An Introduction to Christ University
Comprehensive Financial Inclusion Index (CUCFIIX): A Result of Critical Assessment on Indicators of Financial Inclusion Measurement

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Abstract--- Financial inclusion is the ability to access the formal financial services by all sections of the people. The financial services include basic bank accounts, credit facility, deposits, insurances, payment system and so on. Financial inclusion has become policy initiative in almost every country especially in developing countries and under developed countries. The facets of financial inclusion vary from country to country. As a result, there are many indicators to measure financial inclusion. The world financial agencies like International Monetary Fund, World Bank and eminent researchers proposed financial inclusion indicators. This study has reviewed and assessed the literature available on financial inclusion indicators. Based on such review and assessment, this study proposes a conceptual framework of comprehensive financial inclusion index which is known as Christ University Comprehensive Financial Inclusion Index (CUCFIIX). The financial inclusion index developed in this research study is named after the Christ University which sponsors this financial inclusion project.

I. Introduction

Financial exclusion is a term which has acquired universal acceptance among academicians, researchers and policy makers. The term “financial exclusion” was first coined by British geographers (Tankha, 2014). Financial exclusion refers to the inability to access necessary financial services in an appropriate form (Stephen, 2001). Financial inclusion is explained in the state of exclusion from financial system. Treasury Committee, House of Commons, UK (2004) views financial inclusion as “Ability of individuals to access appropriate financial products and services”.

The definition of financial inclusion varies all over the world on different basis like social, economic, financial development and so on. Generally, financial exclusion is expressed as the inability to access necessary financial services. Definitions of financial exclusion in the literature diverge on the basis of proportions such as ‘breadth’, ‘focus’ and ‘degree’ of exclusion (Thrift, 1993).

Aynsley (2010) mentioned three features of definitions of financial inclusion namely access to financial services and products, financial capability and (iii) financial literacy. But, most of the definitions emphasized on access rather than the other features.

Thus, defining and measuring financial inclusion is very challenging and difficult. However, financial inclusion is not mere access to financial services.

II. Statement of the Problem

Financial inclusion definitions across the world emphasize various facets of financial inclusion discussion and process. While few definitions address about access, financial capability, financial literacy, weaker sections, few other definitions emphasize values like affordability, transparency and appropriateness. Some researches emphasize the requirement for suitable products to face various needs of the poor households. Thus, there is no common definition of financial inclusion across the world. As a result, measurement of financial inclusion is also not standardized which is an obstacle to set national financial inclusion targets and to monitor financial inclusion progress. When government and government agencies have reliable and standardized financial inclusion indicators and survey mechanisms, they can identify the state of financial inclusion, agree on targets, identify barriers, craft policies and monitor and measure policy impact.
III. Objectives of the Study

Primary objectives of this study.

To assess different measures of financial inclusion available in the literature.

To provide a standardized financial inclusion indicators.

IV. Research Methodology

This research is completely based on secondary data relating to measurement of financial inclusion available with World Bank, United Nations Development Programme, Asian Development Bank, Reserve Bank of India and research literatures.

V. Assessment of Indicators used to Measure Financial Inclusion

Financial inclusion has been explained through different indicators. Given the many differing perspectives, there was a question that is financial inclusion mere financial access? Then, general agreement was achieved that financial inclusion should also relate to the use of financial services, in addition to the access to financial services. Further, it was discussed that financial products and services offered by the formal financial institutions should consider and suit the needs and expectations of the financially excluded people and those financial products and services should be offered to the clients at affordable cost with transparency in all respect.

An exhaustive list of such needs is provided by Samit Ghosh who states in Business Standard that real financial inclusion is about providing a comprehensive set of services which meet the total needs of the working poor. Their financial needs include “a safe place to save, credit for business, farming, animal husbandry, emergencies, education, family needs and housing, remit funds to support families and business, life & medical insurance for protection against frequent exigencies they face and pension to support them at old age”.

From the above passages, one can understand that the important types of indicators used to measure financial inclusion in the literature are;

a) Access indicators which measure depth of outreach of financial services
b) Usage indicators which assess the extent to which financial services are used by the people
c) Quality indicators which measure suitability of financial products and services offered with expectations and needs of the people.

A. Access Indicators

Access indicators measure depth of outreach of financial services and the ability to use available financial services and products from formal institutions by the people. There are various measures of access to finance. Access to finance can be access to banks, insurance companies, and MFIs or access to payments services, savings or loans and credits. However, these indicators vary country to country. The important access indicators used by different agencies/institutions and by the researchers are presented in the following table.

<table>
<thead>
<tr>
<th>Category</th>
<th>Access Indicator</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Points of access</td>
<td>Branch penetration: Number of branches per 1,00,000 adults</td>
<td>International Monetary Fund (IMF) financial access surveys and CRISIL inclusix</td>
</tr>
<tr>
<td></td>
<td>Number of ATMs per 1,00,000 adults</td>
<td>IMF financial access surveys</td>
</tr>
<tr>
<td></td>
<td>Number of point of services terminals per 1,00,000 inhabitants</td>
<td>World Bank Global payments system surveys</td>
</tr>
<tr>
<td></td>
<td>Number of bank branches per 1,000 sqkm.</td>
<td>Beck et al (2007)</td>
</tr>
<tr>
<td></td>
<td>Number of bank ATMs per 1,000 sqkm</td>
<td>Beck et al (2007)</td>
</tr>
<tr>
<td></td>
<td>Credit penetration: Number of loan accounts per 1,00,000 people</td>
<td>CRISIL inclusix</td>
</tr>
<tr>
<td></td>
<td>Deposit penetration: Number of savings accounts per 1,00,000 people</td>
<td>CRISIL inclusix</td>
</tr>
<tr>
<td></td>
<td>Population per bank branch</td>
<td>Ravikumar (2012)</td>
</tr>
<tr>
<td></td>
<td>Branch penetration area wise</td>
<td>Ravikumar (2012)</td>
</tr>
<tr>
<td>E-money accounts</td>
<td>Number of e-money accounts for mobile payments</td>
<td>WB Global Payments Systems Survey</td>
</tr>
</tbody>
</table>
From the above table, it is clear that vital access indicators of financial inclusion are population per branch, demographic branch penetration, demographic ATM penetration, geographic branch penetration and geographic ATM penetration

B. Usage Indicators

Usage indicators assess the extent to which financial services are used by the people. The usage indicators employed by different agencies/institutions and by the researchers are presented in the following table.

<table>
<thead>
<tr>
<th>Category</th>
<th>Usage Indicator</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formally banked adults</td>
<td>Percentage of adults with an account</td>
<td>WB Global Findex</td>
</tr>
<tr>
<td></td>
<td>Number of depositors per 1,000 adults</td>
<td>IMF Financial Access Surveys</td>
</tr>
<tr>
<td>Adults with credit at regulated institutions</td>
<td>Percentage of adults having one credit account</td>
<td>WB Global Findex</td>
</tr>
<tr>
<td></td>
<td>Number of borrowers per 1,000 adults</td>
<td>IMF Financial Access Surveys</td>
</tr>
<tr>
<td>Adults with insurance</td>
<td>Number of insurance policy holders per 1000 adults.</td>
<td>IMF Financial Access Surveys</td>
</tr>
<tr>
<td>Cashless transactions</td>
<td>Number of retail cashless transactions per capita</td>
<td>WB Global Payments Systems Survey</td>
</tr>
<tr>
<td>Mobile transactional use</td>
<td>Percentage of adults using mobile to make a payment</td>
<td>WB Global Findex</td>
</tr>
<tr>
<td>Saving propensity</td>
<td>Saving in formal financial institutions.</td>
<td>WB Global Findex</td>
</tr>
<tr>
<td>Usage of loan</td>
<td>Number of loans per 1,000 people</td>
<td>Beck et al (2005)</td>
</tr>
<tr>
<td></td>
<td>Loan-income ratio</td>
<td></td>
</tr>
<tr>
<td>Remittances</td>
<td>Percentage of adults involving domestic and international remittances</td>
<td>Gallup World Poll</td>
</tr>
<tr>
<td>Formally banked enterprises</td>
<td>Percentage of SMEs with bank account</td>
<td>WB Enterprise Surveys</td>
</tr>
<tr>
<td></td>
<td>Number of SMEs with bank deposit accounts</td>
<td>IMF Financial Access Surveys</td>
</tr>
</tbody>
</table>

Usage indicators adopted by various surveys and studies relate to individuals and enterprises. Further, these studies used modern banking technological developments like mobile transactional use as parameters to measure usage of financial services. Further, digital banking was also used as one of the indicators of financial inclusion measurement. Cashless transactions are defined as the number of payments through cheque, credit transfers, direct debits and payment with credit and debit cards.

C. Quality Indicators

Quality indicators intend to measure suitability of financial products and services offered with expectations and needs of the people. The important quality indicators are presented below;

<table>
<thead>
<tr>
<th>Category</th>
<th>Quality Indicator</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispute Resolution</td>
<td>Index which imitates the existence of formal internal and external dispute resolution mechanisms</td>
<td>WB Global Financial Consumer Protection Survey</td>
</tr>
<tr>
<td>Cost of Usage</td>
<td>Average cost of opening a basic bank account.</td>
<td>WB Global Payments Systems Survey</td>
</tr>
<tr>
<td></td>
<td>Average cost of maintaining a basic bank current account</td>
<td>WB Global Payments Systems Survey</td>
</tr>
<tr>
<td></td>
<td>Average cost of credit transfers</td>
<td>WB Global Payments Systems Survey</td>
</tr>
<tr>
<td>Credit Barriers</td>
<td>Percentage of SMEs provided security to get loan</td>
<td>WB Enterprise Surveys and OECD SME Scoreboard</td>
</tr>
</tbody>
</table>

Quality indicators used to measure financial inclusion focused on barriers confronted by the people, cost of financial services, cost of enforcement and governance index. But, these indicators do not focus quality of financial products and services which are to be offered to the people. The quality of financial products and services are highly qualitative and they differ person to person and country to country. But, the quality of financial products and
services can be measured indirectly using proxy indicators namely demand for financial product and services offered, number of years a financial product or service in the market etc.

Here, it is essential to distinguish between the supply side represented by institutional initiatives and the demand side as projected by people’s needs and capacities. Both supply and demand determine financial exclusion. Non-availability of pro-poor financial environment and non-availability of suitable financial services and products are supply side causes of financial exclusion. On the other hand, low financial literacy and distrust of formal banking system make up barriers for financial inclusion from the demand side. Therefore, financial education should be observed as an important indicator of financial inclusion to achieve higher amount of financial inclusion.

This study proposes to include financial education, which refers to the ability to manage personal finance matters in an efficient manner and it includes the knowledge of making appropriate decisions about personal finance such as investing, insurance, real estate, paying for college, budgeting, retirement and tax planning, as one of the indicators to measure financial inclusion. Further, three indicators of financial inclusion namely access indicators, usage indicators and quality indicators did not consider few vital indicators of financial inclusion. The indicators which were not considered in the measurement of financial inclusion are

1. Number of active accounts.
2. Consistent use of accounts.
3. Time taken to provide financial products and services.

Out of the above three indicators, first and second indicators belong to usage indicators and third one belongs to quality indicators.

Focus on measurement of active accounts is very much required because financially excluded people are brought in to formal financial system through financial inclusion initiatives of the governments and the people also come in to formal financial system by having a bank account. But, over the period of time, considerable amount of such accounts become dormant accounts due to various reasons like unemployment, geographical barriers, lack of faith on formal financial institutions and so on. Moreover, bank accounts are to be used consistently. Some bank accounts may be active, but, there may not be regular transactions. So, consistent use of accounts should also be used as one of the indicators for the measurement of financial inclusion. It is also mentioned here that availability of data to measure number of active accounts and consistent use of accounts. The central banks may advise its commercial banks to have data on number of active accounts and consistent use of accounts in their reports.

Time taken to provide financial products and services will measure speed of serving the people, corruption free transactions and transparency.

It can be measured by comparing standard time fixed and actual time taken by the formal financial institutions to serve the people. Determination of the standard time should be realistic one.

From the above discussions, the study strongly believes that there are four important indicators to measure financial inclusion namely access indicators, usage indicators, quality indicators and financial education indicators.

Few studies (World Bank Global Findex survey and WB Financial Capability Surveys) employed financial knowledge and financial behavior as quality indicators of financial inclusion. Financial education is much broader term than financial knowledge and financial behavior. In fact, financial education includes financial knowledge, financial behavior, financial attitude and financial decision making.

VI. Christ University Comprehensive Financial Inclusion Index (CUCFIIX)

There are many surveys and studies which intended to provide comprehensive financial inclusion measurement indicators by balancing country specific barriers, economic specific barriers and so on. Most of the studies focused on access indicators, usage indicators and quality indicators. Few studies concentrated financial knowledge as one of the quality indicators, but financial education was not completely covered. In India also, there is one comprehensive financial inclusion measure namely CRISIL inclusix. CRISIL inclusix was developed in association with Ministry of Finance, Government of India and considers Branch Penetration (BP), Credit Penetration (CP) and Deposit Penetration (DP) as indicators of financial inclusion measurement. Branch penetration measures the ease with which people in a particular territory can access financial services. Credit penetration measures the extent of access to loan products by farmers, small traders and individuals. Deposit penetration measures the extent of access to savings account. Thus, CRISIL inclusix measures only access indicators of financial inclusion and it does not consider usage indicators, quality indicators and financial education indicators. So, CRISIL inclusix does not provide complete and comprehensive financial inclusion measurement.
As a result, the researcher of this study makes an attempt to put forth a comprehensive financial inclusion measurement theoretically. The following figure presents conceptual framework of Christ University Comprehensive Financial Inclusion Index (CUCFIIX).

![Conceptual Model of CUCFIIX](image)

CUCFIIX uses four indicators to measure financial inclusion namely access indicators, usage indicators, quality indicators and financial education indicators. Further, CUCFIIX also reveals the way through which these four indicators are measured. Sub-dimensions of each indicator are explained here under.

**Access Indicators of CUCFIIX**

- **Demographic and Geographic branch penetration**
  - Number of branches per 1,00,000 persons
  - Number of branches per 1000 square kilometers (km²)

- **Demographic and Geographic ATM penetration**
  - Number of ATMs per 1,00,000 persons
  - Number of ATMs per 1000 square kilometers (km²)

- **Branch Penetration area wise**
  - Number of branches per 1,00,000 persons area wise which shows penetration of branches in different areas

- **Population per branch**
  - Total population of the country divided by total number of bank branches
Usage Indicators of CUCFIIX

- Credit and Deposit penetration: Number of credit accounts per 1,00,000 persons and Number of deposit accounts per 1,00,000 persons
- Usage of mobile transactions by adults: % of adults that use their mobile device to make a payment
- Active savings account: Number of active accounts per 1,00,000 persons. Active savings account is a savings account which has been used regularly or frequently
- Consistent use of savings accounts: Average number of transactions per savings account

Quality Indicators of CUCFIIX

- Dispute Resolution: Index reflecting the existence of formal internal and external dispute resolution mechanisms
- Cost of Usage: Average cost of maintaining a savings and credit account.
- Time taken to provide service: Average time taken to provide financial service as against standard time fixed by financial institutions
- Demand for financial product and services: Number of products and services sought by the people.

Financial Education Indicators of CUCFIIX

- Financial knowledge: Financial knowledge score. Arithmetic score which sums up correct responses to questions about basic financial concepts, such as: (A) Inflation, (B) Interest rate, (C) Compound interest, (D) Money illusion, (E) Risk diversification, (F) Main purpose of insurance.
- Financial behaviour: Source of emergency funding, Response to: a) borrow from friends/relative; b) work more; c) sell assets; d) use only savings; e) loan from informal sector; f) loan from bank; g) would not be able to find it
- Financial attitude: Attitude of people towards financial planning and personal financial management
- Financial skills: Financial decision making skills

CUCFIIX measures financial inclusion indicators namely access indicators, usage indicators and quality indicators using data available with formal financial institutions and measures financial education indicators using surveys.

VII. Conclusion

This article reviewed and assessed various indicators of financial inclusion proposed and used. Based on critical assessment of financial inclusion indicators, this study has developed conceptual framework of comprehensive financial inclusion index named as CUCFIIX. CUCFIIX considers four major indicators namely access indicators, usage indicators, quality indicators and financial inclusion indicators to measure financial inclusion.

References


