# A STUDY OF FINANCIAL INCLUSION IN INDIA

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## Abstract

The study seeks to examine the extent of financial inclusion in India. It is observed from the study that although there has been an improvement in outreach activity in the banking sector, the achievement is not significant. An index of financial inclusion (IFI) has been developed in the study using data on three dimensions of financial inclusion. The study shows that Kerala tops the list in financial inclusion followed by Maharashtra and Karnataka.

**Keywords:** index of financial inclusion, money-lenders, dimensions.

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**Introduction**

The concept of financial inclusion can be traced back to the year 1904 when co-operative movement took place in India. It gained momentum in 1969 when 14 major commercial banks of the country were nationalized and lead bank scheme was introduced shortly thereafter. Branches were opened in large numbers across the country and even in the areas which were hitherto being neglected. Even after all these measures a sizable portion of the population of the country could not be brought under the fold of banking system. In fact, there is a severe gap in financial access which needs special attention. Studies have proved that lack of inclusion or rather exclusion from the banking system results in a loss of 1 per cent to the GDP. Thus, financial inclusion is not just a socio-political imperative but also an economic one. Realsing the gravity of the problem, Reserve Bank in its Mid Term Review of Monetary Policy, urged the banks to make financial inclusion as one of their prime objectives.

The positive impact of financial inclusion is wide-spread across the globe. Most of the literature on banking sector outreach focus on its effect through cross-country evidence (Pechey/Roe 2006, Beck et al. 2006, Claessens 2006, Anderloni et al. (2007). Some of the studies which are important in this respect are Beck, Demirguc-Kunt, and Levine (2007), Honohan (2004), Galor and Zeria (1993), Klaper, Leaven, and Rajan (2006) and Rajan and Zingals (2003). World Bank has also done a study on this subject for rural India and found that about 40 per cent of households have deposit accounts, 20 per cent have outstanding loans and only 15 per cent have any insurance (Basu, 2006).

Financial exclusion is broadly defined as the lack of access by certain segments of the society to suitable, low-cost, fair and safe financial products and services from mainstream providers. Thus the essence of financial inclusion is to ensure that a range of appropriate financial services is available to every individual and enable them to understand and access those services. Apart from the regular form of financial intermediation, it may include a basic no frills banking account for making and receiving payments, a savings products suited to the pattern of cash flows of a poor household, money transfer facilities, small loans and overdrafts for productive, personal and other purposes, insurance (life and non-life), etc. in fact, the main reasons for financial exclusion, from the demand side are lack of awareness, low income, poverty and illiteracy; and from the supply side is distance from branch, branch timings, cumbersome

documentation and procedures, unsuitable products, language, staff attitudes, etc. Due to all these procedural hassles people feel it easier to take money from informal credit sources, but it results in compromised standard of living, higher costs and increased exposure to unethical and unregulated providers and vulnerability to uninsured risks. Thus financial inclusion does not mean merely opening of saving bank account but signifies creation of awareness about the financial products, education and advice on money management, offering debt counseling, etc. by banks. Every society should ensure easy access to public goods. Therefore, banking services being a public good should also be aimed at providing services to the entire population.

With this background, the major objective of this paper is to examine the extent of financial inclusion in India. In Section 2 we discuss the index of financial inclusion. Section 3 deals with the findings of the study and Section 4 conclude the study.

**Index of Financial Inclusion**

The term banking sector outreach or financial inclusion refers to the access to banking services and their use by households and firms (Beck et al. 2006). There are various dimensions to access: availability of financial services, cost of access, range, type and quality of financial services offered (Claessesns 2006). Access is not synonymous to use. Economic agents might decide not to use accessible financial service, either for socio-economic reasons, or because opportunity costs are too high (Beck et al. 2006). The counter part of access is exclusion. Financial exclusion may be caused by (1) 'geographic limitations' due to under-provision of banking services in remote and scarcely populated areas, (2) 'socio-economic limitations' when financial services appear inaccessible to specific income, socio or ethnic groups, or (3) 'limitations of opportunity', when new or small firms with profitable projects are credit rationed because of lack of information and collaterals (Beck/de la Torre 2006, Anderloni/Carluccio 2007, pp. 9).

So far, the literature on financial sector development has focused primarily on the dimension of depth, its measurement, determinants and its economic impact. Little is known about the breadth or the outreach of financial systems across countries, its determinants and impact on development. This is partly due to inadequacy of data (see Honohan 2004).

To measure financial inclusion, several proxy indicators have been used in the literature (Table 1). Proxi (i) measures access to and use of bank accounts. Full access may be reached, if the number of accounts per adult is above 0.5 (Peachy/Roe 2006). The penetration of banks"

physical outlets (branches, ATMs) is measured by (ii) – (v). While higher geographic branch and ATM penetration indicate smaller distance and thus easier geographic access, higher demographic branch and ATM penetration indicates easier access because of fewer potential clients per outlet. The use of loans and deposit is measured by (vi) – (ix). A higher demographic loan or deposit penetration indicates larger use, and higher loan or deposit-income ratios signal that these services may only be affordable to larger enterprises or wealthier individuals. The loan-income ratio is above 2 in rich countries, but above 8 in poor countries (Beck et al. 2006). Alternative measures of deposit penetration are the deposit-GDP ratio or the cash-deposit ratio. According to Peachy and Roe (2006), an economy has reached full access, if the deposit-GDP ratio is 100 per cent or the Cash-Deposit ratio is below 20 per cent. This measures the development of the financial system rather than deposit penetration. For the indicators (ii)-(ix), a country may be considered approaching full access, if its outreach indicator lies above the mean value in developed countries (Beck and de la Torre 2006).

**Table 1: Indicators of banking sector outreach**

| Indicator | Measurement |
|---|---|
| (i) Bank accounts per adult | Number of bank accounts per adult |
| (ii) Geographic branch penetration | Number of branches per 1000 km2 |
| (iii) Demographic branch penetration | Number of branches per 1,00,000 people |
| (iv)Geographic ATM penetration | Number of bank ATMs per 1000 km2 |
| (v) Demographic ATM penetration | Number of bank ATMs per 1,00,000 people |
| (vi)Demographic Loan penetration | Number of loans per 1,00,000 people |
| (vii)Loan-income ratio | Average size of loan to GDP per capita |
| (viii)Demographic deposit penetration | Number of deposits per 1,00,000 people |
| (ix) Deposit-income ratio (or deposit-(or total GDP Ratio) | Average size of Deposits to GDP per capita bank deposits to GDP) |

| | |
|---|---|
| (x) Cash-Deposit Ratio | Cash in circulation to total bank deposits |

Source: Conrad, et al. (2008).

Thus several indicators have been used to assess the extent of financial inclusion. However, the indicators discussed above, while used individually, provide only partial information on the inclusiveness of the financial system of an economy. Using individual indicators can lead to misleading picture of the extent of financial inclusion in an economy. Therefore, any single indicator fails to adequately capture the extent of financial inclusion. In order to address this problem, we have developed an index of financial inclusion, which is able to capture information on several aspects in one single number. Such a measure is useful to compare the levels of financial inclusion across economies and across states within countries at a particular time period. It can be used to monitor the progress of policy initiatives for financial inclusion in a country over a period of time. In this paper, we calculate state-wise index of financial inclusion (IFI) which is the main focus of our study.

The IFI satisfies the following criteria:
(i) It should incorporate information on as many aspects (dimensions) of inclusion as possible.
(ii) It should be easy and simple to compute.
(iii) It should be comparable across countries/states.

The proposed IFI takes values between 0 and 1, zero indicating lowest financial inclusion (i.e., complete financial exclusion) and 1 indicating complete financial inclusion.

**Methodology**

Since inclusive financial system is judged from several dimensions, we follow a multidimensional approach while constructing the index of financial inclusion (IFI). Our approach is similar to the one used by Sarma (2008). UNDP (United Nations Development Programme) has also used similar kind of approach for computation of some well known development indexes such as HDI, the HPL, the GDI and so on. As in the case of these indexes,

IFI is computed by first calculating a dimension index for each dimension of financial inclusion. The dimension of index for the $i^{th}$ dimension, $d_i$, is computed by the following formula.

$$d_i = \frac{A_i - m_i}{M_i - m_i} \quad (1)$$

where,

Ai = Actual value of dimension i.

mi = minimum value of dimension i.

Mi = maximum value dimension i.

Formula (1) ensures that $0 \leq d_i \geq 1$. Higher the value of di, higher the state's achievement in dimension i. If n dimension of financial inclusion are considered, then a state i will be represented by a point $D_i = ( D_1, D_2, \ldots\ldots D_n )$ on the n-dimensional Cartesian space.

In the n-dimensional space, the point O = (0, 0,……0) represents the point indicating the worst situation while the point I = (1, 1, ……,1) represents the highest achievement in all dimensions. The index of financial inclusion, IFIi, for the i-th state, then is measured by the normalized inverse Euclidean distance of the point Di from the ideal point I = (1, 1, ….,1). The exact formula become,

$$IFI_i = 1 - \frac{\sqrt{(1-d_1)^2 + (1-d_2)^2 + \ldots + (1-d_n)^2}}{\sqrt{n}} \quad (2)$$

In formula (2), the numerator of the second component is the Euclidian distance of Di from the ideal point I, normalizing it by $\sqrt{n}$ and subtracting from 1 gives the inverse normalized distance. The normalization is done in order to make the value lie between 0 and 1 and the inverse distance is considered so that higher value corresponds to higher financial inclusion.

In this paper, we consider three basic dimensions of an inclusive financial system – banking penetration (BP), availability of the banking services (BS) and usage of the banking system (BU). The main reasons for selecting these dimensions are data availability and recent development in the literature.

**Banking penetration (Dimension 1)**

This is one of the most important indicators of financial inclusion. Ideally, inclusive financial system should penetrate widely amongst its users. The size of the banked population, i.e., number of adult population having a bank account is a measure of the banking penetration of the system. Thus if every adult person in an economy has a bank account, then the value of this measure would be equal to 1. In the absence of the data on banked population, we use number of bank accounts as a proportion of the total population as an indicator of this dimension. However, we use both deposit account and credit account or loan account as the indicators of banking penetration.

**Availability of banking services (Dimension 2)**

Under an inclusive financial system, banking services should be easily available to its users. Availability of services can be indicated by the number of bank outlets (per 1000 population) and/or by the number of ATM per 1000 people, or the number of bank employees per customer. In India, there is another concept introduced in the banking system which is known as Banking Correspondence (BC) model in order to provide the banking services to the people of the nation. In the absence of data on the number of ATMs and number of BCs appointed, we use the number of bank branches per 1000 adult population and also number of branches per square km to measure the availability dimension.

**Usage (Dimension 3)**

This dimension emerges from the concept of "under banked" or "marginally banked" people, as observed by Kempson et al (2004). It observes that "in some apparently very highly-banked countries, a number of people with bank account are nonetheless making very little use of the services on offer". Thus merely having a bank account does not ensure that the system is inclusive; it is also imperative that the banking services are adequately utilized. In order to incorporate the usage dimension in our index, we consider two basic services of the banking system – outstanding credit and deposit. Accordingly, the volume of outstanding deposit and credit as proportion of the Net District Domestic Product (NDDP) has been used to measure this dimension.

Thus, considering the above three dimensions – penetration, availability and usage – we can represent a state i by a point (pi, ai, ui) in the three dimensional Cartesian space, such that

$0 \leq p_i, a_i, u_i \leq 1$, where pi, ai and ui denote the dimension indexes for the state i computed using formula (1). In the three dimensional Cartesian space, the point (0, 0, 0) will indicate the worst situation (complete financial exclusion) and the point (1, 1, 1) will indicate the best or ideal situation (complete financial inclusion).

The IFI for the state i is measured by the normalized inverse Euclidean distance of the point (pi, ai, ui) from the ideal point (1, 1, 1). Algebraically,

$$IFI_i = 1 - \frac{\sqrt{(1-p_i)^2 + (1-a_i)^2 + \ldots + (1-u_i)^2}}{\sqrt{n}} \quad (3)$$

**Data**

Since the initiatives on financial inclusion in India were taken during 2005-06, we have computed the index from 2006-07 till 2011-12. First we have computed the index for 23 states of India along with all-India average. All banking data have been taken from Banking Statistics of Reserve Bank. Data on adult population and geographical area of the states have been taken from Census of India.

**Results**

Using data on all three dimensions (penetration, availability and usage) for 23 states and IFI values have been computed and averaged for six years.

Depending on the values of IFI, states are categorized into three categories, viz.

(i) $0.5 < IFI \leq 1$ – high financial inclusion

(ii) $0.3 \leq IFI < 0.5$ – medium financial inclusion

(iii) $0 \leq IFI < 0.3$ – low financial inclusion

**Findings of the study**

In the group of 23 states for which a 3-dimensional IFI has been estimated by using data on 3 dimensions of financial inclusion, Kerala leads with the highest value of IFI followed by Maharashtra and Karnataka (Table 2). However, only three states, viz., Kerala, Maharashtra and Karnataka belong to the high IFI group with IFI values of 0.5 or more. Another six states, viz., Tamil Nadu, Punjab, Andhra Pradesh, Himachal Pradesh, Sikkim and Haryana form the group of medium IFI states with IFI values between 0.3 and 0.5. In fact, all-India average IFI also falls under this category. All other states have a low IFI values, ranging between 0.0 and 0.3. It is

interesting to note that all the southern states are at the high or medium level of financial inclusion and except Sikkim all the eastern, north-eastern and central states are in the low level of financial inclusion. On the other hand, West Bengal and Gujarat rank 11th and 12th, respectively in financial inclusion. Further, out of 7 North-Eastern States, three states belong to the lowest rank of financial inclusion.

**Table 2: State-wise Index of Financial Inclusion**

| State | D1 (Penetration) | D2 (Availability) | D3 (Usage) | IFI | IFIRank |
|---|---|---|---|---|---|
| **High Financial Inclusion (0.5-1)** | | | | | |
| Kerala | 0.70 | 0.81 | 0.28 | 0.54 | 1 |
| Maharashtra | 0.62 | 0.29 | 1 | 0.53 | 2 |
| Karnataka | 0.72 | 0.47 | 0.46 | 0.53 | 3 |
| **Medium Financial Inclusion (0.3-0.5)** | | | | | |
| Tamil Nadu | 0.70 | 0.43 | 0.38 | 0.48 | 4 |
| Punjab | 0.45 | 0.69 | 0.29 | 0.45 | 5 |
| Andhra Pradesh | 0.56 | 0.30 | 0.41 | 0.41 | 6 |
| **All-India** | **0.27** | **0.22** | **0.55** | **0.33** | **7** |
| Himachal Pradesh | 0.42 | 0.40 | 0.18 | 0.33 | 8 |
| Sikkim | 0.28 | 0.33 | 0.34 | 0.32 | 9 |
| Haryana | 0.39 | 0.50 | 0.12 | 0.32 | 10 |
| **Low Financial Inclusion (<0.3)** | | | | | |
| West Bengal | 0.24 | 0.38 | 0.23 | 0.28 | 11 |
| Gujarat | 0.32 | 0.30 | 0.16 | 0.26 | 12 |
| Uttar Pradesh | 0.28 | 0.31 | 0.15 | 0.24 | 13 |
| Meghalaya | 0.21 | 0.28 | 0.14 | 0.21 | 14 |
| Tripura | 0.31 | 0.22 | 0.08 | 0.20 | 15 |
| Orissa | 0.26 | 0.23 | 0.11 | 0.20 | 16 |
| Rajasthan | 0.25 | 0.22 | 0.12 | 0.19 | 17 |
| Arunachal Pradesh | 0.20 | 0.16 | 0.14 | 0.17 | 18 |
| Mizoram | 0.13 | 0.26 | 0.09 | 0.16 | 19 |
| Madhya Pradesh | 0.18 | 0.21 | 0.08 | 0.16 | 20 |
| Bihar | 0.15 | 0.24 | 0.08 | 0.15 | 21 |
| Assam | 0.17 | 0.17 | 0.07 | 0.13 | 22 |
| Nagaland | 0.03 | 0.04 | 0.07 | 0.05 | 23 |

| | | | | | |
|---|---|---|---|---|---|
| Manipur | 0.00 | 0.01 | 0.01 | 0.01 | 24 |

**Conclusion**

The issue of financial inclusion has received large importance in India during the recent years. India had invested considerable amount of resources in expanding its banking network with the objective of reaching to the people. During the last 40 years huge infrastructure has been created in the banking sector. However, this large infrastructure that has penetrated even remote rural areas has been able to serve only a small part of the potential customers. While India is on a very high growth path, almost at the two-digit level, majority of the people are out of the growth process. This is neither desirable nor sustainable for the nation. We also know that one of most important driving forces of growth is institutional finance. Therefore, it is now realized that unless all the people of the society are brought under the ambit of institutional finance, the benefit of high growth will not percolate down and by that process majority of the population will be deprived of the benefits of high growth. Thus financial inclusion is not only socio-political imperative but also an economic one.

We have developed an index of financial inclusion using data on three dimensions of financial inclusion. This is useful to monitor the progress of policy initiatives for financial inclusion in a country/state over a period of time. The result shows that in the group of 23 states for which a 3-dimensional IFI has been estimated by using data on 3 dimensions of financial inclusion, Kerala leads with the highest value of IFI followed by Maharashtra and Karnataka.

In a nutshell, it is observed that although various measures have been undertaken for financial inclusion, the success is not found to be noteworthy. However, only supply side factor is not responsible for the financial exclusion. Demand side factors are also equally responsible. Thus there is a need to solve both these problems with the help of appropriate policies. Banks should look at financial inclusion both as a business opportunity and as a social responsibility. Apart from formal banking institutions the role of the self-help group movement and microfinance institutions (MFIs) is important to improve financial inclusion. However, some regulatory procedures for MFIs may have to be evolved in consultations with MFIs, consumers and the government. Political interference in the financial system should be avoided in order to maintain the viability of the formal financial institutions. The risk elements of small and marginal farmers

and other vulnerable groups have to be taken into account in framing policies for financial inclusion. Banking correspondent (BC) model has to be made more effective, by involving more local people. Proper BC model can take care of problems of supply and demand factors to a greater extent. In fact, providing the banking service is not sufficient. Many rural people still are not aware of banking products and they are reluctant to take the advantage of banking facilities. Therefore, financial literacy among the rural people is important. This apart, because of various formalities involved in availing loans etc. they are scared of going to bank and hence fall back upon the moneylenders. But since BC is recruited from the local people they can solve these problems. On the one hand, they can do the formalities on behalf of the illiterate or semi-literate people and on the other, they would educate them how to benefit from the banking service in an effective manner. Above all, a whole-hearted effort is called for from all the corners of the society, viz., banks, beneficiaries and regulators in order to make financial inclusion more meaningful and effective.

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