MEASUREMENT OF FINANCIAL WELL-BEING, A REVIEW OF THE LITERATURE

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Abstract

Financial well-being measures the ability of a household or individual to function on a daily basis, the resilience to withstand negative shocks to earnings and / or expenditure in the short-term and the ability to meet desired long-term economic goals. It is increasingly becoming seen as the policy objective of financial inclusion in contrast with earlier objectives of the mere access that a household has to the formal financial system. However, measuring financial well-being is a challenge. So far, approaches to measuring financial well-being are based on household surveys where the measures are a combination of facts and perception. If better financial well-being is to become the expected outcome of greater inclusion into the financial system, then both of these should be regularly measured systematically, and made available for commercial and research purposes.

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1 Introduction

Economic theory suggests that individuals and households ought to access and use finance to better sustain expenses as well as to absorb economic shocks. However, even today, the evidence for this is limited. While there has been a growth in structured data on households participation and usage of finance, the link from households use of finance to how it shapes its well-being is still not well established (Campbell, 2006). This is the problem of measuring the impact of financial inclusion, a problem that has been increasingly of interest to policy makers and financial service providers. In the space of financial inclusion policy, a measure should capture how household use of finance (inputs) translate into household use of finance (outputs). But the aspect of financial inclusion of the greatest interest is its impact on the financial well-being of households.

In this paper, we review the literature on what constitutes financial well-being of a household and how it can be visualised as the outcome of financial inclusion. If financial well-being can be measured accurately, it can guide both policy makers and financial service providers on what and where are the gaps in how finance can improve the lives of their customers. When combined with data on participation and the use of financial services and products by households, both policy makers and financial service providers can respond with changes to the existing financial ecosystem to serve their existing customers and to attract new customers.

Our literature review on measuring financial well-being reveals a few key features. First, we observe differences in how financial well-being is measured for households in advanced economies compared to those in emerging economies. While the objective of the measurement is similar, the focus and the types of variables that are measured can vary. For instance, household characteristics such as income level, income and expense volatility, social network support impact the financial well-being of the households (Ladha et al., 2017). Further, there are significant differences between the institutional environment in these two categories such as social security systems and customer protection regulations that tend to be distinctly different between the two types of economies.

Another feature that we observe is that financial well-being may be better measured by explicitly incorporating the extent to which specific financial products and services affect different aspects of the short-term consumption and long-term economic aspirations of households. We consider the example of credit. The use of credit allow certain households to overcome liquidity constraints for consumption smoothing. For other households, credit can enable investments that can lead to higher levels of consumption for these households.

The paper draw upon the results of the review as a guide to what a survey on financial well-being for households in India ought to contain. This incorporates various elements of financial well-being from the literature review into a set of questions to administer, with attention paid to the distinctions of the Indian ecosystem and the limitations of the existing measurement systems.

The paper is organised as follows. Section 2 presents various definitions of financial well-being used by policy and research organisations. Sections 3 and 4, we present the literature on financial well-being measurement frameworks in developed and emerging economies, respectively. Section 5 highlights the limitations of these existing approaches. Section 6 concludes.

2 What is the financial well-being of a houshold?

The first organization to coin a definition for financial well-being was the Center for Household Financial Stability (CHFS) in 2014 (Emmons and Noeth, 2014). CHFS defines being financially healthy as

> being able to accumulate wealth if the household is able to save regularly, make all of its payments on time such as paying the entire credit card balance when due, is able to maintain a stock of safe and liquid assets, and is able to stay away from taking on debt whose repayment is a significant fraction of the monthly household income.

In 2015, the U.S. regulatory agency, Consumer Financial Protection Bureau (CFPB) defined financial well-being in Bureau (2015a) as

> a state where a person can fully meet current ongoing financial obligations, can feel secure in their financial future and is able to make choices that allow enjoyment of life

The Centre for Financial Services Innovation (CFSI) in Gutman et al. (2015) stated that financial health is achieved when

> an individual's day-to-day financial system functions well and increases the likelihood of financial resilience and opportunity. They also define financial resilience as a combination of access to life insurance, the ability to come up with a certain amount of money in certain number of days, and the ability to recover from sudden financial shocks, which include unexpected loss of income and/or an uncontrollable increase in expenditure

(Rhyne, 2020) in a broader review of this literature listed key elements of financial well-being as when households are able to

> smoothly conduct day-to-day transactions, prepare and recover from financial shocks, meet long-term life goals as well as experience an overall positive sense of financial well-being.

In addition, all measures of financial well-being seek to gauge a combination of the households use of financial services and if they are able to meet their financial goals over time.

In the following sections, we organise various measures for financial well-being that have been popularly used. We find it useful to examine the list of these measures that have been collected for developed economies, and those for emerging economies. One reason for this separate exploration by these two country categories is because we expect that the overall level of financial well-being is likely to be higher on average for households in developed economies because average income levels in these economies are higher. As households grow richer, the nature and type of their access to finance could involve different types of instruments or services (health insurance). Further, these households are likely to have different aspirations on average. If such differences mean that households in these economies use finance, it could have implications on how financial well-being is measured.

3 Measuring financial well-being for households

There has been a steady effort to measure financial well-being over the last decade from regulatory organisations. In the U.S. where some of the earliest work in this domain has emerged, the Consumer Financial Protection Bureau (CFPB) and the Center for Household Financial Stability (CHFS) of the Federal Reserve Bank of St. Louis have been at the forefront of this effort. In addition, there has been work started by independent research organisations like the Financial Health Network[1] and the BBVA Research.[2]

Table 1 presents the various frameworks to measure financial well-being of individuals or households[3] across the agencies that conduct the surveys. The motivation for these surveys has been to understand (a) financial habits and behaviour arising out of socio-economic situations, (b) preparedness for unexpected shocks, and (c) the ability to make and implement long term financial goals of households/individuals, and how these various elements contribute to their overall financial well-being.

Table 1: Measurement focus of financial well-being surveys by organisation

CFPB	**CHFS**	**CFSI and BBVA**
Control over everyday finance	Meeting financial obligations	Spend
Capacity to absorb shock	Saving	Save
Financial freedom to make choice	Quantum of debt to income	Borrow
Track financial goals	Quantum of liquid assets to total assets	Plan

The work on measuring financial well-being of an individual first started in 2014, when

[1]This was formerly the Centre for Financial Services Innovation (CFSI) which was set up as a research entity by the Community Development Bank in Chicago called Shorebank.

[2]This was formerly known as the Research Service, set up by the Spanish bank *Banco Bilbao Vizcaya Argentaria*.

[3]https://www.dvara.com/research/evidencegapmap/assets/Financial_Wellbeing_Report.pdf

CHFS categorised individuals as financially healthy using financial well-being as a combination of the ability to save, meet all payment obligations including credit card dues, as well as maintain adequate liquid savings and debt as reasonably lower than income (Emmons and Noeth, 2014). This was a measure system based on facts about individuals and households. CFPB followed by, constructing a scale of financial well-being based on an individual's perception of their present financial situation as well as in the face of potential situations that may arise (Bureau, 2015b).

In 2016, CFSI combined both facts and perceptions in their financial well-being scores for individuals. The framework in Parker et al., 2016 identified sub-components that make up financial well-being; namely spend, save, borrow and plan and assigned a score based on how people perceive that their financial situation fares across all the identified sub components. Since 2018, the Financial Health Network (which was a re-branding of CFSI) has conducted annual surveys to measure financial well-being of individuals for the U.S. (Garon, Dunn, Golvala, et al., 2018). Arellano, Camara, and Mejia, 2019 used the existing CFSI framework. However, rather than using perceptions, they measured the sub components of financial well-being based on facts about the household.

What emerged from all the studies was the idea that financial well-being is an amalgamation of how finance helps individuals in their day to day functioning. These functions ranged from transferring consumption inter-temporally either using savings or borrowings to the use of finance in planning long term consumption and building resilience during emergencies. There are three components that emerge as most commonly measured.

The first is the question of whether the household earns more than it spends and by how much over a period of twelve months. The second component captures whether financial obligations like bills and credit card payments are met on time and in full. The third one focuses on whether liquid and short-term savings are sufficient to meet expected and unexpected short-term expenses.

Beyond these, other components which have been recorded as important include whether households and individuals have long term savings, whether their debt load is manageable or sustainable, whether individuals have prime credit scores or not, whether they are able to plan ahead for the future or can handle a major unexpected expense. Insurance has also been considered as an important measure of financial well-being. Details on the different ways in which variables have been captured to arrive at a measure of financial well-being in advanced economies can be found in Appendix B.1 of the paper.

3.1 Survey data structure

Financial well-being is measured using survey data that has been administered to individuals, and in one case, to the household. As discussed previously, these data-sets are based on surveys that are administered once. However, the availability of such data has often created a precedent to drive new research. More importantly, they become the basis of new surveys building on existing data-sets that are done on a regular basis, which measure the current state of the financial well-being as well as how these measures change over time. One such example is the CHFS, which relied on data collected in the Survey of Consumer

Finances (SCF) conducted between 1992 and 2013. In other cases, financial well-being survey questions are added onto existing surveys that focus on collecting and managing data about household characteristics and features. Table 2 present details about some of these data sources.

In each case, survey questions are developed on the specific focus areas of the financial well-being framework as described in Table 1. For example, CHFS had five questions on financial well-being in a survey to 38,385 families for the Federal Reserve's Survey of Consumer Finances (SCF) data between 1992 and 2013.

Other data-sets combine information across different sources. CFPB collected information on 217 variables of which 175 variables were collected specifically for the National Financial well-being Survey. The remaining questions were based on personal and situational information about the households. CFSI relied on the Understanding America Study maintained by the Center for Economic and Social Research (CESR) at the University of Southern California. This was a probability-based internet panel wherein participants are recruited using address-based sampling and provided with a tablet and internet connection. Respondents were paid USD 15 in order to complete the CFSI Financial Health Pulse Index 2018 Benchmark Survey.[4] The number of respondents grew from 5,019 in 2018 to 5,424 in 2019 with 4,339 individuals completing both the surveys.

The only non-U.S. based data-set among these was from the survey that was conducted by BBVA Research in collaboration with the CAF Development Bank of Latin America which collects micro-data on households for Latin American countries. The surveys were carried out face-to-face and were designed to be representative at a national level for the four countries in South America – Bolivia, Colombia, Ecuador, and Peru in 2013, and Chile in 2016. The survey had questions about financial behavior, knowledge, and attitudes, as well as other questions about financial inclusion and socio-demographic information. Of the 35 questions, nine focused on the measurement of financial behavior and financial control. Details about the methodologies used for the development of all the data-sets listed in this section are presented in Appendices C.2 to C.4.

3.2 Surveys in emerging economies

For the emerging economies, financial inclusion has been increasingly seen as alleviating poverty among policy makers from 2010 onward. Here, much of the policy objective has been to improve access to the narrow domain of mostly banking services. Recently, the rise of FinTech firms providing technology based financial products and services has shifted the focus of measurement to cover a wider set of financial service providers beyond the traditional channels of banks. The prominent measurement frameworks for financial well-being for households in emerging economies are presented in Table 3.

Most studies on financial well-being conducted in emerging economies start from the same basis as those described in the previous section on developed economies, with some

[4] https://uasdata.usc.edu/index.php?r=eNpLtDKyqi62MrFSKkhMT1WyLrYyNAWyS5NyMpP1kvNTUpPy87NBwkAVxcWZKSCmsZWSobGxknUtXDBKRhJz

Table 2: Financial well-being surveys in advanced economies

Data-set	Period	Frequency	Surveyor agency	Region	Unit of survey	Sample Size	Documentation
CHFS: Survey of Consumer Finances (SCF)	1992-2013	Every three years since 1983	Board of Governors of the Federal Reserve System	USA	Household	1,458 in 2013	https://www.federalreserve.gov/econres/scfindex.htm
CFPB: National Financial well-being Survey	2016	One-off	CFPB, ABT Associates, University of Wisconsin-Madison's Center for Financial Security, and GfK	USA	Individual	6,394 (999 aged at least 62)	https://www.consumerfinance.gov/data-research/financial-well-being-survey-data/
CFSI: U.S. Financial Health Pulse survey	2018, 2019	Every year since 2018	University of Southern California Dornsife Center for Economic and Social Research (Understanding America Study)	USA	Individual	4,339, both years	https://finhealthnetwork.org/programs-and-events/u-s-financial-health-pulse/data/
BBVA: Micro-data-Measurement of Financial Capabilities survey	2013, 2016 (Chile)	One-off	CAF Development Bank of Latin America	Latin America: Bolivia, Chile, Colombia, Ecuador, Peru	Individual	Over 1,200 per country	

Table 3: Financial well-being surveys in emerging economies

CFSI	**FII**	**Gallup Survey**	**KGFS**	**Insights2Impact**
Balance income and expenses	Financial planning and prioritizing	Financial control	Plan	Day-to-day management
Build and maintain reserves	Balancing income and expenses	Financial security	Protect	Resilience
Manage existing debts and has access to potential resources	Building and maintaining reserves		Grow	Future goals
Plan and prioritize	Securing the future		Diversify	Perception of well-being
Manage and recovery from financial shocks	Practical financial management			
Use an effective range of financial tools				

modifications. The CFSI framework of 2015[5] was deployed to measure household financial well-being in the U.S. and other advanced economies. CFSI itself adapted their measurement taking into cognisance the unique challenges, constraints and contextual factors that can influence the financial health of consumers in emerging economies. In this framework, there are six primary indicators used to measure consumer financial well-being generally as well as four contextual factors that are important exogenous salient factors to consider in the developing world. As can be expected, these four factors include absolute income level, income and expense volatility and the financial role of the social network. For instance, absolute income is intended to provide insight into the relative poverty level of the household. In this context, financial health is difficult to achieve for those in abject poverty, where the focus is on daily survival and not on longer term aspirations. CFSI considers these factors to be more prevalent in emerging economies such as India and Kenya where they conducted pilot surveys.

This measure was widely adopted and improvised by Financial Inclusion Insights (FII) which carried out a survey on financial well-being in Bangladesh, India, Kenya, Nigeria, Tanzania and Uganda.[6] This has also been adopted by Innovations for Poverty Action

[5] https://www.centerforfinancialinclusion.org/beyond-financial-inclusion-financial-health-as-a-glo

[6] http://finclusion.org/topic/financial-health/#financial-health-financial-health-by-inclusion

(IPA) in an ongoing study to measure financial well-being across emerging economies.[7] In 2018, Gallup[8] conducted a survey of financial control and financial security in 5 high-income countries and in 5 middle or low-income countries including India. BBVA Research (with CAF) conducted a measure of financial vulnerability in five Latin American countries.[9] Here, the measure was designed to assess the vulnerability of consumers based on their participation into financial assets.

In India, both CFSI and FII have conducted surveys to measure financial well-being of households. In addition, there is effort by local, non-banking finance firms, typically in the micro-lending sector. For example, Kshetriya Gramin Financial Services (KGFS) services low income customers who start with poor access to formal finance. KGFS collects information about households with whom they build a credit relationship, and build models of financial suitability based on information about their characteristics and existing access to financial products and services that can optimally improve their financial well-being. Models such as the KGFS model uses the financial well-being measure to guide a customised financial services to low-income households.[10]

The literature on financial well-being in emerging economies reveal three strategies of measurement:

1. **Financial well-being indexes**: Such indexes serve as monitoring devices of the financial well-being of a household or a category of households, which can be analysed along with socio-economic and demographic features from alternative sources about the households to identify systemic lapses in how and where finance is being used well or is missing.

2. **Measurement of resilience**: Measures with a central focus on the household experience with economic shocks are useful to understand the role of access to immediate financial resources as well as access to other risk mitigation mechanisms.

3. **Comprehensive financial well-being surveys**: These are more complete surveys that can be used to both create financial indexes as well as to identify the reasons behind the performance. These surveys are time-consuming and costly but provide richer insights than either financial health indexes or measurement of resilience can individually.

Most financial well-being measurement exercises in emerging economies began after 2015. CFSI in collaboration with Dalberg and BMGF conducted primary survey in India and Kenya which captured five dimensions of financial well-being and four factors to set the context for the measurement. After this, other institutions adopted and modified this measurement further. For instance, in 2017 Kantar conducted surveys using the global CFSI framework to measure financial health in emerging economies like Kenya, Tanzania,

[7] https://www.poverty-action.org/study/measuring-global-financial-health

[8] https://news.gallup.com/reports/233399/gallup-global-financial-health-study-2018.aspx. The Gallup survey was conducted in

[9] https://www.bbvaresearch.com/wp-content/uploads/2019/08/WP_Financial_Health_Vulnerability_0812.pdf. The BBVA study was conducted in Bolivia, Chile, Columbia, Ecuador and Peru

[10] https://www.dvara.com/blog/2016/07/20/reorienting-financial-well-being-through-fwr-2-0/

Uganda, Nigeria, India and Bangladesh. These surveys provided one-off measures of individual financial well-being based on questions about financial planning and prioritisation, balancing income and expenses, building and maintaining reserves, securing the future, and practical financial management. Since the same survey was conducted in different countries, it provides a useful metric to compare and contrast between economies with similar challenges and levels of economic environment.

The 2018 Gallup 10 country survey focused entirely on financial control. Each respondent was asked a series of questions with binary options and their level of financial control was measured and compared against respondents from other developing economies. The Gallup survey was administered at both individual and household level. A similar global survey is also being conducted by Innovations for Poverty Action (IPA) on a population size of 9000 individual respondents. Except for the Gallup survey, all other surveys were conducted at an individual level. They are all one-off surveys, and do not capture a systematic change of financial well-being over time.

The methodologies used to measure financial well-being in emerging economies is not publicly available for most surveys except for the Gallup survey. The methodology for the Gallup survey can be found in Appendix C.5. A summary of these surveys is presented in Table 4.

Table 5 presents the summary of the categories of questions used to measure the financial well-being of households in advanced and emerging economies. What is clear is that the same *types* or *categories* of questions are asked to households in both types of economies. The differences emerge in the details of what is asked. Much of the difference appears to be driven by the higher income levels in advanced economies. For example, there is no focus on asking households in these economies whether they are able to meet *basic needs*. Another differentiator appears to be that the presence of social security and welfare is considered ubiquitous in the advanced economies and not as prevalent or accessible in the emerging economies. Therefore, questions about *retirement savings* appear not to be a focus in advanced economies which we infer to indicate an assumption of some basic income support being available to households or individuals in these economies.

We summarise the differences in measurement between these two categories of economies that we identify from our literature review as follows:

1. Access to a wider range of financial products and services in advanced economies is considered universal. The underlying assumption is that access to financial services and products is not a differentiator for financial well-being. In contrast, there is a substantial variation in engagement with financial services providers in emerging economies, which can have a direct or indirect impact on financial well-being of an individual and household.

2. Higher income levels of households in advanced economies suggests that individuals are better placed to benefit from a higher engagement with financial service providers. Such benefits may accrue at two levels: at the level of the household as well as an inter-generational transfer of knowledge on money management techniques and universal access to education.[11] The literature on financial well-being in advanced economies indicates that these

[11] Rhyne(2020)

Table 4: Financial well-being surveys in emerging economies

Data-set	Period	Data Freq	Regions	Unit of survey	Sample Size	Documentation
CFSI: Beyond Financial Inclusion: Financial Health as Global Framework	2017	One-off	India and Kenya	Individual	Not available	Not available
Gallup: Global Financial Health Study: Key Findings and Results	2018	One-off	Kenya, Bangladesh, Vietnam, Columbia, Chile, Greece, South Korea, Japan, U.K., U.S.	Individual, Household	Atleast 1500 residents from each country	Available
Kantar: Financial Inclusion Insights	2017	One-off	Kenya, Tanzania, Uganda, Nigeria, India, Bangladesh	Individual	Not available	Not available
BBVA Research: Disentangling Vulnerability through Consumer Behavior: The Role of Financial Health	2013-2017	One-off	Bolivia, Chile, Columbia, Ecuador, Peru	Individual	At least 1200 survey in each country	Available
IPA: Measuring Global Financial Health (Ongoing)	2017-2019	One-off	Not available	Individual	9000	Not available

Table 5: Comparing financial well-being measures in advanced and emerging economies

Measure	Advanced Economies	Emerging Economies
Day-to-day functioning		
Income vs. expenditure	Y	Y
Payments made on time and in full	Y	Y
Ability to meet basic needs	N	Y
Resilience		
Adequacy of liquid/short-term savings	Y	Y
Handling unforeseen expenditure	Y	Y
Ability to obtain lump sum for emergency (time horizon)	N	Y
Planning		
Long-term goals	Y	Y
Retirement savings	N	Y
Borrowing		
Manageability of debt	Y	Y
Credit discipline	Y	Y
Perception of being in control		
Financial control	Y	Y
Financial security	Y	Y

factors have a direct bearing on an individual's financial capability and subsequently on their financial well-being.

3. Advanced economies have institutions that provide access to adequate safety net, which reduces expense related to health crisis, old-age problems and unemployment shocks to individual and households. These factors have a direct bearing on the financial vulnerability and overall financial well-being of individuals and households. On the contrary, access to social security benefit is neither universal nor adequate in developing economies and these need to be factored in while measuring financial well-being in EEs.

3.3 Limitations in the literature

As mentioned previously, measuring the financial well-being of households is part of understanding how and why financial inclusion of the household is important. This is reflected in that the literature on measuring well-being takes into account household access and use of various financial instruments, and how well households fare when these are used. What this literature highlights is that it is important to take all types of financial services and products into account when measuring both financial inclusion and well-being.

From this respect, there appears to be two shortcomings in this literature. The literature does not appear to include the role of informal financial systems and how these impact on the financial well-being of the household. Second, it falls short of explicitly including the financial services particularly financial advice and redress.

The presence and use of informal products that provide functions similar to formal financial products is well-documented. In particular, there is a very large base of literature about households access informal credit products to manage consumption. Here, we differentiate formal financial system as those products provided by firms and institutions that are governed by financial regulation including micro-prudential regulation governing the health of the firm and customer protection. Alongside these, there exists an informal system that also offers credit, savings, and payment transfers outside the ambit of regulation. Households rely on such products for their day to day functioning, saving, or borrowing needs. These are available even today in both advanced and emerging economies. For example, the Payday Loans market in the U.S. are a well documented source of credit to households (Stegman, 2007). Similarly, there is a large literature on the social within-group savings and lending schemes that are present in several emerging economies in Asia and Africa, called Chit funds in India and ROSCAs in other parts of the world (Buteau et al., 2011; Bouman, 1994). Much of the literature on the payday loans tends to focus on how the use of these products impacts the economic status and financial health of individuals and households that use them (Bhutta, 2014; Skiba and Tobacman, 2019). But access and use of these products and services are not integrally present in the surveys on household well-being. If households that use such products tend to be worse-off, then it is important to take this into account when measuring and studying the links between financial inclusion and financial well-being of households.

There is also little literature that captures the importance of measuring financial services such as financial planning and investment advice as either part of financial inclusion or of financial well-being of the household. Over the last decade, several scholarly articles have been written on the importance of financial literacy in influencing the choices of households in choice of financial product or investments. However, there is little to no literature on how access to, or use of, advice about financial planning or investments leads to better outcomes on financial well-being.

The existing literature does touch briefly on the confidence of a household in the ability of financial instruments to fulfil the requirements and objectives of the household. Interactions with the financial system by individuals from heterogeneous backgrounds varies. Distinct groups may vary in (a) the type of financial infrastructure that they have access to, (b) the terms and conditions levied on them for similar financial products, and (c) overall experiences with the financial system. There may be merit in actively studying how such differences translate to those of financial well-being for households belonging to these distinct groups.[12]

[12]Indicators related to a household's overall experience with the financial system "is only included in the CFPB and Kempson frameworks, but it is implied in that of the Financial Health Network." (Rhyne, 2020). Financial Health Network observed differences in the financial well-being scores by income group, age, gender, race/ethnicity, education, employment status, marital status, region and urbanicity (Garon,

Finally, much of the literature on measuring financial well-being and analysing its links to financial inclusion is based on measures collected in one-time household surveys. The well-being of households may vary with time, especially when macro shocks occur. Having a periodic measure of financial well-being does not just track changes in the household well-being but also helps to record how households cope when faced with disruptions to income and to their needs. However, we find limited literature on regular measures of financial well-being other than (Garon, Dunn, Golvala, et al., 2018) which emphasises the need for a regular, periodic measurement and delivers annual household financial well-being measures for the U.S.

4 In summary

This paper conducts a review of literature on various frameworks and specific indicators used to measure of financial well-being by organisations in advanced and emerging economies. The exercise of measuring financial well-being is relatively new and continues to be an important initiative to understand the real economic and financial impact of access and usage of financial products and services. From the review of the existing literature, we conclude that the financial well-being measurement framework should include five dimensions. These are the measures of the household day-to-day functioning, their resilience to shocks, their ability to plan and ability to borrow borrowing. The last element measuring financial well-being is the household perception that they have control and are secure about their finances.

We find that there is considerable overlap between the dimensions used to measure financial well-being in AEs and EEs, except in the case of three indicators such as a) ability to meet basic needs, b) ability to obtain lump-sum for emergency (time horizon)[13] and c) retirement savings (Refer to table 5). These three indicators were included in the emerging economy's financial well-being measurement framework but not for advanced economy's framework. A holistic measurement of financial well-being should capture indicators of access to financial products (inputs), usage of those products (outputs) and their impact on the financial well-being of the household members (outcomes).

A key challenge for measuring financial well-being is the availability of relevant, nationally representative, dis-aggregated, and accurate panel data of households' access and usage of financial products and services. To mitigate this challenge, there is a need for periodic and large-scale measurement of various financial and non-financial indicators that could indicate the overall status of financial well-being of various households in a country over time.

Dunn, Golvala, et al., 2018).

[13]As per literature in advanced economies, consumers' ability to obtain lump sum funds during emergency is noted, however, it falls short of discussing the sources and time horizon of obtaining these funds. In contrast, the literature for emerging economies covers, the ability as well as the sources and the time horizon of obtaining lump sum funds during emergency.

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A Documentating search for the literature

The start of search for the literature on the topic was using `Google Scholar`. The phrases that were used are listed below, along with the resulting number of papers obtained. The search was restricted to a period of the last five years from 2020.

Phrase used	**Number of results**
"how to measure individual financial well being"	1 paper (by CFPB)
"how to measure consumer financial well being"	0 papers
"how to measure individual financial health"	1 paper (by CFSI)
"how to measure consumer financial health"	0 papers
"how to measure financial health"	2 papers (by CFSI and BBVA)

B Focus areas to measure financial well-being

B.1 Advanced economies

1. Ability to save

    - Is household generating a surplus?
        - Expenditure is less than income (Arellano, Camara, and Mejia, 2019)
        - Is money left over at the end of the month: Always, Often, Sometimes, Rarely, or Never (Bureau, 2015b)
        - Are there savings over the last twelve months (Emmons and Noeth, 2014).
    - Magnitude of saving:
        - Spending much less than income,
        - Spending a little less than income,
        - Spending about equal to income,
        - Spending a little more than income, or
        - Spending much more than income

      (Garon, Dunn, Golvala, et al., 2018):
    - Payments made:
        - How many bills paid on time: All, nearly all, most, some, or few (Garon, Dunn, Golvala, et al., 2018);
        - Are bills paid on time in full (Arellano, Camara, and Mejia, 2019);
        - Is behind with finances: Always, Often, Sometimes, Rarely, or Never (Bureau, 2015b);
        - Have missed payments on any obligations in the past year (Emmons and Noeth, 2014)
    - Sufficiency of liquid/short-term savings:

- How long could one survive only on savings without having to borrow or withdraw money from retirement accounts: 6 months or more, 3-5 months, 1-2 months, 1-3 weeks, or less than 1 week (Garon, Dunn, Golvala, et al., 2018);
- Have liquid savings, whether in formal or informal modes of saving (Arellano, Camara, and Mejia, 2019);

2. Ability to manage shocks

   - Can handle a major unexpected expense? Completely, Very well, Somewhat, Very little, or Not at all (Bureau, 2015b)
   - Have insurance (Arellano, Camara, and Mejia, 2019);
   - Confidence in insurance to handle unforseen events:[14] Very, Moderately, Somewhat, Slightly, Not at all (Garon, Dunn, Golvala, et al., 2018);

3. Debt and financial health:

   - How manageable is household debt: No debt, manageable, a bit more than manageable, or far more than manageable (Garon, Dunn, Golvala, et al., 2018);
   - Is debt sustainable: if debt is never from informal sources of lending but from either a formal source of lending, relying only on formal savings (no debt), or a combination of both (Arellano, Camara, and Mejia, 2019);
   - Is total debt service (principal + interest) less than 40% of income (Emmons and Noeth, 2014);
   - Quality of credit score: Excellent, Very good, Good, Fair, Poor, or Don't know (Garon, Dunn, Golvala, et al., 2018);
   - Output of credit score: only formal loans or no loans taken (Arellano, Camara, and Mejia, 2019);
   - Unpaid balance on credit card after last payment due date (Emmons and Noeth, 2014).

4. Sufficiency of long-term financial comfort:

   - Being concerned the money saved will last: Completely, Very well, Somewhat, Very little, or Not at all (Bureau, 2015b);
   - Having liquid assets more than 10% of total assets (Emmons and Noeth, 2014).
   - Having assets/long-term savings whether in formal or informal modes (Arellano, Camara, and Mejia, 2019);
   - Confidence to financially support long-term goals:[15] Very confident, Moderately confident, Somewhat confident, Slightly confident, Not at all confident (Garon, Dunn, Golvala, et al., 2018);

[14] health insurance, vehicle insurance, home or rental insurance, life insurance, and disability insurance

[15] like saving for a vacation, starting a business, buying or paying off a home, saving up for education, putting money away for retirement, or making retirement funds last

- Confidence about financial ability to cover current and future material wants and aspirations: Completely, Very well, Somewhat, Very little, or Not at all (Bureau, 2015b).
- Household plans for the future (Garon, Dunn, Golvala, et al., 2018);
- Household plans future expenses (Arellano, Camara, and Mejia, 2019);
- Household have a secure financial future: Completely, Very well, Somewhat, Very little, or Not at all (Bureau, 2015b).
- Financial management and life satisfaction (Bureau, 2015b)
    - Enjoy life because of money is managed: Completely, Very well, Somewhat, Very little, or Not at all
    - Is getting by financially: Completely, Very well, Somewhat, Very little, or Not at all
    - Sufficient finances to support social graces such as gifts for special occassions: Always, Often, Sometimes, Rarely, or Never
    - Is controlled by financial constraints: Always, Often, Sometimes, Rarely, or Never

B.2 Emerging economies

1. Ability to save

    - Period for which household can meet basic needs (food, rent, clothes, transportation, fees): for 1-3 months, 4-6 months, or more than 6 months? (Gallup, 2018);
    - Have enough money to pay for living expenses or not
    - Less money spent than money made each month or not (Kantar, 2017; Ladha et al., 2017).
    - Payments made on time

      Able to make payments in full and on time or not. (Rhyne, 2020; Kantar, 2017).
    - Sufficiency of liquid savings

      • Period for which all basic needs, like food, housing, and transportation is covered if income is lost: Less than one month or more than one month? (Gallup, 2018).

2. Ability to manage shocks

    - Own emergency fund large enough to cover unplanned expenses: Yes, No (Kantar, 2017; Ladha et al., 2017).
    - Ability to obtain lump sum (1/20th of annual net income) for an emergency within a month or not (Rhyne, 2020).
    - Ability to access resources:
        - Support friends and family financially or not? (Kantar, 2017).
        - Get financial support from friends and family and others or not? (Gallup, 2018; Ladha et al., 2017).

3. Debt and financial health:
   - Repaying debt causes stress on household expenditure: Very difficult, somewhat difficult, or not at all difficult. (Gallup, 2018).
   - Earnings / Income sufficient to repay debt above living expenses or not? (Kantar, 2017; Ladha et al., 2017).
4. Sufficiency of long-term financial comfort – Financial Security (Gallup, 2018).

   Households can cover ALL of their basic needs (like food, housing and transportation) for more than six months if they lost their income.

C Survey questions by source

C.1 CHFS

1. Did you save any money last year? ("1" if true)
2. Did you miss any payments on any obligations in the past year? ("1" if false)
3. Did you have a balance on your credit card after the last payment was due? ("1" if false)
4. Including all of your assets, was more than 10 percent of the value in liquid assets? ("1" if true)
5. Is your total debt service (principal and interest) less than 40 percent of your income? ("1" if true)

Financial Well-being score where 0 denotes poor health and 5 denotes good health.
Source: (Emmons and Noeth, 2014)

C.2 CFPB

1. How well does this statement describe you or your situation?

   Completely (4), Very well (3), Somewhat (2), Very little (1), or Not at all (0)

   (a) I could handle a major unexpected expense
   (b) I am securing my financial future
   (c) Because of my money situation, I feel like I will **never** have the things I want in life. (Reverse coding)
   (d) I can enjoy life because of the way I'm managing my money; can take values 4, 3, 2, 1 and 0
   (e) I am **just getting by** financially. (Reverse coding)
   (f) I am concerned that the money I have or will save won't last*; can take values 0, 1, 2, 3 and 4

2. How often does this statement apply to you?

   Always (4), Often (3), Sometimes (2), Rarely (1), or Never (0)

   (a) Giving a gift for a wedding, birthday or other occasion would put a strain on my finances for the month (Reverse coding)

   (b) I have money left over at the end of the month; can take values 4, 3, 2, 1 and 0

   (c) I am behind with my finances (Reverse coding)

   (d) My finances control my life (Reverse coding)

Financial well-being scores is converted from a total response value of $0 - 40$ into a scale that can take values from 0 (poor health) to 100 (good health).
Source: (Bureau, 2015b)

C.3 CFSI

1. $spend_i$: average of Indicator 1 and Indicator 2 where
   - Indicator 1: By how much is Expenditure < Income (0-100)
   - Indicator 2: How many bills are paid on time (value 0-100)
2. $save_i$: average of Indicator 3 and Indicator 4 where
   - Indicator 3: Savings as the only source of funds for how long (0-100)
   - Indicator 4: Confidence in long-term goals being met (0-100)
3. $borrow_i$: average of Indicator 5 and Indicator 6 where
   - Indicator 5: Manageable debt (0-100)
   - Indicator 6: Rating of credit score (0-100)
4. $plan_i$: average of Indicator 7 and Indicator 8 where
   - Indicator 7: Have confidence in insurance (0-100)
   - Indicator 8: Plan ahead for expenses (0-100)

The Financial Health Network Financial well-being score is

$$\mathrm{FHS}_i = average(spend_i^{1,2}, save_i^{3,4}, borrow_i^{5,6}, plan_i^{7,8})$$

using each of the scores described above calculated for each household. The scores go from 0 (bad) to 100 (good).
Source: (Garon, Dunn, Golvala, et al., 2018)

C.4 BBVA Research

1. Spending:
   - Is expenditure less than income? (‘1’ when true)
   - Are bills paid in full on time? (‘1’ when true)
2. Saving:
   - Have liquid/short-term savings? (‘1’ when true for any type of product)
   - Have assets/long-term savings? (‘1’ when true for any type of product)
3. Credit:
   - Sustainable debt load? (‘1’ when never informal lending but either formal savings or formal lending)
   - Prime credit score? (‘1’ when there is at least one formal loan taken and 0 if an informal loan taken or no experience with loans)
4. Planning:
   - Have insurance? (‘1’ when true for any type of product)
   - Do plan for future expenses? (‘1’ when true)

Financial well-being score is calculated using $FH_i = spending_i + saving_i + credit_i + planning_i$ with values from 0 (bad) to 8 (good).
Source: (Arellano, Camara, and Mejia, 2019)

C.5 Gallup Survey

1. Financial security:

   (a) Suppose you lost your income and had to survive only on your savings or things you could sell. How long would you be able to cover ALL of your basic needs, like food, housing, and transportation? ('1' if less than one month)

   (b) If "more than one month", then can you cover all basic needs for:

      i. 1-3 months,

      ii. 4-6 months,

      iii. More than 6 months

   (c) Do you, personally, owe any money to a financial institution, such as a bank or a credit card company? ('0' if true)

   (d) Do you, personally, owe money to another person? ('0' if true)

   (e) If 0 in either case, then does repaying what you owe make it very difficult, somewhat difficult, or not at all difficult for you to pay for the other things you need?

2. Financial Control:

   (a) Do you think that no matter what you do, your financial future will stay the same? ('1' if yes)

   (b) Do you think you can overcome any financial problem that you might face? ('1' if yes)

   (c) If you had a financial emergency today, do you think you would be able to pay for it? ('1' if yes)

   (d) Do you have people in your life who can help you financially if you ever need it? ('1' if yes)

   (e) When you spend money on something you don't need, do you usually regret the decision later? ('1' if yes)

   (f) Have you tried to save money in the past, but have not been able to? ('1' if yes)

   (g) Do you avoid thinking about how you are going to pay for things in the future? ('1' if yes)

   (h) Do you enjoy planning what you are going to do with your money in the future? ('1' if yes)

   (i) Are you satisfied with how much input you have in financial decisions in your household? ('1' if yes)

   (j) Do you think you will ever be able to pay back all the money you owe? ('1' if yes)

Creates three categories of financial security and a financial control score: Financial security: Financially *Insecure*, Respondents who said they had less than a month of savings or assets OR said their debt made it "very difficult" to pay for other things. Financially *Secure* had more than six months of savings and, if they have debt, paying back that debt is "not at all difficult" and *Stretched* if neither. Financial control score: 0 (lowest control) and 10 (highest)