

Use of financial services – evidence from Indian households

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Abstract

The aggregate indicators of financial inclusion in India have significantly improved over time, particularly since 2005-06 with the institution of explicit policies for financial inclusion. Evidence from the Global Findex database, however, shows a less impressive growth in real use of financial services by households. The present study sought to examine the use of financial services by Indian households with the help of data from the India Human Development Survey, 2011-12 (IHDS-II), using non-conventional concepts of multiple deprivations, specificity of use combinations, interdependence and multi-dimensional first order dominance. Considerable inter-state and intra-state inequality was observed in the use of formal financial services, as indicated by the high ratio of fully-deprived households to fully-privileged households in most states and its wide range. The multi-dimensional index of use of financial services (D_i) too displayed wide difference in the level of achievement, with Himachal Pradesh, Kerala, Punjab and Karnataka ranking high and Meghalaya, Nagaland, Mizoram, Bihar and Assam at the bottom reaffirming their capabilities in development. Unexpectedly, Gujarat, Tamil Nadu and Maharashtra had below-average indices, pointing to intra-state inequalities. North Eastern (except Sikkim), Eastern (Bihar, Jharkhand, West Bengal) and Central (Madhya Pradesh, Uttar Pradesh) regions fared poor with low index.

Key words: Deprivation, Financial inclusion, Financial services, Use JEL Classification: G20, O10.

Introduction

Use of financial instruments increases savings (Aportela, 1999), consumption and productive investment (Dupas and Robinson, 2009). It also smoothes income cycles generated by unexpected shocks or discontinuous income flows, thus optimising inter-temporal consumption and improving well-being (Camara and Tuesta, 2015). Non-use of financial services could lead to a poverty trap and an increase in inequality gap (Banerjee and Newman, 1993; Galor and Seira, 1993; Aghion and Bolton, 1997; Beck, Demirgüç-Kunt and Levine, 2007). Having an account at financial institutions serves as an entry point into the formal financial sector, whereas bank accounts, savings and credit highlight the distinction in various countries' level of financial inclusion (Demirguc-Kunt et al., 2013).

A large percentage of the population in developing countries saves, remits money or accesses credit using informal financial services, indicating that an increase in access to formal services does not automatically imply an immediate and corresponding decline in use of informal services, especially as many individuals use informal and formal services in parallel (de Koker and Jentzsch, 2011). With the increasing recognition in the global policy circles regarding the importance of an inclusive financial system for enabling growth and development of nations, there has been major thrust on financial inclusion policy. As a sequel to the international initiatives, many countries across the world now consider financial inclusion as a conduit for comprehensive and inclusive growth, with many of them having taken legislative measures, policy initiatives and national strategies

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since 2010. Empirical evidence on global access to and use of financial services indicates that the use of a deposit account at a bank or a formally regulated financial institution varies widely across regions, economies and individual characteristics. The Global Findex 2017 database showed that financial inclusion is on the rise globally with the share of adults having an account with a financial institution or through a mobile money service up from 51 per cent to 69 per cent globally and from 54 per cent to 63 per cent in developing economies, between 2011 and 2017 (Demirguc-Kunt et al., 2018). Yet, nearly one-third of adults are still unbanked, about half of whom are women, poor households in rural areas or out of the workforce (ibid.).

The policy response to financial inclusion in India came in the form of various measures spanning from encouraging people to open 'no-frills'/basic savings bank deposit accounts, simplified KYC requirements, to the recent Pradhan Mantri Jan Dhan Yojana (PMJDY) launched in 2014, mandating banks to offer accounts to every citizen, in conjunction with the Aadhaar national biometric identification cards to boost account ownership among unbanked adults. The aggregate indicators of extent of financial inclusion in India, assessed mostly from a supply perspective, combining the access and availability dimensions, have significantly improved over time, particularly since the institution of explicit policies for financial inclusion in 2005-06. According to the Global Findex database, the share of adults with an account in India doubling since 2011 from 35 per cent to 80 per cent in 2017 and increasing by more than 30 percentage points between 2014 and 2017 among women and adults in the poorest 40 per cent of households (Demirguc-Kunt et al., 2018). However, there are concerns as one does a deeper analysis of the use of financial services in India. First, the above evidence, *inter alia*, shows a less impressive growth in real use of financial services. While agreeing that the recent spurt in financial inclusion in India is due largely to the government's PMJDY programme, based on the Global Findex Database,

2017, Rhyne and Kelly (2018) observed that nearly half of the people obtaining new accounts did not use them, with only 41 per cent of Indian adults having active accounts. These remarks suggest that the 'leap' made by India in account ownership is partly an 'illusion' as nearly half of the people obtaining new accounts do not use them (ibid.). Secondly, severe exclusion is experienced by the marginalised sections of the country, as elucidated in a study based on primary data from 300 households in tribal districts of Odisha, which showed that 71.7 per cent of households had no savings bank accounts; 70.7 per cent were not involved in SHG activities and 97.7 per cent did not have post office saving accounts (Sahoo et al., 2017). Thirdly, despite registering a massive increase in formal credit flow, particularly since 2004-05 thanks to various policy initiatives, the credit penetration in India measured by number of credit accounts per 1000 adults continued to be abysmally low at 216 during 2017-18, even after a nearly three-fold growth from the level of 83 during the year 1999-2000. Thus, on an average, while every adult owns more than two deposit accounts in India, only one out of five adults has availed a formal loan.

In this backdrop, the present study seeks to examine the use of financial services among Indian households from the user perspective, employing micro-level data available in India Human Development Survey (IHDS) dataset, which has hitherto remained unexploited in financial inclusion landscape. The central aim of this paper is to analyse the pattern and extent of use of various financial services by constructing a multi-dimensional index of achievement at the national and sub-national levels.

Material and methods

Data source

Secondary data gathered and published under India Human Development Survey-II (IHDS-II), 2011-12 was analysed in the study considering its quality

and rich coverage. Although the data does not specifically address financial inclusion, IHDS-II, inter alia, gives insight into the financial habits of households at a reasonably good depth, adequate enough to understand the financial behaviour of households in terms of use of financial services. The data on four basic financial services, viz., savings, credit, insurance and pension, used by Indian households during 2011-12 was subjected to analysis for determining the level of financial inclusion at the national and sub-national level covering 28 states. A temporal comparison with previous dataset would have enabled to assess the progress in financial inclusion, which has not however been attempted in the present study on account of space constraints.

Use of financial services across dimensions and indicators of financial inclusion

Viewing the outcome of financial inclusion as meaningful use of financial services, it is posited that use is a function of all other dimensions viz., access, quality and barriers. A household having access is more likely to have an account at a bank, which in turn increases the likelihood of using more financial services like deposit, credit, payments and transaction etc. from the formal financial system. So, being deprived of owning an account prevents the possibility of carrying out transactions and payments or even having an insurance or pension product. Analysing use of financial services using the concept of multiple deprivation helps us in assessing the extent to which an entity (household/individual/area) is deprived across various dimensions. The proportion of households using each service and two or more services in various combinations was computed to examine the level and pattern of use.

Concept of multiple deprivation in use of financial services

Building on the methodology used by Alkire and Foster (2007), Chakravarty and D' Ambrosio (2006), Jayaraj and Subramanian (2010) in the context of measurement of multidimensional

deprivation of 'basic human needs', Mishra and Shukla (2015) added the phenomenon of 'specificity of combination of indicators' also besides accounting for the number of dimensions in which a household is deprived. To overcome the problems associated with welfare comparison on the basis of aggregate indices, given the differential impact of each dimension on welfare, the above methodology used the concept of multi-dimensional first order dominance, enabling comparison across time and between populations based on a series of binary or multi-levelled ordinal welfare indicators. This methodology was employed in the present study to analyse the four dimensions of use of financial services by introducing the two concepts of 'multiple deprivations' and 'interdependence' into the financial inclusion landscape.

All possible combinations of deprivation and achievement in terms of use of the four services were considered in order to get a robust picture of financial inclusion. The outcomes of the selected indicators of financial inclusion were presented in digital form, assuming the value '1' for achievement (use) and '0' for deprivation (non-use). The outcomes ranged from deprivation in all indicators (fully deprived) to achievement in all indicators (fully privileged) at the two extremes and all possible combinations representing various mixes of deprivation and achievement in one or more services.

Multi-dimensional index of use of financial services

With a view to making robust comparison of various dimensions across population groups and to enable computation of multi-dimensional index of achievement for use of financial services, the concept of multi-dimensional first order dominance or stochastic order dominance (advanced by Arndt et al., 2012) was used, following Mishra and Shukla (2015). Considering the case of two population distributions, one distribution first order dominates another if one could hypothetically move from one population distribution to the other by iteratively shifting population mass in the direction from better

outcomes to worst outcomes. Thus, whenever one is able to observe first order dominance between two population distributions, the dominating population is unambiguously better off (ibid.). The achievement under each dimension across different distribution of households was compared by plotting the cumulative share of privileged households against the privileged scores.

The privileged scores refer to the number of dimensions in which households are privileged. Following this, when four dimensions are considered, households deprived in all dimensions will receive a score of '0' as against households privileged in all dimensions getting a score of '4'. However, these scores cannot be treated as random variables as they do not associate with unique probabilities and hence an expected score of privilege cannot be obtained. To resolve this, the privilege score was differentiated within the same number of privilege but different combinations. Such differentiation is made under a premise of conceptualising deprivation/achievement conditioned by negative externality of prevalence of various combinations. For instance, being deprived in one dimension should ideally be assigned a value of '1' which is differentiated with a Score = $1 - S_i$, where S_i is the prevalence share of a particular combination of single dimension deprivation. Similarly, a Score = $2 - S_i$ is computed for all possible combinations with deprivation in two dimensions (ibid) and so on.

Following the above methodology, the multi-dimensional index of use of financial services was

computed using the following formula:

$$D_i = \sum_j \left(\frac{P_j}{K} \right) H_j$$

where,

H_j = proportion of population for j^{th} combination

P_j = privilege score for j^{th} combination and

K = number of dimensions considered.

D_i = use index of financial inclusion

Results and Discussion

Distribution of households by use of financial services

On examining the distribution of households by reported use of the four financial services (Table 1), we found that only just more than half of the sample households (57.24%) possessed savings at a bank, implying that 42.76% of the households in the sample were deprived of formal savings. This proportion was 61.08% and 49.98% of the respective population in rural and urban areas, indicating that the rural households were better off than the urban households in possessing bank savings. Further, out of the households who had bank savings, 69.82% lived in rural areas and 30.18% lived in urban areas, which was in accordance with the corresponding population proportion.

We compared these results with the supply side data during 2011-12, which indicated that there were 112.8 deposit accounts per hundred adult individuals in India, which was almost double the figure based on micro-level data. This difference explained the

Table 1. Use of formal financial services and products by Indian households, 2011-12

Financial service	Category	Proportion of households %		
		Rural	Urban	Total
Savings	Within group	61.08	49.98	57.24
	Between group	69.82	30.18	100
Credit	Within group	17.81	29.25	21.76
	Between group	53.53	46.46	100
Insurance	Within group	24.91	28.62	26.20
	Between group	62.22	37.78	100
Pensions	Within group	21.95	21.81	21.90
	Between group	65.56	34.43	100

inability of the aggregate institutional data to explain the extent of non-users of a particular service by its inherent lacuna of not being able to reveal unique accounts (by counting multiple accounts of a single account holder), thereby presenting a brighter picture of inclusion. Moreover, the aggregate data failed to give any information on the excluded segments (like who were the non-users, what were their characteristics, why they did not use etc.) and their extent of deprivation in terms of access and use.

As we went further deep into the use of complex and advanced financial services to see whether the savings accounts opened by households got translated to active and meaningful use, by using more complex services (indicating higher level of participation in economic activities), we found that only less than or around one-fourth of the sample households used either credit (21.76%) or insurance (26.2%) or pension (21.9%) (Figure 1). This meant that as high as 78.24%, 73.8% and 78.1% of the households were deprived of credit, insurance and pension respectively. Further, in contrast to the pattern observed in the case of savings, only 17.81% of rural households had availed credit facility as compared to 29.25% in urban areas. However, out of the households that had availed credit, 53.53% lived in rural areas and only 46.46% lived in urban areas (Figure 2). This would mean that a big majority did not have any access to finance for meeting emergency fund needs of family or for creation of assets or for livelihood activities. Also, many of them were deprived of protection against risks as well as social safety-net to provide for old-age. The distribution of households using these two services between rural and urban was almost similar to that of savings with nearly two-third residing in rural areas. While prudential limits existed in extending access to credit, because not everyone was creditworthy or could handle credit responsibly, such a limit might not exist for advancing access to deposits or insurance (Cull et al., 2012), partly explaining why the number of credit accounts was much less than that of deposit accounts. The reasons

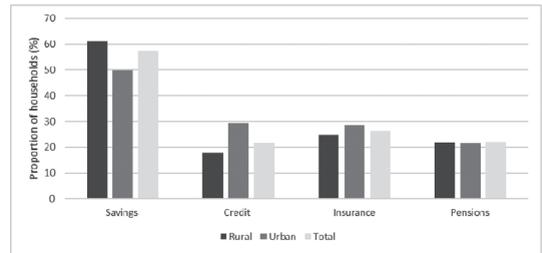


Figure 1. Share of Indian households using formal financial services in rural and urban areas, 2011-12 (%)

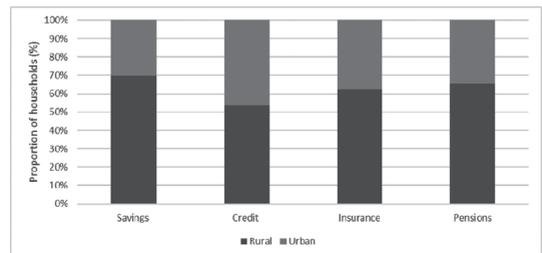


Figure 2. Distribution of Indian households using formal financial services by place of residence, 2011-12 (%)

for low insurance penetration could be manifold ranging from low demand due to the inability of poor to understand the concept and benefits of insurance, which was different from other financial services they generally used, to the structure of market with higher price and over-provision by government or international bodies in times of disaster (Banerjee and Duflo, 2011).

Based on a key information available in the IHDS dataset on the ability of households to get bank loan or microfinance, it was observed that only 24.6% of the households had approached a bank for loan, of which 21.8% were able to get it and 2.8% were unable to. Those who were able to get a formal loan also included Kisan Credit Card (KCC) beneficiaries (1.1%) and SHG borrowers (3.2%), besides other borrowers of banks (17.5%). The above observation also meant that 75.3% of the households had not approached the formal financial system for loan, reasons for which needed to be explored further. This prompted to look at the proportion of households having any kind of debt – formal or informal – we found that 53.6% of the households had availed loan during the last five

years from some source including banks/SHG/KCC (21.8%), followed by friends and relatives (17.1%), moneylenders (10.1%) and others like employers/suppliers/ middlemen/govt. programmes/PF/LIC etc. (4.6%). This pattern led to two findings. First, more than half of the sample households had demand for credit, as indicated by their reported use. However, a majority of them accessed informal loans without approaching the formal system, apparently indicating a perception among many households regarding the presence of certain constraints in the formal delivery system such as inappropriate design of products, documentation requirements and eligibility criteria (like permanent income source, income guarantee/surety, collateral, asset etc.), legal identity that tended to exclude certain segments of population. The perception of households that they would not fit into the stipulated eligibility criteria would have driven them away (voluntary exclusion) from the formal system, prompting them to resort to informal means of credit, which was often convenient, readily and timely available, flexible and hassle-free, though relatively expensive. The households who had been denied credit by the formal system (2.8%) represented involuntary exclusion.

Secondly, 46% of the households apparently did not have demand for credit as they reported non-use (of both formal and informal credit), forming part of the voluntarily excluded population. This kind of exclusion could have arisen either due to lack of need or self-assumed rejection owing to inherent weaknesses like low income lack of capabilities or due to lack of awareness. This strengthened the argument that providing physical availability of institutions and ensuring access had to be inevitably supplemented by sufficient enabling conditions for generating adequate demand for leveraging opportunities for growth. The specific barriers that came in the way of households to effectively participate in economic activities had to be identified and removed with reference to particular social, economic and geographic settings.

Multiple deprivations in terms of use – fully privileged vs fully deprived

Analysing the data based on user-proportion threw little light on the segment of households not using any services, using all services and those using services in varying levels, making it difficult to examine the amount of deprivation experienced by user and non-user households in terms of use of various financial services across space. The extent to which the services and products offered by formal financial institutions were accessed and used optimally varied with each household depending on the given extrinsic and intrinsic factors. When we considered four financial services as the dimensions of use, there might have been households deprived in using one or two or three or four or none of the services. Such segmented analysis was essential for targeted policies to address exclusion by removing barriers. We therefore applied the concept of multiple deprivations to study the diverse patterns of use through a deeper analysis of extent of deprivation experienced by households. We considered the reported use or non-use of each of the above services by each household by assigning values of '0' or '1'. The higher the number of financial services used by a household, the higher the extent or degree of use of that household. The non-use of a particular service or product by a household was considered a deprivation. For instance, a household having only savings at a formal financial institution and not using credit, insurance or pension was said to be deprived in three indicators and privileged in one indicator. As the number of services availed by the household increased, its deprivation decreased. However, the achievement in one or more dimensions could not reveal the identity of the dimensions in which the entity is deprived or privileged, i.e., such an analysis was silent on the specificity of indicators.

Considering use across the above mentioned four indicators, there were a total of 16 observed combinations comprising of totally deprived of all services at the bottom, various combinations of use in the middle and all-privileged at the top. Thus,

the worst combination represented fully deprived (0,0,0,0) and the best one indicated fully-privileged (1,1,1,1). This method of analysing deprivations and achievements helped to address the specificity of indicators and combinations thereof. Ideally, a higher proportion of fully privileged households and a lower proportion of fully deprived households were considered better in terms of inclusion and vice-versa. Analysing the two extreme situations in the use continuum, we observed that as high as 25.4% of households (10695) were totally deprived of any formal financial service as compared to a meagre 1.4% of households (611) being fully privileged to use all four types of financial services, at the national level (Figure - 3). In both rural and urban settings, around 25% of the households were deprived of all the services. Among the user

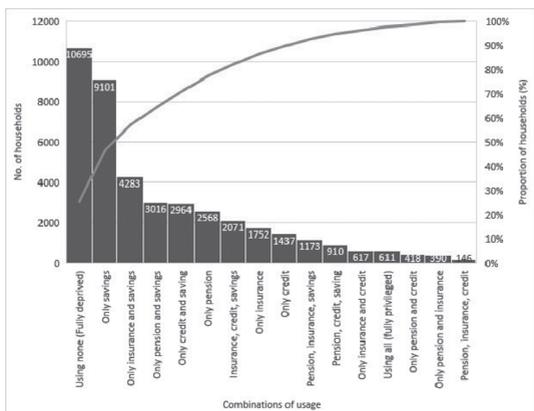


Figure 3. Distribution of Indian households by pattern of use of formal financial services, 2011-12 (%)

households, amounting to 74.9% at the national level, there was wide variation in use of services, as seen from the proportion of users under different combinations, signifying varying levels of deprivations. Of this, while 38.6% used two or three services, a slightly lower proportion of households, i.e., 34.9% used only any one of the four services, with savings being the most-used single service (21.4%).

The population proportions under each combination ideally cumulated to a total of 100%, in the progression from fully deprived household to fully privileged households, in the use continuum, as shown by the curved line in Figure 3.

A similar comparison at the state level (Table 2) also showed diverse patterns, with the highest proportion of fully privileged households in Kerala (3.79%) and Himachal Pradesh (3.73%) and least in five states viz., Arunachal Pradesh, Nagaland, Mizoram, Meghalaya and Goa, where none of the households were fully privileged (i.e., no household was using all the four services). Half of the households were deprived of all the four financial services in Mizoram and Assam, whereas more than 40% of the households were fully deprived in Meghalaya, Bihar and Gujarat. At the other end of the spectrum, this proportion was the least in Goa, Himachal Pradesh, Manipur, Punjab and Kerala. Thus, while states like Kerala, Himachal Pradesh,

Table 2. Proportion of fully deprived and fully privileged households and their ratio – top-five and bottom-five states

Top-five states		Bottom-five states	
Highest fully privileged	Lowest fully deprived	Lowest fully privileged	Highest fully deprived
Kerala (3.79%)	Goa (5.88%)	Mizoram (0%)	Mizoram (50.68%)
Himachal Pradesh (3.73%)	Himachal Pradesh (6.03%)	Nagaland (0%)	Assam (49.03%)
Karnataka (3.02%)	Manipur (6.82%)	Arunachal Pradesh (0%)	Meghalaya (48.12%)
Uttarakhand (2.35%)	Punjab (10.84%)	Meghalaya (0%)	Bihar (44.71%)
Orissa (2.04%)	Kerala (12.14%)	Goa (0%)	Gujarat (43.13%)
Ratio of proportion of fully deprived to fully privileged households			
Top five states (lowest ratio)		Bottom five states (highest ratio)	
Himachal Pradesh	1.62	Gujarat	135.00
Kerala	3.20	Bihar	98.43
Manipur	6.00	Assam	43.64
Punjab	6.57	Tamil Nadu	41.17
Karnataka	6.72	Jharkhand	39.38

Note: Figures in parantheses indicate the proportion of households

Punjab, Karnataka and Goa had by and large better distributions in terms of lower level of deprivation and higher level of achievement, the north eastern states in general, and Bihar and Gujarat in particular, exhibited higher levels of deprivation with majority of the households fully deprived.

With a view to fully understanding the regional disparities across states and extent of inequalities prevailing within states, we further computed the ratio of fully deprived to fully privileged households which indicated the number of fully deprived households for every fully privileged household. The higher the ratio, the higher the prevalence of inequality in the state. While the average ratio for the country was 17.37, it ranged from 1.62 in Himachal Pradesh and 3.2 in Kerala to as high as 135 in Gujarat and 98.43 in Bihar, pointing to huge regional disparities in levels of use of financial services. As expected, again, Himachal Pradesh, Kerala, Punjab and Karnataka fared better with lower ratios. Surprisingly, Manipur, with a ratio of 6 also secured position in the group of top five states. However, it was rather unexpected to observe that developed states like Gujarat and Tamil Nadu had very high ratios and found themselves in the league of bottom-five states along with Bihar, Assam and Jharkhand, which were traditionally considered backward with high levels of inequality in many development indicators. The changes in ratio registered by states over time could be used to monitor progress achieved by them in bringing down the levels of deprivation of households.

Interdependence among use of various financial services

Households using just one service were most likely to have only savings in a formal financial institution, whereas all other combinations would be having savings as one of the services used. Having savings could be said to influence the use of other financial services, as a household without formal savings might not naturally have demand for higher investment due to lower disposable income and was hence not likely to resort to formal credit or pay

premium to purchase insurance. Therefore, it could generally be argued that the universality of other dimensions of use is conditional on the universality of formal savings for households. We therefore attempted to examine the interdependence between pairs of indicators with savings as the common element. Accordingly, six pairs of use combinations emerged, viz., (i) savings - credit, (ii) savings-insurance, (iii) savings-pensions, (iv) credit-insurance, (v) credit-pension and (vi) pension-insurance. The sum of proportions of households having similar score of either (0,0) or (1,1) was considered to represent interdependence between any two dimensions. The highest interdependence was found to be between savings and insurance (44.7%), followed by savings and credit (40.9%) and savings and credit (38.8%) at the all-India level.

At the state-level also, similar pattern was observed with majority of the states (15) exhibiting the highest interdependence between savings and insurance and states like Arunachal Pradesh, Assam, Gujarat, West Bengal and Bihar at the top of the chart. Savings and pension showed the highest interdependence in eight states (Punjab, Haryana, Nagaland, Manipur, Mizoram, Tripura, Meghalaya and Goa). In the case of five states, viz., Kerala, Andhra Pradesh, Karnataka, Madhya Pradesh and Chattisgarh, savings and credit showed the highest interdependence. The interdependence between dimensions in respect of the other three pairs was not so notable as that with savings and other dimensions.

Despite the interdependence of other dimensions with savings, as discussed above, it was also observed that 17.3% of households (spread over the seven combinations without savings) were found to be using one or more of the other three services, even in the absence of formal savings. Such households were mostly having pension and/or insurance, and credit to a small extent, indicating the possibility that they could be beneficiaries of social security schemes of government (for pension) or private insurance schemes (health cover) or those

who availed micro-credit (SHG lending) which did not require to have a bank account. The proportion of such households were found to be highest in Andhra Pradesh (37.58%), Haryana (27.97%), Karnataka (27.93%), Tamil Nadu (26.65%), Assam (26.35%) and Kerala (23.89%). Such linkages with any form of institutional system through these schemes could however offer possibilities for the households to graduate to availing complex and more advanced services from the regulated financial institutions in the short or long run.

Multi-dimensional index of use of financial services

To capture the welfare gain among households with additional use of a service, it was imperative to consider all possible combinations of deprivation/achievement. We computed the proportion of

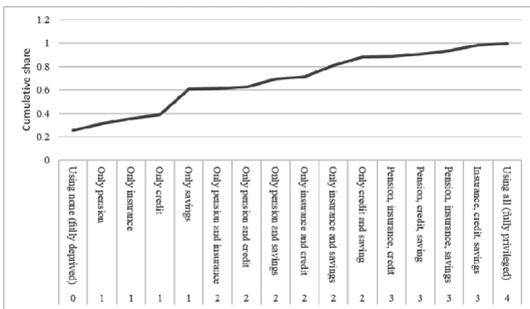


Figure 4. Cumulative share of privileged population by pattern of use of formal financial services, 2011-12

households under all the 16 possible combinations of use. Employing the concept of ‘multidimensional first order dominance’, an attempt is made to make comparisons of the achievement across different distributions by plotting the cumulative share of privileged households against the privileged scores (number of use dimensions in which households were privileged) (Figure 4).

These privilege scores (0, 1, 2, 3 and 4) cannot be treated as random variables as they do not associate with unique probabilities. We therefore differentiated it within the same number of privilege but different combinations. Accordingly, the privileged score so computed together with the cumulative share of privileged population for each combination of use of financial services are presented in Table – 3.

Based on the above privilege score and proportions and using the formula given in section 3.2, the multi-dimensional achievement index for use of financial services (D_i) was computed as 0.298 at the national level. Following the same methodology, the use index was computed as 0.292 and 0.302 respectively for rural and urban households. There was only a marginal difference between the two settings, indicating that the level of achievement in terms of

Table 3. Computation of privileged score and cumulative share of privileged population

Combinations of use	Share of privileged population (S_i)	Privileged score $P_j=(1-S_i)$	Cumulative share of privileged population
Using none (fully deprived)	0.254	0.000	0.254
Only pension	0.061	0.939	0.315
Only insurance	0.042	0.958	0.356
Only credit	0.034	0.966	0.390
Only savings	0.216	0.784	0.606
Only pension and insurance	0.009	1.991	0.615
Only pension and credit	0.010	1.990	0.625
Only pension and savings	0.072	1.928	0.697
Only insurance and credit	0.015	1.985	0.712
Only insurance and savings	0.102	1.898	0.813
Only credit and saving	0.070	1.930	0.883
Pension, insurance, credit	0.003	2.997	0.887
Pension, credit, saving	0.022	2.978	0.908
Pension, insurance, savings	0.028	2.972	0.936
Insurance, credit, savings	0.049	2.951	0.985
Using all (fully privileged)	0.014	3.986	1.000
Total	1.000		

use across most combinations were almost similar.

The index (D_i) computed for the 28 states (Table 4) displayed wide difference in the levels of achievement, with Himachal Pradesh securing the highest score of 0.428, closely followed by Kerala (0.411), Punjab (0.355) and Karnataka (0.351). At the other extreme, were Meghalaya with the lowest score of 0.116, followed by Nagaland (0.152), Mizoram (0.156), Bihar (0.201), Assam (0.202). While 12 states had a score higher than the all-India score of 0.298, 16 states scored less. All the North Eastern states except Sikkim had a below average index, which was on expected lines. The Eastern (Bihar, Jharkhand and West Bengal) and Central States (Madhya Pradesh, and Uttar Pradesh) fared ill with low scores of index, reaffirming their low capabilities in terms of economic development. Unsurprisingly, states like Kerala, Karnataka, Punjab, Andhra Pradesh, Haryana and Goa fared better in terms of use from the demand-side perspective also, corresponding to their performance in terms of supply-side parameters. These results were in line with the findings based on analysis of extreme combinations in the previous section.

However, a few observations with regard to states like Maharashtra, Tamil Nadu and Gujarat which

had a below-average use index were in stark contrast to the higher credit and deposit penetration observed in terms of supply side data on number of deposit accounts per 1000 adults, average deposit and credit size, per capita deposit and credit. Similarly, Himachal Pradesh, Chattisgarh, Orissa and Jammu & Kashmir secured above average index as compared to lower level of financial penetration observed in the institutional data.

The presence of a large segment of population without access to the formal financial system could be viewed as a form of market failure where commercial providers did not supply to those whose effective demand was judged inadequate. The presence of more number of branches/offices of financial service providers as revealed by various access indicators, did not necessarily ensure that all individuals who needed financial service really had access to it and used it adequately. Providing access was essential, though not a sufficient condition for financial inclusion. A study by Kamath et al. (2010) in the Indian context showed that access to financial services and its usage were not strictly correlated. The emerging patterns and variations could therefore be correlated with the general economic development, effectiveness of public policies and financial sector development of the state. While

Table 4. State-wise multidimensional achievement index of use of financial services

State	Use Index	State	Use Index
Above average		Below average	
Himachal Pradesh	0.428	Madhya Pradesh	0.292
Kerala	0.411	Tripura	0.292
Punjab	0.355	Maharashtra	0.280
Karnataka	0.351	West Bengal	0.278
Sikkim	0.339	Uttar Pradesh	0.273
Chhattisgarh	0.328	Arunachal Pradesh	0.267
Orissa	0.323	Manipur	0.256
Goa	0.320	Rajasthan	0.253
Andhra Pradesh	0.316	Tamil Nadu	0.243
Uttarakhand	0.314	Jharkhand	0.233
Jammu & Kashmir	0.303	Gujarat	0.204
Haryana	0.300	Assam	0.202
All-India average	0.298	Bihar	0.201
		Mizoram	0.156
		Nagaland	0.152
		Meghalaya	0.116

supply-oriented financial inclusion policies (like branch penetration) helped foster the delivery of financial services (Burgess and Pande, 2005), demand dynamics, in turn, got influenced by economic growth (Zang and Kim, 2007). Economic prosperity, in particular industrial development, played a vital role in spurring the use of financial services in a region (Rajan and Zingales, 1998; Beck et al., 2008). Lower banking outreach of certain regions could also be attributed to inadequate availability of physical infrastructure facilities such as roads and power, which created enabling conditions for boosting economic activity and thereby improved demand for banking services. In terms of industrial development, lower number of factories per 1,000 population in the eastern regions highlighted the extent of gap that needed to be bridged for catching-up with the front-running regions (Rajesh and Das, 2019). All the states of the Eastern Region except Arunachal Pradesh, Sikkim and Mizoram, were characterised by below national average per capita income. Low-income implied a lack of effective demand for financial services on one hand, whereas, the failure of supply and the limitations of the current service provision to become inclusive and responsive to the needs of low-income groups would have adversely impacted demand on the other hand.

An underlying argument in this direction was that the financial services sector had been showing a trend of shifting away from providing basic deposit and credit products towards ‘growth-orientated investment related products’ (Kempson et al., 2000; Rogaly and Fisher 1999). This was evident from the retreat of financial service providers from the already deprived and low-income states to better performing and higher income ones, which also happened to be generally more endowed in terms of natural resources, infrastructure and investment climate. The perception of the suppliers that the financial service needs of low-income customers were uneconomic because ‘their needs were modest and the profit margins small’ (Kempson et al., 2000) might have aggravated the supply situation,

implying that the standard services and products on offer were not appropriate enough to meet the specific needs of the financially excluded segments. Lastly, the common understanding that deprivation in use of financial services might be experienced differently among people belonging to various population groups across their place of residence, age, gender, level of education, income, source of livelihood etc. offered scope for advancing the study further by examining the level of use across these socio-economic groupings. Having come thus far in terms of overall financial inclusion, the need of the hour was to devise and design tailor-made strategies at the village level as the approach of ‘one size fits all’ did not any longer suit the needs of a diverse country like India. Addressing the underlying inadequacies and causes of the observed pattern of exclusion was definitely an important step in reducing deprivation. This could be resolved by removing the potential barriers like lack of awareness and inherent low absorption capacities manifested as low incomes and low demand, through the provision of adequate education, income-enhancing measures, skill upgradation, better quality jobs and decent wages. The dynamics of development in states with low levels of financial inclusion therefore required further investigation for suggesting specific interventions, which was beyond the scope of this paper.

Through this paper, an attempt was made to examine the penetration of financial services in terms of actual use by households in a manner distinct from the conventional methods in two ways, viz., in terms of data and methodology, by (1) using a nationally representative data-set viz., IHDS-II, unexploited in the financial inclusion landscape and (2) employing the concepts of multiple deprivations, specificity of use combinations, interdependence and multi-dimensional first order dominance. The overall trend showed that the level of use was particularly low with high levels of deprivation among those states which were deprived in economic development. It was found that there was considerable inequality in the use of financial

services by households across states as well as within the states, as indicated by the very high number of deprived households per privileged household in most states as well as its wide range. Non-use of formal financial system could be viewed as an undesirable outcome of the intersection of supply-side barriers to access and perceived demand-side barriers to use.

Any region that excluded a majority of its population from the formal financial system could not be optimally employing its human resources. Eventually, economic growth would be lower than what it could have been if a larger majority was drawn into the formal financial system. Exclusion from financial services or the inability to use them could lead to insecurity as it was similar to the experience of deprivation when people are disempowered and unable to control their circumstances. This constituted the logical core of the more modern idea that access to formal financial services be made universal rather than confining it to be need-based. It could therefore be concluded that focussed efforts are needed to improve use by creating genuine demand for appropriate financial services, based on an understanding of the dynamics of financial inclusion across its multifarious dimensions from the user perspective. Further, mainstream services should be made affordable and accessible by suitably adapting the existing financial products and services and providing alternatives with the help of public intervention. This called for genuine and concerted efforts for formulating and implementing tailor-made policies and plans for promoting financial inclusion and inclusive growth simultaneously in the regions and among the segments with unmet demand for financial services.

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