

FINANCIAL INCLUSION FOR SUSTAINABLE DEVELOPMENT OF AGRICULTURE –A STATE-LEVEL ANALYSIS OF OUTREACH AND USAGE OF FINANCIAL SERVICES

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Abstract: For growth of a society/economy to be sustainable in the long-run, it needs to be equitable and therefore, the seeds of change should be sown at the bottom level. Finance is an integral part of all economic activities necessary for development of a nation. Financial inclusion can be viewed as a process to cover the hitherto deprived groups of a nation under the purview of institutional framework in an order to make provision of at least basic financial services to one and all in a timely manner and on an equitable basis. To ensure that the financial resources are available across all social groups as and when required, several measures have been initiated in India since the beginning of 19th century. Still the country is far away from the goal of 100 percent financial inclusion. The inclusion remains very low in India especially among farming households in rural areas. In this context, this study has viewed financial inclusion as a multi-dimensional concept and proposed an index of financial inclusion (IFI) for India and its several states and union territories by employing eight parameters of outreach and usage of financial services. The parameters used to determine access are –demographic and geographic penetration of branches and ATMs; whereas usage of financial services has been measured by –loan and deposit accounts per capita, loan – income ratio and deposit –income ratio. Index values 0 and 1 represent complete financial exclusion and inclusion respectively whereas intermediate values indicate low/high score on the index. The results show that the overall value of financial inclusion in India as measured by IFI is 0.183 for the year 2014. Chandigarh is the best performing state with an index value of 0.673 whereas Nagaland is the least scoring state with an index value of 0.023 on IFI. Huge interstate disparities in several parameters of access and usage are found.

Keywords: Access to financial services, financial institutions, index of financial inclusion, institutional credit

INTRODUCTION

Finance is the basic element of all economic activities. For the growth of an economy to be sustainable in the long-run, it is necessary that all sections of the society get

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equal opportunity to financial services as and when required and at an affordable cost. In this context, financial inclusion can be viewed as the process of providing at least basic financial services including a bank account, deposit remittance, insurance etc. to all sections of the society on an equitable basis. Globally, more than 70 percent of the total world's population is excluded from formal financial services (Barclays, 2010). Financial exclusion or unavailability of financial services when required, leads to social exclusion (World Bank, 2008). For the development process to be sustainable in the long-run, it is important that the seeds of success be sown at the bottom level (Peet and Hartwick, 2009). Finance for '*one and all*' on an equitable basis is a key pillar towards sustainable development. The concept of financial inclusion has gained relatively more popularity in the recent years. For a developing economy, the growth needs to be not only balanced and equitable but also sustainable in the long-run. Indian economy is one such economy. It is the mechanism of financial markets which plays a significant role to make the development process of an economy sustainable (Sangwan, 2008). The banking sector in India has come a long way and shown an enormous growth in the past decades from a total branch network of 8292 branches in 1968-69 to 117280 branches in 2013-14, still complete financial inclusion remains an issue of deep disquiet for the policy makers. Subbarao (2009) points out that out of about 600000 villages in the country, about 5 percent are covered under the institutional setup. Financial requirements of a vast segment remain unmet by the institutional sector and these segments are forced to get trapped to the non-institutional sector. Small and marginal farmers, women, immigrants from other states, senior citizens are mostly excluded from the institutional setup (Karmakar *et al.*, 2011). The burden of debt from informal sources and the exorbitant rates of interest on loans put borrowers in distress. Further, accumulated losses in huge amount lead to situations of agrarian distress and farming communities are prompted to take drastic steps like committing suicides. The incidence of farmer suicides is positively associated with borrowings of the households from informal sources of credit (Deshpande, 2002). Although the micro-finance sector enjoys competitive advantage over traditional sources of finance while lending to small and medium enterprises and agriculture sector, collateral is still a problem. To be financially sustainable, MFIs (Micro-finance institutions) in India have to go a long way. The micro-finance movement which started in Bangladesh in the year 1976 has made widespread presence across various regions in India and operates via two modes:

1. Self-help group –Bank linkage programs
2. Micro-finance institutions

The SHG –bank linkage program was started by NABARD in 1992, the borrowers are usually women. They work on the principle of promoting self savings to later offer them as loans of small chunks to group members. They get support from NGOs, SIDBI and NABARD. The micro-finance institutions in India work on the principle of joint liability groups which may be either formal or informal and works under the principle of mutual trust. Generally, the amount granted is very small. In India they

are registered as either of the following –NBFCs, mutually aided cooperative societies or NGOs.

Table 1 gives a snapshot of banking sector development in India. The number of commercial banks in India increased from 89 in 1969 to 151 in 2014. Since the initiation of nationalization process in mid 1950s, the banking sector has seen a significant improvement in terms of number of branches. The priority sector lending has been targeted at compulsory lending to those sectors which are otherwise left. Over the years, the scope of priority sector has changed and for the year 2014, it was set at 40 percent of adjusted net bank credit or credit equivalent off-balance sheet exposure, whichever is higher of the two.

Table 1
Selected indicators of banking sector outreach

<i>Indicators</i>	<i>June 1969</i>	<i>March 2004</i>	<i>March 2008</i>	<i>March 2014</i>
No. of commercial banks	89	291	175	151
Scheduled commercial banks*	73	286	171	146
RRBs	-	196	91	57
Non-SCBs	16	5	4	5
Deposits of SCBs (in INR Billion)	46.46	15422.84	31969.39	79134.43
Credit of SCBs (in INR billion)	35.99	8655.94	23619.14	61390.45
PSL by SCBs (in INR billion)	5.04	3113.35	8247.73	21549
Share of PSL in total credit of SCBs (in %)	14	37.1	34.9	35.1
Credit-deposit ratio	77.5	56.1	73.9	77.6
Cash-deposit ratio	8.2	5.6	8.6	5.4

Note: *excluding RRBs

Source: Basic statistical returns, Reserve Bank of India (various issues)

In rural India, about 70 percent small/marginal farmers do not possess even a bank account and of those having a bank account, just 13 percent make use of institutional credit (Basu and Srivastava, 2005). Further, the National Sample Survey Organization has reported that only 18 percent of the poorest households avail credit from formal sources (NSSO, 2006). Agricultural land holdings in India are fragmented with most of the farmers in the country being marginal and small with possession of limited resources. Table 2 presents a snapshot of proportion of rural population and agricultural households to total population. It can be seen that the proportion of farming communities is decreasing over the years and people are migrating towards other avenues which is an indication of non-viability of the sector. Natural calamities and other weather vagaries further add to it.

Table 2
Population proportion of rural and agricultural households

Year	Total population (in millions)	Rural population (in millions)	Cultivators & farm workers*	% of total population	% of rural population
1951	361.1	298.6	97.2	26.91	32.55
1961	439.2	360.3	131.1	29.84	36.35
1971	548.8	439.0	125.7	22.93	28.63
1981	683.3	523.9	148	21.66	28.24
1991	846.4	628.9	185.3	21.86	29.46
2001	1028.7	742.6	234.1	22.76	31.53
2011	1210.6	833.5	225.5	18.62	27.05

Note: *figures are in millions.

Source: Indiatat.com

Figure 1 shows the proportionate share of various institutional and non-institutional sources of credit to total rural credit in India across several decades after independence in 1947. The institutional sources include credit from commercial banks including regional rural banks, cooperative societies, post office and other formal lending agencies whereas non-institutional sources cover credit from informal sources like friends, relatives, large landholders, unregistered commission agents etc. The figure clearly indicates a sharp increase (from 14.8% to 29.2% of total) in the share of institutional credit to total rural credit during 1960 to 1970. The nationalization of major banks during the late 1960s and mandatory agricultural lending can be attributed as its principal cause (Kumar *et al.*, 2010). Despite the adoption of flexible norms in agricultural lending, a bias towards non-institutional sources of credit can be observed clearly in the last two decades.

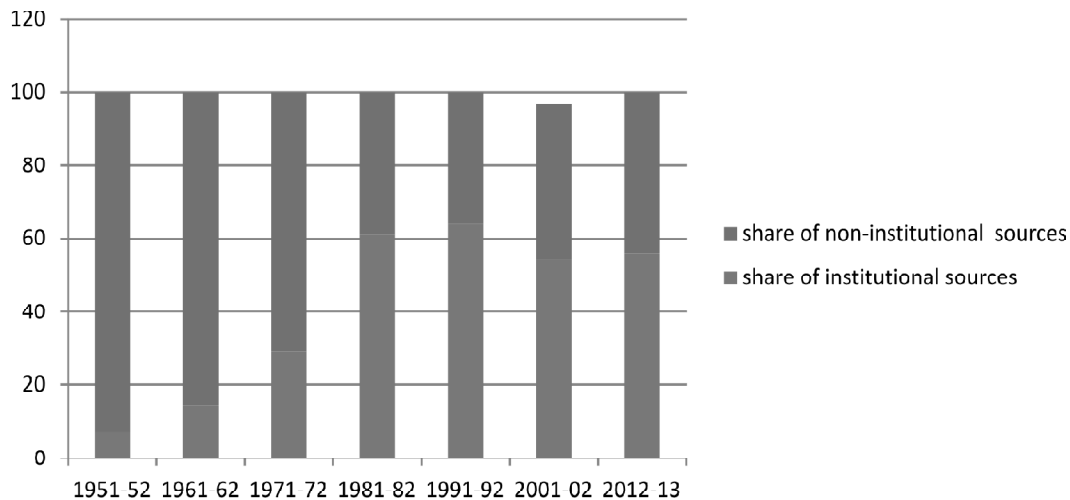


Figure 1: Share of institutional and non-institutional sources of credit in rural India

Source: CSO (several issues)

The major economic reforms in India which started in early 90s diverted the attention of Indian banking sector from agriculture sector to more profitable avenues. During this period, the growth rate of population outpaced the growth rate of bank branches and hence it promoted the increased use of non-institutional sources (Pal and Vaidya, 2011).

India is a diverse economy with distinct demographics in its population across distinct regions. There exist regional disparities across states with some of them more developed in terms of total productivity, per capita income than their other counterparts. In such case, the integrated development plan for the whole economy seems difficult to be implemented.

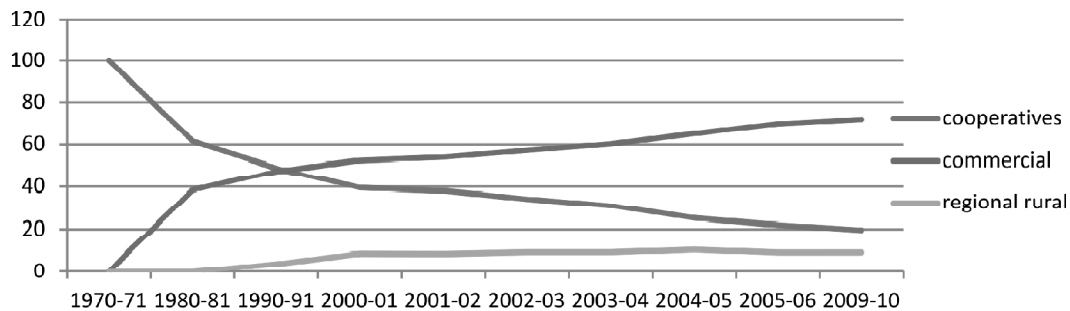


Figure 2: Share of cooperative, commercial and regional rural banks in India

Source: RBI, handbook of statistics on Indian economy (several issues)

Figure 2 depicts the share of cooperatives, commercial banks and regional rural banks in providing credit to agriculture and allied activities during the period 1970-71 to 2009-10. It can be observed that the share of cooperative banks has been declining over the years after the nationalization of the major banks. Das *et al.* (2006) assert that the failure of cooperatives can be attributed to factors like ineffective and poor management, political influence in functioning, tremendous growth in share of non-performing assets in their total assets and dual regulation. In India such banks have a big role to play especially by mobilizing the savings of middle class section and channelizing it towards weaker sections of the society. The regional rural banks in India were set up to improve the efficiency of rural credit markets. The growth of rural banks after their setup in 1975-76 has been steady but slow (Misra, 2006). This poor growth can be attributed to factors like heavy establishment expenses, lack of infrastructure, lack of technology, inability to compete with commercial banks in the region.

Roughly 70% of the Indian population lives in rural areas with agriculture as their primary activity. It is the main occupation of rural communities which are characterized by lower income levels, higher prevalence of poverty and illiteracy and comparatively lower development. About 52 percent of the farmer households in the country are

indebted, although there are disparities in the share of various states and out of the total indebted, about 60 percent of the farmers are indebted to institutional sources of credit (NSSO, 2014). Hence, the usage of financial services is limited especially in rural areas. Access to financial services does not necessarily mean they are used and therefore access and usage cannot be used interchangeably (Beck *et al.*, 2007). Therefore, financial inclusion needs to be studied as a multi-dimensional concept with the presence of several measures present in the literature to quantify it into a single number. In this context, keeping in the view the broad coverage of financial inclusion, this study employs eight parameters of access and usage to measure financial inclusion for India and its several states/UTs. Later, stepwise multiple regression has been used to identify contributory factors affecting low/high level of financial inclusion.

LITERATURE REVIEW

Literature is full of evidences on financial inclusion/exclusion in both developed and developing countries. Recent literature shows that a fair number of studies have been conducted in India and outside as well to quantify financial inclusion in index form. Sarma (2008) study financial inclusion for – a) 55 countries using three broad parameters of banking penetration, availability and usage of financial services b) 100 countries using the parameters of availability and usage, for the year 2004. While banking penetration was measured by number of bank accounts as percentage of total population of a country, the availability of banking services was measured by the number of bank branches available per 1000 people; whereas the dimension of usage was measured by the total of outstanding deposit and credit amount as percentage of country's GDP. In the group comprising 55 countries, Spain is found to be the top scorer on the composite index of financial inclusion with index value as high as 0.737, whereas Madagascar is found to be the least scorer with a value of 0.013. Further, in the group comprising 100 countries, Spain finds top rank with a value of 0.792 and Cambodia ranks least (100th) with a value of 0.015 on IFI. Bhanot *et al.* (2012) study financial inclusion in two states of north-east India; namely – Assam and Meghalaya with a sample size of 411 households. The study finds that out of total sampled households, only 18.32 percent are financially included (have a bank account) whereas mere 5.94 percent of sample households avail credit facilities of the formal financial system. The study views possession of a bank account as being financially included and employs binary logistics model to identify determinants of financial inclusion at the micro-level and documents that income of the household, source of information, distance, awareness of self-help group are significant variables which affect the outcome of being financially included/excluded. Additionally, the interaction of government benefits and area terrain is also statistically significant. Singh and Singh (2013) analyzed the growth and development of agriculture sector in India across various planning periods and argued that the farm subsidies are rational as long as they benefit small and large farmers of the society. Bose (1998) found that when borrowers are denied access to credit by formal financial institutions on account of being less credit-worthy,

they access informal moneylenders. Therefore, due to “composition effect”, the policy of providing cheap credit in the formal market can adversely affect the rates in the informal credit markets. The study done by Bhalla and Singh (2009) compared the performance of farm sector in India at state level for two different periods i.e., pre-reform period (1980-1990) and post-reform period (1990-2006) and found that crop yields in major states as well as total agricultural output decelerated post-reforms in the Indian economy. The liberalization that was meant to promote agriculture improvements failed to do so. Mohan (2006) found that the outreach of credit in the country had increased between the years 1951-52 to 2001-02 but lending to small and marginal farmers was inadequate in relation to its demand. They were unable to secure loans for long and medium term projects due to deficiencies in the legal framework and outdated tenancy records. Kumar *et al.* (2010) critically analyzed the performance of agriculture credit in the country after independence in 1947 and found that although the outreach of formal financial institutions had increased over the past decades but regional disparities and bias towards large landholders were also present. The study finds that at the micro level, age and gender of the household were significantly and positively associated with household’s decision to opt for formal source of credit. Additionally, years of schooling, size of the farm, and size of the household and main occupation of the household also influenced the household’s decision. Vasavi (2009) conducted a study to find out the factors responsible for agrarian distress and reasons for the spate of farmer suicides prevalent in the country. The study finds indebtedness as the primary cause of suicides among farmers. Arun and Kamath (2015) compare the status and performance of financial inclusion in three countries namely –India, South Africa and Australia. The study finds that in Australia, about 17 percent under-banked adults are not able to access safe, affordable and appropriate financial services like credit and insurance. In South Africa, financial exclusion increased from 23.4% in 2010 to 27% in 2011 whereas in India the usage of financial products in India is very low and the economic reforms of 1990 negatively impacted the growth rate of commercial bank branches in the country. Sarangi (2010) analyzed the trends in priority sector lending with special reference to agriculture credit in India. The study covered a large sample of 3.68 crores farmers from all over the country and reported a reversal trend in growth rate of bank branches after the implementation of economic reforms of 1990. Shehu (2012) argues that inclusive finance does not necessarily mean that everyone who is competent should “use” the financial services but be “able to use” them whenever they wish to. The aim of inclusive finance is –access to credit at reasonable cost, sound financial institutions, stability in the system, and presence of multiple financial service providers. Aggarwal and Klapper (2012) study the status of financial inclusion across several world economies and find that distance from a bank is the primary cause of financial exclusion. Lack of savings to open account, high cost of opening account, documentation and lack of confidence in financial institutions also influence the incidence of being financially included /excluded. The study suggests that in rural areas the branchless model is best suited to be viable for the banks whereas relaxation in documentation can best work for urban areas. Aportela (1998) assesses

the impact of increasing financial access on savings of low-income groups by employing the national surveys of income and expenditure in Mexico for the years 1992 and 1994 and finds that the incidence of savings is significantly affected by per member income of a family, gender of family head, education, occupation, number of young members in the family. The study finds that the increase in financial services has significant positive impact on low income households. Allen *et al.* (2012) employed dataset for 123 countries with a large sample of 124000 individuals to study factors affecting penetration of financial services. The study finds that lower account costs and greater proximity are associated with increased use of financial services. Also, those who belong to marginally backward groups of the society, are less educated, unemployed and belong to rural communities are more likely to report cost as a barrier to account ownership. Ahluwalia (2000) compares the economic performance of Indian states during pre and post reform periods. The study finds no association between a states' planned expenditure and its growth rate of state GDP. Additionally, poor governance and corruption are found to be major problems which make the government's inclusion programs less effective. Fiscal stress (measured by ratio of interest payments to total revenue) is found to be more severe in Orissa and Uttar Pradesh during the period 1981-1997. According to the study, huge inter-state differences exist in terms of development. Akhtar and Parveen (2014) compare the performance of Indian financial sector during pre and post reform periods and found that after 1990, the growth rate of banking outreach has reversed for rural areas. The major decline has been observed for north-eastern, eastern and central regions. Allen *et al.* (2012) study the trends and patterns in access to financial services in Kenya using country level and firm level data and find that population density is important for development of the banking sector in Africa. The study finds strong linkage between financial development and economic development. The financial development in Africa is found to be very low. Further, the determinants of banking sector development are found to be different from rest of the world.

DATA AND RESEARCH METHODOLOGY

Data

The data for this study has been collected from various secondary sources. Data on indicators of financial inclusion has been gathered from basic statistical returns of RBI which is an annual publication of RBI. Data on state-wise dimensions has been collected from Indiastat.com; data on number of micro-finance institutions has been collected from "Status of microfinance in India" which is an annual publication of NABARD. The following eight indicators of access and usage of financial services have been used:

1. Outreach of banking services

- 1.1. Geographic penetration of banks (bank branches per 1000 km²)
- 1.2. Demographic penetration of banks (bank branches per one lakh population)

- 1.3. Geographic penetration of ATMs (ATM availability per 1000 km²)
- 1.4. Demographic penetration of ATMs (ATM availability per one lakh population)
2. Usage of banking services
 - 2.1. Loan accounts per capita (number of loan accounts per 1000 population)
 - 2.2. Deposit accounts per capita (number of deposit account per 1000 population)
 - 2.3. Loan –income ratio (average size of loan to GDP per capita)
 - 2.4. Deposit –income ratio (average size of deposit to GDP per capita)

RESEARCH METHODOLOGY

This study has proposed an index of financial inclusion using above mentioned eight parameters. Following the same approach as followed by Sarma (2008), this study first calculates the dimension index for each individual dimension using the following formula:

$$D_i = \frac{A_i - m_i}{M_i - m_i} \text{ where } i = 1, 2, \dots \dots 8$$

A_i = actual value of dimension

m_i = minimum value of dimension i

M_i = maximum value of dimension i

It ensures normalization of dimensions such that $0 < D_i < 1$. The index of financial inclusion for a state/UT is given by the following formula:

$$IFI = 1 - \frac{\sqrt{(1-d_1)^2 + (1-d_2)^2 + \dots + (1-d_n)^2}}{\sqrt{n}}$$

RESULTS AND DISCUSSIONS

After deriving the scores of states/UTs on the index of financial inclusion, the next step is to rank all of these based on their relative position. Table 3 presents the index values and relative ranking of Indian states/UTs based on the composite IFI. The overall value of India on the index is 0.183 for the year 2014. Huge inter-state disparities can be observed with several states/UTs performing below the country average. Chandigarh and Delhi are the top performers with index values as high as 0.673 and 0.598. Table 4 presents the descriptive statistics of dimensions used to study financial inclusion. The categorization of states/UTs in India based on their score on the index of financial inclusion can be seen in Table 5 where majority of the states/UTs fall under the category of low financial inclusion.

Table 3
Scores of states/UTs on index of financial inclusion

<i>State/UT</i>	<i>Rank</i>	<i>Score on IFI</i>
Chandigarh	1	0.673
Delhi	2	0.598
Goa	3	0.332
Tamilnadu	4	0.284
Kerala	5	0.272
Maharashtra	6	0.260
Punjab	7	0.259
Karnataka	8	0.258
Pondicherry	9	0.233
Andhra Pradesh	10	0.218
Himachal Pradesh	11	0.207
Haryana	12	0.189
Uttarakhand	13	0.183
Jammu and Kashmir	14	0.174
Sikkim	15	0.161
Gujarat	16	0.142
Orissa	17	0.137
West Bengal	18	0.118
Meghalaya	19	0.114
Mizoram	20	0.113
Arunachal Pradesh	21	0.111
Tripura	22	0.102
Andaman Nicobar	23	0.101
Chhattisgarh	24	0.092
Uttar Pradesh	25	0.091
Madhya Pradesh	26	0.090
Jharkhand	27	0.088
Rajasthan	28	0.085
Assam	29	0.075
Bihar	30	0.049
Manipur	31	0.034
Nagaland	32	0.023
All-India	0.183	

Source: Author's own calculation

Table 4
Descriptive statistics of dimensions

<i>Dimension</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>
Access:				
Geographic bank penetration	1.53	3578.95	232.02	722.49
Demographic bank penetration	5.29	33.00	12.43	6.02
Geographic penetration of ATM	1.87	5315.79	403.52	293.68
Demographic penetration of ATM	4.77	45.48	16.84	9.56
Usage:				
Deposit accounts per capita	369.33	2524.20	1061.02	461.56
Credit accounts per capita	42.35	398.01	105.99	74.44
Credit income ratio	0.17	4.24	0.89	0.90
Deposit income ratio	0.56	3.53	1.40	0.68

Source: Author's own calculation

Table 5
Categorization of states/UTs on the basis of index values

<i>Index value</i>	<i>Category</i>	<i>States/UTs</i>
0 – 0.30	Low	Tamil Nadu, Kerala, Maharashtra, Punjab, Karnataka, Pondicherry, Andhra Pradesh, Himachal Pradesh, Haryana, Uttarakhand, J&K, Sikkim, Gujarat, Orissa, West Bengal, Meghalaya, Mizoram, Arunachal Pradesh, Tripura, A&N, Chhattisgarh, UP, MP, Jharkhand, Rajasthan, Assam, Bihar, Manipur, Nagaland
0.30 – 0.50	Moderate	Goa
0.50 – 1	High	Chandigarh, Delhi

Source: Author's own calculations

DETERMINANTS OF FINANCIAL INCLUSION

An index of financial inclusion has been proposed using eight parameters of access and usage of financial services covering 32 Indian states/UTs for the year 2014. Next, to determine which factors are responsible for high/low scores on the index, this study employs step-wise multiple regression analysis. The following seven factors were used to see their impact on state wise level of financial inclusion –number of KCC issued, state GDP per capita, share of agriculture sector to total state GDP, number of MFIs present in the state, number of factories, average population per branch and road availability per capita. Table 6 shows the stepwise regression results. Out of seven variables which entered in the model, factors most significant in determining variation in scores on index of financial inclusion are –number of KCCs issued, average population per branch, share of agriculture sector to total state GDP and number of MFIs present in the state.

Table 6
Results of stepwise regression model

<i>S.No.</i>	<i>Variable name</i>	<i>Coefficient</i>	<i>t value</i>	<i>Significance</i>
0	Intercept	—	-1.259	.219
1	No. of KCC issued	.609	8.421	.000*
2	Average population per branch	.283	4.103	.000*
3	Share of agriculture to state GDP -.278	-3.990	.000*	
4	Number of MFI	.172	2.411	.023**
	N	32		
	R ²	88.6 %		
	Total sum of squares	1.185		
	F value	52.606		
	Significance	.000		

* denotes significance at 1 and 5 percent respectively

The coefficient of number of KCC issued is positively related with financial inclusion, thereby implying that as the number of KCCs issued in the state/UT increases, the level of financial inclusion goes up. KCC scheme was started in India in the year 1998-99, since then they are widely used to offer credit facilities to farming

communities. The flow of agriculture credit through KCC was INR 730765 crores for the year 2014. In addition to being innovative instrument in institutional credit delivery, they have the advantage of being offered by all cooperative and commercial banks including regional rural banks. The KCC scheme in India has been successful to meet production requirements of large number of farmers. Issuance of more cards is positively associated with increased level of financial inclusion and leveraging on such scheme can foster the inclusion process of the economy in rural areas. The coefficient of share of agriculture credit is negative and significant. It means that with rise in share of agriculture credit in state GDP, the financial inclusion goes down. Notably it implies that as compared to other sectors, more population is employed in agriculture which is characterized by low income levels and prevalence of seasonal and disguised unemployment. The propensity to save in such communities is very low due to irregular incomes. Banks postulate such customers as highly risky and therefore temporize while lending to such communities to minimize their default risk (Ghosh, 2012). Hence, less financial inclusion is there. In such situation, it becomes important that banks be advised to strictly adhere to meet the targets under priority sector lending. Besides, agricultural crop insurance, provision of better marketing facilities to farming communities is likely to reduce the risks associated with agriculture sector. Next, the coefficient of average population per branch is positive. It means that as average population per branch goes up, the level of financial inclusion also goes up. It is more common in urban and metropolitan areas where banks can serve a large number of customers with existing resources and eventually the transaction cost of serving customers comes down. Alternatively, in rural and far flung areas, the average population per branch is comparatively lesser thereby making the transaction costs too high for the banks. This finding is supported by Kumar (2013). Lastly, the coefficient of number of MFIs present in the state is positively associated with the level of financial inclusion. More the number of MFIs in the state/UT, higher is the performance of state/UT on the index of financial inclusion. Similar results were reported by Karmakar *et al.* (2011). Micro-finance is spreading its roots in India. Besides being a mid-way between institutional and non-institutional sectors, micro-finance sector is also associated with providing non-financial services like education, vocational training to group members. Amidst rising concerns over issues such as sustainability and over-dependence on donations, micro-finance institutions have to go a long way to embark their presence in hitherto unreached sections of the economy.

CONCLUSION AND SCOPE FOR FUTURE RESEARCH

The recent literature suggests that possession of a bank account cannot be viewed as a proxy for financial inclusion unless the services of a financial system are used. Several previous studies like –Beck *et al.* (2007), Sarma (2008; 2012), Mehrotra *et al.* (2009), Pal and Vaidya (2011), Chattopadhyay (2011), Chakravarty and Pal (2013), Camara and Tuesta (2014), have proposed the construction of index to measure financial inclusion to capture information on several dimensions. Following the same lines, this study

has proposed a multi-dimensional index of financial inclusion for Indian states/UTs for the year 2014 using eight parameters of access and usage of financial services. The overall value of financial inclusion for India is 0.183, which is very low. Similar low levels of financial inclusion in India have been reported by Sarma (2008), Pal and Vaidya (2011), Mehrotra *et al.* (2009), Karmakar *et al.* (2011). Except Chandigarh, Goa and Delhi, all other Indian states/UTs score low on the index of financial inclusion. Manipur and Nagaland are least performing states with index values as low as 0.034 and 0.023, which is far lower than the country average. Regional disparities exist in the access and usage of financial services in India. Based on the results of this study, it can be concluded that financial inclusion in India remains very low. A vast population remains uncovered from the institutional framework of formal sector. In this light, it can be suggested that to make development process of the Indian economy sustainable, banking institutions need to put more efforts to promote financial inclusion as a part of their social responsibility. Following stepwise regression, the variables which are most significant determinants of financial inclusion are –number of KCCs issued, average population per branch, share of agriculture in total state GDP and number of micro-finance institutions present in the state.

LIMITATIONS

A few limitations of the study are –due to non-availability of data on several variables; only commercial banks have been included in the study. Further, a large number of variables are present in literature to identify access and use of financial services, the results can be improved by including more variables. Future research can be undertaken by including several other determinants of financial inclusion. Further, micro-level analysis can give a better picture of factors influencing individual choices for accessing a particular source of finance.

Acknowledgements

An earlier version of this paper was presented at 5th Annual International Conference on Sustainability, SUSCON 5, held at IIM Shillong, India during March 17-19, 2016.

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