Catering to every need:

A measurement framework for functional financial service needs
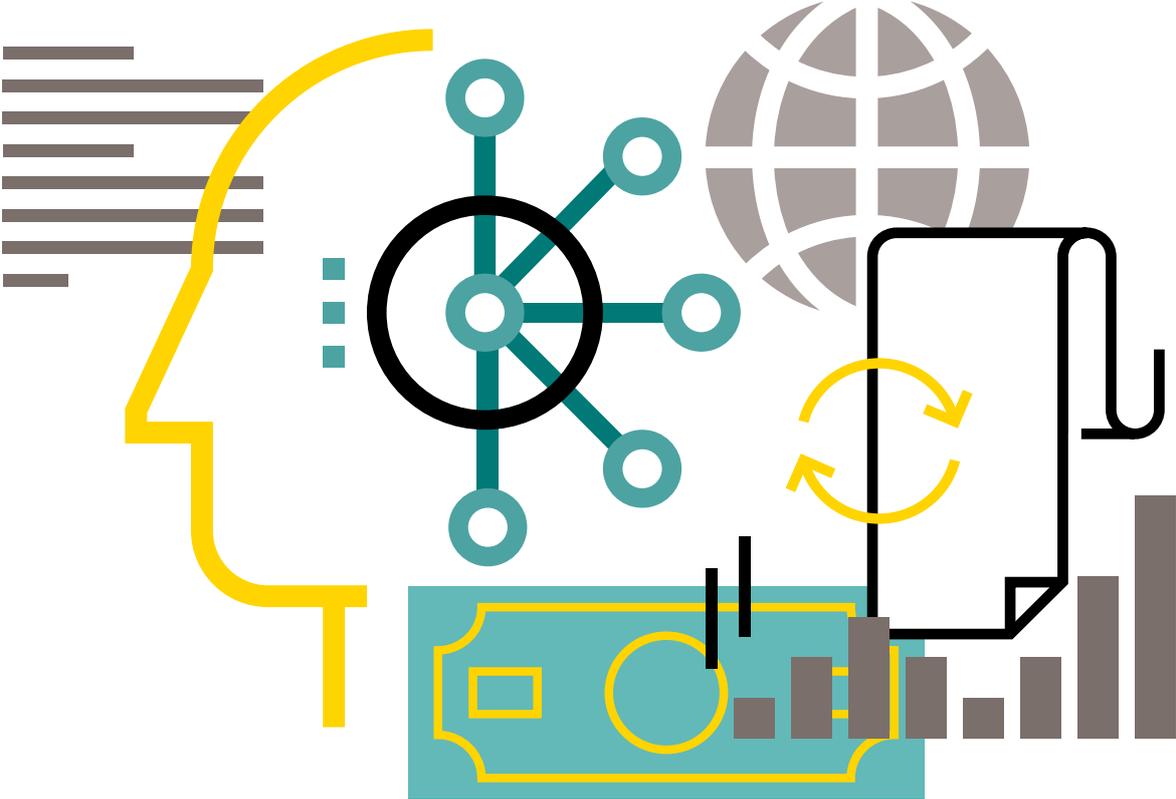
Acknowledgments

About insight2impact

Insight2impact | i2i is a resource centre that aims to catalyse the provision and use of data by private and public-sector actors to improve financial inclusion through evidence-based, data-driven policies and client-centric product design.

For more information:

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About the i2i measurement framework note series

This note is the fourth in a series of notes to explore the role of measurement in delivering on financial inclusion objectives and to develop a set of new measurement frameworks to assist stakeholders in achieving these objectives.

The first note, *Introduction to measurement frameworks*, introduces the concept of a measurement framework, its purpose and components. The second outlines a scan of existing measurement initiatives in the financial inclusion space to position our usage agenda in context.

The third note builds a conceptual model of financial device usage and the triggers and drivers thereof as a theoretical underpin to the work of i2i, on the premise that actual usage, rather than mere uptake, is important for financial inclusion impact.

This and the remaining notes present a number of new measurement frameworks (MFWs) for policymakers, development organisations and financial service providers to practically measure, and therefore better understand, priority measurement areas for financial inclusion. The current note develops a measurement framework for the concept of financial needs as the 'origin' or purpose of usage.

		Title	What does it cover
Umbrella notes	1.	Introduction to MFWs	Looks to other fields to explain what a measurement framework is.
	2.	Determining our focus	Scan of existing measurement frameworks and indicators in financial inclusion to position our measurement agenda ('gap analysis').
	3.	Usage conceptual model	Builds a conceptual model of financial service usage and the triggers and drivers thereof as a theoretical underpin to the work of i2i, on the hypothesis that actual usage, rather than mere uptake, is important for financial inclusion impact.
Measurement framework concept notes	4.	Needs measurement framework	Outlines a measurement framework for how financial service needs are revealed and met through financial service usage.
	5.	Financial inclusion depth measurement framework	Outlines a measurement framework for financial inclusion that considers the portfolio of financial devices taken up or used per person (termed 'depth of financial inclusion'), in contrast to a one-dimensional focus on percentage of people reached.
	6.	Usage measurement framework	Unpacks the definition of usage, clearly demarcating it from uptake; lays out a set of principles for determining usage indicators and provides examples of how these manifest.
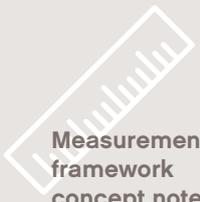
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Executive summary

The i2i facility was established as a resource centre to assist the financial inclusion community in making better use of available and new data to improve the value delivered by financial services for low-income households and nations.

A focus on usage. Following a scan of existing measurement frameworks in financial inclusion and a consultation process to understand the evolution of financial inclusion measurement to date and the key measurement needs, the measurement of usage of financial services was identified as an area where i2i can make a substantial contribution.

Core assumptions. Durable measurement frameworks are underpinned by sound theory. Thus, i2i developed a theoretical or conceptual framework around usage. This framework starts from financial needs as point of departure. It then considers what triggers financial service uptake and/or first use, what drives sustained usage and how one can meaningfully gauge how consumers deploy different financial services towards meeting the underlying need. **This conceptual model is based on three underlying assumptions:**

» Usage – rather than mere uptake – is necessary for financial inclusion outcomes and impact.
» Consumers choose financial services based on their underlying financial needs.
» Different financial devices (payments, savings, credit, insurance), from different types of formal and informal providers, are substitutes or complements in meeting a specific need.

These three core theoretical tenets imply that, from a policy perspective, it is essential for governments, donors and financial service providers to measure: (i) the nature and patterns of their citizens' usage of financial services; (ii) across the full financial usage profile, formal as well as informal; (iii) the purpose of usage, namely the needs being served; and (iv) the different devices (formal and informal, and across product markets) that are being used to meet these needs.

Building the conceptual model

Towards commonly accepted definitions. The conceptual model of usage comprises several core concepts for which a common definition is required:

» **Use cases** are defined as the specific purpose underlying usage. Examples include: the need to invest in children's education, to set up a business or buy a house; the need to cover health expenses and to cope if the harvest fails or a household member dies; the need to pay the household bills or send money to a relative in the rural areas; or the need to cope with budget shortfalls for regular monthly expenses such as food. Use cases fulfilling the same underlying function are grouped into four financial needs, namely meeting goals, resilience, transfer of value and liquidity.
» **Financial devices** are any physical, social or electronic mechanism that stores, accumulates, distributes or transfers value and that can be used to meet a financial need. People use a portfolio of financial devices – from the proverbial mattress for saving at home, to turning to community members for assistance, using a hawala or hundi service, mobile money, formal insurance, a loan from a money lender, a bank account or an MFI loan – to meet their financial needs.
» **Usage** can be defined as 'a person deploying a financial device to meet a specific financial need'.
» The active deployment sets usage apart from **uptake**, which we define as "the act of meeting the requirements and/or completing the procedures that confer on a customer the right to use a financial device".

Uptake triggers and usage drivers. The poor are especially resourceful when managing their financial lives. What they choose to use, and how, is part-determined by supply-side factors that set access barriers[1], as well as contextual matters relating to their lifecycle, socioeconomic circumstances or the macroeconomic realities of the time. But equally important are perceptions, behavioural traits and the nature of societal functioning. Uptake or usage triggers are defined as factors prompting first use (for example advertising), of which the effect erodes over time, whereas drivers exert a sustained influence over time.

Three usage paths. After first use of a financial device has been triggered, the user can follow one of three paths: he or she can sustain their usage, can defect to an alternative device (or revert back to cash as default device for living his or her financial life) or the use case can cease, in which case there will no longer be any usage. It is important to build an understanding of the drivers of decision-making along each path.

A particularly important driver is the value proposition of the financial device vis-à-vis alternative options. Does it provide better functional value towards meeting the use case than alternative devices?

The i2i facility will be developing and testing several measurement frameworks to measure different dimensions of the usage framework that are relevant to policy makers. Two measurement frameworks have already been developed and are now being tested and piloted:

Needs measurement framework. The needs measurement framework sets out to measure the functional needs being served by financial devices. Four universal financial needs are defined: transfer of value, liquidity, resilience and meeting goals. These are measured by considering uptake of different financial devices towards use cases linked to each need. Analysing different devices that are used to meet each need enables the building of a market perspective on the competitive forces, complements and substitutes, across product types (formal and informal) for meeting the underlying need.

Thus, the objective of the financial needs measurement framework is to understand how the market for retail financial services in low-income communities works, in order to ensure sustainable and effective provision of financial services.

The indicators are usage of various types of financial devices towards a financial need, as drawn from demand-side survey data, and informed by qualitative demand-side research. As such, the needs measurement framework provides an alternative measure of retail financial services market behaviour to the traditional product market measures. It is proposed that this measure is a more realistic reflection of actual client behaviour and therefore more useful for policymakers and financial service providers to deliver politically and commercially sustainable financial inclusion initiatives and outcomes.

Usage measurement framework. Building on the financial needs measurement framework, the usage measurement framework sets out to understand the scale and nature of usage to inform policies and business models tailored to financial needs. Applying the usage measurement framework allows the efficacy of such policies and strategies to be evaluated at a more granular and relevant level than allowed by conventional uptake measures.

The usage measurement framework measures the nature and scale of the deployment of a specific financial device, considered across recency (when the most recent incidence of deploying the device occurred), *frequency* (the number of interactions with the financial device over a defined period), *duration* (the length of time for which the person has used the financial device) and *value* (the size of deployment in monetary terms) as core metrics.

Aggregate indicators include the current state of usage, aggregate market size, relative use of specific devices and average or median use. The main data sources are supply-side data for objective assessment of frequency, recency, duration and value, complemented by demand-side data to understand the mix of devices used by consumers – formal and informal – in context.

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[1] Such as proximity, eligibility and affordability

1. Introduction

> This note outlines ==a measurement framework== for gauging how ==financial needs== are ==revealed and met through usage.==

Why a needs measurement framework?

As discussed in the concept note for i2i's measurement series, titled *Financial service usage: A conceptual model*, the financial inclusion space has seen a number of initiatives that have generated millions of new accounts but that have failed to translate into sustained usage. The primary reason[2] is that customers do not think in terms of using savings or credit or payments or insurance, but in terms of the underlying needs for financial services that they want to meet. They want to fund their children's education, meet their day-to-day expenses or be able to cope with healthcare emergencies – and they will use financial services if it can help them to do that. When viewed this way, savings, insurance, payments and credit are not four separate markets operating in silos, but are substitute or complementary products in the market for meeting the underlying need, as are formal and informal products, each with distinct advantages and disadvantages.

Understanding the variety of needs and how they are currently met will go a long way towards explaining how markets behave and what can be done to meet needs more effectively.

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[2] As argued in our blog: This road will not get you there. http://cenfri.org/blog/this-road-will-not-get-you-there.

Box 1.
Needs as point of departure

Traditionally, frameworks aimed at understanding the state of financial inclusion in low-income markets have focused on the provider and the products they provide as a point of departure, as illustrated in the upper part of the diagram on the right. Policymakers, donors and market players looked at financial inclusion through a product market and provider lens, which could then be used to serve various needs.

The needs measurement framework reverses the order (as per the lower part of the diagram on the right). It starts by asking what financial service needs people have – for example, the need of a mother to care for her sick child – and then considers which product types and providers are used to meet this need (or could be used in principle).
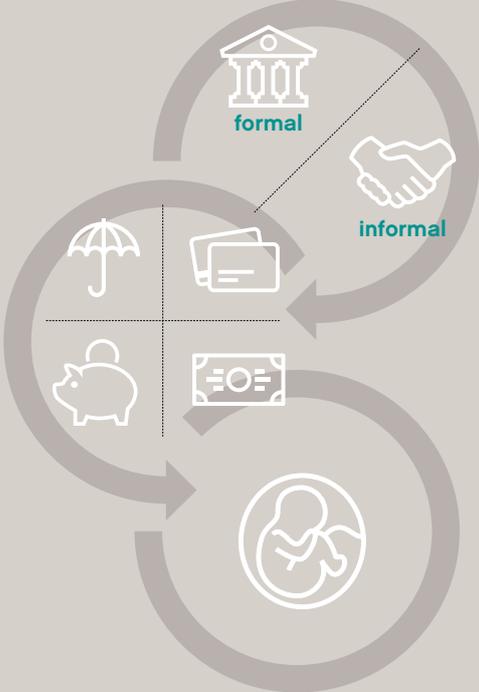
Figure 1.
Changing the approach to measurement:
needs at the core
Source: Authors' own

Who will be interested in a needs measurement framework and why?

This measurement framework (MFW) concept note builds on our theory of financial service usage as set out in the note titled *Financial service usage: A conceptual model* to provide a needs-centric understanding of what drives market behaviour for all parties interested in the dynamics of financial markets for low-income individuals, be they policymakers, regulators, financial service providers or donors.

What does the needs measurement framework cover?

Section 2 introduces the market for meeting financial service needs at the heart of the needs measurement framework. Section 3 outlines the elements of the needs measurement framework according to the core aspects of a measurement framework as introduced in the note *Introduction to measurement frameworks*.

Section 3.1 states the objective of the measurement framework.

Section 3.2 provides more detail on the condition to be measured, namely financial needs.

Section 3.3 elaborates on the indicator used to describe the condition, namely financial device usage.

Section 3.4 outlines the different data sources used in the needs measurement framework and discusses how a dedicated survey module could be designed to improve on current methodologies.

Section 4 concludes this note, followed by two appendices. Appendix 1 sets out a **step-by-step guide** for constructing the needs measurement framework based on existing datasets, whilst Appendix 2 outlines a draft taxonomy of use cases and financial devices to form the basis for the design of a dedicated financial needs survey module.

Recap: What is a measurement framework?

As explained in the note titled *Introduction to measurement frameworks,* a MFW combines theory and data to describe a condition necessary to achieve an objective. It consists of an indicator or set of indicators populated by data. The theory explains why the condition is important for the objective and why the indicators are valid proxies for the condition and any changes therein. The condition being measured is the physical state, set of circumstances, behaviour(s) or process, which is necessary to achieve the objective.

2. Financial service needs: A market perspective

Human needs translate into economic and financial needs.

The starting point for constructing a needs measurement framework is that people have basic **human needs** to be able to live and thrive (akin to Maslow's hierarchy of needs)[3]. To satisfy these needs, they engage with the economic system within which they find themselves: they earn a living and support one another. Outside of a barter economy, engaging with the economic system requires money. Thus, to engage with the economic system, people either use cash directly or the services of others to manage money (financial services).

Money and/or financial services typically serve four functions: to pay somebody else (**transfer of value**), to meet expenses on an ongoing basis (**liquidity**); to meet large expenses resulting from shocks or other unpredictable events (**resilience**); or to put together larger amounts of money to achieve objectives that cannot be funded from regular income (**meeting goals**). These four are universal functional needs for financial services, termed financial needs for the purpose of this paper[4].

Financial devices used to meet needs.

People use multiple **financial devices**[5] to meet these financial needs. One financial device can be used to meet multiple financial needs. For example, a savings account can be used to meet the need for both liquidity and resilience. As discussed below, multiple financial devices, say a bank account and a savings box at home, can also be used to meet a single financial need, such as liquidity.

The starting point for constructing a needs measurement framework is that people have basic human needs to be able to live and thrive.

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[3] Maslow's original list of needs ranges from basic needs, such as food and shelter, to altruism and self-actualisation. For our purposes, it is important to understand not only the revealed need for a financial service, but also the underlying human need, in order to understand current and potential financial service usage. This includes social needs. This is illustrated powerfully in the Kenya Financial Diaries study, which shows that Kenyans derive social value from their interaction with financial services (Zollman, 2014) and resonates strongly in the MAP qualitative demand-side studies conducted in 10 countries to date. For instance, through generosity and reciprocity, people build a sense of belonging and may also increase their social standing. In another example, the MAP Madagascar qualitative research drew on the social needs framework to understand current financial service behaviour. It found that many people own land, but that they do not even consider putting that land up as surety for a loan and hence would be unlikely to use collateralised loans, due to the cultural importance of maintaining ancestral land. For the purpose of this measurement framework, we consider social value as the underlying human need that translates into some functional financial service need – in the Kenyan case, the need to transfer value to another person. The social drivers of usage decision-making are introduced in the note titled *Financial service usage: A conceptual model* and will be unpacked further in a dedicated concept note.

[4] This categorisation corresponds largely to that identified by others. FSD Kenya, for example, through the financial diaries and other research, refers to "bridges" (liquidity), "safety nets" (resilience) and "ladders" (meeting goals) as three core functions of financial services towards financial health. CFSI (2016), also as part of a measurement framework for financial health, classifies the need to (i) spend, (ii) plan, (iii) save and (iv) borrow. Spend spans the ability to spend less than current income and pay bills on time and in full (what we term the liquidity need). *Save* has a liquidity and resilience component (the ability to have sufficient liquid savings to meet day-to-day needs), as well as a meeting goals and 'longer-term' resilience component (what they term 'have sufficient long-term savings or assets'). Under *borrow*, they classify having a sustainable debt load and having a prime credit score (which contributes to meeting goals and resilience). Lastly, under *plan* they classify having appropriate insurance (our resilience need) and the ability to plan ahead for expenses (meeting goals). Follow-up research conducted to apply the CFSI framework globally, via a dedicated demand-side survey of more than 1,000 respondents in Kenya and India as well as 89 qualitative interviews (Dalberg, 2016), lists key needs as meeting day-to-day needs plus shaping and smoothing volatile income (corresponding to our liquidity and transfer of value categories), pursuing opportunities and building financial reserves (meeting goals) and building resilience. Likewise, CGAP (Peachey & Arora, 2016) classify functional value rendered by financial services as supporting customers to deal with health and other shocks (what we term resilience), to balance cash flows between income and expenditure cycles (liquidity) and to seize opportunities to enhance income and assets (what we term meeting goals).

[5] We draw this term from the financial diaries methodology (see, for example, Collins et al., 2009, and Zollman, 2014), which maps all financial tools or instruments people used under the term 'financial devices'. See the box for a full definition.

Depending on availability, cost and other considerations, ==people choose between financial devices to meet a financial need.==

What is a financial device?

We define the term **financial device** as any physical, social or electronic mechanism that stores, accumulates, distributes or transfers value and that can be used by a person to meet a financial need.

This definition is intentionally broad, for two reasons. Firstly, the ingenuity of people to meet needs is vast, hence the definition should encompass as broad as possible a set of current and potential devices. Secondly, this concept should allow researchers to standardise the tools used by people to lead their financial lives across the formal and informal, to create a measureable profile of a person's full financial behaviour. Examples of financial devices include, amongst others, a bank account, cash, saving with an informal savings group, or loans from an informal money lender or family member. A person, therefore, can use multiple financial devices to meet a single financial need.

Financial devices as substitutes or complements. When you consider the purpose of usage, the implication is that financial usage decision-making is based not purely on the merits or demerits of the particular device, but also and perhaps more strongly on the larger financial need that the various devices are trying to meet. This, in turn, would suggest that the primary market dynamics are not determined by the device but by the underlying financial need. Depending on availability, cost and other considerations, people choose between financial devices to meet a financial need. Thus, a savings account and a loan from an informal lender are substitute financial devices in the market for meeting liquidity needs. To understand the size and dynamics of the market, we need to understand the mix of devices used to meet this financial need.

Three market components.

Measuring the market for meeting financial needs requires three core building blocks:

»   **Use cases** are the discrete purposes for which people or customers use financial devices.[6] Examples include being able to send money to a relative in another part of the country, being able to pay monthly school fees, being able to purchase enough food, being able to pay for unexpected medical expenses, or building a business. All use cases can be categorised into the four financial needs (see Section 3.2 for more detail).

»   **Financial devices** – as defined above.

»   **Time period** – people manage money and financial services based on their income and expenditure cycles. Due to the seasonal nature of income and expenditure in most societies, the full cycle of seasons (one calendar year) is usually the most sensible period within which to measure the use of financial devices towards meeting financial needs.

Using these metrics, we are able to construct a number of useful 'market indicators' that collectively make up the measurement framework for meeting financial needs, such as:

Adult population revealing a specific financial need. The number of adults that used a financial device for at least one use case classified under a specific financial need during the period. The analysis can be represented at needs level or disaggregated by discrete use case.

Financial devices utilised to satisfy specific financial needs. The nature and extent of different financial devices used to satisfy each use case or need. For example, the proportion of formal versus informal devices or the proportion of devices that can be categorised as savings, credit, payments or insurance.

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[6] The desired outcome of financial service usage is to effectively meet people's financial service needs, as measured across the various use cases. Thus, the use case is both the purpose and the outcome of financial service usage.

3. Constructing the financial needs measurement framework
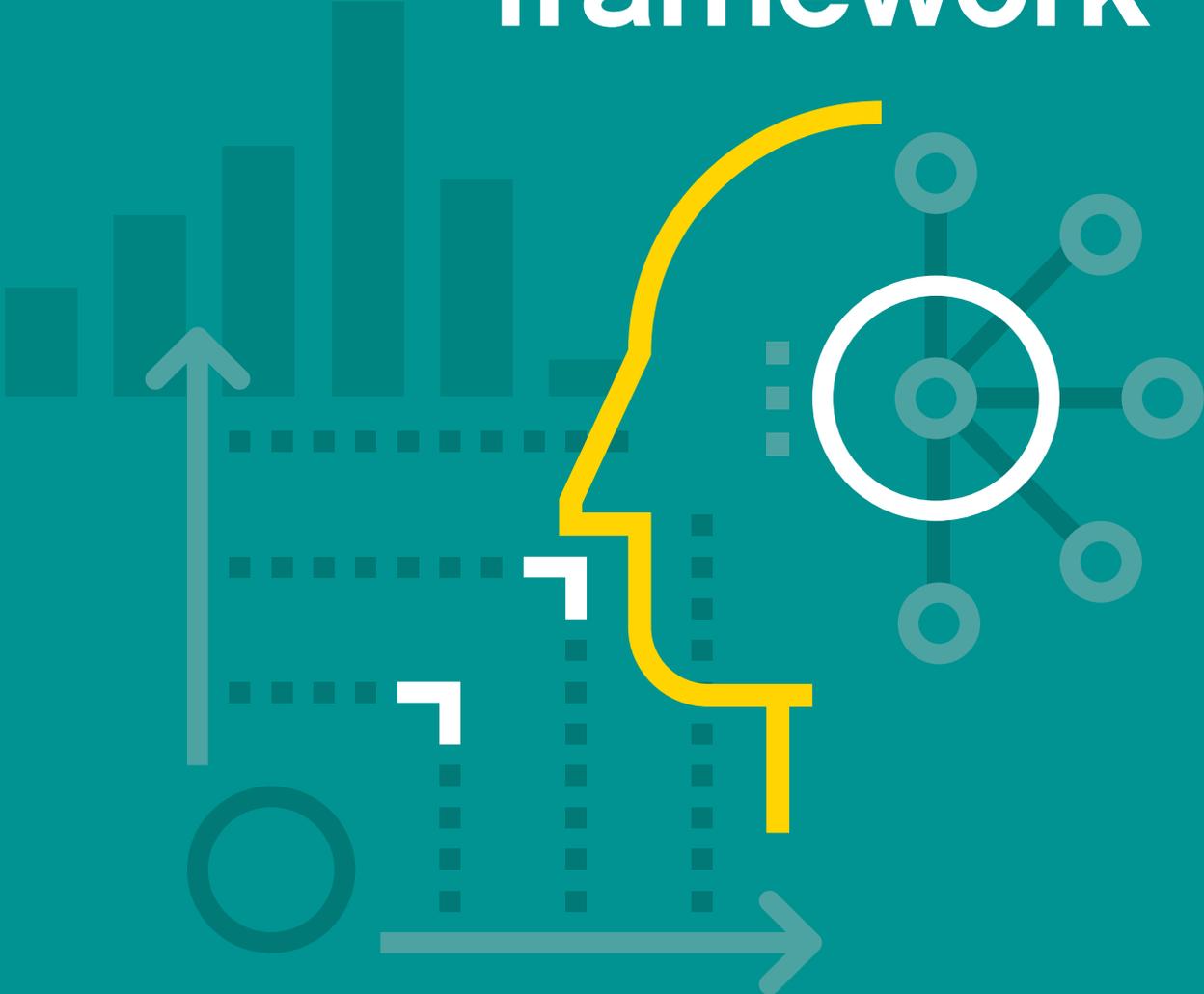
3.1 Objective

Financial needs MFW objective: To understand how the market for retail financial services in low-income communities works, in order to ensure sustainable and effective provision of financial services.

The measurement objective of the financial needs measurement framework is to understand how the market for retail financial services works. As explained in *Financial services usage: A conceptual model* and Section 2 above, a core hypothesis underlying i2i's measurement agenda is that consumers' usage decisions, and hence usage market dynamics, are determined by financial needs. As indicated in the note *Determining our focus*, current financial market measurement frameworks for retail services aimed at the low-income market, focus by and large on measuring uptake of savings and other formal product categories. However, narrow indicators focused on particular product categories that do not take account of underlying financial need-based market dynamics may lead to policy prescriptions around formal provision that end up failing. Thus, understanding financial need market dynamics is a central measurement objective for i2i in its quest to promote sustainable provision of financial services that improve outcomes and impact.

3.2 Condition

Condition: Consumer market behaviour: transfer of value, liquidity, resilience and meeting goals as functional financial needs, each comprising one or more use cases.

The financial needs measurement framework seeks to measure market behaviour by tracking the usage of financial devices to meet the four functional financial needs categories introduced in Section 2.

Each of these financial needs represents a market with market participants and behaviours:

» **Transfer of value:** Transferring value is a core functional need to enable people to live their economic lives, as it enables consumption, gifting, payments and receipt of income. It is also a prerequisite for accessing savings, credit and insurance services. Value transfer is furthermore core to the maintenance and utilisation of social capital. Thus, transfer of value underlies all the other financial needs and is the 'original' function of a financial system – in the absence of transfer-of-value devices, communities must revert to barter. Value transfers take place at local, national and cross-border level.

» **Liquidity:** Liquidity refers to people's ability to meet expenses in each income cycle. It is essential for survival and to maintain productive capacity.

» **Resilience:** Resilience refers to the ability to deal with unexpected shocks that have a financial impact. Thus, it goes beyond short-term liquidity management to allow people to avoid falling into poverty or reducing their living standards.

» **Meeting goals:** The ability to meet goals refers to the extent to which individuals utilise financial services to meet foreseeable, desired life objectives, either to grow their economic or financial position or to reach some kind of fulfilment.

Underlying use cases

A person does not in the first instance think about their needs as, say, a resilience need or a need to meet goals. These are mere categories to group a variety of discrete 'frontline' needs or use cases. For example, a person may have the need to finance unexpected health expenses, to pay a bill, send money to a relative, meet day-to-day budget shortfalls, provide for old age, pay for a wedding or provide reciprocal support to others in the community. Thus, each need category encompasses a set of discrete use cases as 'sub-needs'. All the use cases categorised under a need require the same 'money function' to be performed. That is: transfer of value use cases all entail some form of value transfer; liquidity use cases all require a sum of money to make up for shortfalls in a person's 'usual' or regular income cycle; and resilience or goal-related use cases all require a larger sum of money than can be provided from 'regular' income cycles.

Box 2 outlines indicative use cases feeding into each category. Appendix 2 sets out the principles for developing a taxonomy of use cases as the basis for the measurement of financial needs.

Box 2. What constitutes each need?

The four financial needs are categories within which engagements with financial services can be housed.

Each comprises a number of discrete use cases as an actual purpose to which someone will use a financial service, as illustrated in the table below:

Financial need	Indicative use cases
Resilience	Providing for lumpy expenses due to health risks, accidents or physical impairment. Coping with loss of income due to death in the family. Coping with funeral expenses. Coping with loss or damage of physical assets due to risk events. Coping with the impact of agricultural risk, e.g. drought, flood or livestock disease.
Transfer of value	Paying a bill. Making an over-the-counter purchase. Handing over money to somebody in the community. Sending money to a relative in another country.
Meeting goals	Investing in a business or for farming. Investing in education. Providing for life events, such as weddings or births. Providing for old age. Buying household assets. Buying or building a house. Gaining social standing or status[7].
Liquidity	Being able to meet day-to-day expenses such as food, rent, clothing, utilities, buying school uniforms or paying school fees. Being able to manage your business cash flow and to purchase working capital. Being able to meet (reciprocal) demands for support from the community and extended family.

Table 1.
Indicative list of use cases per financial need
Source: Authors' own, drawing on various financial inclusion literature sources

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The exact use cases that are classified under each need category will be determined when a needs measurement framework is applied in practice, depending on the underlying data and country context, and informed by qualitative demand-side research. To guide the researcher in defining and analysing the relevant use cases, we have developed a taxonomy comprising the generic dimensions that can be used to classify use cases. See Appendix 2.

3.3 Indicators

Indicators: Usage of various types of financial devices towards a financial need.

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As described in the note *Introduction to measurement frameworks*, indicators are measurable proxies for the condition to be understood. You measure the indicator to better understand the condition, as it is difficult to measure the condition directly.

Headline indicator: usage towards a specific need. It is difficult to gauge the intensity of a financial need or what value people derive from meeting such a need, without deep qualitative probing. This is because the intensity of the need will vary from one individual to another, depending on their circumstances and preferences[8]. Given that the intensity of the need cannot easily be quantified, it is impossible to rank the needs in terms of importance. In other words, resilience may be more important to one person than another, or more important than other needs for a particular person at one point in time, but not at other times. However, we can explore how users opt to interact with financial devices towards a need and when which devices are preferred[9]. Rational individuals, if given sufficient choice, will opt for specific devices to meet specific needs in a specific manner, and that may tell us something about

their underlying needs. The approach within this measurement framework is thus to look at individuals' actions – namely their uptake and usage of financial devices towards a particular use case – as 'revealing' the existence of the associated financial need, as far as can be revealed through a well-designed questionnaire. Uptake and/or usage towards a use case is therefore used as a proxy indicator for meeting financial needs, given that needs as condition cannot be directly measured.

Sub-indicators: usage across use cases and devices. The heart of the needs measurement framework is a solid taxonomy of (i) use cases, and (ii) financial devices. If you ask people what they are doing with their money or what they would like their money to achieve for them (use case) and then ask them what device they use to do each of that, it provides useful insights on how different financial devices[10] are currently used to meet functional financial service needs – and, importantly from a policymaker or market player's perspective, what the gaps or unmet opportunities are for formal financial services. The usage-towards-needs indicator is thus constructed from two sub-indicators: use cases observed and financial devices used. For example: formal versus informal or individual versus collective devices used for a particular use case, or a particular use case being met by savings or credit devices, measured across the number or proportion of adults in each case.

Additional metrics that would be descriptive of usage behaviour towards a particular need would include time (period over which usage takes place) and monetary value associated with the usage. These more granular usage indicators measure the intensity of usage at a market level and are the subject of a separate *Usage measurement framework* concept note.

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[7] Some refer to this as 'relational savings'. See, for example: http://blog.imtfi.uci.edu/2017/01/ceremonial-expenses-as-relational.html.

[8] In order to understand how an individual ranks these needs, they must be presented with some type of resource constraint. Through taking decisions under this constraint, they reveal their true prioritisation and needs. Trying to establish *a priori* needs in a survey may over-estimate the true need. In the absence of any resource constraint, microeconomic theory dictates that individuals will pursue all their wants and needs without a limit. This approach is both unrealistic (all decisions individuals make are within constraints) as well as rendering measurement moot (all preferences will be expressed at all times – nothing remains to measure).

[9] Drawing on utility theory, the term ordinal utility, as opposed to cardinal utility, refers to the notion that each rational economic agent, when presented with a choice, will order their choices from most to least preferable and will opt for the most favourable outcome. If they have any ability to choose further, they will opt for their next most favourable outcome, and so the choices proceed until they have maximised their utility within a given resource constraint. As per our usage theory set out in *Financial service usage: A conceptual model*, we view such decisions without the context of ecological rationality, that is, rationality within the social context and with regard to behavioural preferences, biases and heuristics.

[10] The measurement framework breaks down the manner in which consumers meet their needs by asking them what financial device(s) they use per use case. The device can span different product categories, formal or informal, devices provided by or accessed via family and friends, as well as 'self-provided' devices such as saving at home under the proverbial mattress. Appendix 2 outlines the framework for developing a taxonomy of financial devices.

3.4 Data

Data: Existing or new demand-side survey data, informed by qualitative demand-side research.

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The data requirements for a needs measurement framework can be split into two components. The first is the statistical survey data required to support the calculation of the indicator and sub-indicators outlined above. Here, one can either work with existing datasets, or (ideally) develop and implement a dedicated survey module. Each approach is outlined below.

The second is qualitative data to understand and contextualise the use cases and to safeguard the integrity of the statistical data by ensuring that the correct questions are asked, in the appropriate way, in the data collection phase.

Working with existing datasets

Which data sources qualify? To lend itself to the creation of a needs measurement framework, a statistical dataset should provide a bare minimum of information. It must cover some level of questions around what financial devices a person uses, to which purpose. Where more than one device can be relevant for a single purpose or use case, it would also be good to gauge the reason for choosing one over the other.

Though not part of the financial needs measurement framework per se, it would furthermore be essential to measure the degree or extent of engagement of a person with each substitute or complement device in the market for meeting the specific need. This forms the basis for the usage indicators set out in the *Usage measurement framework* concept note. A granular demand-side survey of financial inclusion, such as FinScope[11], is most suitable to this analysis.

Needs strand as core methodology.

Demand-side surveys to date have not been designed specifically with the measurement of the fulfilment of financial service needs in mind. Doing so based on existing datasets therefore requires going through the entire questionnaire to identify those questions that would be relevant to each use case, and labelling the financial devices (across both the product and provider perspective) used towards that use case, to the extent that those are captured in the relevant questionnaire. On this basis, revealed needs can be coded and the results categorised in different ways to render policy-relevant insights. This allows a needs strand to be constructed to show the extent to which different financial devices are used towards different use cases. A 'strand' is simply a visual representation to show the different elements or components comprising a single indicator.

Box 3, which follows, provides an illustrative application of the needs strand methodology as applied in the FinScope Zimbabwe dataset. Appendix 1 provides a step-by-step guide for constructing a needs strand based on the current FinScope survey instrument.

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[11] See www.finscope.co.za for an overview.

Box 3.
Practical application of the needs strand on an existing financial inclusion dataset – the case of FinScope Zimbabwe

The diagram below indicates the needs strand developed as part of the MAP Zimbabwe diagnostic study in 2016, drawing on FinScope Zimbabwe 2014 data. Whilst this dataset contains enough granularity to construct a needs strand, the survey questionnaire was not designed with the construction of a needs strand in mind.

Hence the use case framework had to be retrofitted to the questionnaire by coding a taxonomy of relevant survey questions for various use cases, grouping the responses into the four financial needs and then mapping the financial products and providers used towards each need. For some use cases, not enough reliable information was available to map products and providers.

The graph below illustrates the 10 use cases that were constructed in Zimbabwe and how individual use cases, where applicable, classify into each of the four needs[12]. RCTV refers to remote cross-border transfer of value and RDTV to the domestic equivalent. The strand was constructed by aggregating the findings into a set of 'financial device and user pairings' towards each use case. These were then classified by product market (payments, savings, credit or insurance), with those users that have more than one financial service towards a particular use case indicated separately in the 'overlap' component of the strand. The y-axis indicates the proportion of adults using different devices towards each of the 10 use cases identified on the x-axis.
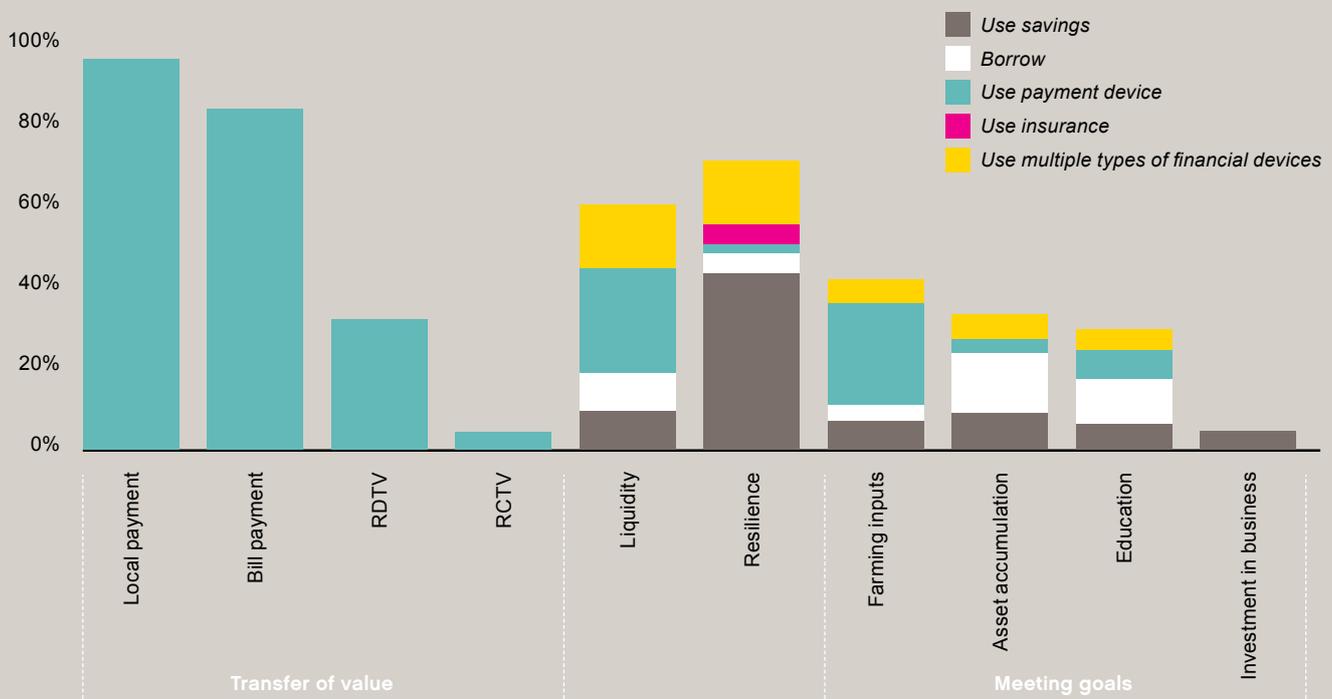

Figure 2.
Zimbabwe needs strand
Source: FinScope Zimbabwe 2014

[12] Note that, in the case of transfer of value and meeting goals, a number of use cases were identified as 'sub-needs'. However, the questionnaire did not allow enough granularity to break down the liquidity or resilience needs into discrete use cases.

Box 3.
Continued.

The analysis rendered the following insights:

» **Prominence of transfer of value revealed.**
The vast majority of Zimbabweans engage with transfer of value of some sort, particularly through the purchasing of airtime (a bill payment) as well as purchasing of goods (a local payment). Secondly, Zimbabweans use payments devices for a wide variety of other needs, with payments devices (primarily driven by remittances) featuring prominently in consumption smoothing and agricultural input financing.

» **Saving for risk, borrowing for goals.**
Savings and credit play a prominent part in the use cases that relate to the achievement of goals, such as asset accumulation and education. In terms of resilience, many more Zimbabweans use savings than insurance.

» **A closer look at prominent use cases.**
In addition to the overall strand, it is important to unpack individual use cases in detail. For the education use case, for example, Figure 3 unpacks total use by product market (without any overlaps). It reveals that 8% of Zimbabwean adults use remittances in order to pay for education, whilst 10% of individuals use accumulated savings and 11% use credit of some form.
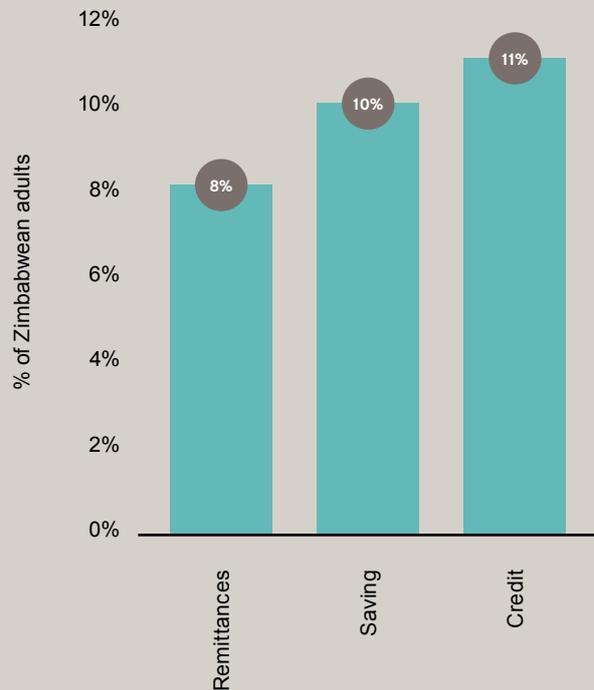

Figure 3.
Unpacking the education use case in Zimbabwe by product category
Source: FinScope Zimbabwe 2014

Unpacking this further, one can look within these product categories to understand what type of provider is drawn on:
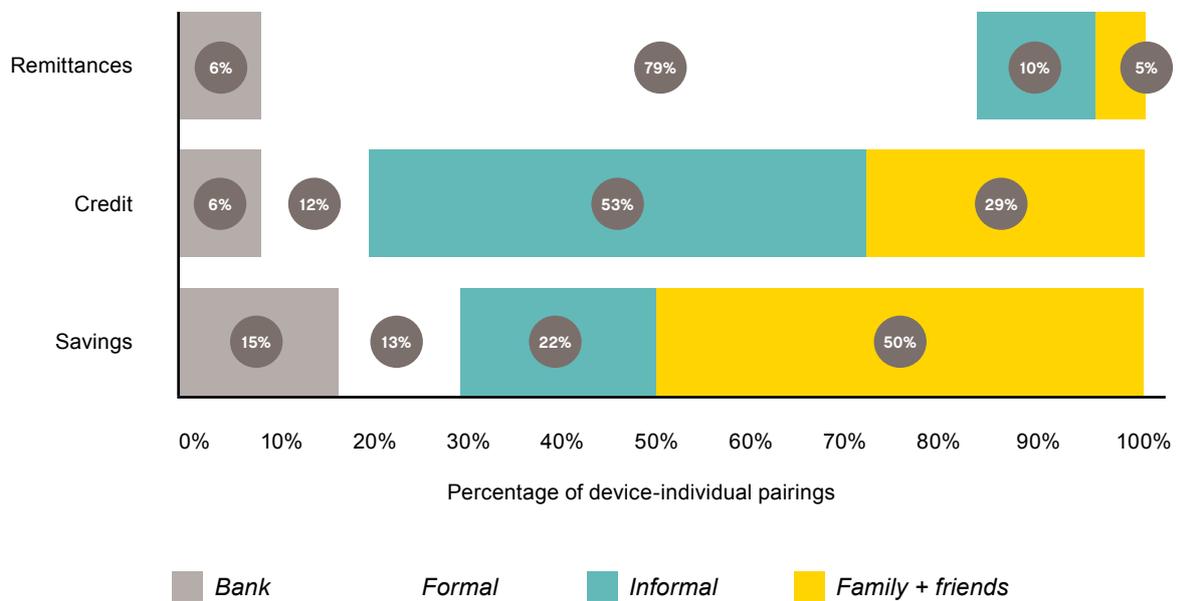

Figure 4.
Unpacking the education use case in Zimbabwe by provider category
Source: FinScope Zimbabwe 2014

Figure 4 illustrates that formal non-bank remittances from mobile money providers and money transfer operators account for the bulk of the transactions[13] that are used to fund education. Formal remittance providers thus have an inextricable link to education within the Zimbabwean economy. Furthermore, informal credit is responsible for over half of the transactions that allow the financing of education. Finally, half of Zimbabweans' savings transactions for education draw on money saved with family or friends. This indicates a possible market gap for formal providers.

This approach illustrates the value of showcasing product and provider level data within the needs measurement framework.

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[13] Note that the provider strand as illustrated in Figure 4 is of a different character than the needs strand. For the purposes of this strand, a transaction is defined here as an individual reporting an engagement with a particular financial device (called a 'device-individual pairing'). These engagements are in turn classified into a group in terms of which provider provided the device. The total strand in Figure 4 thus is representative of all interactions an individual made for a particular purpose, such as education, in a mutually exclusive manner. An example is an individual using some funds from their credit card (bank), as well as some money from their parents (family and friends) to come up with sufficient funds for their educational expenses. These would be counted as unique and distinct and no ranking is made between them.

Towards dedicated survey module design

The methodology above implies that a specific needs strand will be compiled for each eligible dataset, depending on the nature of the specific questionnaire. As questionnaires are not standard across countries, it is not possible to develop a needs strand that allows for cross-country comparison. Existing questionnaires are also not designed to explicitly gauge a full suite of use cases. To standardise the measurement of use cases served through various devices, the i2i measurement and data teams are developing a dedicated needs survey module.

Survey designed around use cases and devices. The point of departure in constructing a needs-centric survey module is to establish the various use cases that people exhibit, to cluster them into the four financial need 'buckets' and to track the number of people revealing each use case. For each use case, the next step is then to track the device(s) used towards that use case and, where relevant, the reasons for choosing that device. Thus, the module is built around a taxonomy of use cases and financial devices. After that, various other data points can be cross-tabulated with each use case, for example the demographic, socioeconomic or geographic profile of those with different types of devices towards the same use case, or of those exhibiting one use case versus another.

Box 4 (on the next page), outlines the basic approach to constructing a dedicated needs survey module.

Role of qualitative research

Ex ante and ex post. Though no quantitative inferences can be made from qualitative demand-side research, such research (for example in the form of in-depth consumer interviews, ethnographic immersions and/or focus group discussions) is central to inform the quantitative data-gathering exercise.

Qualitative research is ideally needed twice during the needs measurement exercise:

» Upfront, to understand the country context, social norms and customs likely to shape consumer behaviour, as well as their likely front-of-mind needs. These insights will then be used to shape the list of use cases and the structure and nature of the questions in the survey questionnaire.

» After the roll-out of the survey, at the analysis stage, to help interpret the findings and add depth to the insights and to position findings within the social context. Where no budget is available for a dedicated qualitative probe at this stage, the pre-survey qualitative findings should be re-analysed to see what light they can shed on the survey findings.

Understanding use cases and devices in context.

A basic qualitative financial needs discussion guide takes care to establish a rapport with the interviewee and then to probe the household and social context, to understand how extended families and communities function and what reciprocal relationships shape the fabric of the respondent's daily life. The next step is to gauge the typical income and expenditure streams of the household and to establish their transfer of value patterns and needs. On this basis, the researcher then starts to probe what happens when income is not enough or expenses are too high to meet financial obligations across the income cycle, why that would be the case and what the respondent would do to cope (liquidity need). A similar line of enquiry is followed for a scenario where things go wrong (unexpected, large costs – to probe the resilience need). The next step is to understand what people plan for or aspire to and what devices they use to that end. Finally, the interviewer takes stock of all the formal and informal devices used, respectively, towards the above needs, asking why a person started to use and/or ceased to use it and what the benefits or disadvantages are vis-à-vis alternatives. A typical interview lasts about two hours and provides an in-depth glimpse into the household's financial life and the factors driving their usage decisions.

Box 4.
Indicative survey module structure

The table below outlines the indicative structure of a survey module, populated with hypothetical answers, which would be required to provide the baseline information to construct a needs measurement framework. See *Appendix 2* for an outline of a use case and financial device labelling or classification system (taxonomy) that will underlie the construction of such a survey module.

What do you need to do with your money? Example categories for labelling discrete use cases reported.	What financial device(s) do you use, ranked by importance, to do so? Example categories for labelling discrete devices reported.	Why are you using this particular device(s)? Why do you prefer one over the other? Example categories for grouping discrete reasons reported.
Meeting goals: life stage: * I need to pay for my son's wedding.	**Self-provided saving:** * I save in a safe place at home. * I bought a calf that I'm rearing. **Bank-based savings account:** * I opened a bank account.	* **Affordability/convenience:** I save at home, because I know it won't be eaten up by bank costs. However, it's difficult not to spend that money. * **Growth potential:** The cow can get sick or stolen, but the benefit is that it grows in value. * **Discipline:** It's easier not to spend money that you keep in a bank account.
Transfer of value: regular in-person payments * I need to buy groceries.	**Cash payment:** * I use cash. **Transactional bank account:** * Sometimes I pay by card.	* **Affordability/convenience:** Cash does not cost me anything, the shop does not have a card machine. * **Security:** It's too risky to buy a big item like a fridge in cash.
Liquidity: business flow management: * I need to be able to pay for my business inputs.	**Self-provided saving:** * I set aside cash each month. **Formal non-bank credit:** * I use the loan facility on my mobile money account.	* **Affordability/convenience:** Cash remains the most convenient for keeping track of what I have. * **Affordability/convenience:** This is a cheap form of loan, plus I can then use the mobile money to pay my suppliers.
Resilience: coping with impact of death in the family: * I need to pay funeral expenses, should somebody in my household pass away.	**Informal collective risk pooling:** * My community of fishermen formed a mutual support group.	* **Trust and social capital:** I belong to the group because I know that they will support me, also emotionally.

Table 2.
Indicative survey module structure
Source: Authors' own hypothetical examples, with hypothetical category labels

4. Conclusion

Going forward, it will be an important part of the i2i's mandate to inform the design of a dedicated survey module to better gauge the extent and ways in which different financial needs are met across various use cases.

This note introduced the elements of the financial needs measurement framework following the standard measurement framework structure as set out in the note 'Introduction to measurement frameworks'. It showed why it's important to focus on functional financial needs and how demand-side survey data (informed by qualitative research) can be used to construct a market behaviour indicator of needs as revealed through usage, built from a taxonomy of use cases and financial devices.

As such, the needs measurement framework provides an alternative measure of retail financial services market behaviour to the traditional product market measures. It is proposed that this measure is a more realistic reflection of actual client behaviour and therefore more useful for policymakers and financial service providers to deliver politically and commercially sustainable financial inclusion initiatives and outcomes.

As is clear from the practical application, this measurement framework is only partially informed by current datasets. Going forward, it will be an important part of the i2i's mandate to inform the design of a dedicated survey module to better gauge the extent and ways in which different financial needs are met across various use cases.

Appendix 1: Approach to constructing a needs framework when working with current datasets

This appendix describes the methodology for constructing a needs strand from an existing financial inclusion demand-side survey database that was not specifically designed to gauge market dynamics from a needs perspective. It assumes the basic survey structure of the FinScope survey, but could also be constructed from demand-side survey databases with similar objectives and questions. The purpose is to obtain the insights available from the needs measurement framework without having to undertake a completely new survey.

Step 1: Investigate the quality of the dataset and establish the ability to construct specific use cases. Prior to starting the exercise, the following should be assessed:

» Is the data granular enough to allow for this type of analysis?

» Is there sufficient qualitative and third-party (desktop) research to highlight which use cases are most prominent in the country?

» Is this research sufficient to justify the housing of most, if not all, of the survey respondents within the use cases?

If the answer is yes to all these questions, it will be possible to establish granular use cases. If not all answers are affirmative, then it may only be possible to construct the over-arching needs strands for the given country, or it may require qualitative and/or desktop research to better understand use cases.

Step 2: Establish a use case taxonomy.
Regardless of the outcome of the process outlined above, a taxonomy of relevant questions should be established from the survey questionnaire for each use case and for how the use cases cluster into a need[14]. The taxonomy is important as it lays out all the available data that is relevant to the construction of a needs strand, in line with the principles outlined in the indicator section of this note. To construct the taxonomy, qualitative and quantitative research must be engaged side by side. The quantitative data will provide the information required to calculate the strand, whilst the qualitative information will help determine which use case to house a question and which use cases cluster together under each need.

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[14] A taxonomy is a repository of all the relevant questions that are available in a survey and that links them to specific themes that the researcher wishes to understand. In the case of the current measurement framework, these themes will be the relevant use cases established in the first step of the process.

[15] Forthcoming publication authored by Cenfri and commissioned by Financial Sector Deepening Zambia. See: http://cenfri.org/making-access-possible/map-zambia

Box 5. What does a use case taxonomy look like?

A taxonomy is built around the variables that are available to measure needs. To construct a taxonomy, a list of all available variables (questions in the survey questionnaire) and options (values captured by the variable in the questionnaire) should be put together. Next, using a template such as the one below, each question and option on that list should be evaluated to determine which category they belong to for each of the following dimensions: need, use case, product type and provider type. Even though we are ultimately interested in the financial device used (see Appendix II), most demand-side surveys will capture information pertaining to financial devices along two dimensions – products and providers. Therefore, these are listed in the taxonomy.

For coding purposes, the variable name and option (the value which the variable should be equal to) are also captured, along with any additional considerations that need to be taken into consideration when creating the new needs variables. Below is an example of what the first three lines of a taxonomy could look like, taken from MAP Zambia[15].

Question	Option	Need	Use case	Product Type	Provider Type	Variable	Option	Add. Consid.
Where do you get most of the money from to buy/build the house? Question 1.8.2b	Chillimba	M	G	S	I	Q1_8_2B	9	
How/where will you get most of the money to pay for birth of a child (==1) (read option mentioned in Q3.5.1) if you have to? Question 3.5.2	Rely on savings group social fund	M	L	S	I	Q3_5_2	2	&Q3_5_1 ==1
	Sell some-thing that I bought for this purpose	M	L	S	K	Q3_5_2	12	&Q3_5_1 ==1

In the first row, the question relates to how the respondent could finance the house that they own. The option in this instance (there may be other options captured elsewhere) was to use money from a Chilimba, a type of informal Zambian savings group. Therefore, the need that the respondent is meeting is to meet a goal (M) – by investing in a productive asset – to grow (G), using a savings (S) product from an informal (I) provider. The variable is called Q1_8_2B in the dataset and Chilimba, the option, is labelled number 9. No additional considerations need to be considered.

In rows two and three, respondents are indicating that they plan to manage the additional cost of a child by (i) relying on a savings group social fund or (ii) selling something that they bought for this purpose. Both meet a goal (M) – to have a child – which is a type of life event (L), using savings (S). However, using savings from a savings group relies on an informal (I) provider, while buying an asset to sell later for a specific purpose constitutes savings in kind (K). Rows two and three illustrate two additional things. Firstly, both options have additional considerations attached to them: due to the manner in which the dataset was constructed, question Q3_5_1 needs to be equal to one in order for these lines to hold. Secondly, they show that a question can have multiple options. In fact, some questions have many options, and each of them should be treated separately. Therefore, the list to which we referred in the beginning is a list containing all relevant variable-option pairs, each of which needs to occupy its own row in the taxonomy.

Step 3: Coding and constructing the needs strand. In the taxonomy, there are four dimensions along which variables and their options are categorised: needs, use cases, and (to account for financial devices) product types and provider types. Each of these dimensions has a number of options. For example, there are four needs: meeting goals, resilience, liquidity, and transfer of value. Following construction of the taxonomy, as described in the box above, a binary variable for each of these options is created, along all four dimensions: to show whether usage resorts into the specific category or not. The number of binary variables that can be created depends on the number of options under each of the four dimensions. For example, if there are four overarching needs, a total of 10 use cases, four product types and five provider types, a total of 23 binary variables need to be created.

Thereafter, these binary variables can be combined in numerous interesting ways. For example, the needs strand discussed in the body of this piece was created by matching product types to needs using these binary variables.

One method that can be used to construct these binary variables, following on the discussion of the taxonomy above, is to filter by letter for each of the dimensions (one dimension at a time) and then to export the resulting list of questions to data processing software such as Stata for coding purposes. For example, in the figure below, filtering the Need column and selecting M ('Meeting Goals'), without filtering Use case, Product Type or Provider Type, will result in a list in the Variable column, which includes all the variables available to measure whether the 'Meeting Goals' need is being met. This list can then be exported, along with the associated values in the Option column, to a software programme and then construct a binary variable in whichever way is most convenient, given the software selected.

Thereafter, the Need column can be filtered by R ('Resilience'), leaving all the other columns unfiltered, then by L ('Liquidity') and so on, until a binary variable has been created for all the categories in the Need column. Next, the Need column can be left unfiltered and the Use case column can be filtered, for each of its categories individually. The same can be done for the Product type and the Provider type columns.

The contents of the Options and Additional Considerations columns will be taken into account depending on the software used. In Stata, for example, the contents of the Additional Considerations column can be added as additional constraints while creating the variables.

Step 4: Validate the approach. After constructing the binary variables which feed into constructs such as the needs strand, a validation of the results should be carried out to see whether they are credible and stand strong alongside desktop research, qualitative demand-side findings or stakeholder consultations. Should there be a dramatic conflict with expectations, these may be explored in two ways:

» *Incorrect classification of question:* It is necessary to investigate whether the classification of the questions is correct. Some variables may initially appear to fit two needs categories. Often some reflection, along with contextual information, can provide clarification and reveal flaws in the categorisation. Some discretion will always be required.

» *Other issues with the dataset:* There are many potential stumbling blocks in survey design and data collection[16]. Therefore, results that deviate too strongly from expected outcomes can be investigated by returning to the data source, e.g. checking whether certain questions could have been misinterpreted, either by the interviewer or the interviewee, whether the weight variable is correct, or whether skips were incorrectly included in the questionnaire, causing data to be collected on a subsample of the desired population. Where possible, the effect of these errors should be accounted for, but the levity of a particular situation can only be judged by the researcher.

New insights: If the questions are correctly classified and the data is a true depiction of reality, yet the analysis still yields results that differ from a priori expectations, then the results may be able to reveal new dimensions to the reasons that drive the public's engagement with financial services.

Appendix 2: Baseline use case and financial device taxonomies for new survey module design

This appendix sets out the principles and approach for classifying use cases and financial devices to inform survey module design and ensure that the desired indicators of financial needs market behaviour can be constructed – as input to the financial needs measurement framework as well as the usage measurement framework:

» The purpose of the use case taxonomy is to provide a method for labelling use cases so that any discrete use cases that may arise can be classified into a generic set of use cases that is mutually exclusive and collectively exhaustive.

» The purpose of the financial device taxonomy is to classify devices into generic categories on which it will be relevant to compare and contrast usage towards each use case from a policymaker and financial service provider perspective.

Use case taxonomy

Point of departure. When starting with a long list of individual use ases (such as "I need to pay for my children's education", "I want to grow my business", "I need to make a contribution if somebody in the community passes away" and "I need to buy groceries") – then what mutually exclusive, collectively exhaustive categories can be specified so that whatever future use cases are identified can be classified into these clusters? And once such categories have been created, how can the use cases be further labelled so that individual use cases can be compared and contrasted on different core features?

Two core filters. The use case taxonomy is designed to answer these two questions. It is built around two levels of use case filters:

1. **Per financial need.** This filter will be applied when constructing the survey module and deciding which particular use cases to include under which financial need category, but will not be explicitly asked in the questionnaire.

2. **Per core feature:** for further filtering of use cases under each need, or across use cases independent of need category.

Use case taxonomy filter 1: Classify the use cases into one of the four core financial needs. The four primary financial needs are classified in terms of either entailing lumpy amounts or 'regular' amounts. Lumpy amounts are regarded as amounts too big to cover out of a household's 'normal' or regular income cycle, and regular amounts, conversely, as amounts that are accommodated in the normal budget cycle of the person or household (rather than regular in the sense of recurring). Financial needs can furthermore be classified in terms of being relatively certain or expected vs uncertain or unpredictable. Thus, asking two questions of any use case (with binary 'yes/no' answers) should always enable the researcher to classify it as one of the four financial needs:

1. **Is it lumpy?**
2. **Is it certain?**

Each pairing of the answers to these two questions classifies the use case into a particular financial need category, as follows:

	Regular	Lumpy
Certain	Transfer of value	Meeting goals
Uncertain	Liquidity	Resilience

Table 3.
Financial needs core classifier matrix
Source: Authors' own

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[16] The literature on these topics is vast. A handbook such as the Handbook of Survey Design by Rossi et al. (2013) may serve as a good introduction to the field.

Note that this is merely a heuristic classification. In the first instance, the realities in the local context will determine which use cases are included in which financial need categories.

Some exceptions and further explanations to note:

» In some instances, the need to transfer value can pertain to a lumpy or uncertain expense. On the whole, however, transfer of value refers to the way that you make payments as part of your 'regular', expected receipts and expenses. So transfer of value use cases are about how a person or household gets money in or spends money, rather than in the first instance about how lumpy those payments are.

» Resilience use cases will always be uncertain as well as lumpy. They refer to the ability to cope with the impact of a risk event that has a bigger financial impact than what you can absorb in your "normal" budget cycle. This sets it apart from liquidity use cases, which are more regular. Take the example of funeral expenses. If you know that if somebody in your immediate family dies you will have to pay $1,500 towards the funeral, an amount that you do not simply have at hand, that's clearly a resilience use case for saving, borrowing or insurance. But if somebody in your community dies and you are expected to contribute what you can, or the expected contribution is, say, $50, that's a liquidity use case. Both are uncertain as you were not able to plan for this expense upfront, but in the case of the one, you can cope by making trade-offs in your normal household budget, while in the case of the other that is not possible.

» Liquidity is classified as uncertain to indicate the need that arises to smooth your income when your expenses are higher than planned for or income is lower than planned for (that is, if your budget doesn't balance in a normal income cycle), which then gives rise to a need for a financial service to help smooth consumption or manage business cash flow. So, if household expenses are larger than expected in one month and you cannot meet it from your normal income, it creates a liquidity use case. That use case may relate to the sum of a range of expected, certain expenses, such as paying school fees, paying rent and buying groceries, but the liquidity use case arises relative to your ability to make good on your expenses, which is uncertain.

» Meeting goals use cases are classified as lumpy (something you need to plan for) as well as certain (in the sense that it does not arise because of an unexpected event, but rather relates to life goals or business goals that you work towards).

Once each use case is classified as either one of the four needs, the next step is to filter use cases according to core classifiers to position discrete use cases as 'sub-needs' in each needs category.

Use case taxonomy filter 2: Label the use cases according to core classifiers.

One relevant classifier holds across all four need categories, namely whether the use case is at the individual or household level, or towards a collective purpose or responsibility. In short: do you use a financial device to serve a direct need of your household, or because society expects something of you or you are following social customs or cultural norms?

Note on compulsion versus volition

An important cross-cutting dimension pertaining to usage of financial devices (see the *Usage measurement framework* concept note) is whether usage is compulsory or voluntary. We recognise that compulsion is an important driver of market behaviour and market size and should therefore be reflected in usage indicators. This begs the question: does compulsion come into play as a cross-cutting use case classifier? As use cases deal with the purpose of usage, however, the argument is that the purpose of usage will always be functional, whether actual usage is compulsory or voluntary. For example: should a car owner be required by law to take out compulsory third-party liability insurance, the usage action (as measured through the usage measurement framework) is compulsory as the underlying trigger of uptake and driver of continued use is compulsory. However, the use case (or purpose served) remains functional, namely to protect against the financial impact of a car accident. Thus, compulsion is not used as a use case classifier in this taxonomy.

Then there are a number of classifiers that are relevant for particular need categories:

For Resilience use cases, the most pertinent classifier is whether the use case relates to **things** or to **people**:

- » **For things:** are productive or personal assets at stake?
- » **For people:** does the use case relate to personal risks in the immediate family that do not entail death (notably health, accident or disability, with separate mention of health); death in the immediate family[17]; or involuntary dislocation?

For Transfer of Value use cases:
- » Whether the transfer need is **'in'** or **'out'**.
- » Whether the transfer need is **regular** / recurring or **ad hoc** / sporadic.
- » Whether the transfer need is **in person** / local (the person who transfers and the person who receives are both physically present at the moment of transfer) or over a **distance** (and if over a distance, whether cross-border or domestic)[18].

For Meeting Goals use cases:
- » Is the goal being pursued productive, consumptive or related to a certain life stage.

For Liquidity use cases:
- » Is the need to manage liquidity related to a **productive** purpose or for consumption **smoothing.** Note that consumption smoothing as defined here would include use cases related to social obligations. For example, if you are required to make a contribution to a community member who falls ill, the financial need generated for your household budget is one of consumption smoothing.

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[17] Note that contributions following a death in the community would be regarded as a liquidity rather than a resilience need, as it is an unexpected, but not lumpy expense as defined here.

[18] Note that there may also be other classifiers, such as whether it is a requited transfer (the transfer is to satisfy a pre-existing obligation, such as a bill payment) or whether the transfer is unrequited (such as a donation). The relevance of the specific classifiers will be tested in the pilot phase.

**The following diagram illustrates these 'classification pathways':**
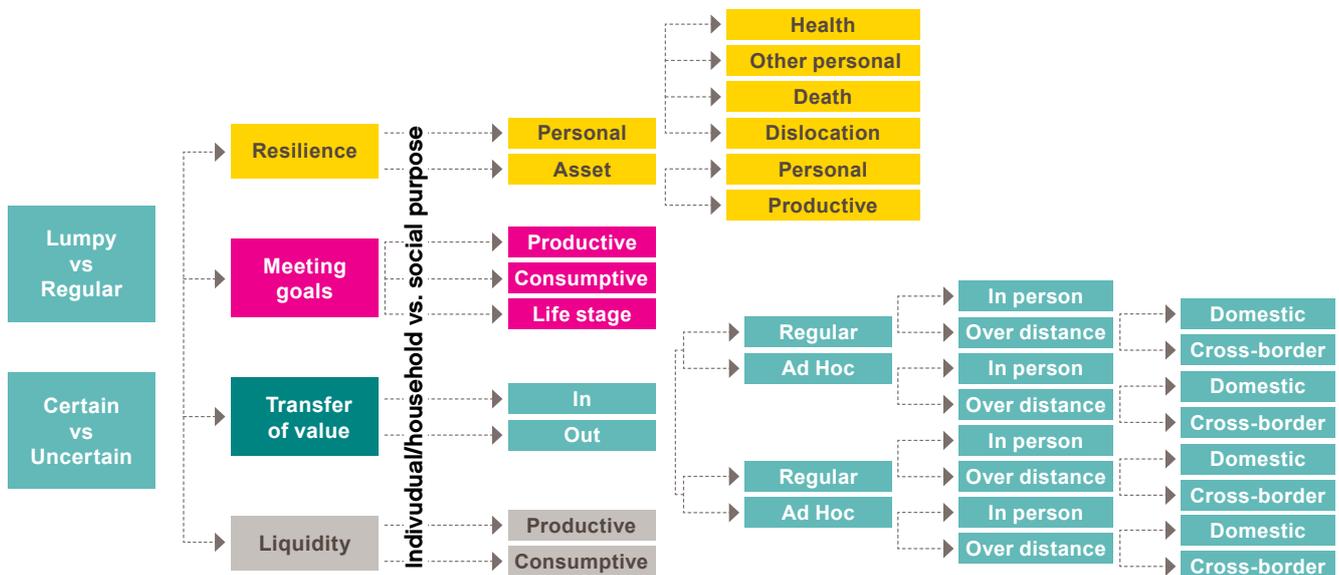
Figure 5.
Use case taxonomy
Source: Authors' own

Generic use cases to be explored in survey module.

When applying the filters as set out above, it renders the following 23 generic use cases:

Resilience
1. Coping with the impact of health risks
2. Coping with the impact of non-health personal risks
3. Coping with death in the family
4. Coping with involuntary disloaction
5. Coping with loss or damage of personal assets
6. Coping with loss or damage of business assets

Transfer of value
10. Regular in-person payments
11. Regular distance payments: domestic
12. Regular distance payments: cross-border
13. Ad hoc in-person payments
14. Ad hoc distance payments: domestic
15. Ad hoc distance payments: cross-border
16. Regular in-person receipts
17. Regular distance receipts: domestic
18. Regular distance receipts: cross-border
19. Ad hoc distance receipts: domestic
20. Ad hoc distance receipts: cross-border
21. Ad hoc in-person receipts

Meeting goals
7. Productive investment
8. Life stage goal
9. Building comsumptive assets

Liquidity
22. Consumption smoothing
23. Business flow management

Figure 6. List of generic use cases
Source: Authors' own, applying the taxonomy

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It is important to note that this list is not prescriptive, nor necessarily exhaustive. The taxonomy for classifying use cases is meant as a tool to help navigate the landscape of individual use cases. The exact list of specific use cases under each financial need will need to be determined in the country context when a survey module is designed, informed by qualitative demand-side research and this taxonomy as point of reference. The list indicated above will be tested through i2i and others' measurement exercises and, if need be, will be adapted, expanded or collapsed.

Financial devices taxonomy

Point of departure: mapping the long list of devices. A person can use a variety of financial devices towards each use case. For example, if the use case is to cope with the impact of personal risks, **the list of relevant devices would include:**

» Health insurance policy or hospital plan
» Burial society or another collective support/risk pooling group
» Remittance receipt
» Savings account
» Saving at home in cash
» Saving in kind (such as in gold or in livestock)
» Saving with an ASCA or another collective mechanism
» Relying on community contributions
» Loan from a bank or another formal institution
» Loan from a cooperative or another collective mechanism
» Loan from a family member, friend or others in the community
» Loan from a moneylender or another informal provider

Mapping the universe of discrete financial devices gives a picture of a person's full financial life and what combination of devices – across provider and product types, formal and informal – is used towards each use case (which can then be aggregated at the needs level).

Classification. The next step is to classify the long list of devices into meaningful categories of financial devices so that the discrete devices used by a person towards each use case can be labelled and then compared and contrasted in a way that will render relevant insights for policymakers and financial service providers on the dynamics of financial need markets. This is done through a financial device taxonomy. Categorising financial devices per use case will also form the basis for the usage measurement framework as outlined in the *Usage measurement framework* concept note.

The most often-used device labels relate to (i) the product type (typically payments, savings, credit or insurance) and (ii) the provider type of the device[19].

Product type. While the fundamental premise of the needs measurement framework is that the market for meeting needs is not structured according to traditional product silos, it is nevertheless relevant for policy purposes to compare and contrast usage of devices from different product types towards the same use case. In this way, for example, the measurement exercise may tell policymakers that the market for meeting Resilience needs is served largely by savings or credit devices, thereby indicating a gap or inefficiency in insurance supply. Or if it shows that the market for Meeting Goals is met largely through savings and payments devices, it may indicate that there are barriers in the credit market.

Provider type. The second main device classifier is the nature of the provider. Two main provider categories are relevant:

» **Formal vs informal.** Whether the provider is formal or informal has significant policy relevance: if, for example, most Meeting Goals use cases are served through informal loans or savings, it requires close scrutiny of the accessibility, appropriateness, affordability and attractiveness of formal options[20].

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[19] It is also these two core classifiers that will form the basis of survey module design. If the survey module is able to record a granular enough list of discrete devices used across provider types and product categories, then this list of devices can be labelled ex post into each of the other categories listed here.
[20] Formal, as defined here, draws on the standard World Bank definition as being provided by financial service providers registered with a public authority to provide such services. Note that this measurement framework, and the i2i measurement work more broadly, is agnostic as to whether a device is formal or informal, lawful or unlawful. Rather, its purpose is to understand true market behaviour to make for sustainable policymaking and business models.

Institutional type. Regardless of formal/informal status, it is relevant to know by which type of institution or individual the device is provided. The most relevant categories are whether the device is provided by: (i) a **bank;** (ii) a **non-bank institution** (which can be a corporate, such as a mobile network operator, as well as individual, such as a moneylender); (iii) a **collective** vehicle (such as a cooperative, association, society or club); or (iv) **family and friends** (an umbrella category that also includes individuals within the community, based on reciprocal relationships, rather than providing financial services for profit motives). To this we add (v) **'self-provided'**, which would apply in the case of devices that are not provided by a third party, such as the proverbial saving under the mattress[21]. Non-bank institutions and collective vehicles can be either formal or informal. Banks are by definition formal, and family and friends and self-provided by definition informal.

Two further classifiers may be relevant for certain categories of devices, namely the type of instrument and the nature of the service relationship:

»   **Instrument.** Financial devices take on one of three forms: cash, digital[22] or in-kind (such as saving in livestock or gold). Knowing which instruments are used most towards which use cases can be relevant for both policy and market strategy purposes.

»   **Relationship-based or ad hoc.** Lastly, it is relevant to determine whether the device is based on some kind of ongoing or underlying uptake relationship, or whether it is ad hoc. This is what distinguishes an account-based device from an over-the-counter device. Any device that is based or a contractual relationship such as entering into a policy or loan contract would also be considered relationship-based. The same holds for collective or membership-based vehicles. So, for example, a ROSCA entails an informal contractual relationship. However, providing assistance to others in the community is a social obligation which, though based on social relationships, does not entail an underlying 'contractual membership' as defined here and is hence classified as ad hoc.

»   For a savings group, you have an informal contractual relationship; to provide assistance to others is a social obligation.

Though there may be a number of further relevant classifiers, such as whether the relationship is long-term or short-term, whether (for credit devices) it is asset-backed or unsecured, whether in the case of insurance devices it is an asset or life insurance device, etc., the classifiers listed above are proposed as particularly relevant for generating generic financial device categories and constructing the corresponding needs and usage indicators.

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[21] Thus, the term institution, as used here, can include formal as well as informal institutions. The term institution is used to denote the presence of a third party, be it an individual such as a moneylender or corporate such as a funeral parlour or MFI. The term institution as used here applies to formal as well as informal providers, and is used to demarcate third-party providers from collective, family and friends or self-provision.

[22] Note that all digital instruments will have some cash 'leg' (for example: money transfer operators or mobile money agents take cash in and pay cash out), but the channel is digital. Also note that payments devices are often used in combination with other devices, to give effect to savings, credit or insurance transactions.

**The following diagram illustrates these 'classification pathways':**
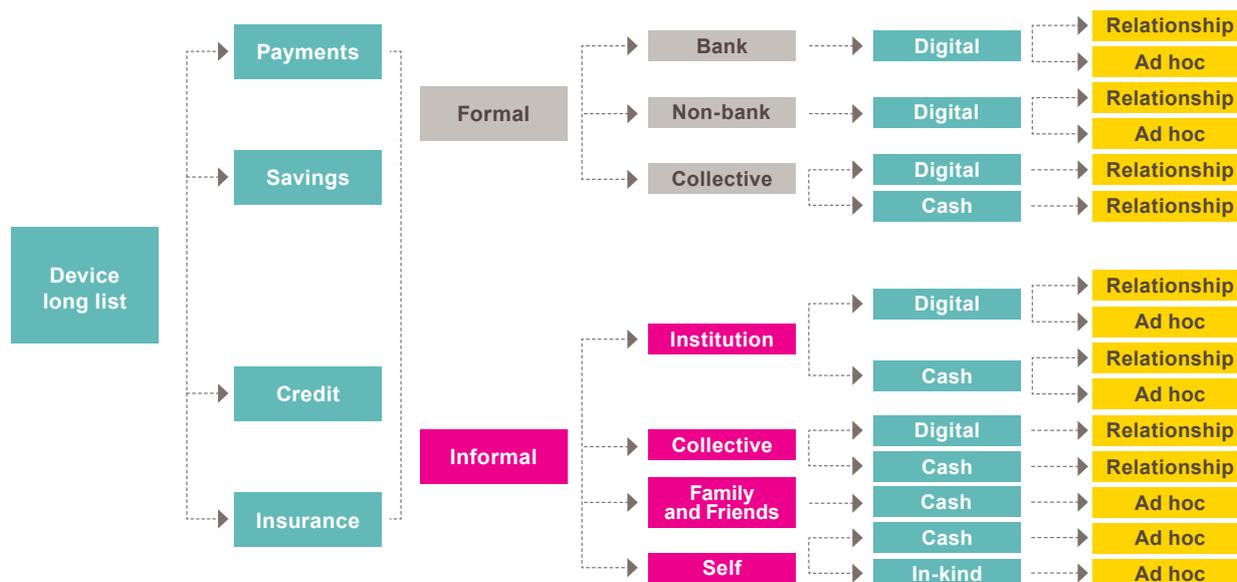
Figure 7. Financial devices taxonomy
Source: Authors' own

Generic financial device categories. Based on this taxonomy, any specific financial device encountered could be classified into the following mutually exclusive categories:

Category:	Examples:
1. Bank-based savings account	Savings account
2. Bank-based credit facility	Credit card
3. Transactional bank account	Bank account
4. Bank-based over-the-counter transactions	Money transfer at a bank
5. Non-bank formal savings	Deposit with a formal deposit-taking MFI
6. Non-bank formal credit	Loan from a formal MFI or mobile money provider
7. Non-bank formal account-based payments device	Mobile money account
8. Non-bank formal ad hoc payments device	Money transfer
9. Formal insurance policy	Life, health or asset insurance policy (from a corporate or mutual insurer)
10. Formal collective savings device	SACCO membership
11. Formal collective loan	SACCO loan
12. Formal collective insurance	Mutual insurance membership
13. Institutionally provided informal credit	Moneylender loan
14. Institutionally provided informal savings	Saving with an informal MFI
15. Institutionally provided informal insurance	Funeral cover from an unregistered funeral parlour (undertaker)
16. Institutionally provided informal payments	Sending money with a hundi or hawala
17. Informal collective credit	VSLA or ASCA loan
18. Informal collective savings	Savings club or ROSCA membership
19. Informal collective risk-pooling	Burial society or community-based health scheme membership
20. Family, friends or reciprocal community-based credit	Loans from friends, family or an employer
21. Family, friends or community-based savings	Savings guard
22. Family, friends or community-based contributions	Collections for emergency expenses such as a funeral/illness
23. Cash remittances	Sending money by bus or with travelling friends
24. Cash payments	Cash purchases
25. Self-facilitated savings	Saving at home or saving in kind

Table 4. Generic list of financial devices
Source: Authors' own

As with the use case taxonomy, this categorisation is indicative only, and the exact classification will be determined by the practicalities of survey questionnaire design and the local context and market realities. The classification pathways and preliminary generic list of devices set out above will be tested and refined through the i2i measurement pilot projects.

Overlaying use cases and devices

The measurement objective is to understand which devices are used to satisfy which use cases. This exercise is likely to render better answers by starting with the use case rather than the devices, since that is how consumer decision-making works.

After identifying which use cases a person has, the next step is to identify the universe of financial devices used by that person towards each use case, that is to match the list of possible devices as per the generic categories above to discrete use cases.

This is tricky, since people often do not use the device for its ostensible purpose (consider the phenomenon often found in MAP diagnostics whereby mobile money accounts are used as a store of value rather than for transacting). Thus, it is best not to decide *a priori* which devices serve which use cases, but to source consumer feedback on actual device usage towards various use cases. It will be important to verify the devices encountered from supply-side data, or by cross-checks inserted in another place in the questionnaire.

The financial device taxonomy allows the longlist of devices tracked through the survey to be labelled and retrofitted into the taxonomy categories for analytical purposes.

Evolving the taxonomies

Based on the classification system as set out above, and drawing on MAP and Financial Diaries research[23] in a number of countries for examples of on-the-ground use cases and devices, we have developed longlists of use case and financial devices, respectively, and have labelled and classified these into the generic use case and financial device categories as set out above. These taxonomies, which are contained in a separate Excel workbook that will be made available on www.i2ifacility.org, classify the known universe of use cases and financial devices. This is intended as an evolving database, rather than a definitive list. Any contributions or suggestions are welcome.

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