Determinants of Financial Inclusion and Human Development: A Study of selected countries

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Abstract

Financial inclusion is a part of inclusive growth as it focuses on delivering financial services at much affordable costs to the under-privileged sections of the society. The issue of financial inclusion is a development policy priority in many countries.This paper made an attempt to measure the degree of association of Index of Financial Inclusion (IFI) with Human Development Index (HDI) values and to explain the observed variation of financial inclusion index values by fitting a regression based on consideration of several relevant explanatory variables.This study reveals that the coefficients of the explanatory variables per capita GNI, population, education& life expectancy has the expected positive sign and is significant.And also pooled OLS with clustered standard error regression model has been used to explain the factors influencing financial inclusion across the countries of the world.

Keywords: index of Financial Inclusion (IFI), Human Development Index (HDI), GNI Per capita.

Introduction

Financial inclusion refers to a process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy. An inclusive financial system has several merits. It facilitates efficient allocation of productive resources and thus can potentially reduce the cost of capital. In addition, access to appropriate financial services can significantly improve the day-to-day management of finances. An inclusive financial system can help in reducing the growth of informal sources of credit (such as money lenders), which are often found to be exploitative. Thus, an all-inclusive financial system enhances efficiency and welfare by

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providing avenues for secure and safe saving practices and by facilitating a whole range of efficient financial services.

The importance of an inclusive financial system is widely recognized in the policy circle and recently financial inclusion has become a policy priority in many countries. Initiatives for financial inclusion have come from the financial regulators, the governments and the banking industry. Legislative measures have been initiated in some countries.

The banking sector has also taken a lead role in promoting financial inclusion. In India, the Reserve Bank of India (RBI) has initiated several measures to achieve greater financial inclusion, such as facilitating 'no-frills' accounts and "General Credit Cards" for low deposit and credit. The German Bankers' Association introduced a voluntary code in 1996 providing for an 'everyman' current banking account that facilitates basic banking transactions. In South Africa, a low cost bank account called 'Mzansi' was launched for financially excluded people in 2004 by the South African Banking Association. Alternate financial institutions such as micro-finance institutions and Self-Help Groups have also been promoted in some countries in order to reach financial services to the excluded.

Review of Literature

The problem of financial exclusion is a worldwide phenomenon with over two billion people estimated as being deprived of banking service facilities. While the problem is most intense in the developing countries, it is not altogether absent in the developed economies of the world as well. However, massive in accessibility to financial institutions is a key difference between developed countries and developing countries **(World Bank, 2005).Thorsten Beck, AsliDemirguc-Kunt, and Ross Levine (2004),** in their paper, **Finance, Inequality and Poverty: Cross-Country Evidence**found that the financial development of a country includes three aspects (i) incomes of the poor to grow faster than average GDP per capita (ii) income inequality to fall more rapidly and (iii) poverty rates to decrease at a faster rate. The financial development reduces income inequality by disproportionately boosting the incomes of the poor.

Sharma, Mandira (2008), in his study, **Index of Financial Inclusion**, attempts to fill this gap by proposing an Index of Financial Inclusion (IFI). The IFI is a multi-dimensional index captures information on various dimension of financial inclusion in one single digit lying between 0 and 1, where 0 denotes complete financial exclusion and 1 indicates complete financial inclusion in an economy.

The study on, **"Developing a Vision for Financial Inclusion",** by **Elaine Kempson and Sharon Collard (2012),** examined the progress towards Financial Inclusion and to develop the evidences based on long-term vision for Financial Inclusion over the next ten years. The study found that there was a significant positive development in financial inclusion policy and practice

A Study, **Measuring Financial Inclusion: Multidimensional Index**, by **Noelia Camara and David Tuesta (2014)**, found that the degree of financial inclusion is highly correlated with some macro-economic variables such as GDP per Capital, education Efficiency of a financial system and financial stability. This result suggests that supply of formal financial services is more important than number of users in exploring our index.

Peter J. Morgan & Victor Pontines (2014), in their study entitled, **Financial Stability and Financial Inclusion,** found some evidence that an increased share of lending to small and medium sized enterprises (SMEs) ids financial stability mainly by reducing non-performing loans (NPLs) and the probability of default by financial institutions.

Objectives of the Study

The main aim of the study is to measure the degree of association of Index of Financial Inclusion (IFI) with Human Development Index (HDI) values and to explain the observed variation of financial inclusion index values by fitting a regression based on consideration of several relevant explanatory variables.

This analysis is completely based on secondary data and data was taken from World Bank report and Human Development Report of 2018.

Methodology of the Study

The index of financial inclusion is a measure of inclusiveness of the financial sector of a country. It is constructed as a multidimensional index that captures information on various aspects of financial inclusion such as banking penetration, availability of banking services and usage of the banking system. The IFI incorporates information on these dimensions in one single number lying between 0 and 1, where 0 denotes complete financial exclusion and 1 indicates complete financial inclusion in an economy. **Sarma (2008)** has developed a method of computing the IFI for several dimensions of financial inclusion. Based on the availability of comparable data, **Sarma (2008)** has computed the values of IFI for 54 countries using the three basic dimensions of financial inclusion– accessibility, availability and usage of banking services. Accessibility has been measured by the penetration of the banking system proxies by the number of bank A/C per 1000 population. Availability has been measured by the number of bank branches and number of ATMs per 100,000 people. A dimension index for each of these dimensions has been first computed by the following formula:

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

Where Ai = Actual value of dimension i

mi = lower limit for dimension i, given by the observed minimum for dimension i

Mi = upper limit for dimension i, given by the empirical 94th quantile for dimension i

For the availability dimension, two separate indexes are first calculated; one for bank branch and the second for ATMs. A weighted average of these two indexes, using 2/3rd weight for bank branch index and 1/3rd weight for ATM index is considered as the index for the availability dimension. After giving weights to the dimensions, the final IFI is computed as follows:

$$IFI = 1 - \sqrt{\frac{(1-p_i)^2 + (0.5-a_i)^2 + (0.5-u_i)^2}{1.5}}$$

Where $\boldsymbol{p_i, a_i}$ ***and*** $\boldsymbol{u_i}$denote respectively the weighted dimension indexes for the dimensions accessibility (or penetration), availability and usage.

Then the pooled OLS estimators of a and b are likely to be biased and inconsistent. If we run OLS technique with White's heteroscedasticity corrected standard errors (robust standard errors), (i.i.d) assumption of U_{it} is violated in many cases. Hence a natural generalization is to introducing the notion of clustered standard errors as follows:

$$\boldsymbol{(IFI)_{it} = \propto + \beta_1 (PCGNI)_{it} + \beta_2 (POP)_{it} + \beta_3 (EDU)_{it} + \beta_4 (LEXP)_{it} + \beta_5 (URB)_{it} + \beta_6 (D1)_{it} + \beta_7 (D2)_{it} + U_{it}}$$

From **Table 1** presents the Index of Financial Inclusion and Human Development Index, 2017. From the above presents the IFI computed for 30 countries and the corresponding human development index (HDI). Singapore and Canada with an IFI value of 1.075 & 1.021 exceeds the inclusion value and HDI Value is 0.718 & 0.926 while Peru with an IFI values of 0.218 the lowest and HDI value is 0.611. Sarma (2008) states that countries having IFI value between 0.5

and 1 are classified as high IFI countries, those having IFI value below 0.3 and 0.5 are termed as medium IFI countries and the rest having less than 0.3 are classified as low IFI countries. By this classification, only 12 of 30 countries classify as high IFI countries, these include Singapore, Canada, Spain, magnolia, France, Finland, Italy, Iran, and Israel. The medium IFI countries are 9 of the 30 countries in the list are Brazil, Bulgaria, Chile, Dominican Republic, India, Turkey, Saudi Arabia, and Hungary while it is not surprising the low IFI countries are dominated by low income countries , there are some expectations. A comparison of IFI with human development index (HDI) show that most of the countries with high and medium IFI belong to high HDI value stated by human development (HDI>0.7).

Table 1 Index of financial inclusion and human development index, 2017

Sl. No	Country	IFI Value	HDI Value
1	Argentina	0.281	0.825
2	Australia	0.782	0.939
3	Austrria	0.719	0.908
4	Brazil	0.447	0.759
5	Bulgaria	0.425	0.813
6	Bangladesh	0.142	0.608
7	Canada	1.045	0.926
8	Chile	0.383	0.843
9	Colombia	0.289	0.747
10	Denmark	0.75	0.929
11	Dominican Republic	0.324	0.736
12	Finland	0.707	0.92
13	France	0.68	0.901
14	Greece	0.443	0.87
15	Hungary	0.482	0.838
16	India	0.345	0.64
17	Indonesia	0.283	0.694
18	Iran	0.561	0.798
19	Israel	0.642	0.903
20	Italy	0.597	0.88
21	Mexico	0.246	0.774
22	Nigeria	0.302	0.532
23	Mongolia	0.587	0.741
24	Peru	0.218	0.611
25	Panama	0.284	0.789

26	Saudi Arbia	0.428	0.853
27	Singapore	1.079	0.718
28	Spain	0.716	0.891
29	Turkey	0.35	0.791
30	United Arb Emirates	0.551	0.863

Source: IFI Value Author's Calculation and HDI Value taken from Human Development Statistical Report 2017

Determinants of Index of Financial Inclusion

The Index of financial inclusion as impacted in the exclusion of banking services is supposed to influence by a number of explanatory variables such as per Capita GNI, Percentage of Population aged by (15-64) years, net school enrolment at secondary level, life expectancy rate, percentage of urban people. These are the important variables that influence and identify the factors variations in IFI values. With increase in Per Capita GNI, people are likely to have a positive sign and better access over banking and financial services. Again, the percentage of population aged (15-64) years rises the banking services is likely to expanding its activity in rural remote access of the economy to channelize greater savings through creation of bank accounts and extending better deposit services to the people. With the rise in enrolment ration from lower secondary people's employment opportunity, better awareness to utilize the benefits if banking services may result in positive sign with IFI values. Further, life expectancy rate provides better health and expenditure services is likely to enhance people's productivity and awareness to take advantage of bank finance insurance. Then the rise in the percentage of urban population is likely to expand the demand for banking services and bring more urban rural population in the fold of mobilize their savings. From **Table 2**, it is evident that the co-efficient of explanatory variable's namely, per capita GNI, population, education and life expectancy rate have the expected positive significant relationship with IFI values.

Table 2 Regression Result of IFI and Selected Factors of Selected Countries

Variables	Co-efficient	Robust std.error	t-statistics	P-value
PCGNI	0.00000000228*	6.99E+10	3.26	0.002
POP	0.049176**	0.0024687	1.99	0.048
EDU	0.0016517*	0.0005316	3.11	0.003

LEXP	0.007462	0.0143279	1.73	0.088
URB	0.0016227	0.0012496	1.3	0.198
Constant	-0.7423301	0.1718256	-4.32	0.000
R - Square	0.7167			
F-Statistics	54.45			0.000

Source: Authors Calculation from Secondary Data
***indicates 1 % level of Significance**indicates 5 % level of significance**

Findings and Conclusion

From the above analysis reveals the fact that there is an association of Index of Financial Inclusion (IFI) with human Development Index (HDI) values. The present study mainly focuses to explain and identify the explanatory variables relationship with the IFI Values. A comparison of IFI and HDI shows that most of the high and medium IFI values belong to the group that is classified by Human Development (HDI) values (HDI>0.7). And also, it is observed that there exists a positive correlation between IFI and HDI values. Further, it is an evident that there exists a co-efficient of explanatory variables namely, per capita GNI, Population, Education is likely to have a relationship of positive sign with IFI values. This Justifies the idea that with the rise in income, people's awareness, education level, and better health condition will take more advantage I inducing financial facilities.

Financial inclusion is more than just "banking the unbanked"; it includes extending access to credit, savings, and insurance products that satisfy the needs of low income people and help them ride up the ladder of rising income. The extension of banking sector services could result in a neo-institutionalism which may develop other financial agencies. This is also likely to counter the emergence of profit seeking, informal lending agencies which try to exploit the poor rural masses. In this context, the recent initiative in India to launch "Jan DhanYojana", No frill accounts are a beneficial step for the masses.

In general, government intervention needs to be proactive in terms of adopting policy measures that focus onissues such as (i) proximity to financial services (ii) extent of their dimension and coverage (iii) product features and quality (iv)promotion of usage (v) household financial capacity and (vi) expansion of financial literacy. This would helpintensify the efforts of financial inclusion programmes to reach out across all sections of society.

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