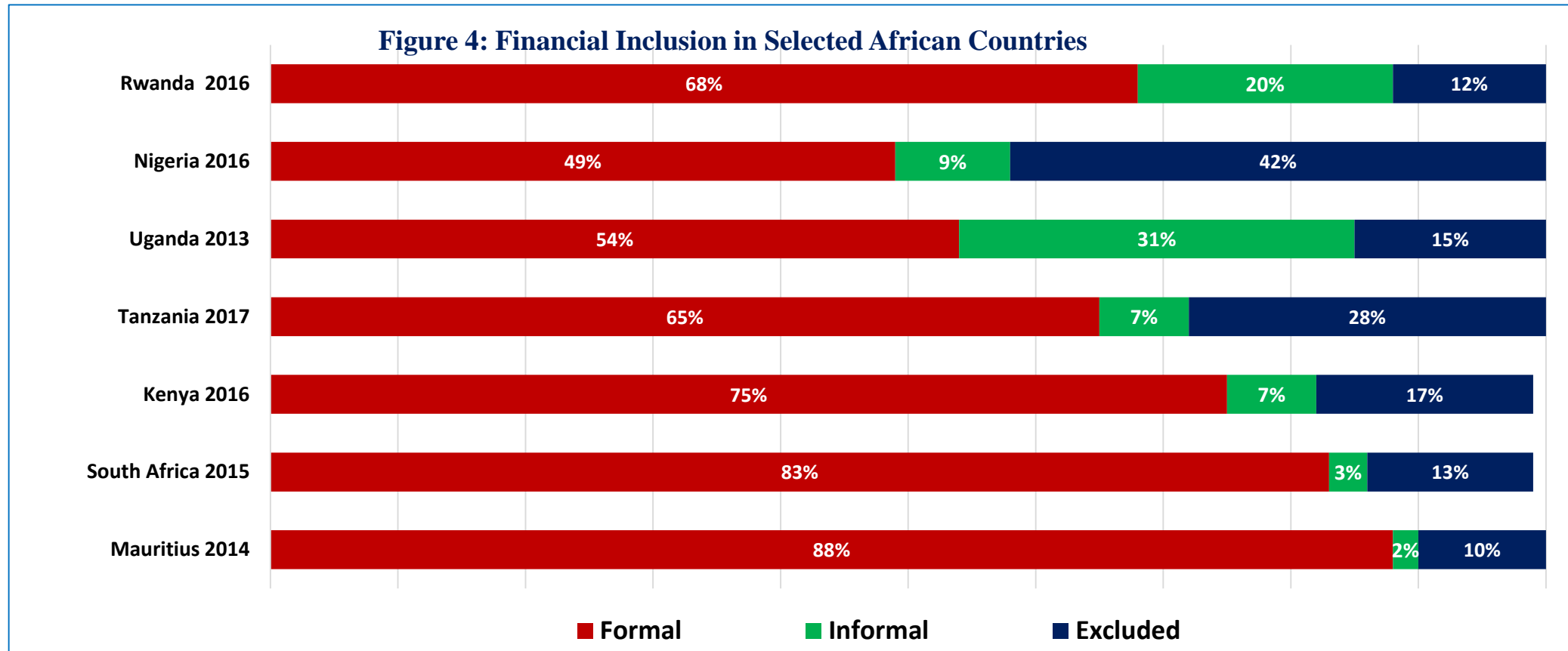
...DFS Transformation in Kenya - benefits

- **At macro-level (economy-wide), DFS** have impacted the financial sector and overall economy;
 - Increased competition, expanded consumer options, improved access to financial services and driven innovation in other sector, influenced banks to change their business models to meet customers' demands
 - Increased efficiency: better infrastructures (modern payment system infrastructures, credit information systems, and public registries) and automated back-and front-office processes leading to improved decision making processes
 - Created new investment opportunities – big data, more innovations
 - improved financial supervision i.e. RegTech and SupTech (we are headed there)
 - Increased collaboration and partnerships between banks and other service providers e.g. telcos
- **At Household (micro) level, DFS** revolution benefited many lives, especially the previously excluded and rural poor, through:
 - *Last Mile Access* - customers leverage on technology to access financial services via mobile phones or in the neighbourhood 'mom and pop' shops. Kenya has more than 100,000 mobile phone financial services agents and over 50,000 bank agents spread all the over the country reducing distance to nearest financial service provider
 - *More Access to Credit* - Products such as M-Shwari and Equitel made access to credit much easier and faster. Credit Unions/Saccos have also adopted FinTechs in credit disbursements.
 - *Beyond money transfers* - DFS now include; pension and social benefits, investment and savings, insurance, utilities, Tax payments, Transport (airticket), agriculture, health services (M-Tiba) etc. more innovations hubs – IMB, MasterCard, Equity bank, Google etc.



3. Digital Financial Services in Kenya - Outcomes

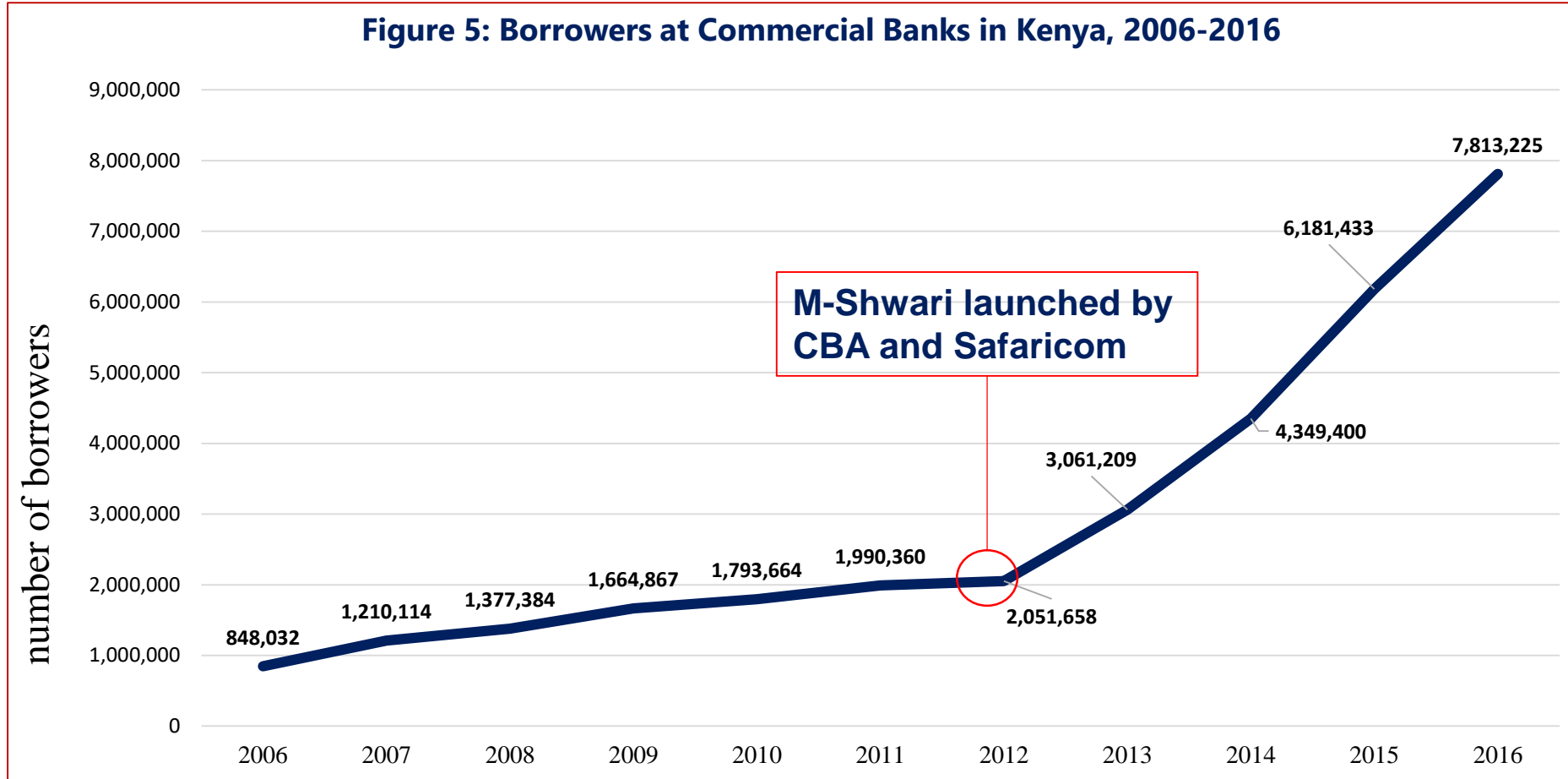
- Adoption of DFS led to increased **financial inclusion**



Sources: Finscope and FinAccess Surveys of various countries



...DFS outcomes – new borrowers into formal sector



- Mobile lending comprises about 2 percent of the **total value** of loans, but 75 percent of the **total number** of borrowers from commercial banks

Source: IMF Financial Access Survey 2017



...DFS Outcomes: low cost to access to Financial Services

Distance to the nearest mobile financial services provider – proxy for cost

2013 % of Population within:

3km 69%

2015 % of Population within:

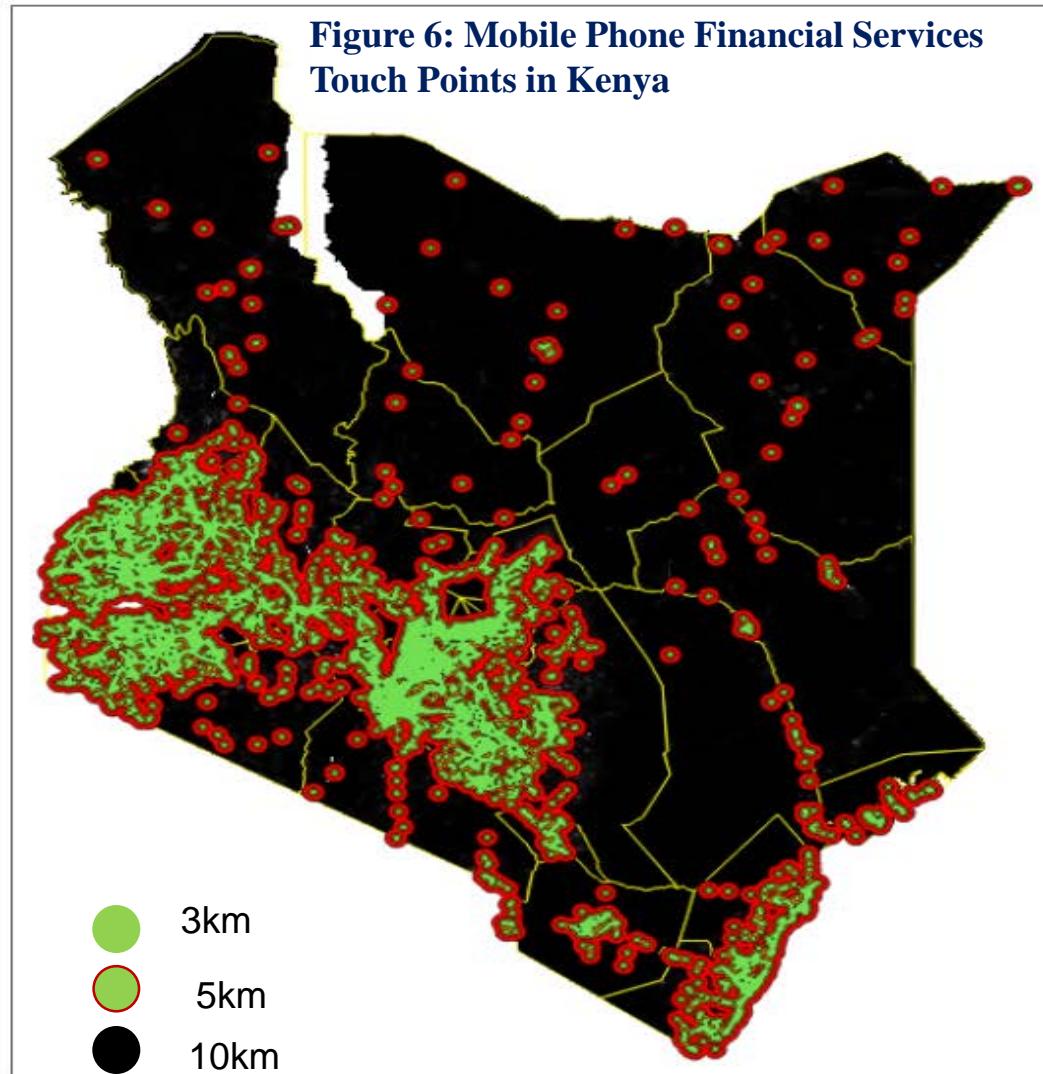
3km 73%

5km 86%

10km 94%

More people spent less to access financial services in 2015 due to Mobile Phones Usage compared to 2013

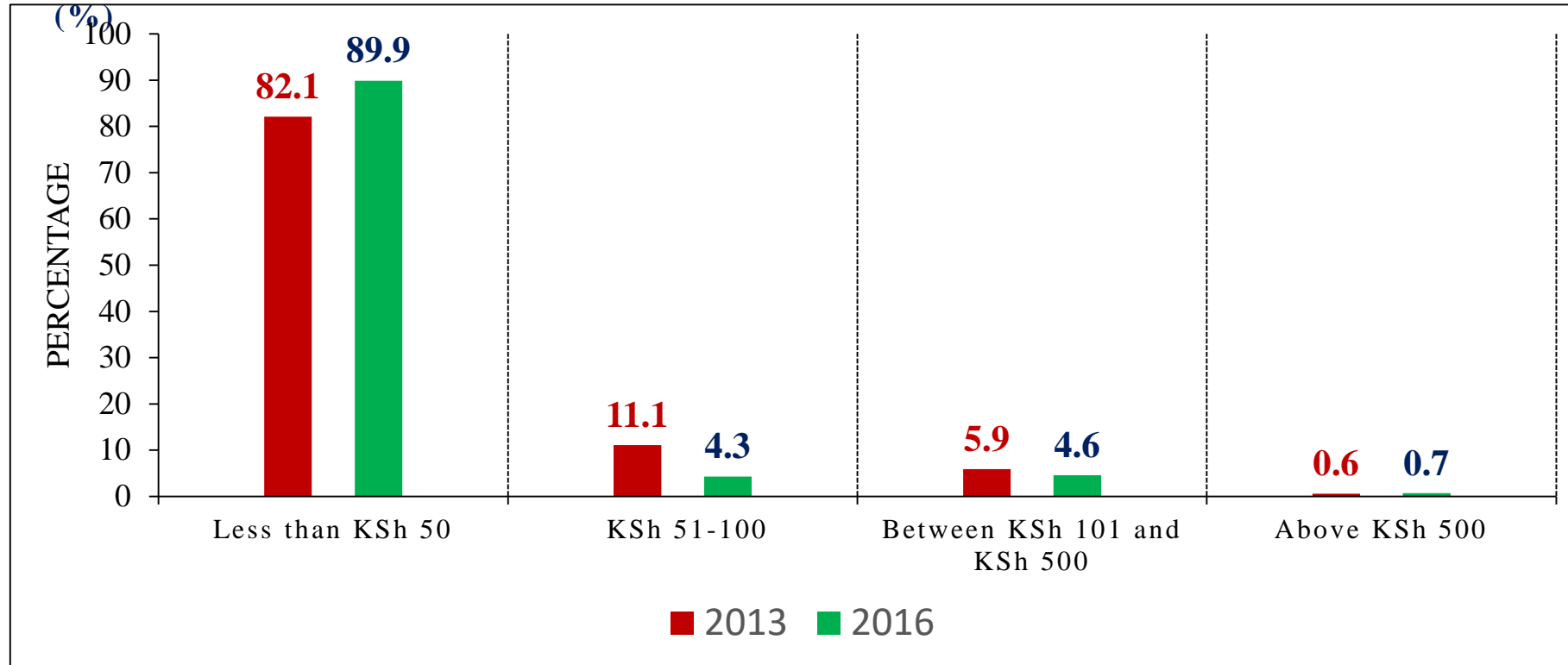
Figure 6: Mobile Phone Financial Services Touch Points in Kenya





...DFS Outcomes: low cost to access to Financial Services

Figure 7: Cost to Population to the nearest Financial Service Access Point: 2013 Vs. 2016



FinAccess Geospatial Mapping Survey 2015

- About 94 percent of adult Kenyan population pay less than USD 1.00 to Access nearest financial services



...DFS Outcomes: Support to Agricultural Sector

Figure 8 (a) Mobile Financial Touch Points

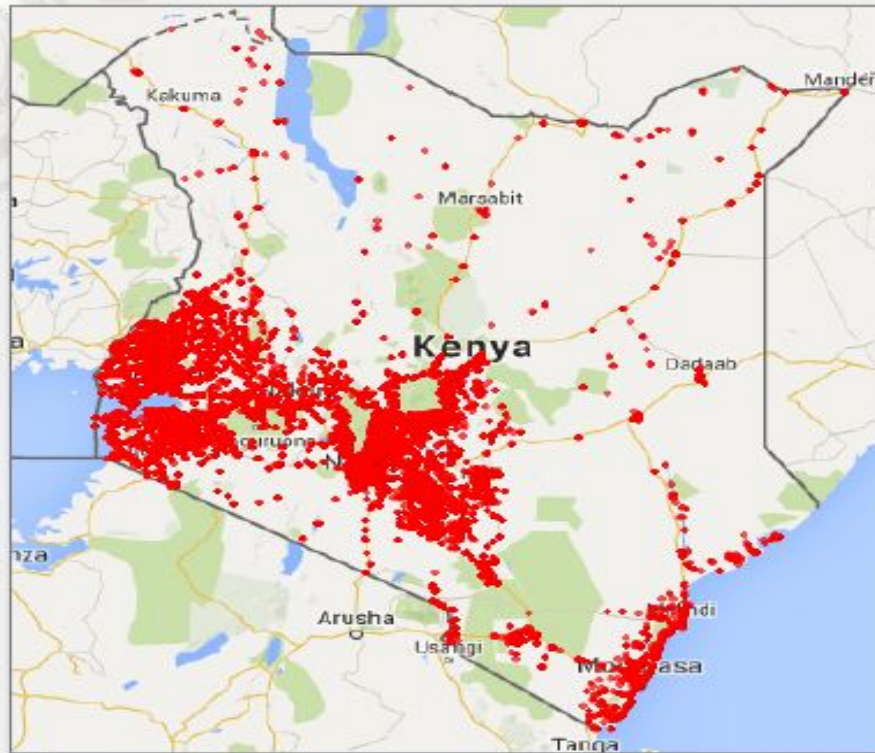
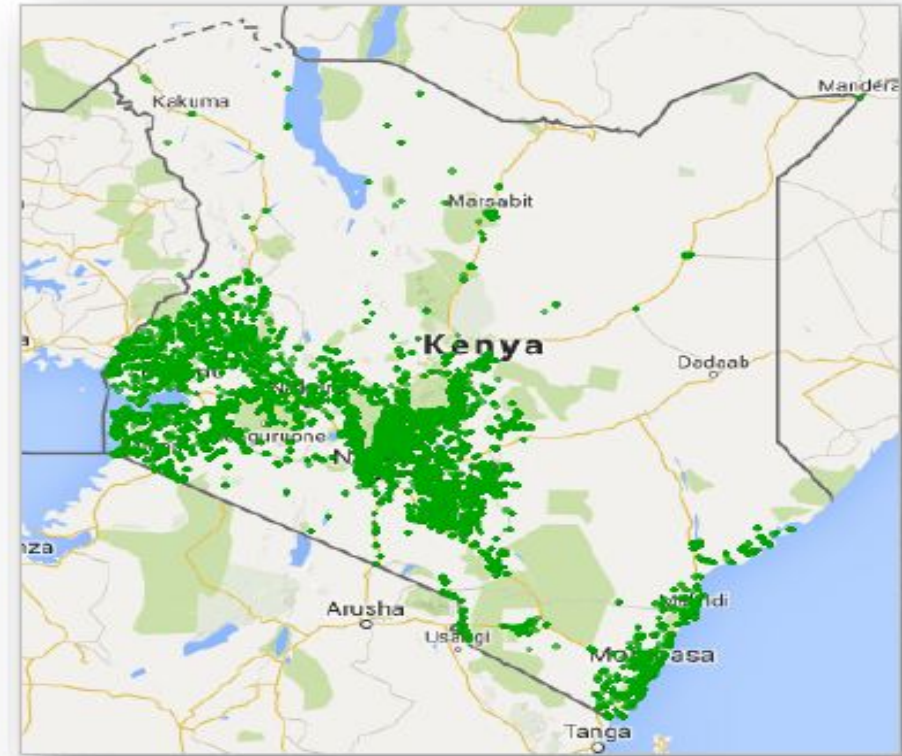


Figure 8 (b): Rich Agricultural Centres

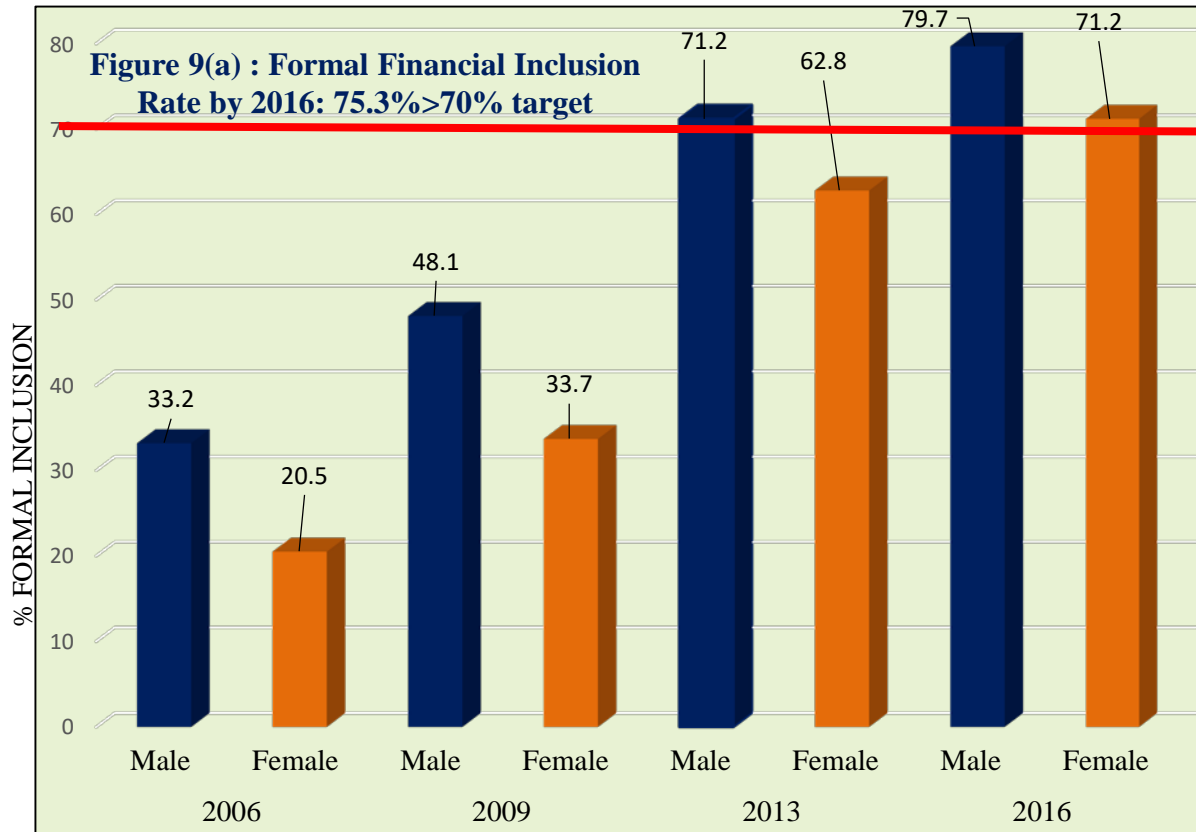


FinAccess Geospatial Mapping Survey 2015

- About **70%** of Kenya's population engage in Agriculture and related activities. Strong link between agriculture (green map) and access to finance (red dotted map) - *supply-side complements demand-side*

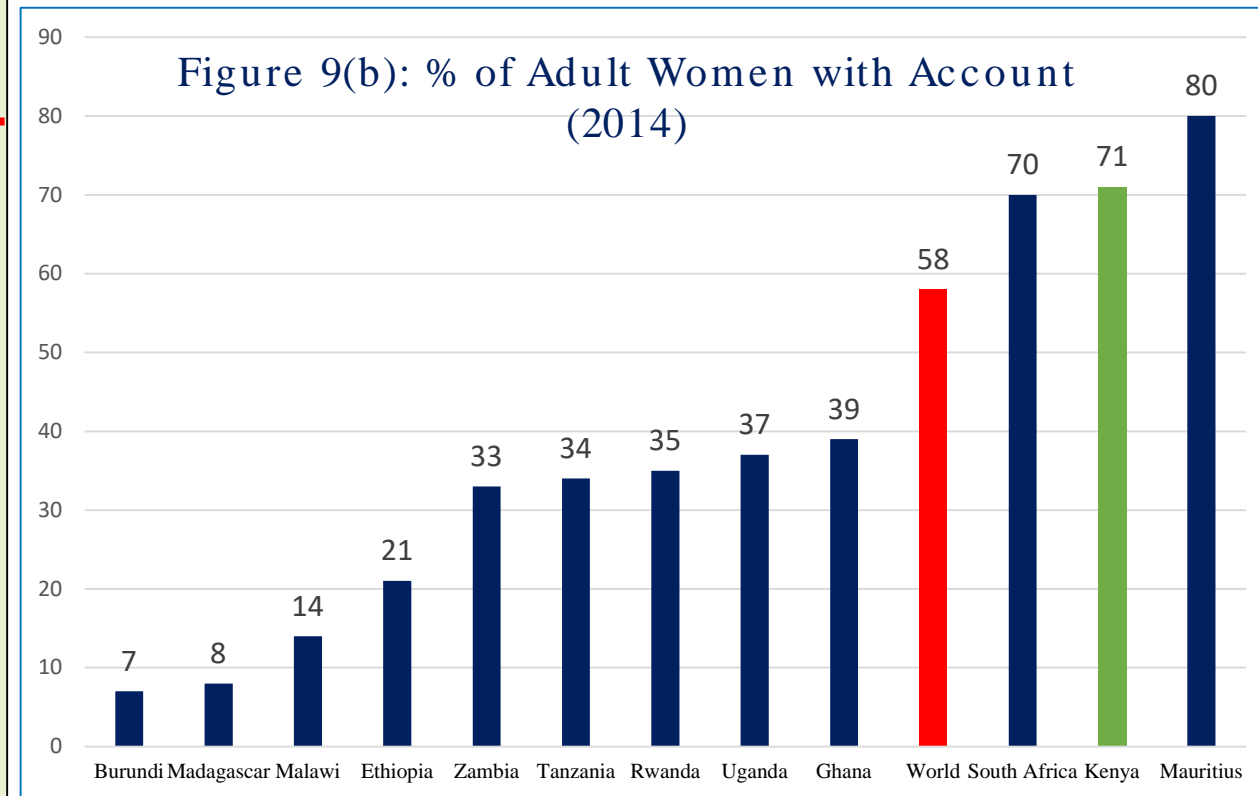


...DFS Outcomes: Reduced Gender Gap



Source: 2016 FinAccess Household Survey

Kenya surpassed the 70% target of inclusion in formal financial services by 2018 in for both men and women under the country's medium term development blue print – Vision 2013



Source: World Bank Global Findex, 2014

- Gender gap narrowed from 14.4% in 2009 to 8.5% in 2016 due to mobile money.
- % of women with accounts in Kenya (incl. mobile accounts and accounts with other financial institutions) surpassed global and regional average.



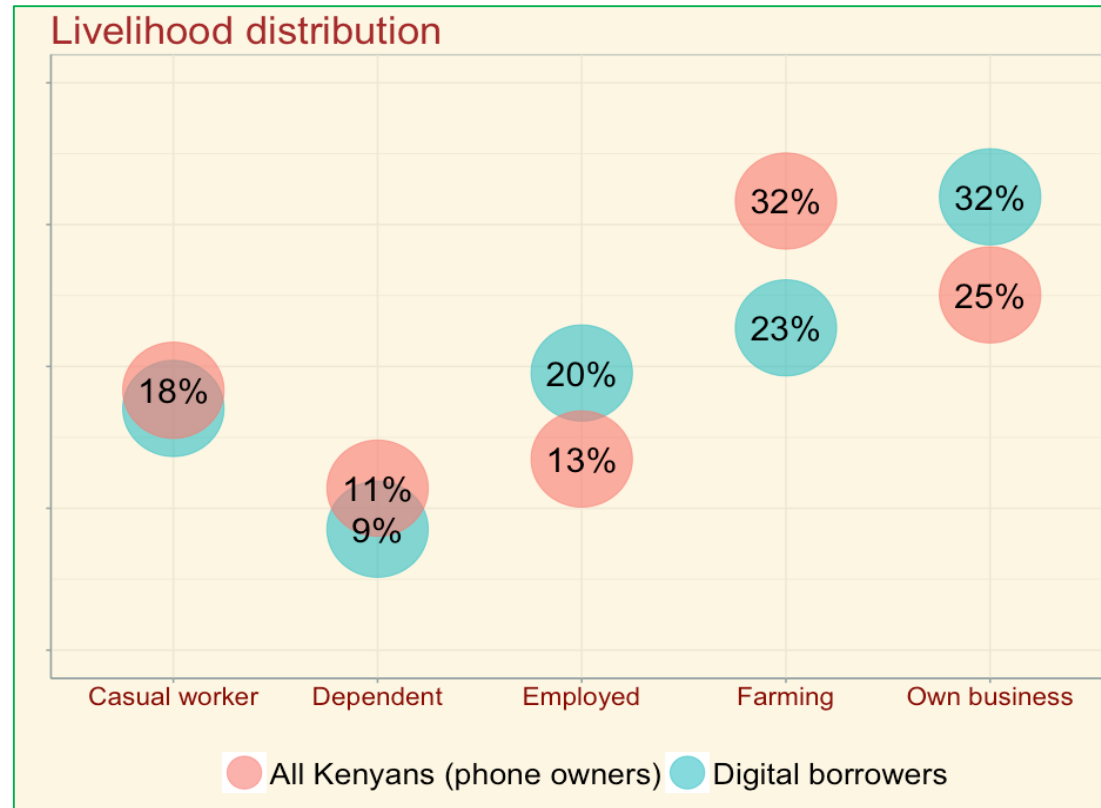
...DFS outcomes: more digital credit for SMEs

1 **Build digital credit records – access to formal finance**

2 **Access to credit among excluded groups (e.g. smallholder farmers, SMEs)**

3 **Flexible, 24/7, convenient**

Figure 10: Digital Credit Benefits who?



- Digital credit borrowers more likely to own their own business (compared to all Kenyan phone owners)
- 23% of digital borrowers are agriculturalists

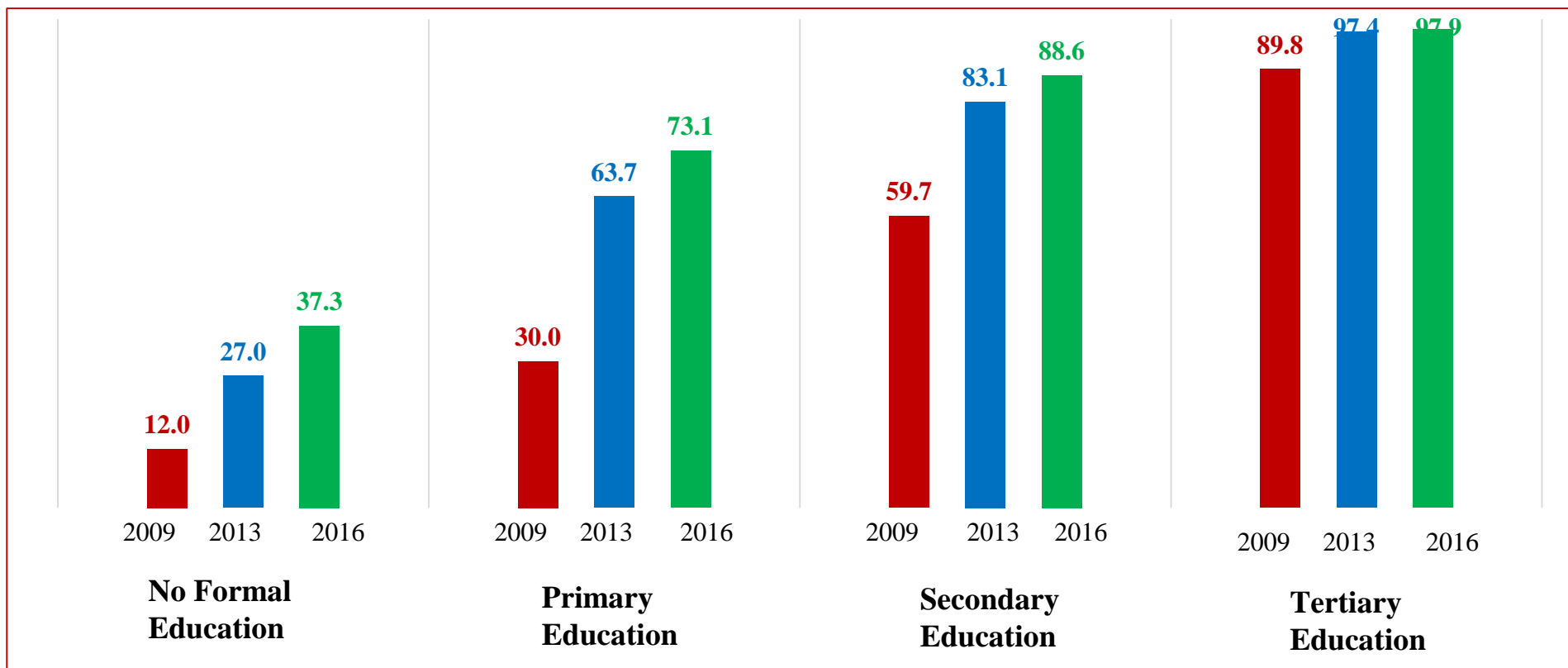
The Mama Mbogas: the loan volumes of the leading digital lender in Kenya surge between 3 and 5 a.m. because that's when small-scale traders purchase their stock for the day. These loans are often repaid in the same day.



... Outcomes: Benefits to less Educated population

- More people with no Formal Education now accessible to Formal Financial Services

Figure11: Usage of Financial Services/Products by Education Levels: 2009-2016



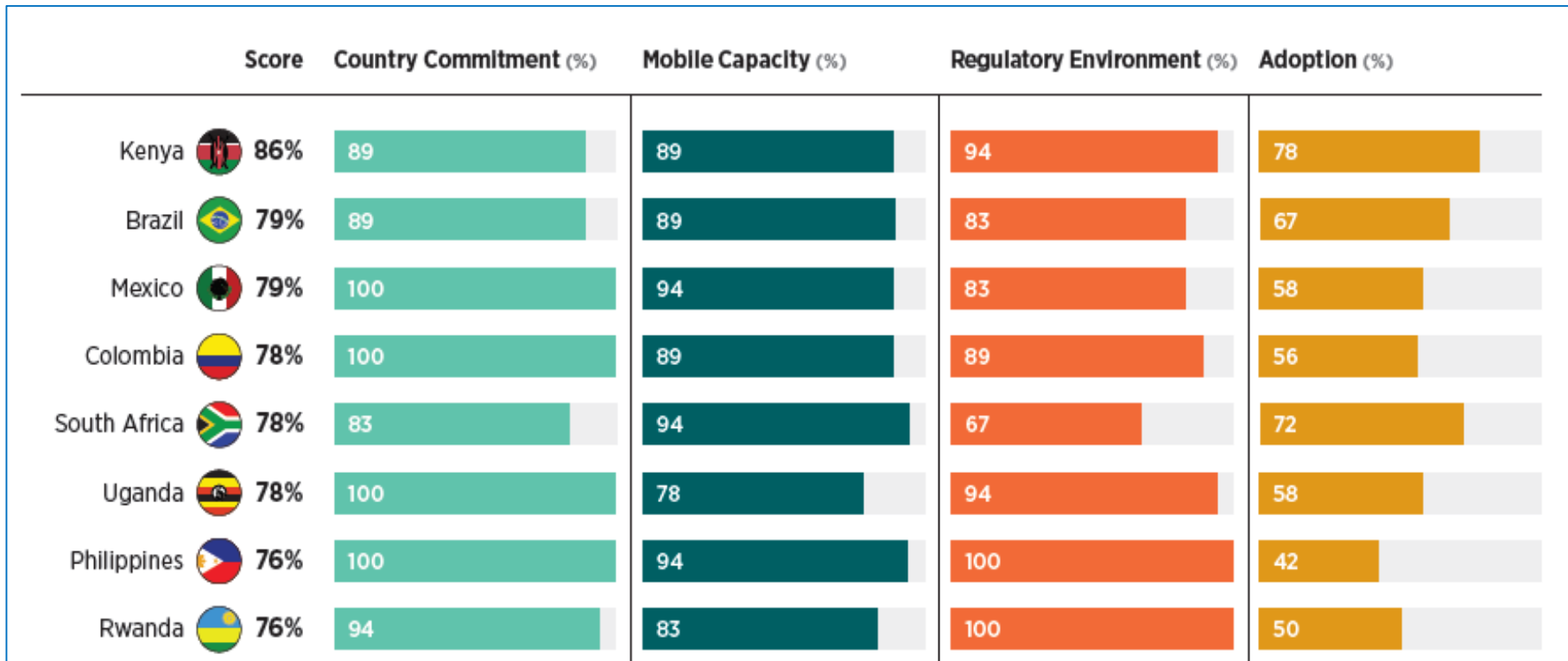
Source: FinAccess Surveys



...DFS outcomes – global leader

- Kenya remains a global leader in DFS innovations and usage

Figure 12: Kenya’s Global Ranking in DFS



Source: Brookings, 2017

- For the 3rd year in a row, Kenya ranked at the top of the Brookings’ Financial and Digital Inclusion Project (FDIP) Scorecard
- Driven by wide adoption of MFS & the increasingly broad range of DFS



4. Role of Central Bank of Kenya in DFS Transformation

- ***Enabling Legal, regulatory and deliberate policy frameworks;***
 - Under the CBK mandate provided for under CBK Act S. 4A(1)(d)
”formulate and implement such policies as best promote the establishment, regulation and supervision of efficient and effective payment, clearing and settlement systems”
 - Arising from this, CBK has formulated and worked with Parliament to enact the following laws governing payments systems including MFS;
 - National Payment System Act, 2011
 - National Payment System Regulations 2014
 - Money Remittance Regulations enacted in April 2013 allowing the licensing and supervision of standalone money remittance companies
 - Through these regulations, CBK has devised mitigating measures against fraudsters in the MFS through tool such as;
 - Filtering fraudulent SMS via SMSC filtering engine
 - Tracking fraudsters and enhancing KYC procedures
 - Automatic blacklisting of fraudsters
 - Agent training programmes
 - Compliance with AML/CFT requirements



... Role of Central Bank of Kenya

- ***Enabling regulatory environment***: CBK adopted a ‘test and learn’ approach that applies proportionate regulation. Regulators focus on understanding emerging business models, inherent risks and how they are mitigated. Balancing regulation with innovation!
- ***Effective partnerships***: collaborations between regulators, Telcos, banks and other stakeholders.
- ***Supporting agency network***: cost-effective interaction between DFS providers and their clients.
- ***Private sector investment*** in research and development, marketing, customer awareness and delivery channels – MasterCard Foundation, banks, Safaricom
- ***Supporting innovation*** to create a robust and vibrant financial infrastructure – Treasury Mobile Direct, M-Akiba,
- ***Continuous advise to banks in changing their business models*** – adoption of technology to enhance efficiency, safety and reduce costs to grow customers for “**on demand**” of banking services left banks with no choice but to align their business models.



5. DFS Transformation and Risks

- *What worries Central Bank most?*

1. **Data privacy/security**

- Increased accumulation of personal data, held by multiple actors in the payment and financial processes
- Misuse of data may result in identity theft and damage to a user's credit profile among other risks
- Limited clarity on liability for data breaches, data sharing among third parties

2. **Consumer Protection**

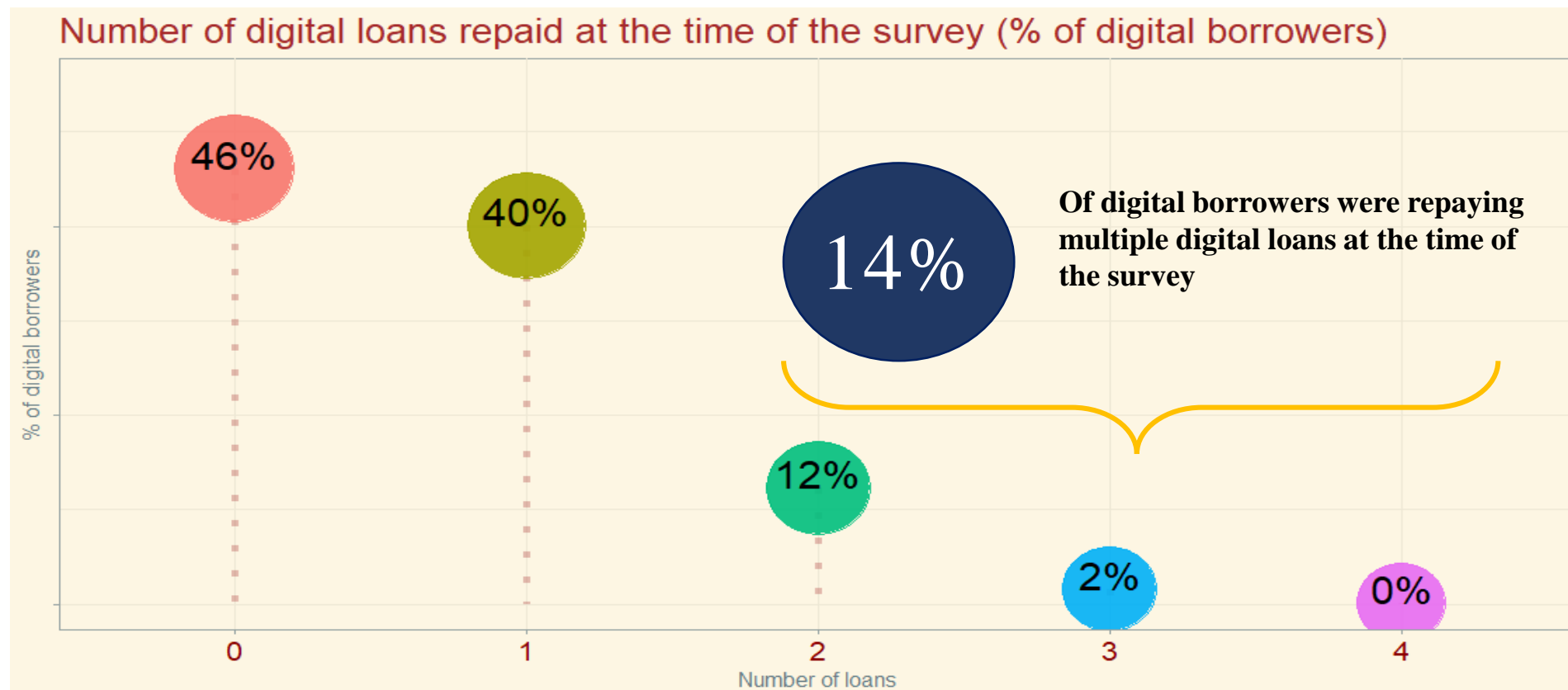
- Disclosure of information/transparency including pricing of products/services - Consumers need to understand the information provided to them to make informed choices
- Non-bank digital lenders: More than 20 non-bank digital lenders, mostly credit-only and lend off their own balance sheet. Not regulated by any one financial sector regulator, hence concerns of:
 - High interest rates/transaction fees
 - Multiple borrowing from different lenders (**next slide**)
 - Unclear disclosure of pricing/terms
 - Recourse – complaints/dispute resolution
 - Appropriate understanding of borrowing



...but potential risks - multiple borrowing

- More than half of digital borrowers had at least one outstanding digital loan at time of the survey and over a third of borrowers had tried multiple digital lenders. Multiple defaults and increased household debt!

Figure 13: Household Indebtedness



Note: Nationally representative sample of N=2890 phone owners in Kenya, of whom 956 have ever used digital credit. Multiple answers allowed

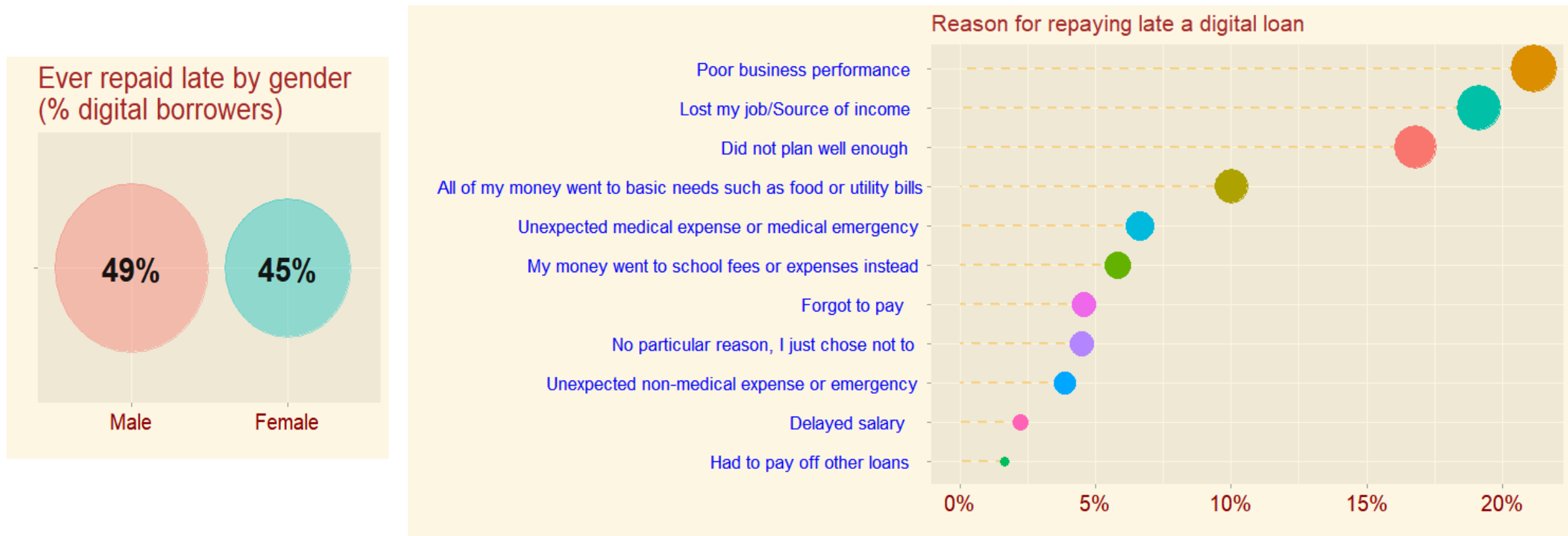
Source: FinAccess Digital Credit Tracker Survey 2017



...late repayment & default

- About 50% of digital borrowers had late loan repayment and 12.5% defaulted. Poor business performance and losing the source of income are main reasons. Hence reduced household future borrowing to grow wealth due to black-listing by CRBs. Male borrowers most affected given high default rates!

Figure 14: Default by Gender and Reasons for late Repayments



Source: FinAccess Digital Credit Tracker Survey 2017

Nationally representative sample of N=2890 phone owners in Kenya, of whom 956 have ever used digital credit. Multiple answers allowed



...DFS Risks

3. Technology Risks

- **Availability**

- Inter-linkages between mobile money platforms and financial markets – outage or system malfunction can impact the entire financial sector
- Interconnectivity of systems is necessary, however increased integration introduces new risks.

- **Cyber Security**

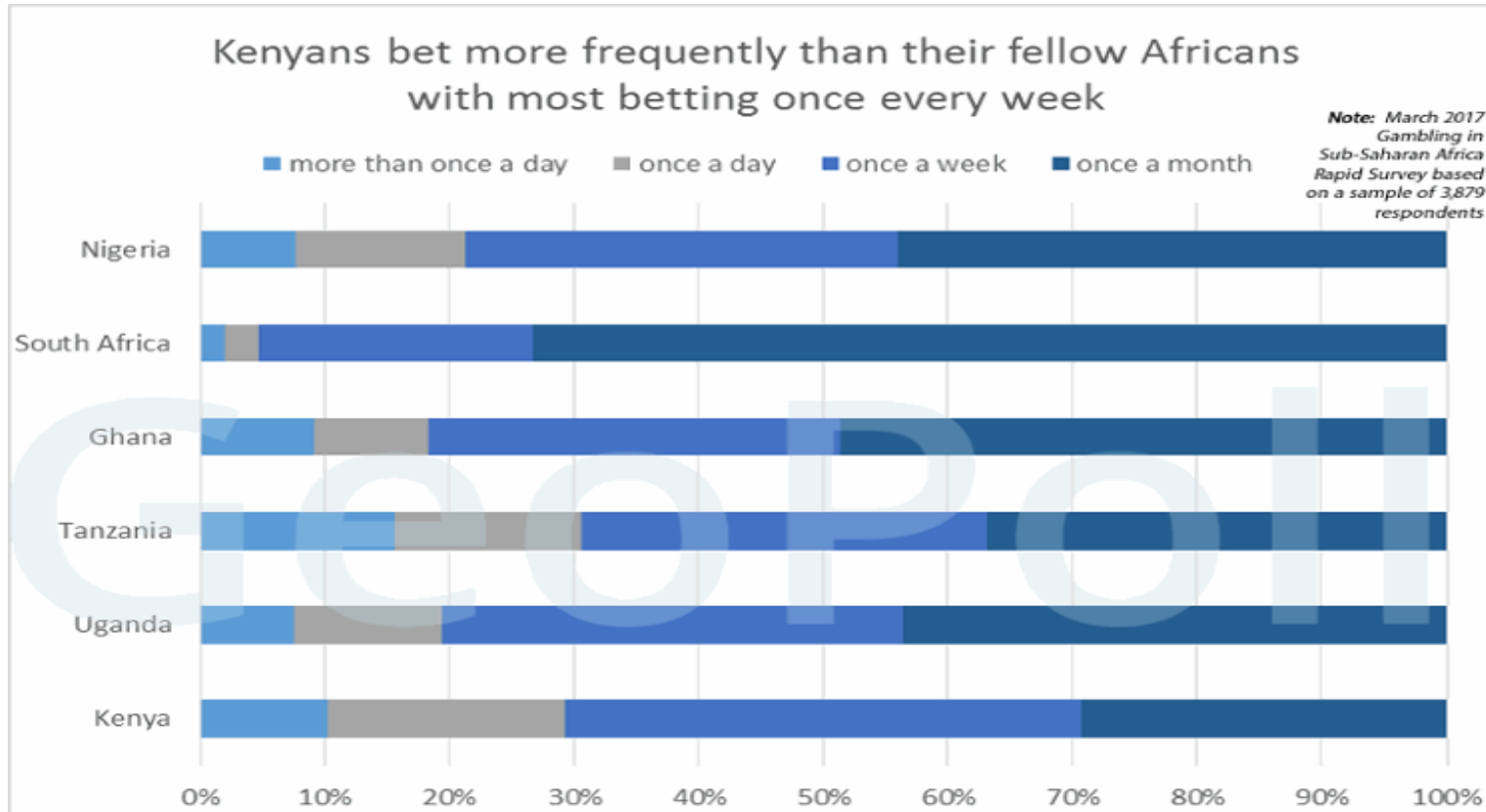
- 54% of global fraud in payments come from transactions via mobile money and e-commerce platforms and global cost of cyber crime will reach USD 2 trillion by 2019 (Source: Mastercard). Hence need for:
 - Collaboration between agencies
 - Personnel development and capacity building to build awareness and be alert
 - Encouraging institutions to invest in cyber security
 - Public-private partnership collaborations to develop cyber security frameworks
- The Central Bank of Kenya issued a Guidance Note on Cyber Security in August 2017
 - Minimum standards institutions should adopt to develop effective cyber security governance & risk management frameworks.

- **AML/CFT** – digital platforms should not be used for illicit activity



...DFS risks in Kenya – Mobile betting

Figure 15: Borrowing fro Betting?



Source: Geopoll survey of 3,879 youth in Kenya, Uganda, South Africa, Ghana, Nigeria and Tanzania in March 2017

- PWC estimates that annual gross turnover of the sports betting industry in Kenya will be USD 30 million in 2018. Among Kenyan youth (17-35):
 - ✓ 76% have participated in gambling or betting in the past
 - ✓ 70 % bet once a week or once a month
 - ✓ 79% of bets are placed on football matches
 - ✓ 96% of those who bet use mobile phone
 - ✓ Most spend about USD 50 per month



...DFS Risks

4. Other Concerns:

- ***Interoperability*** – inability for; Infrastructures or system of payment service providers (PSPs) to interact or connect, E-money wallet holders to seamlessly top-up each others e-wallet irrespective of the payment service provider; and Agents to perform cash-in or cash-out transactions for all e-wallet holders irrespective of affiliation.
- ***Unforeseen impact on monetary policy and central banks independence*** – cryptocurrency and digital currency regimes. Hard Cash no longer the King!
- ***Financial Literacy among rural population and urban poor low*** - Financial Inclusion and financial literacy are complementary to each other and mutually-reinforcing. Adequate access to financial products/services is important but financial literacy creates demand for these products/services.



6. Lessons Learnt

- Regulatory objectives remain the same – building market confidence and safeguard stability of the financial system. However, we must balance stability and inclusion goals to support innovation.
- As regulators we should clearly understand new innovations and risks therein to ensure that appropriate mitigation measures are embedded in the products and services design process - “Test and learn” or “walking alongside innovators” approach.
- Regulatory frameworks should be robust and balanced, dynamic across time and space, to support the provision of sustainable digital financial services to users and to guarantee the stability of the overall financial system.
- Regulatory perimeter should change in tandem with innovations, partnerships and cooperation across sectors and borders
- Consumer protections in the face of innovations must be given great attention
- Seeing beyond mobile payments- leverage data to advance access to finance, enabling seamless payments and building a “Cloud for Africa”



6. Take Aways

- Kenya continue to benefit immensely from DFS transformation, hence focus on building an effective legal and regulatory environment for DFS to thrive
- Collaboration with key stakeholders at national and international stakeholders is key to success of DFS transformation - cross-border, cross-sector risks, and sharing experiences with digital finance
- Enhancing consumer protection in DFS to reduce regulatory “grey areas” (e.g. credit-only, digital lending products) and enhancing transparency are very important – role of financial literacy very important as creates demand for these products/services.
- Financial education is important, but must be complemented by effective prudential regulation, market conduct regulation, financial inclusion initiatives and financial education.
- Seeing beyond mobile payments to the next frontier - leveraging data to advance access to finance, enabling seamless payments and building a “Cloud for Africa”



THANK YOU