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[Cashless Economy and Index of Financial Inclusion in India]

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The cashless economy is one which do not make use of traditional form of money viz. Coins and rupees .In cashless economy financial transactions are done through the transfer of money through electronic devices between the transacting parties by mobile wallet by using smart phones. It is easy to operate and is useful in depositing and crediting monetary transactions within few seconds even in holidays. Sweden is the most cashless society in the World with only one percent of physical payments. In India at present 5% of all payments are done electronically .In India we use plenty of cash for transactions. The ratio of cash to GDP is very high in India .With the rapid advancement in the banking sector the use of digital money or plastic money is increasing day by day. People today use it in various forms like credit card, debit card. Paytm. Bhim app and other net banking instruments .All these types of monetary transactions are necessary for rapid economic development. All these monetary instruments have generated cashless economy in the advanced countries whereas in Indian economy under the influential leadership of PM Shri Narendra Kumar Modi we are moving fast in the direction of cashless economy. RBI, commercialized banks, and private banks are offering various types of cashless transactions by electronic banking services. These instructions are reliable and fast and protect people from dangers of taking money from one area to another .Major problem in cashless transactions is financial exclusion of high percentage of Indian people .Until and unless people are financially included in the banking sector development the goal of cashless economy will not be achieved. The main objective of this research article is to discuss the gravity of the problem of financial inclusion in India.

The financial sector in India has paid attention on financial inclusion especially to the weaker sections of society by more geographical coverage by financial institutions, socio-economic coverage of deprived groups, broadening various types of financial products and services and providing various types of financial opportunities so that financial system is more dynamic and is easily accessible. The major objective of this research article is to discuss the extent of financial inclusion by its measurement in terms of an index. This index is called 'Index of Financial Inclusion'. This index was used by Prof. Conrad by using ten indicators of banking sector out reach or financial inclusion .The methodology employed for index of financial inclusion is same as of 'Human Development Index or 'Gender Development Index'.

Few studies are notable in this direction Beck T. and Demirguc-kunt. A and Mastinez Peria, M. S. in a world bank study in 2006 on the topic 'Reaching out: Access and use of Banking Services Across Countries' measured index of financial inclusion. Claessens, S. also done a remarkable work in the World Bank Research Observer 21(2) 207-240 on the topic 'Access to Financial Services: A Review of the Issues and Public Policy Objectives in the year 2006. Honohan P. also wrote an interesting article in the edited book 'Financial Development and Economic Growth' explaining the links' from Palarave Publication. London. Similar study was conducted by Conrad A. D. on the topic "Geographic and Demographic Bank out reach :Evidence from Germany's Three – Pillar

Banking system, University of Rostock working paper 98 in the 2008. It was a very useful study where 10 indicators of financial inclusion was taken together to compute the index of financial inclusion. These were proxy indicators of financial inclusion or banking sector outreach.

According the RBI "Report on Trend and Progress of Banking in India in 2006" a remarkable progress has been made after nationalization but even after all this a sizable portion of the population of our country could not be brought under the coverage of the banking system especially the poors were the mostly excluded groups. Feeling the gravity of the problem of financial inclusion RBI in its Mid-term Review of monetary policy (2005-06) urged the Indian banks to make financial inclusion as on of their prime objectives. RBI realized that there is a severe gap in financial access which demand special attention. This lack of financial inclusion results in loss of GDP.

World Bank has also conducted an evaluation study on this subject (financial inclusion) for Rural India and found that (a) About 40% of households have deposit accounts (b) 20% have outstanding loans and (c) only 15% have any insurance.

Brief Review on Banking Sector Growth in India:

The financial sector in India was largely neglecting the rural areas before nationalization of banks. The number of bank branches and banking facilities were almost lacking. After nationalization the banking sector get momentum and a number of schemes including lead bank scheme, priority sector lending, and loans to weaker sections under various liberal financing schemes were launched. In 1975 Regional Rural Banks were introduced with support from lead bank. These banks opened branches in large number in rural areas or semi urban areas across the country and even in the areas which were hither to neglected. These banks offered wide varieties of financial services to weaker sections of society in rural areas and tried to include poor under various schemes of RBI/NABARD/Govt. of India. The progress of commercial banks, RRBs and Cooperatives is depicted in table no-01

RBI has a very dynamic and historic branch expansion programme during last 40 years. As a result huge banking infrastructure in the form of commercial banks, cooperative banks and RRBs has been developed. This large not work of banks has been able to serve in remote and backward rural areas and to the weaker sections of society.

Indicators of financial inclusion-

Conrad used ten proxy indicators of financial inclusion or banking sector outreach. These indicators are used to analyse the a- banking penetration b- availability of the banking services and c- usage dimension of banking sector. These ten indicators are proxy indicators to assess the financial inclusion. The details of these indicators of financial inclusion is given below:

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 km^2
(iii) Demographic branch penetration	Number of branches per 1,00,000 people
(iv) Geographic ATM penetration	Number of bank ATMs per 1000 km^2
(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-GDP Ratio)	Average size of Deposits to GDP per capita (or total bank deposits to GDP)
(x) Cash-Deposit Ratio	Cash in circulation to total bank deposits
Source: Conrad, et al. (2008).	

These ten indicators taken together show a good picture of the extent of financial inclusion, but when these indicators are studied separately they provide only partial information on the inclusiveness of the financial system of the economy. Using a single indicator or a set of two or three indicators always presents a misleading picture of the extent of the financial inclusion of the economy.

The concept of financial inclusion- The essence of financial inclusion is that wide varieties of financial services are made easily available to each and every individual who make use of it properly. The term financial inclusion is meant to include all the sections of society whether rich or poor and especially those who are excluded from the net of financial institutions. Therefore it means that banking services should be provided to all the households of the country. The term financial inclusion does not mean merely opening of saving accounts but develop awareness of the people about the financial services. It develops the banking habits of the people. Financial inclusion in broad sense is not only access to banking services but depth of banking services across the country. The extent of financial inclusion can be measured by the index of financial inclusion by making use of several proxy indicators.

The index of financial inclusion came in India on account of slow progress of our banking system and inability to cover mass weaker sections of society. This outreach of banking sector has resuted in financial exclusion which is counter part of the term financial inclusion. Financial exclusion stresses the need for financial inclusion. Financial exclusion can be defined as lack of access of financial services or products by certain segment of society. So it demand a suitable low cost fair and safe financial product and services form main stream providers viz.. institutional sources. Financial exclusion can be caused by variety of factors such as..

a- Geographical limitations to provide banking services due to remote area or hill area.

b- Socio-economic limitations such as unwillingness, inaccessibility to specify income or socio group and

c- Limitations of opportunity when projects are not profitable or approachable due to lack of information, and lack of collaterals.

In fact the main reasons for financial inclusion from the demand side are:

a- Lacks of awareness
b- Low income and poverty.
c- Illiteracy
d- Unviable projects

And from the supply side are

a- Distance from bank branches.
b- Branch timings.
c- Difficult documentation procedure.
d- Language problem
e- Staff attitudes.

Methodology: The index of financial inclusion can be obtained for various states and a country. These are called state-wise index of financial inclusion. The for calculation of index of financial inclusion is –

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

Where d is the index for the i th dimension.

Thus it is a multi dimensional approach where first obtain values d1, d2, ---------------- di--------------- dn for each dimension and after it me calculate the IFI.

Prof. Conrad adopted three dimensional methodologies for calculation of IFI for an inclusive financial system. The three dimensions were banking penetration, availability of the banking services and usage of the banking system.

Banking Penetration- Banking penetration is one of the more important indicators of financial inclusion. It measures the effectiveness of the system in providing banking services that is how much areas are covered by financial system. For the measurement of banking penetration three indicators are used:

a- The number of bank account as proportion to the adult population.
b- Number of deposit accounts.
c- Number of Credit or loans accounts.

This loan account is considered to take care of the demand side of financial inclusion. All these three indicators taken together represent the penetration power of the financial system and is denoted by d_1.

Availability of the Banking System- The availability of the Banking System are measured by a set of indicators which explain the easy access to the formal banking system. It represents dimensions of an inclusive financial system. The availability dimensions can be measured by a- the number of branches per sq.km. b the number of bank branches per 1000 adult population and c- The number of ATM per lakh population. It takes care of supply side of financial inclusion and is denoted by d_2.

Usage Dimension:- Sometimes people open the bank account and does not properly use bank account or the other services of bank. Thus merely having a bank account does not ensure that the system is inclusive, it is also imperative. For it be can consider to important basic services of the banking system- outstanding credit and deposit as proportion to net income of that region.

If people approaches more towards bank for saving/loan account. They are called better customers but it they do not make use of banking services they are called under banked or marginally banked people. This dimension is measured by following three indicators and is denoted by d3

a- Out standing credit as proportion to the net income of the region.
b- Deposits
c- Credit-deposit ratio

After calculating these three dimensions the index of financial inclusion (IFI) is computed. The methodology for calculating it is the same as that of human development index (HDI). The dimension of index for the I th dimension is calculated by the following formula:

$$d_i = \frac{A_i - m_i}{M_i - m_i}$$

Where Ai = Actual Value of dimension i

mi = minimum Value of dimension i

Mi= maximum Value of dimension i

Application of Methodology –

Since the initiatives on financial inclusion in India were taken during 2005-06, we have computed the index from 2006-07 till 2009-10. First we have computed the index for 23 states of India along with all-India average.

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

Depending on the values of IFI, states and districts 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

Table 2: State-wise Index of Financial Inclusion

State	D1 (Penetration)	D2 (Availability)	D3 (Usage)	IFI	IFI Rank
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

Note: Author's own calculations based on Trends and progress of Banking in India-RBI

Financial inclusion and Poverty

The term financial inclusion and poverty is interlinked. Proper development of banking sector and its access to mass people is very important for maintaining high growth rate. Under financial inclusion neglected sectors and weaker sections of society are concerned by institutional sectors so poor people gets easy support from various programmes of financial institutions. The lack of financial institutions inclusion will encourage dependency on non- financial institutions viz. Money lenders etc. Financial Institutions help poor to increase their income level, employment level, social status, productivity etc. thereby their level of indebtedness is reduced and they are encouraged to take productive business activities. This financial inclusion not only helps in eradication of poverty but also in sustaining high growth rates. Under financial inclusion all the people of our society are covered under financial inclusion all the people of our society are covered under umbrella of institutional finance. Easy access to finance is very helpful in eradication of poverty. Thus by financial inclusion the benefits of growth percolate to the weaker sections of society and majority of population feels benefits of high growth. In India after 1980's on account of number of poverty eradication programmes and branch expansion programmes the poverty rates has reduced remarkably. But the problem of poverty has not been effectively solved by it. Still a large number of people are not familiar with banking services. Though there is improvement in the parameters of financial inclusion but it is still not significant as compared to developed nations. Despite huge branch expansion programmes, increase in deposits, increase in liberal financing the parameters of financial inclusion are not showing satisfactory progress. Both demand side and supply side factors are responsible for low financial inclusion. On account of poverty, illiteracy, poor, social status, traditional attitudes, distance from bank branches, rigid behavior of branch officials the demand for financial inclusion is badly affected in rural areas. Awareness for banking services in rural areas is important aspect for financial inclusion. Besides it the banks should also concentrate on financial inclusion both as a business opportunity and as a social responsibility. NGO's can play a vital role in financial inclusion and development of awareness amongst poor. The role of self-help groups and micro financial institutions is very important to improve financial institutions provide cheap, easy and accessible finance besides marketing and training support, thereby these can be very useful is micro finance and poverty alleviation. They are required to operate viable projects according to the suitability of the region. While framing polices for financial inclusion the risk elements of weaker sections such as small farmers, marginal farmers, small businessmen/entrepreneurs and landless labourers should be taken into account.

On the supply side the services of financial institutions and their products are very important. Many people especially the poors are not aware to the banking products/services as such they are ignorant to the banking facilities. Therefore financial literacy among people is very important aspect. In this regard banking correspondent model can be more effective for involving a large no. of local people. Proper business correspondent can take care of problems of demand and supply in financial inclusion. Business correspondent should be local people who will help them regarding banking formalities and benefits of banking.

In India though there is improvement in the parameters of financial inclusion but it is still not satisfactory as compared to developed nations. Our efforts of sustained high growth and poverty alleviation can be obtained only when we obtain significant level of financial inclusion as majority of population will obtain benefits of high growth.

The index of financial inclusion suggest that India has a long way to go for cashless economy. After demonetisation we are adopting digital modes of payment but cash will continue to coexist in the Indian economy. It is hoped that in near future India will be cashless economy

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