A Study On Measuring Index Of Financial Inclusion (IFI) In The District Of Purba Bardhaman, West Bengal

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Abstract

After partly successful implementation of the poverty alleviation program in India, Central Government has focused on Inclusive growth with the aim that entire society of the country will grow equally, not giving any special emphasis on any caste, creed, gender, religion, etc. through Financial Inclusion. Financial Inclusion represents the delivery of banking services to the common people, principally to the underprivileged and disadvantaged people at an affordable cost. The banking sector can play a crucial role in the development of the primary sector of the Indian economy basically concentrated in the rural part of the country by way of opening the bank outlets and ATM counters in the rural areas. The banking sector can improve the rural part of the country through opening savings accounts of masses, protecting rural people from rural money lenders by giving easy credit, and ensuring the rural people.

To quantify the Financial Inclusion, Index of Financial Inclusion (IFI) is one of the important measures in India. In this study, it has been observed that the Index of Financial Inclusion of Purba Barddhaman district is 0.44. That means, the status of Financial Inclusion is in the medium range as fixed by Sri Sadhan Kumar Chattopadhyay (2011). This level can only be achieved by the successful organization of Financial Literacy Camps by DLBC, RBI, NABARD, and Burdwan Central Co-operative Bank Ltd. and a huge opening of savings account under Pradhan Mantri Jan Dhan Yojana.

Key Words: Financial Inclusion, Index of Financial Inclusion.

1. Introduction

"Financial inclusion may be defined 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" (Rangarajan, 2008). "Financial inclusion can be broadly defined as access to a wide range of financial services at a reasonable cost. These include not only banking products but also other financial services such as insurance and equity products" (Rajan, 2009).

Reachability of financial services at affordable costs to all individuals and trades & businesses, without concern of net worth and volume of the business and trade, financial

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inclusion tries to solve the constraints that ignore individuals from joining in the formal financial sector of the country. It has been observed that level of financial inclusion is directly correlated with GDP growth and inversely related to income inequality i.e. higher the level of financial inclusion implies higher the level of GDP growth and lower the level of income inequality (Demirguc-Kunt et al. 2017).

As per Global Findex (2014), 62% of adults globally stated having bank accounts. In India, this was only 53% which was much lower than the global average. But through Pradhan Mantri Jan Dhan Yojana (PMJDY), India Government pushed the percentage to 80% in 2017 (as per Global Findex Report, 2017). As per the progress report of Pradhan Mantri Jan Dhan Yojana (PMJDY), 38.23 Crore accounts have been opened under the scheme with a deposit of Rs. 133564.23 Crore as on 15/04/2020. Out of which 59.30% of beneficiaries i.e. 22.67 Crore has belong to rural and semi-urban areas and 54.20% of beneficiaries i.e. 20.72 Crore are women. This implies miles to go to achieve the target of total financial inclusion in India.

The researchers have discussed the close association between financial development of a country and increase of economic growth many a time. It has been detected that even a developed economy has a certain section of people who belong to outside of the formal financial sector of the economy. So, the inclusive financial system is today's obligation.

Many works have been done on Financial Inclusion. But a small number of works have been carried out to measure the financial inclusion across economies. Some indicators can be used to improve the index of financial inclusion (IFI). A multidimensional approach is followed to build the Financial Inclusion Index. This method is alike to that used by Mandira Sarma(November 2010) in "Index of Financial Inclusion", Discussion Paper on Economics, and by Sadhan Kumar Chattopadhyay(2011) in working paper for RBI on "Financial Inclusion in India: A case study of West Bengal".

2. Purpose and Objective of the Study

Transparency of the purpose and the objective is the compulsion for the success of a research work. Fairness is a significant quality for excellent research. The objective of the research is the road map of achieving the research aim i.e. what the researcher expects to achieve by the research work. The objective of this study is to measure the strength of financial inclusion in the Purba Burddhaman district of West Bengal.

3. Research Methodology

The research work is descriptive in nature. The researchers used secondary data to find Index of Financial Inclusion in the context of Purba Burddhaman district, West Bengal. Data is collected mainly from secondary sources like magazine, newspaper, RBI press release, RBI website, SLBC website, Govt. website and previous studies on the subject, etc.

4. Problem Statement

A research problem is an area of concern or a gap in the existing knowledge that points to the need for further understanding and investigation. A problem statement is used in research work as a claim that outlines the problem addressed by a study. At the time of review of literature, the researchers couldn't to find any measurement of Financial Inclusion i.e. Index of Financial Inclusion (IFI) in the context of Purba Barddhaman district, West Bengal separately. So, to measure the strength of Financial Inclusion in the context of the Purba Burddhaman district is taken as a research problem.

5. Review of Literature

Y. Venugopal Reddy, Ex-Governor, Reserve Bank of India has introduced the term ‘Financial Inclusion’ in India in the Annual Policy Statement in April 2005. The phrase “Financial Inclusion” is repeatedly used to offer ample financial amenities like a) savings, b) credit, c) payment and remittance facilities, and d) insurance by the standard financial system to those who tend to be excluded from the above-mentioned services, at a reasonable price.

In recent times former RBI Governor Raghuram Rajan focused on what financial inclusion should be. He said that financial inclusion can be a way of rescuing the deprived from necessity on indifferently distributed public services at an affordable cost. Further, he narrated that through financial inclusion poor can get the product of their needs – “a safe place to save, a reliable way to send and receive money, a quick way to borrow in times of need or to escape the clutches of the moneylender, easy to understand life and health insurance and an avenue to engage in savings for the old age”.

The participation of the banking sector in a wholehearted manner is the right path to achieve the target of inclusive growth and total financial inclusion set by Reserve Bank of India and the Central Government. Inclusive growth is a concept that advances equitable opportunities for economic participants during economic growth with benefits incurred by every section of society regardless of their economic class, gender, sex, disability, and religion.

Sarma Mandira (November 2010) in her work “Index of Financial Inclusion” stated that academic works have effectively illustrated the close relationship between financial development of the country and economic growth but not much discussed whether financial development is positively related to the degree of financial inclusion. She stated that the inclusive financial system is desirable for below-mentioned reasons: -

1. Efficient allocation of financial resources; 2. Access to financial services can considerably develop the day-to-day management of finance; 3. Access to appropriate financial services implies a decrease of the informal source of credit such as money lenders.

In her paper Mrs. Sarma pointed out five major forms of financial exclusion: - a) access exclusion, b) condition exclusion, c) price exclusion, d) marketing exclusion, e) self-exclusion.

Sarma Mandira (2010) defined ‘Financial Inclusion’ as a process that ensures the access, availability, and usage of the formal financial system for all members of the economy.

Mrs. Sarma did the pioneering work for measuring financial inclusion in India, Before that literature of financial inclusion lacks a comprehensive measure of the extent of financial inclusion in an economy. In her study she used four parameters to develop Index of Financial Inclusion: - a) No. of bank accounts (per ‘000 adult population), b) No of bank branches (per million people), c) No. of ATMs (per million people), d) Amount of bank credit and deposit. It was a multidimensional approach.

She introduced three basic dimensions of measuring Financial Inclusion: banking penetration (BP), availability of the banking services (BS), and usage of the banking system (BU). Also, a multidimensional approach was offered by the researcher to compare the extent of financial inclusion across different economics. Financial Inclusion was measured subject to availability of data at different levels of economic aggregation (village, province, state, nation, and so on).

The researcher illustrated that the Multidimensional Index of Financial Inclusion (IFI) i.e. range of Financial Inclusion was positioned between 0 and 1. Total Financial Exclusion was represented by 0 and 1 indicates Total Financial Inclusion. The researcher categorized the countries in three groups depending on the value of the Index of Financial Inclusion (IFI),:- 1.

0.5 ≤ IFI ≤ 1 – high financial inclusion, 2. 0.3 ≤ IFI < 0.5 – medium financial inclusion, 3. 0.0 ≤ IFI < 0.3 – low financial inclusion.

Sadhan Kumar Chattopadhyay, in a working paper for RBI on **Financial Inclusion in India: A case study of West Bengal (2011)** has depicted the degree of Financial Inclusion in the country in general and in particular in West Bengal both in the rural and urban sectors. In the study, it was observed, although progress in the outreach movement in the banking sector, that heterogeneity across the state was widespread. It was observed by the researcher that after spending a significant quantity of funds on account of Financial Inclusion to reach the goal of Total Inclusive Growth of the economy, the success was not significant.

Sri Chattopadhyay also pointed out that both demand and the supply-side problems were responsible for Financial Exclusion. The main reason for Financial Exclusion as depicted in the study: -

From Demand side: - a) lack of awareness, b) low income, c) poverty, d) illiteracy.

From Supply side: - a) distance from branches, b) branch timings, c) cumbersome documentation and procedures, d) unsuitable products, e) language, f) staff attitudes

In his study, Sri Chattopadhyay defined Financial Inclusion as "to include all sections of the society, who are mainly out of the financial institutions, concentrated only on the rural section."

Sri Sadhan Kumar Chattopadhyay also highlighted the followings in his study:

a) Unless all individuals of the society of the country are fetched under the mainstream of finance i.e. under the coverage of bank finance, the essence of the higher growth rate of the country will not infiltrate down the line. b) An index of financial inclusion (IFI) has been established in the work using data on three dimensions of financial inclusion viz. banking penetration (BP), availability of the banking services (BS) and usage of the banking system (BU). c) Outreach of bank was increased day-by-day all over India, particularly in West Bengal. d) Credit to rural farmers was one of the important factors of financial inclusion. f) In his study, Sri Chattopadhyay estimated a 3-dimensional Index of Financial Inclusion (IFI) for 23 states. It has been observed that all southern states are either in high or medium groups of the state. In the case of West Bengal, though the state had held the 10^{th} rank from 2006 to 2008, the value of IFI was decreasing continuously (2006- 0.308, 2007- 0.290, 2008- 0.262).

Dr. Namita Rajput and Ms. Shelly Oberoi (2014) in their study "Reaching the unreached: Financial Inclusion in India – A Study", depicted that Financial Inclusion helped alleviating poverty and accelerating economic growth. The researchers also mentioned about the objectives of Financial Inclusion: a) Economic objective, b) larger market for financial service, c) political objective, d) social objective, e) sustainable livelihood for the weaker section, f) mobilization of savings. Three-phase of financial inclusion in India were also pointed out in their study. All-India CRISIL Inclusix score was also analyzed by the researchers. Their study on Financial Inclusion Index coincided with CRISIL Inclusix. The states of Southern India were placed at the higher side of the Financial Inclusion Index and the state of North Eastern states were on the lower side. Awareness about the banking services was low within the financially excluded people. They suggested that bank people must look after the need and capacity of the people. Side-by-side researchers have also given the emphasis on financial literacy and awareness to the rural masses of the country. They have also pointed out that financial inclusion has enough capacity for raising economic growth, the standard of living, equality, etc.

In their study, they made KMO and Bartlett's test which indicated that the sample size in this study was satisfactory for factor analysis. The value of chi-square in Bartlett's Test of Sphericity was statistically significant. It validated that the selected indicators of financial inclusion were intercorrelated. Consequently, Principal Component Analysis was appropriate for scrutinizing the magnitude of the selected indicators in financial inclusion. The comprehensive consequences of the PCA which disclosed the variance after extraction and after rotation. The study analyzed that the PCA model identified three components with eigen value greater than 1.

Vaidhyasubramaniam Dr. S. and Deepti Ms. N.S (2018), "Measure of Index on Financial Inclusion in India", used a multidimensional index which used to measure Financial Inclusion in India. The researchers used the following dimensions to measure Index of Financial Inclusion: -

a) Banking Penetration – the primary indicator of financial inclusion- in the nonexistence of data on the number of "banked" individuals, the number of bank account per 1000 adult population was taken to calculate this dimension.

b) Availability of Banking Services - The parameters used for availability of banking services were a) number of bank outlets, b) ATMs, per 1000 population, c) number of PoS Terminals, d) no. of ICT Accounts/ BC transactions.

c) Usage of the banking sector: - The suitable measure measured for the usage dimension is the volume of credit and deposit to adult individuals

The measure of IFI was found to be improving in India from year to year. According to a study conducted in 2015-16, it was 0.55.

6. Analysis and Interpretation

Index of Financial Inclusion (IFI) in the context of Purba Burddhaman, West Bengal, a multidimensional approach is developed to evaluate the inclusiveness of a financial system. In this study, a dimension index for each dimension of financial inclusion is considered.

The dimension index for the i^{th} dimension, d_i, is computed by the formula **(1)**.

A weight w_i such that $0 < w_i < 1$ is attached to the element i, showing the virtual status of the dimension i in quantifying the inclusiveness of a financial system

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

Where

w_i = Weight involved in the measurement i.e. $0<w_i<1$

A_i = Actual value of dimension i

m_i = Lower limit of the value of dimension i

M_i = Upper limit of the value of dimension i

Formula (1) endorses that the value of d_i lies between 0 and w_i i.e. $0 \leq d_i \leq w_i$

If in association with financial inclusion, dimensions are taken into consideration then a district of a state can be denoted on the nth dimension cartesian space by a point D = (d_1, d_2, d_3 ……… d_n).

In the nth dimensional, the point O = (0, 0, 0…., 0) specifies the worst situation, and Point W = (w_1, w_2, w_3 ……… w_n) identifies the uppermost attainments in all dimensions.

The formula of Index of Financial Inclusion (IFI) as stated by Mandira Sarma(November 2010) in "Index of Financial Inclusion", Discussion Paper in Economics and by Sadhan Kumar Chattopadhyay(2011) in Working paper for RBI on "Financial Inclusion in India: A case study of West Bengal" was as follows: -

$$\text{IFI} = 1 - \frac{\sqrt{(w_1 - d_1)^2 + (w_2 - d_2)^2 + \cdots + (w_n - d_n)^2}}{\sqrt{(w_1{}^2 + w_2{}^2 + \cdots + w_n{}^2)}} \quad \text{----------------(2)}$$

In this work, the author has considered that all the dimensions are equally essential i.e. weight of all dimensions are equal as mentioned in Mrs. Sarma's article i.e. w_i=1 for all i then

$$\text{IFI} = 1 - \frac{\sqrt{(1-d_1)^2 + (1-d_2)^2 + \cdots + (1-d_n)^2}}{\sqrt{n}} \quad \text{---------------------(3)}$$

Multi-Dimensional Index

The multidimensional measurement of financial inclusion is significant in numerous aspects. First, a measure that aggregates a number of indicators into a single index aids in summarizing the complex nature of financial inclusion and helps to monitor its evolution. A good index is used to take out information.

In study three elementary dimensions such as Banking Penetration (BP), Availability of Banking Services (BS), and Usage of Banking System (BU) of the inclusive financial system have been taken into account to measure the Index of Financial Inclusion of Purba Burddhaman.

Dimension 1: Banking Penetration

Penetration defines how many users are there for a product. It is one of the measures of a company or industry's success in getting consumers to use their products. Banking Penetration implies a numeral of adult populaces having a bank account either savings or loan account. Banking Penetration is also one of the most noteworthy indicators of financial inclusion. One of the measures of Banking Penetration is the size of the banked masses. If every adult of an economy has a bank account then the result of this measure is equal to one. As the data of the banked populace is not obtainable, the number of the bank account as a proportion of the total population has been taken as a measure of this dimension. All types of savings accounts and loan and advance accounts are to be taken as bank account.

Dimension 2: Availability of banking services

Banking services should be made available to the users and their availability also indicates financial inclusion. The measures of availability of banking services are the number of bank outlets, ATMs, per 1000 population and/or bank outlets, ATMs per 1000 square-km. As data on the number of ATMs and Business Correspondences appointed for Purba Barddhaman is not available, so the number of bank branches per 1000 adult populace is considered a measure of availability dimensions.

Dimension 3: Usage

Financial inclusion is also indicated by the adequate usage of banking services. The measure for usage dimension is the number of people having bank accounts and availing two basic services – deposit and credit. This part originates out from the thought of "underbanked" or "marginally banked" people, as stated by Kempson et al (2004). So, an individual having a bank account does not indicate that the banking service accessible to him is entirely exploited. Opening a bank account does not imply the services offered by the bank have been fully utilised by the account holder. After opening a bank account, the account may also be dormant i.e. after opening an account, the account may not be operated at all. In order to include the usage aspect in the index, in this study we have considered two basic banking services such as outstanding savings and credit amount.

Accordingly, the volume of outstanding deposit and credit as the proportion of the Net District Domestic Product (NDDP) has been used to measure this dimension.

Bearing in mind about three dimensions mentioned above - Banking Penetration (BP), Availability of Banking Services (BS), and Usage of Banking System (BU), Purba Barddhaman district IFI is represented by a point (bp_i, bs_i, bu_i) in the 3-dimensional cartesian space. In the three-dimensional cartesian space bp_i, bs_i, bu_i implies the dimensional indexes. The point (0,0,0) indicates Total Financial Exclusion and (1,1,1) denotes Total Financial Inclusion.

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

$$\text{IFI} = 1 - \frac{\sqrt{(1-bp_i)^2 + (1-bs_i)^2 + (1-bu_i)^2}}{\sqrt{n}}$$

Data Analysis:

Data for Banking Penetration: -

As no data is available on number of people having a bank account in Purba Burddhaman, so number of people having bank accounts in West Bengal in Mar-2010 taking from (Sadhan Kumar Chattopadhyay (2011)) has been taken into consideration. Number of people having a bank account in West Bengal is 79 out of 100 in March- 2010 (Sadhan Kumar Chattopadhyay (2011)).

Data for Availability of Banking Service: -

No of bank branches as on 2018 in Purba Barddhaman – 421

Total population (as per 2011 census) – 48, 35,532

Average population served per bank branch in Purba Barddhaman – 11492

Data for Usage:
Total Deposit (as on 31/12/2019) = 24760.83 Crore
Total Credit (as on 31/12/2019) = 10522.27 Crore (Source: SLBC Report Dec- 2019)
Gross District Domestic Product (as of 2013-14, at Constant (2004–05) Prices): - Rs. 38923.07 Crore (Source: - Economy of West Bengal, downloaded from Wikipedia dated 07/10/2019)

Calculation of Index of Financial Inclusion:

District	bp_1	bs_1	bu_1	IFI
Purba Barddhaman	0.79	0.09	0.91	0.44

Table – 1

Results

Sadhan Kumar Chattopadhyay (2011) has categorized into three parts depending on the scores of Index of Financial Inclusion (IFI) as follows: -

a) High Financial Inclusion - $0.5 < \text{IFI} \leq 1$

b) Medium Financial Inclusion: - $0.3 \leq \text{IFI} < 0.5$

c) Low Financial Inclusion: - $0 \leq \text{IFI} < 0.3$

As the Score of Purba Burddhaman District is 0.44, so Purba Burddhaman District lies in Medium Financial Inclusion status. This result is the positive effect of organising different financial literacy camps in the rural areas of Purba Burddhaman by Reserve Bank of India with the help of local administration and different PACs.

7. Conclusion

From 2005, the Government of India along with Reserve Bank of India and NABARD introduced many schemes for the successful implementation of Financial Inclusion in India to achieve the inclusive growth target. But the achievement was not up-to-the-mark. Financial Inclusion is nothing but includeing the financially excluded masses at an affordable cost by way of opening and utilising a bank account for every adult population of the country. As 85% of the inhabitants belong to the rural areas, a special drive of Financial Inclusion projects for the rural area may help to achieve the target of inclusive growth of the country.

After 15 years of journey of Financial Inclusion program, the measurement tool of Financial Inclusion of a district can help to analyse the position of the district. Index of Financial Inclusion is one of the standard measurements used by different learned previous researchers of the country. It is a three-dimensional model. In this study, the score of Index of Financial Inclusion of Purba Barddhaman district is 0.44 i.e. in the medium range of Financial Inclusion. RBI and NABARD have organized many financial literacy camps in the rural areas of Purba Barddhaman with the help of the District Level Bankers Committee (DLBC). Successful implementation of the Bank-lead-SHG groups' programs also help directly and indirectly in the financial inclusion in the Purba Barddhaman district. Account opened in the Pradhan Mantri Jan Dhan Yozona also helps to fill up the gap of financial inclusion in the rural area of Purba Barddhaman.

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