Exploring the factors impacting financial inclusion: Evidence from South India

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Abstract

Achieving 100% financial inclusion is the main agenda of any successful government. Accordingly, Indian economic reforms show significant impact on the financial inclusion programme. Financial inclusion is the core agenda of the central banks, government and financial policymakers. The World Bank working paper published in 2012 indicated that 65% of adults in India which has a population of over 1.23 billion have no access to bank account. The World Bank also declared financial inclusion as one of the objectives of achieving universal financial access by 2020. Recently the government of india (GOI) has stated the national programme on financial inclusion, the "PradhanMantri Jan DhanYojana (PMJDY)". The objective of PMJDY is to bring the households into the formal banking system by providing them basic bank accounts, issuing the debit cards and provide accidental insurance coverage. This is evidence that financial inclusion has been recognised as a fundamental tool for inclusive economic growth and poverty alleviation. The present study is based on secondary data of various states of south India from 2010-2012 through Reserve Bank of India, Hand book of Statistics on the India Economy. The present study is based on exploring the factors that impact on financial inclusion. The study highlights that size of population, gender ratio, branch penetration and credit to deposit penetration ratio have a significant impact on enhancing financial inclusion programme in south Indian states.

Keywords: Economic reforms, literacy rate, branch penetration, gender ratio, credit penetration, deposit penetration, financial inclusion.

JEL Code: G2 & G21

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1. Introduction

Worldwide, 50 percent of adult population is isolated from formal banking services. The account penetration is almost nearly universal in high-income economies, with 89 percent of adult population reporting that they have an account at a formal financial institution. But it is only 41 percent in rising economies. Worldwide, more than 2.5 billion adults do not have formal bank account. Most of them belong to developing countries only and the difference in account ownership by individual distinctiveness is particularly large in developing countries. From a gender point of view 46 percent of men have formal bank account as compared to 37 percent of women (*Demirguc-Kunt, A and Klapper, L 2012*).

In case of India, 65 percent of adults had no access to a bank account and are hence unable to use financial services. In the present economic scenario, the issues relating to financial inclusion are of growing interest and one of the major socioeconomic challenges for policy makers, researchers, central banks, financial institutions and successive governments.

The World Bank's objective of achieving universal financial access by 2020 is an additional evidence to prove that financial inclusion had been recognised as essential for economic development and poverty alleviation. This is important because diverse theories and empirical support have shown that financial inclusion can have direct or indirect impact on poverty diminution mainly in two ways. It has an indirect influence through positive impact on growth and secondly, it has a direct impact if it causes reformation of the financial system in a way that widely increases access to financial services or makes credit accessible to the poor.

The Indian banking sector has shown unbelievable growth in volume and complication during the last few decades. Despite making significant growth in all the areas relating to financial capability, effectiveness and competitiveness, there are so many issues that banks have not been capable to include huge segment of the adult population, mostly the underprivileged segments of the society, into the fold of essential banking services. Globally also efforts are being made to study the causes of financial exclusion and designing strategies for providing guarantee financial inclusion of the poor and underprivileged. The reasons may differ from country to country and therefore the strategy could also be different but all out efforts are being made as financial inclusion can really boost the financial situation and living standards of the poor and the underprivileged *(Leeladhar.V,2005*).

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The government of India (GOI), Reserve Bank of India (RBI) and financial institutions have been taking proactive actions for providing formal banking services to vast section of people in India. Recently the government of India (GOI), has launched the 'Pradhan Mantri Jan DhanYojana' (PMJDY), with a purpose of removing financial untouchability and providing universal access to banking services with at least one necessary banking account for every family, financial literacy, right to use to credit, insurance and pension by providing formal banking services to the poor. The scheme has some determined targets, such as to provide a bank account to every household within 12 months. Every household person opening an account would also be given individual accident insurance of Rs. 1,00,000/- as well as life insurance of Rs.30,000 (and an overdraft facility of Rs. 5,000 after six months of opening of the bank account).

The scheme was launched on 28th August, 2014 with 1.5 crore new accounts being opened on a single day. Initially, the government set a target to open bank accounts for 7.5 core households by 26th January, 2015. But nearly 8.0 crore accounts have been opened by October, 2014 and the government changed that target to 10.0 crore bank accounts by 26th January, 2015. As against the target of 10.0 crore, PMJDY scheme was successful in creating 12.5 crore bank accounts by 31st January, 2015. The number of bank accounts opened through PMJDY initiative had crossed the 20.0 crore mark by 20th January, 2016 as can be observed from Table1.

Table 1: Status of PMJDY Scheme on 20th January, 2016 (figures in crores)

Financial Institution	Rural	Urban	Total	% of Zero-balance Accounts
Public Sector Bank	8.91	7.10	16.01	31.78
Regional Rural Bank	3.12	0.51	3.63	26.24
Private Banks	0.45	0.30	0.74	39.80
Total	12.47	7.91	20.38	31.09

Source: (http://www.pmjdy.gov.in/account; accessed on 24th January, 2016)

2. Financial Inclusion

Financial inclusion is delivery of banking services at a reasonable cost to the huge sections of underprivileged and low income groups. It ensures that a range of proper financial services are available to every individual and that the individual understands and accesses those services.

This includes a basic, no-frills banking account for making and receiving payments, a savings product appropriate to the cash flows to poor households, money transfer facilities, small amount of loans and overdrafts, and insurance (life and non-life) facilities.

Definition of Financial Inclusion

A. **In 2008**, a committee on financial inclusion headed by **Dr C Rangarajan** defined financial inclusion as, “The process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost".

B. **Prof Raghuram Rajan’s** committee on financial sector reforms defined financial inclusion as, “Expanding access to financial services, such as payment services, savings products, insurance products, and inflation protected pensions”.

C. **CRISIL** defines financial inclusion as “The extent of access by all sections of society to formal financial services, such as credit, deposit, insurance, and pension services”.

The role of sound financial system depends on access to reasonable rate of financial services, mainly credit and insurance services, which help to boost livelihood opportunities and empowers the poor to take charge of their lives. Such empowerment helps social and political constancy. Apart from these benefits, financial inclusion imparts formal uniqueness and provides access to the payments system and to savings protection net like deposit insurance. Hence financial inclusion is measured to be critical for achieving comprehensive economic growth, which itself is required for ensuring largely sustainable economic growth in the country (*Thorat.U, 2007*).

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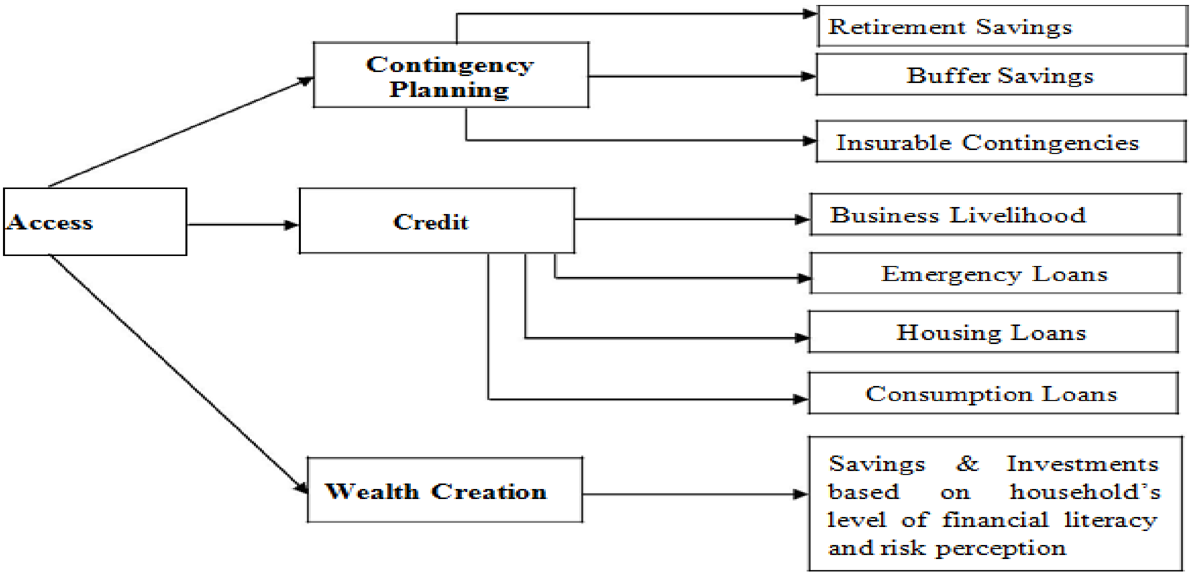
Figure 1: Household Access to Financial Services



Source: *A hundred Small Steps report of the Committee on Financial Sector Reforms*

3. Review of Literature

Bhanot et al (2012) studied the phenomenon of financial inclusion in two-states (Assam and Meghalaya) in north-east India. The authors have attempted to explore the various factors which are critical for determining financial inclusion in remote areas of India. The study concluded that financial inclusion in these remote areas of India was very low. Income levels, awareness regarding financial products through various sources, information about Self Help Groups (SHGs) and education levels of the respondents were concluded to be influential in determining financial inclusion. It was also found that nearness to financial institutions like banks and post offices increases financial inclusion. Other factors like area terrain and government support were not found to be influencing financial inclusion but government support in plain areas was found to have an influence on financial inclusion.

Gupte et al (2012) identified key factors which measure the financial inclusion index in Indian context. The authors used four critical dimensions for calculating financial inclusion index. Outreach dimension (geographic branch penetration; geographic ATM penetration; number of accounts; deposits & loans per 1000 adults), the usage dimension (volume of deposits and loans), ease of transaction dimension and cost of transaction dimension (annual fees charged to

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bank customer for ATM card usage or the cost included for international transfer of money) were found to be determinants of computation of financial inclusion in India. It was found that geographic branch outreach penetration and ATM penetration played an important role in enhancing financial inclusion in India context.

A study by **Kumar (2013)** examined the status of financial inclusion and provided the evidence of its determinants. The study found that branch network has a major impact on financial inclusion. Proportion of factories and employee base factors are important key determinants of penetration for financial inclusion index. It was found that a region's socio-economic and environmental association had a significant influence on shaping banking practices of masses in India. It was also found that spreading out branch net work had a considerable impact on financial inclusion.

Kohli (2013) highlighted the factors which significantly enhance financial inclusion in India. The author identified relationship between financial inclusion and levels of human development in India. Socio-economic factors, income levels among individuals were found to be influential factors on the level of financial inclusion in India. On the other hand, technology and education about the banking services were also found have a significant impact on financial inclusion in India.

Mendoza (2009) examined the factors which influenced enhancing financial inclusion outreach in state of Madhya Pradesh in India. The author has observed that micro finance was a significant tool for enhancing financial inclusion in the state of Madhya Pradesh. It was found that microfinance institutions (MFIs) and non-governmental organizations were the key factors to enhancing financial inclusion in rural areas of Madhya Pradesh.

Chakravarty and Pal (2013) concluded that geographic penetration of branch network and credit penetration were two major strategies to promote financial inclusion in India. It was found that the social-banking policy has played a vital role to promote financial inclusion across states in India during 1977-1990. Later, the move in the direction of pro-market financial sectors restructuring has adversely affected the pace of financial inclusion. It was also highlighted that India could have achieved higher level of financial inclusion during the last two decades. The level of financial inclusion was found to be significantly influenced by economic development of regions, where as agriculture and allied activities were negatively

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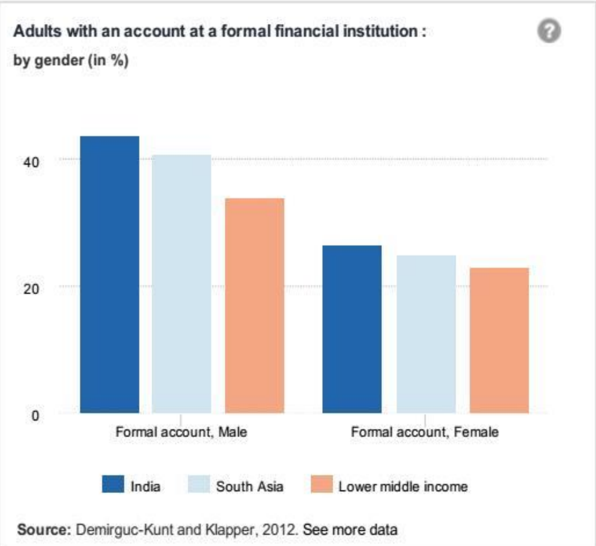
associated with financial inclusion in India.

4. Status of Financial Inclusion in India:

In India, financial inclusion is not a new dispensation. With the intention of increasing the banking services and increasing the credit, banks were nationalised in 1969. However, despite large efforts, a vast section of population (about 65 percent of adult population) has remained isolated from the advantages offered by the organised financial sector. Cognizant of the necessity for financial inclusion in India, the Reserve Bank of India (RBI) has been positive in trying to introduce multiple measures of financial inclusion into the Indian financial institutions. In 2005, RBI prepared guidelines to enhance outreach of banking services. RBI introduced Business Facilitator and Business Correspondent model (BC) with information and communication technology support.

In addition to pursuing its mission towards financial inclusion, RBI set up a committee on 'effective financial access to low income households and micro business entrepreneurs', headed by Nachiket Mor in September 2013. The committee has determined the target of providing every adult in India with access to appropriate financial services by 2016. This plan is hoped to be linked with Aadhaar card information. The committee has also recommended the setting up of 'Payment Banks', a new type of banks, dedicated to enhance financial inclusion.

Figure 2: Adult population with an account at formal financial institutions by gender ratio and literacy ratio



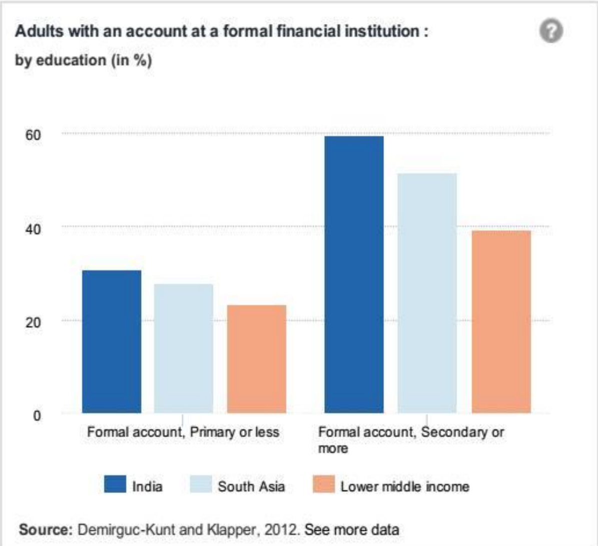


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Figure 2 indicates that the adult population that have an account at formal financial institutions. The financial inclusion status in terms of gender and literacy ratio is shown in Figure 2. It is noted that only 46 per cent male adults have bank account as against 37 per cent women population. It is very high in India in comparison to other South Asian nations. Similarly, India has a higher financial inclusion status with respect to the literary ratio indicating that higher literacy ratio leads to greater financial inclusion.

Table 2: Selected Indicators of Financial Inclusion- Cross Country Comparison

Country	Number of Branches (per 1 lakh adults)	Number of ATM's (Per 1 lakh adults)	Bank loans as per cent of GDP	Bank deposit as per cent of GDP
India	**10.64**	**8.90**	**51.75**	**68.43**
Australia	29.61	166.92	128.75	107.10
Brazil	46.15	119.63	40.28	53.26
France	41.58	109.80	42.85	34.77
Mexico	14.86	45.77	18.81	22.65
United States	35.43	-	46.83	57.78
Korea	18.80	-	90.65	80.82
Philippines	8.07	17.70	21.39	41.93

Source: Report on Trend & Progress of Banking in India, Reserve Bank of India 2011-12

Table 2 presents a summary of selected financial indicators for various important economies of the world. It is noted that in terms of branch penetration Brazil ranks the highest while India ranks as the second lowest in terms of branch penetration. India also ranks poorly in terms of ATM penetration.

5. Objectives of the Study:

The main objective of the study is to identify the determinants of financial inclusion by providing evidential support for South Indian states by using Index of Financial Inclusion (IFI).

6. Research Methodology and Data Source and Variables:

6.1 Research Methodology:

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The study uses multiple regression analysis to examine the determinants of financial inclusion for the states in South India. The regression model is shown as follows.

$$finan\_inclu = \alpha + \beta_1 POP_i + \beta_2 GR_i + \beta_3 BP_i + \beta_4 DCPR_i + \beta_5 LR_i + \varepsilon_i$$

Where finan_inclu denotes the financial inclusion as dependent variable derived from Crisil Inclusix (2013), and other explanatory variables are Population (POP), Gender Ratio (GR), Brach Penetration (BP), Deposit to Credit Penetration Ratio (DCPR) and Literacy Ratio (LR). The data has been considered from Census, 2011 data and Reserve Bank of India Statistics on the Indian Economy.

6.2 Data source: This paper used secondary data of various states in India from 2010-2012 through RBI's, Hand book of Statistics on the India Economy.

6.3 Evidential Support of Variables

Sharma (2008) attempted to study on "index of financial inclusion" and considered three basic dimensions of Index of financial inclusion for an inclusive financial system.

1) Bank Penetration (indicated by people having number of bank accounts)
2) Availability of Banking services and (indicated by the number of bank employees per customer)
3) Usage of banking system(indicated by volume of credit and deposit proportion)

Gupte et al., (2012) in their study on "Computation of financial inclusion index for India" as a geometric mean of four different dimensions.

1. The Outreach Dimension (measured by Branch penetration, ATM penetration, and number of accounts).
2. The usage Dimension (indicated by the volume of Deposits and loans as a percentage of GDP).
3. The Ease of Transactions Dimension (measured by the number of locations to open Deposit or loan accounts and affordability of deposit or loan accounts)
4. The Cost of transactions Dimension (indicated by annual fees charged to customers for ATM usage or cost of money transfer and other remittances are involved)

Arora (2012) studied on "measuring financial access" has considered three variables.

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1. Physical access or Outreach Dimension (Measured by Branch penetration and ATM penetration
2. Ease of Transaction Dimension (measured by location to open bank account, the number of documents required to open bank account)
3. Cost of transaction Dimension (measured by bank charges to customer for access banking services)

Rahman (2013) attempted to construct "Developing a financial inclusion index". In her study considered four indicators to construct index of financial inclusion namely

1. Convenient accessibility (measured by availability of access points, such as bank branch penetration and no. of ATM's in a given area)
2. Take- up rate of financial products (measured by the number of the adult population with a bank account over the total number of the adult population and the number of the adult population with life insurance policies)
3. Responsible usage (considered two basic banking services (deposit and credit) measured by using indicators on percentage of customers with active deposits and percentage of customers with performing financial accounts)
4. Satisfaction level (measured by the percentage of customers who are satisfied with overall financial services provided by financial institutions)

Yorulmaz (2013) studied "Construction of a regional financial inclusion index in turkey". In this study to construct financial inclusion index he followed method suggested by Sarma (2008) and considered same three basic dimensions namely.

1. Banking penetration
2. Availability of the banking services and
3. Usage of the banking system

Crisil Inclusix (2014) an index to measure India's progress on Financial Inclusion based on three tangible and critical dimensions.

a) Branch penetration
b) Credit penetration

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c) Deposit penetration

Demirguc-Kunt and Klapper (2012) “measuring financial inclusion” the global findex database. In this study they used four indicators for measuring financial inclusion.

1. The mechanics of the use of formal accounts (measured by frequency of use, mode of access) and the purpose of these (personal or business ,receipt of payments from work , government , or family) The account penetration (measured by individual or joint ownership of formal accounts such as a bank , credit union, co-operative , post office or micro finance institutions)The receipt of payments measure (measured by payments or money from the government and family remittances- money from family members living elsewhere)

2. Focuses on savings behaviour(measured by the use of accounts , as people often save at formal financial institutions)

3. Focuses on sources of borrowings (formal and informal);purposes of borrowing (mortgage, emergency or health purposes, and the like); and use of credit cards

4. focuses on use of insurance products for health care and agriculture

Amidzic et al, (2014) studied “assessing countries financial inclusion standing - a new composite index”. Three important indicators are used in this study.

1. The outreach dimension (measured by using geographic or demographic penetration indicators-AMT’s and branches per land mass)

2. The usage dimension (measured by the percentage of adults with at least one type of regulated deposit account and the percentage of adults with at least one type of regulated loan account)

3. The quality dimension (measured by financial literacy, disclosure requirements, dispute resolution)

4. The cost of usage dimension

Table 3 gives an overview of various variables used in the earlier studies on financial inclusion.

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Table 3: Various variables used in construction of Financial Inclusion Index by various researchers

Sr. No	Authors	Variables Used
1	Sarma (2008)	1) Bank Penetration, 2) Availability of Banking Services and 3) Usage of Banking System
2	Gupte et al., (2012)	1) The Outreach Dimension 2) The usage Dimension 3) The Ease of Transactions Dimension and 4) The Cost of transactions Dimension
3	Arora (2012)	1) Outreach Dimension 2) Ease of Transaction Dimension and 3) Cost of transaction Dimension
4	Rahman (2013)	1) Convenient accessibility 2) Take- up rate of financial products 3) Responsible usage and 4) Satisfaction level
5	Yorulmaz (2013)	1) Banking penetration 2) Availability of Banking Services and 3) Usage of Banking System
6	Crisil Inclusix (2014)	1) Branch penetration 2) Credit penetration 3) Deposit penetration
7	Demirguc-Kunt and Klapper (2012)	1) The mechanics of the use of formal accounts 2) Focuses on savings behavior 3) Focuses on sources of borrowings and 4) Focuses on use of insurance products
8	Amidzic et al, (2014)	1) The outreach dimension, 2) The usage dimension 3) The quality dimension and 4) The cost of usage dimension

Source: compiled by Authors

Financial Inclusion Index as calculated by CRISIL for different states in India was considered as the dependent variable. Based on evidence from previous studies, we consider five important determinants of financial inclusion: evidence from South Indian States.

1. Branch Penetration
2. Size of Population
3. Gender Ratio
4. Deposit to Credit Penetration Ratio
5. Literacy Rate

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7. Results and Discussion

Results from regression analysis indicate that among all the independent variables, Population size, gender ratio, branch penetration, and Deposit to credit penetration ratio show significant impact on financial inclusion for Indian states. Table 4 presents the regression results.

Table 4: Regression Results

Variable	**Co-efficient**	**t-value**	**VIF**
C	194.869	16.625***	
Population	0.0000	-2.170**	1.481
Gender Ratio	-140.651	-12.072***	1.178
Branch Penetration	0.032	5.129***	5.164
Deposit to Credit Penetration	1.357	3.156**	1.119
Literacy Rate	0.0000	-0.027	4.553
R^2	0.490		
Adjusted R^2	0.482		
F- value	60.553		

*Note:**** Significant at P< 0.001%; ** Significant at P<0.05% *Source: Author's calculations*

8. Conclusion

Financial inclusion has recently been recognised as an important policy option aimed at poverty alleviation, minimizing social exclusion and enhancing inclusive economic growth. Recently the government of India (GOI), has launched financial inclusion programme in the name of 'Pradhan Mantri Jan Dhan Yojana' (PMJDY), with the aim of removing financial untouchability and an intention of universal access to banking facilities with at least one basic banking account for every household. This is evidence that financial inclusion has been recognised as an important tool for inclusive growth. The main objective of this paper is determinants of financial inclusion in South Indian States. Population size, gender ratio, branch penetration, and Deposit to credit penetration ratio show significant impact on financial inclusion in South Indian states.

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