



DIGITAL FINANCIAL SERVICES
(DFS) WORKING GROUP



FINANCIAL INCLUSION DATA
(FID) WORKING GROUP

BRINGING
SMART
POLICIES
TO LIFE

DIGITAL FINANCIAL SERVICE INDICATORS

Guideline Note No. 33
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CONTEXT

The Digital Financial Services (DFS) Indicators document is a comprehensive set of global metrics on the digital finance industry (mobile money, branchless banking, agent banking, e-wallets etc.). It combines unique data sources from identified financial services providers, mobile money operators, e-money issuers, branchless and agent banking services, and any other identified digital finance services provider defined by the regulators and/or stakeholders in a jurisdiction.

As more regulators recognize that the base of every future goal-setting or financial inclusion target is founded on indicative data, the Digital Financial Services Working Group (DFS WG), in collaboration with the Financial Inclusion Data Working Group (FID WG) of the Alliance for Financial Inclusion, was tasked to deliver a holistic set of indicators that can be adopted and utilized in any jurisdiction.

In light of this, DFS WG has identified and created a new basic set of financial inclusion indicators for DFS (“the DFS Basic Set”) to standardize the most basic metrics that measure financial inclusion. While the importance of evidence-based policies is clearly acknowledged, the DFS basic set is intended to provide comprehensive information for the measurement of each indicator.

Digital financial services are now widely available in several countries, and policymakers agree on the necessity for creating a set of indicators to measure their role in financial inclusion. Also, there is a need to revise DFS indicators to reflect developments in the DFS ecosystem and to make the indicators more usable for members of the AFI network.

The indicators for financial inclusion are developed along the following principles:

- > usefulness and relevance to domestic policymaking;
- > pragmatism i.e. leveraging on available data and relative ease of collection, consistency or standardized definitions and alignment with other measurement initiatives, flexibility to customize measurement depending on country circumstances;
- > balance of data coming from both supply and demand side sources; and
- > aspiration to collect more complex measurements.

However, in developing indicators for digital financial services, the following set of criteria must be met:

1. Usefulness and relevance
2. Conciseness
3. Specificity
4. Simplicity of data collection
5. Unbiased

PURPOSE OF THE DOCUMENT

The purpose of this document is to formulate DFS indicators that consider all digital financial services, not only mobile money services (as elaborated in Guideline Note No. 11 (August 2013) on Mobile Financial Services Indicators for Measuring Access & Usage.

As the digital economy grows globally, there is an immediate need to establish a basic set of indicators reflecting the adoption and use of technologies in the creation, distribution and regulation of financial services.

The Digital Financial Services Working Group (DFS WG), in collaboration with the Financial Inclusion Data Working Group (FIDWG) of the AFI network, therefore appreciates the need to revise existing mobile financial services indicators to meet the changes brought by fast-developing technology in the delivery of financial services and to the nascent DFS ecosystem. Ultimately, the purpose is to make the indicators as usable and practical as possible for members of the AFI network.

THE DIMENSIONS

The DFS indicators in this document were developed to address the three basic dimensions of financial inclusion: access, usage and quality. Considering the dynamism and constantly evolving nature of digital financial services, particularly due to emerging technology adoption, DFS indicators should be comprehensive enough to meaningfully capture subsets such as availability (as a subset of access), and uptake or adoption (as a subset of usage). They should also have a strong focus on quality , which is the dimension most-affected by the rapid changes associated with DFS design, development, distribution and regulations.

The overall purpose of this document would be to formulate indicators that can be used to measure the effects of DFS on the overall economy, and the collective prosperity of an inclusive digital economy.

To standardize the reporting of data, it is proposed that the indicators reflect three categories of value storage available via DFS, namely:

- > mobile money wallets (led by a telco or bank, for example)
- > branchless banking i.e. non-conventional bank accounts (led by an agency or micro-finance Institution (MFI))
- > e-wallets i.e. electronic money (e-money) accounts, including pre-paid cards, NFC/RFID cards, etc

These three categories of value storage might be accessed by a user through several digital channels, including:

- > automated teller machines (ATMs)
- > mobile-based payment or transaction fulfilment, including QR codes
- > pre-paid Cards, including NFC, RFID, EMV chip-based cards, etc
- > digital kiosk and/or POS machines
- > mobile money agents or merchants

The indicators captured in this report can be disaggregated by:

- > gender: male/female
- > socio-geography: urban/rural
- > agent type: mobile money agents/merchants
- > digital channel: ATMs/cards/POS machines
- > age: youth (e.g. aged between 15 and 24)/ Adult (25+)

The resultant indicators can be represented as an integer, fraction or percentage as appropriate for the jurisdiction or indicator being considered.

INDICATORS

To achieve a comprehensive evaluation of financial inclusion, data from both the supply-side and demand-side should be included in the measurements of the identifies DFS basic set, namely: (i) access to DFS; (ii) usage of DFS; and (iii) the quality of the DFS offering to users.

TABLE 1: INDICATORS FOR MEASURING ACCESS

#	INDICATOR	HOW TO CALCULATE	REMARKS	FREQUENCY
1	Percentage of administrative units with agent outlet.	Percentage of Administrative units (province, local government or municipality level) with at least one registered agent outlet $\frac{\text{Number of administrative unit with at least one agent}}{\text{Total number of administrative units}} \times 100$	Administrative units: relevant administrative units are country-specific and based on each country's definition, considering geographical, political, cultural or other considerations. For example: > Tier 1: nation; > Tier 2: region or state; > Tier 3: county, town, province; > Tier 4: municipality, district; > Tier 5: village	Quarterly Biannual Annual
2	No. of DFS agents per 10,000 adults. This can be disaggregated based on: > male/female > urban/rural	Registered DFS agents per 10,000 adults: $\frac{\text{Number of registered DFS agents}}{\text{Total number of adults}} \times 10,000$	The indicators in terms of number of DFS agents per 10,000 adults as reference. 10,000 adults is suggested to keep consistency with the AFI core set and basic financial inclusion indicators.	Quarterly Biannual Annual
3	Number of active DFS agents per 10,000 adults This can be disaggregated based on: > male/female > urban/rural	Active DFS Agents per 10,000 adults: $\frac{\text{Number of active agents}}{\text{Total number of adults}} \times 10,000$	The Continuation of Access indicator (2) requests for the Agents that are/were active during the last month. [should be considered during the last 90 days as a criterion? isn't it too restrictive?] The indicator is expressed in terms of 10,000 adults to keep consistency with the AFI core set and basic financial inclusion indicators.	Quarterly Biannual Annual
4	No. of merchant payment points per 10,000 adults This can be disaggregated based on: > male/female > urban/rural	$\frac{\text{Number of merchant payment points}}{\text{Total number of adults}} \times 10,000$	The indicator is expressed in terms of number of merchant payment points per 10,000 adults	Quarterly Biannual Annual
5	Percentage of adult population with registered DFS accounts This can be disaggregated based on: > male/female > urban/rural	Percentage of adult population with registered DFS accounts = $\frac{\text{Number of adults reporting a registered DFS account or number of registered DFS accounts}}{\text{Total number of adults}} \times 100$	Depending on country-specific need, this indicator can be split into individual stores of DFS value components or as a summation. Note: There is high possibility of multiple DFS stores of value accounts being owned by an individual. Filter by regulator/ jurisdiction as appropriate (if data permits) and avoid duplication as much as possible.	Quarterly Biannual Annual

TABLE 2: INDICATORS FOR MEASURING USAGE

#	INDICATOR	HOW TO CALCULATE	REMARKS	FREQUENCY																				
1	<p>Percentage of active DFS accounts. This can be disaggregated based on: > male/female > urban/rural</p>	<p>Percentage of active DFS accounts (accounts that have been used at least once in the last 90 days)</p> $\frac{\Sigma (\text{Weighted Average of all Active DFS Account holders})}{\text{Total number of DFS registered account holders}} \times 100$ <p>Where: $\Sigma (\text{Weighted Average of all active DFS Accounts}) = X1 + X2 + X3 + \dots + Xn$ $X1 = \{\text{No. of Active Mobile Money (MM) Wallets} \times \text{Weight of MM wallets} (\%)\}$ $X2 = \{\text{No. of Active e-Wallets} \times \text{Weight of e-Wallet} (\%)\}$ $Xn = \{\text{No. of Active DFS Account Type} \times \text{Weight of DFS Account Type} (\%)\}$</p> <p>Example:</p> <table border="1"> <thead> <tr> <th>DFS ACCOUNT TYPE</th> <th>WEIGHTAGE (%)</th> <th>NO. OF DFS ACCOUNT TYPE (IN MILLIONS)</th> <th>WEIGHTED AVERAGE OF DFS ACCOUNT TYPE</th> </tr> </thead> <tbody> <tr> <td>Mobile Money Wallet</td> <td>40</td> <td>89</td> <td>35.6</td> </tr> <tr> <td>e-Wallet</td> <td>25</td> <td>82</td> <td>20.5</td> </tr> <tr> <td>Branchless Bank Account</td> <td>35</td> <td>90</td> <td>31.5</td> </tr> <tr> <td>Total</td> <td>100</td> <td></td> <td>87.6</td> </tr> </tbody> </table> <p>If Total Registered DFS Accounts = 140m Therefore, Percentage of Active DFS Accounts = $(87.6/140) \times 100\% = 62.6\%$ Proxy: Where there is no data on active and registered account holders (individuals) and only on the number of accounts, then an alternative or proxy indicator is:</p> $\frac{\Sigma (\text{Weighted Average of all active DFS Accounts})}{\text{Total number of adults}} \times 10,000$	DFS ACCOUNT TYPE	WEIGHTAGE (%)	NO. OF DFS ACCOUNT TYPE (IN MILLIONS)	WEIGHTED AVERAGE OF DFS ACCOUNT TYPE	Mobile Money Wallet	40	89	35.6	e-Wallet	25	82	20.5	Branchless Bank Account	35	90	31.5	Total	100		87.6	<p>An active DFS account is defined as an account used in any financial transaction at least once in the last 90 days or three months through a specific digital channel (MFS, e-Wallet, card/sim, etc.)</p> <p>The indicator for active DFS accounts takes a weighted average of the different market share of the differing DFS account types.</p> <p>The indicator is expressed in terms of 10,000 adults to be consistent with AFI Core Set and Basic financial inclusion indicators.</p>	<p>Quarterly Biannual Annual</p>
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Total	100		87.6																					

# INDICATOR	HOW TO CALCULATE	REMARKS	FREQUENCY
<p>2 DFS transactions (by volume) per registered account.</p> <p>This can be disaggregated based on:</p> <ul style="list-style-type: none"> > male/female > urban/rural > as well as by: <p>DFS Transaction Type (as required by the jurisdiction or availability of data):</p> <ul style="list-style-type: none"> > Total Transactions > Cash in /cash out > Bill payments > Merchant payments > P2P transfers > Disbursement and repayment of loans (microfinance loans) > G2P payments > Salary payments > Value chain payments > E-commerce payments > Cash transfers > Airtime top-ups > Etc. 	<p>Total number of transactions classified by type of DFS over a given period, (e.g. a month), performed by the number of registered active DFS account holders reported in the same period.</p> <p>Average Monthly DFS Transaction =</p> $(1/Z (X1+X2+... X12))$ <p>Where:</p> $Xi = \frac{\text{Total number of DFS Transactions in month } i}{\text{Total number of DFS Active account holders in month } i} \times 100$ <p>Z = Period i.e. January, ... December (i.e. 12 for a full year)</p>	<p>To classify the value of the types of DFS use in a more organized way: P2P, P2B, P2G, G2P, B2P, B2G</p>	<p>Monthly Quarterly Biannual Annual</p>
<p>3 Value of DFS transactions, including:</p> <ul style="list-style-type: none"> > Total > Cash in /cashout > Bill payments > Merchant payments > P2P transfers > Disbursement and repayment of loans (microfinance loans) > G2P payments > Salary payments > Value chain payments > E-commerce payments > Cash transfers > Airtime top-ups 	<p>Total value of transactions in domestic currency classified by type of DFS service in each month, and number of DFS account holders reported in each month.</p> <p>Alternatively, average value of DFS transactions in a year in terms of domestic currency, classified by type of transactions, estimated on a monthly basis.</p> <p>Average =</p> $(1/Z (X1+X2+... X12))$ <p>Where:</p> $Xi = \frac{\text{Total value of DFS Transactions in month } i}{\text{Total number of DFS Active account holders in month } i} \times 100$ <p>Z = Period i.e. January, ... December</p>	<p>Choose top three transactions.</p> <p>To classify the value of the types of DFS use cases in a more organized way: P2P, P2B, P2G, G2P, B2P, B2G</p>	<p>Monthly Quarterly Biannual Annual</p>

TABLE 3: INDICATORS FOR MEASURING QUALITY

#	INDICATOR	HOW TO CALCULATE	REMARKS	FREQUENCY
1	Disclosure requirement	<p>This indicator evaluates the compliance of financial service providers to provide clear, concise and accurate disclosure of terms, conditions and requirements to customers in a bid to ensure responsible practice.</p> <p>Measure: Per identified element: Take the value of “1” for fully represented element and “0” for absence of element Examples of elements to be measured are:</p> <ul style="list-style-type: none"> > Plain language requirement, e.g. clear language, easily understandable, exclusion of hidden clauses > Adapted to local context and language requirements > Prescribed standardized disclosure template/format, including layout, fonts size and readability > Rights to redress and associated processes > Visible total cost of service, associated charges, taxes, commissions or fees disclosure 	This indicator is a combination of several elements of disclosure requirements as defined by the country or jurisdiction.	Quarterly Biannual Annual
2	Number of complaints per 10,000 active DFS accounts	<p>Cumulative complaints to the Central Bank, Ombudsman and the individual financial service providers over the last 12 months.</p> <p>1) Total number of complaints accumulated in a year by type of complaint</p> <p>2) Number of complaints in terms of 10,000 active DFS accounts</p> $\frac{\text{Number of cumulative complaints}}{\text{Total number of active DFS accounts}} \times 10,000$	The indicator is expressed in terms of 10,000 active DFS accounts to be consistent with the AFI Core Set and Basic financial inclusion indicators.	
3	Percentage of complaints resolved	<p>Percentage of DFS service complaints resolved (for and against the customer) over the previous year, in terms of total number of complaints</p> $\frac{\text{Number of cumulative complaints resolved}}{\text{Total number of cumulative complaints}} \times 100$	The collection of data related to complaints about the use of DFS services and determining the ones that were resolved (both in favor of and against the customer) are important.	
4	Transaction Failure	<p>Classification of types of DFS failure in the form of system failure and network failure. For each type of failure, perform an estimate for the indicator using the method below:</p> <p>Annual average of the percentage of DFS failed transactions per month:</p> <p>Average =</p> $1/12 (X1+X2+... X12)$ <p>Where:</p> $X_i = \frac{\text{Number of failed transactions in month } i}{\text{Total number of transactions in month } i} \times 100$ <p>i = January, ... December</p>	<p>The indicator should consider the main reasons for DFS transaction failure including the network and the system.</p> <p>The failed transactions are the ones reported or documented by the financial service providers and the central bank.</p>	

# INDICATOR	HOW TO CALCULATE	REMARKS	FREQUENCY
5 Dispute resolution	<p>This indicator evaluates the provision and existence of formal internal and external dispute resolution mechanisms.</p> <p>Measure: Per identified element: Take the value of “1” for fully represented element and “0” for absence of element</p> <p>Examples of elements to be measured are:</p> <p>a. Internal dispute resolution mechanism: These are policies and processes adopted or ratified by the service provider’s board or executive management that set the standards for dispute resolution and handling based on tiered severity or priority.</p> <p>Sub-indicators for this element include:</p> <ul style="list-style-type: none"> > Timelines > Accessibility > Clear Escalation Path and requirements to engage complaints handling procedure <p>b. External dispute resolution mechanism: This refers to the system or process in place that allows a customer to seek affordable and efficient recourse with a third party such as a supervisory agency, a financial ombudsman or equivalent institution.</p>	<p>This indicator is a combination of several elements of disclosure requirements, as defined by the country or jurisdiction.</p>	<p>Quarterly Biannual Annual</p>
6 Financial literacy	<p>This indicator evaluates the provision and existence of formal financial literacy and education policy, program or process, both internally (for service providers) and externally (for regulatory agencies) to ensure customer awareness, knowledge and capability to use basic financial services.</p> <p>Measure: Per identified element: Take the value of “1” for fully represented element and “0” for absence of element</p> <p>Examples of elements to be measured are:</p> <ul style="list-style-type: none"> > Awareness > Guidance: “How it works”, demos, tips, instructions for use, etc. > Education: Financial literacy curriculum for elementary, high School, etc. 	<p>This indicator is a combination of several elements of disclosure requirements as defined by the country or jurisdiction.</p>	<p>Quarterly Biannual Annual</p>

GENERAL CALCULATION

- > To calculate any indicator for gender (male/female) parameter:

$$= \{\text{Indicator} \times (m/f)\}$$
- > To calculate any indicator for type of location (rural/urban) parameter:

$$= \{\text{Indicator} \times (rural / urban)\}$$

GENERAL REMARKS

Regulators and policymakers are encouraged to collect their own data and supplement them as needed with optional data or indices on key areas of interest, or areas relevant to their country’s context.

The supplementary data for the computation of these indices can be obtained from reputable global sources, including but not limited to the World Bank Global Findex, GSMA State of the Industry Report, local research institute reports such as EFINA in Nigeria, and others.

To achieve standardization, the frequency of measure is also suggested but this is subject to availability, sustainability and how the comprehensiveness of the respective data sources identified by each jurisdiction impacts the indicators and outcome.

DEFINITION

Active DFS cash points	DFS cash points that have performed at least one transaction in the last 90 days.
Active DFS accounts	DFS accounts that have had at least one transaction in the last 90 days.
Administrative Units	Country division based on geographical, political, cultural or other considerations. For instance: Tier 1: nation Tier 2: region, state Tier 3: county, town, province Tier 4: municipality, district Tier 5: barangay, village
Adults	Individual older than 15 years or as defined by country.
Complaints	Matters and subjects of expected redress in the areas of financial services including advisory services and their respective distribution channels for the public and small and medium enterprises, and other matters related to the financial sector under the financial regulator’s purview.
Digital Financial Services (DFS)¹	The broad range of financial services accessed and delivered through digital channels, including payments, credit, savings, remittances, and insurance. The DFS concept includes mobile financial services (MFS). In this context, the term “digital channels” refers to the Internet, mobile phones (both smartphones and digital feature phones), ATMs, POS terminals, NFC-enabled devices, chips, electronically enabled cards, biometric devices, tablets, phablets, and any other digital system. DFS models usually employ agents and the networks of other third-party intermediaries to improve accessibility and lower the overall service delivery cost.
DFS Accounts	For the purposes of this Indicator framework, DFS Accounts means: <ul style="list-style-type: none"> > a branchless banking account i.e. basic savings account or no-frills account that has stipulated transaction and operational limits; or > an e-money account offered in the form of mobile money wallet or electronic wallet.
DFS Agent	A person or business that is contracted to facilitate transactions for users. The most important of these are cash-in and cash-out (i.e. loading value into the mobile money system, and then converting it back out again); in many instances, agents register new customers too. Agents usually earn commissions for performing these services.
DFS Cashpoints	All locations where users can do cash-in and/or cash-out transactions. Types of cash points may include various kinds of cash active outlets such as bank agents, ATMs, telco agents, and cash merchants where DFS services are offered.
DFS Deployment	A specific product offered by a DFS provider, such as a specific e-money product, mobile banking, and/or agent banking.
DFS Interoperability	Payment instrument belonging to a particular scheme or business model that is used in other systems and installed by other schemes. Interoperability requires technical compatibility between systems, but can only take effect when commercial interconnectivity arrangements have been concluded.
DFS Merchant	For the purpose of this document, a registered business that purchases e-money from a DFS provider wholesale and then resells it to agents, who in turn sells it to users.

1 AFI Guideline Note 19. Digital Financial Services Terminology, 2016.

Mobile Phone Population	The population that owns a mobile phone.
Type of DFS	P2P, P2B, B2P, B2B, G2P, P2G, B2G, and non-transactional DFS (e.g.. checking balances in a bank account via a mobile phone)
Youth	An individual between 15 and 24 years or as defined by the country.

BACKGROUND DATA

Some background indicators that may provide context on the size and the potential of each DFS market by country:

1. Number of deposit accounts in financial institutions
2. Number of active deposit accounts in financial institutions
3. Number of active mobile phones
4. Number of DFS accounts by scheme (prepaid or postpaid)
5. Number of SMS messages sent per 10,000 adults
6. Number of financial institutions (by type: banks and non-banks) offering DFS models in the country; also, outreach (active DFS clients) of each financial institution offering DFS models
7. Number and percentage of market share of MNOs who operate non-bank MFS models in the country
8. Number of non-bank and banks that are interoperable by MFS model
9. Number of MFS deployments
10. Number of MFS cashpoints
11. Mobile phone penetration (active mobile phones/total population)

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