

## Human capital and financial inclusion: An empirical study across districts of India

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### Abstract

Human capital and Financial Inclusion are the two important pillars of inclusive growth and play a crucial role in reducing poverty and socio-economic inequalities in the society. India has also recognized financial inclusion as an important parameter to promote inclusive growth. This paper attempted to study the relationship between FII and Human Capital represented by Literacy Rate and Work- Participation Rate (Employment) amongst the 632 districts of India. The study used Financial Inclusion Index (FII) developed by the author (2017). Of the two indicators representing human capital, Literacy rate has been found to be important variable explaining variations in FII. As the study found that most of the financially excluded districts are dominated by primary sector (agriculture based) so analysis was also carried out replacing Work Participation Rate by Cultivators' Participation Rate. Interestingly, it turned out to be an important indicator along with literacy rate. However, its negative association with FII revealed the presence of low productivity and lower per capita earnings in agriculture sector. The study concluded that India can improve the level of financial inclusion by investing in education and providing skill and training to its work –force to improve its productivity and income level. This is also needed to shift some work- force to other high productive sectors of the economy i.e. secondary and service sector. It is only by investing in education and the skill of its work-force; India can reap the advantage of Demographic Dividend and curtail variations and inequalities.

**Keywords:** inclusive growth, financial inclusion, human capital, literacy, employment

### Introduction

Human Capital is the driver of economic growth and a key stimulus of economic development of every nation. Human capital refers to the skill and knowledge possessed by the population of a country. OECD defines it as “the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being” (OECD, 2001) [20]. The country which has well-educated, skilled and healthy people is considered to have better human capital than the country with low level of education and poor health. Human capital can be improved by investing and improving formal education, training, health and well-being of the people. Such investments bring returns to the individual as well as to the economy as a whole. Individuals benefit from higher earnings, and the economy as a whole benefits from higher productivity. Thus human capital is an important pillar of growth of an economy. However, today, the world is facing a major challenge due to presence of glaring disparities in access to health, education and finance (IMF Staff Discussion Note/15/13). The prevalence of large scale disparities across regions, gender as well as different income strata in terms of human capital has put the attention of policy-makers and researchers towards the importance of inclusive growth and efforts are being directed to draw plans and policies for the investment in the education and training of the people at the bottom of the pyramid to narrow down these glaring inequalities. To cut down these disparities is the major challenge of the time as disparities hamper the economic growth by depriving the ability of lower-income households to stay healthy and accumulate physical and human capital

(Galor and Moav 2004) [10]. It is universally accepted that by adopting policies of better access to education and health to the poor and middle class, these disparities can be narrowed down. Thus human capital occupies a key position in promoting inclusive growth and investing in the human capital of those at the bottom of the pyramid is the need of the hour. The 2030 Agenda for Sustainable Development adopted by world leaders at the United Nations Sustainable Development Summit which includes a set of 17 SDGs also focuses on fighting inequality and injustice to promote inclusive growth. Since access to safe, easy and affordable finance is the basic requirement for investing in human capital so financial inclusion is akin to the overall strategy of inclusive growth. The concept of inclusive growth is multifaceted and has financial inclusion as one of its main building blocks. There is no denying the fact that the extent of investment in human capital depends upon the income level of an individual and if resources are made available to the people with low income, they will definitely invest in education and health thus leading to better human capital. It is also true that better the human capital more will be the level of financial inclusion and thus growth will be more inclusive. Thus human capital and financial inclusion are the two sides of the same coin (inclusive growth) and go hand in hand. Improved human capital leads to better earnings prospects thereby helping in narrowing down inequalities while Inclusive finance is the pre-requisite for improving human capital which in turn adds to inclusive growth by curtailing the disparities. Inclusive finance and better human capital are the essential conditions for reduction of poverty and socio-economic inequalities in

the society and all the countries across the globe have realized the need for treating 'financial inclusion' and 'human capital' as policy imperative for inclusive growth.

In India the agenda for inclusive growth was adopted in the Eleventh Plan Document when policy-makers realized that the accelerated growth of 7.7% achieved during Tenth Plan (the highest ever in any Plan period so far) was not inclusive for many sections of the society especially Scheduled Castes (SCs), Scheduled Tribes (STs), and Minorities. The growth rate brought with it many structural changes which affected the women adversely and fueled the gender inequalities. So the Eleventh Plan intended to achieve not only faster growth but the growth process which ensures broad-based improvement in the quality of life of these excluded sections and bring them into the mainstream of the society. The Approach Paper to the 11<sup>th</sup> Five year Plan, "Towards Faster and More Inclusive Growth" identified various areas where new policy initiatives were needed to achieve the 9% growth target and its desired sectoral composition. 12<sup>th</sup> Five year Plan also continued the focus on inclusive growth which is clear from its subtitle 'Faster, sustainable and More Inclusive Growth'. The plan intended to achieve the same by focusing on the development of both human and institutional capabilities. The plan recognized development of human capabilities as the top most priority due to three reasons:

- The human capabilities are end in themselves.
- These help in raising the productive capacity of the economy and thus increase the ability to satisfy the material needs of the population.
- Improved human capabilities increase the accessibility of marginalized and disadvantaged section of the society to the opportunities thrown up by the growth process thereby promoting inclusive growth.

Some of the important targets focusing on human capabilities fixed under 12<sup>th</sup> plan include:

- To increase the mean years of schooling to seven
- Enhance access to higher education by creating two million additional seats for each age cohort aligned to the skill needs of the economy
- Eliminate gender and social gap in school enrolment
- To provide skill certification to around 50 million people and generate new work opportunities for equivalent number in non-farm sector.
- Reduce Infant Mortality Rate to 25 and Mother Mortality Rate to 1 per 1,000 live births, and improve Child Sex Ratio (0–6 years) to 950 by the end of the Twelfth Five Year Plan.
- Reduce under-nutrition among children aged 0–3 years.

At the institutional level, efforts are being made to bring more and more people under the umbrella of banking institutions and promotion of financial inclusion is at the core of all the plans and policies. To give a boost to financial inclusion, Government of India launched a scheme in August 2014 named Pradhan Mantri Jana Dhan Yojana as a National Mission for Financial Inclusion to ensure access to financial services, namely, Banking/ Savings & Deposit Accounts, Remittance, Credit, Insurance, Pension in an affordable manner. Not only in India, there is a broad international consensus on the importance of financial inclusion as a

powerful social development instrument. It is a well-recognized fact across the globe that inclusive growth cannot take place without inclusive finance. FI bolsters balanced economic growth by ensuring the participation of underprivileged and vulnerable groups such as weaker section of the society and low income groups into the growth process. Global organizations like the World Bank, G20, MDGs, Maya Declaration, have identified high levels of financial inclusion as one path to inclusive growth and reducing inequality. The financial sector is probably the only sector that has the ability to act as a facilitator and multiplier for overall economic growth and stability.

World Bank report, Global Financial Inclusion (Global Findex) 2014 <sup>[8]</sup>, released in April 2015, depicts a significant growth in financial inclusion across the globe with 62% of the adults worldwide having an account at a bank or another type of financial institution or with mobile money provider as against 51% in 2011. Between 2011 and 2014, 700 million adults became account holders while the number of those without an account (the unbanked) dropped by 20 percent to 2 billion. However, the report mentioned that extent of account ownership continues to vary widely around the world and regional disparities continue to prevail between developed and developing nations. India also experienced an improvement of 18 percentage points as the proportion of adults having accounts in banks rose from 35% in 2011 to 53% in 2014. However, a disappointing note is that only 14% of the people saved at financial institutions while the proportion of the population who borrowed from these institutions stood at 6% showing a downward trend from 7.7% in 2011. These figures clearly reveal that people in India are still not going to financial institutions for depositing and borrowing money. The low percentage of usage of these accounts reveal that India still has a very larger proportion of financially excluded population spread across different regions of the country. To ensure balanced and sustainable growth, India needs to put efforts in bringing this financially excluded population under the umbrella of financial inclusion to curtail down the presence of glaring disparities across different regions to ensure inclusive growth. In terms of human capital also India's performance is poor. In comparison to other countries of the world, India lags far behind in terms of Human Capital Index. As per the World Economic Forum's Human Capital Report 2015, India ranks as low as 100 out of 124 countries in overall Index. The report assessed human capital through education, skills and employment statistics by dividing total population into five age groups. India is ranked 18 out of 22 Asia-Pacific countries, trailing Bangladesh (Rank 99), Bhutan (Rank87), and Sri Lanka (Rank60). In South Asia, only Nepal (Rank106) and Pakistan (Rank113) performed poorly in comparison to India (Rank 100).

### **Need & objectives of the study**

Looking at the importance of human capital and financial inclusion in promoting inclusive growth, it was thought pertinent to carry out empirical analysis in India to see how far the policies have been effective in promoting inclusive growth by examining the relationship between the level of financial inclusion and human capital at district level. The quality of human capital is considered to be an important factor

explaining the variations across different regions. The variation in Per Capita Income amongst various States has been worsening in the last two decades. The coefficient of variation had increased from 34 percent (1993–94) to 36 per cent (2004–05) and further to 42 per cent in 2011–12. India is concerned not only about inter-state variations rather prevalent of large scale intra-state variations also pose a great threat to the economy. So taking the state as a unit for judging the level of inclusive growth does not depict true results as various studies have concluded that many developed states of India possess least developed areas within their territories and vice-versa. So in the present study district has been taken as a unit of measurement.

To study the relationship between financial inclusion and human capital in a particular region, two factors namely Literacy Rate and Work-Participation Rate (Employment) have been chosen to represent the human capital. Investment in the education is a prerequisite for improving the human capital and is an important pillar of human capital. It is expected that the literacy level and financial inclusion are positively related as higher the level of financial inclusion, higher will be the level of education or vice-versa. Economic empowerment especially of the deprived classes is another important pre-requisite of inclusive finance as the main idea of inclusive finance is to make available financial resources to these classes at affordable rate so that they can uplift their economic well-being. Due to the availability of data, proportion of working population to total population has been taken as the proxy measure of employment representing economic empowerment. It is presumed that higher the proportion of working population more is the level of economic empowerment and thus the rate of financial inclusion. It is also presumed that high economic empowerment means availability of more resources in the hands of people and thus more investment in human capital i.e. education, health etc. Various statistical techniques like correlation, step-wise regression etc have been applied to reach at conclusion as discussed in the following section.

More specifically, the main objective of the study is:

- To study the impact of Human Capital measured in terms of Literacy Rate and Work-Participation Rate on level of Financial Inclusion by taking FII as dependent variable and other two indicators of human capital as independent variables.

### Review of Literature

Financial Inclusion, being at the core of growth policies amongst all the countries of the world, so many researchers have tried to measure it by taking different indicators of financial inclusion. Various studies have been conducted across different nations of the world to carry out cross country analysis like Park and Mercado, Jr. (2015) [7], Amidžić, Massara, and Mialou (2014) [1], World Bank (2014) [8], Cámara and Tuesta (2014) [4], Samra (2008) and Beck, Demirgüç-Kunt, & Peria, (2007) [3]. All these studies concluded the presence of disparities in financial inclusion level amongst developed and developing countries. In India also, various researchers have tried to measure financial inclusion level but most of these studies have chosen state as a unit of measurement and disparities have been studied in India across

different states like Chakravarty and Pal (2010) [5], Pal and Vaidya (2011) [21], Kumar and Mishra (2011) [13], Laha and Kuri (2011) [15], Chattopadhyay, S K (2011) [6], Bagli and Dutta (2012) [2], Sahu (2013) [23], Rajput and Oberoi (2013) [22], Gupta, Chotia, Rao and Muralidhar (2014) [11]. Those who have chosen a district as a unit of measurement limited their studies to a specific state only i.e. they have tried to study disparities within a particular state by selecting districts of that particular state. The only comprehensive study carried out at district level across India is by CRISIL (2013). CRISIL first time published a comprehensive financial inclusion index (viz., Inclusix) in June 2013. For constructing the index, CRISIL identified three critical parameters of basic banking services namely branch penetration measured as number of bank branches per one lakh population, deposit penetration measured as number of saving deposit accounts per one lakh population and credit penetration measured by taking average of three measures (namely number of loan accounts per one lakh population, number of small borrower loan accounts per one lakh population and number of agriculture advances per one lakh population). CRISIL Inclusix, also used the methodology similar to other global indices, such as UNDP's Human Development Index. The report presented financial inclusion metrics in 632 districts of the country over a three-year timeframe (2009-2011). The CRISIL Inclusix indicated an overall improvement in the financial inclusion in India. CRISIL – Inclusix (on a scale of 100) increased from 35.4 in March 2009 to 37.6 in March 2010 and to 40.1 in March 2011. The study also noted the presence of wide disparity in basic banking services in India. However CRISIL used only three indicators of financial inclusion and that to in relation to the population only. Keeping all these factors in mind Kaur Jatinder (2017) [12] in her research developed a comprehensive FII taking 22 indicators covering three different dimension of financial inclusion namely; branch penetration, deposits penetration and credit penetration across 632 districts of India covering all the districts belonging to 28 States and 7 UTs of India. The author measured financial inclusion by applying the technique of T-Score and on the basis of FII, all the 632 districts of India were divided into two categories: High Financial Inclusion Districts (with FII>50) and Low Financial Inclusion Districts (with FII< 50).

### Data base and methodology

The study used the FII developed by the author and to study the relationship between Human Capital and the Financial Inclusion level of different districts (weighted), the following two indicators have been chosen for the present study as the representative measures of human capital:

1. Literacy Rate (XL)
2. Proportion of Working Population to Total Population of each District (XW)

Literacy rate is an important indicator which has direct impact on the promotion of financial inclusion as it is expected that higher the proportion of educated population in a particular region, higher will be the banking habits and thus more developed will be the financial services in that area. Work-participation rate has been taken as a proxy measure of economic empowerment. It is presumed that more the economic empowerment better is the health as people have

more resources to spend on their well-being.

For studying the importance of the selected two variables step-wise regression analysis has been applied with FII as dependent variable and other two factors as independent variables.

### Findings of the Study

The results of the analysis are given in Table 1. It is seen from the Table 1, that of the two variables, only Literacy rate is found to be important in explaining the variations in FII across 632 districts as Work Participation Rate is excluded from the regression analysis.

**Table 1:** Variables Entered/ Removed (a)

Model	Variables Entered	Variables Removed	Method
1	XL	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a) Dependent Variable: Y

Table 2 gives the summary of the overall fit of the model. The value of R square is .118 depicting that 11.8% of the variations in FII are due to the variations in literacy rate across different districts of India. Literacy rate and FII have been found to be positively related to each other. These results also support our hypothesis that education is an important pillar of financial inclusion and thus inclusive growth. Table 3 presents

the results of ANOVA test which depicts that the model significantly predicts the outcome variable as  $p < .001$ . Table 4 gives the coefficients of the regression model which shows the degree and significance that the predictor variable has on the dependent variable. It is seen that one unit increase in literacy rate leads to .011 unit increase in the level of financial inclusion.

**Table 2:** Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.344(a)	.118	.117	.29646

a) Predictors: (Constant), XL

**Table 3:** ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.437	1	7.437	84.620	.000(a)
	Residual	55.372	630	.088		
	Total	62.809	631			

a. Predictors: (Constant), XL

b. Dependent Variable: Y

**Table 4:** Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	49.217	.086		572.542	.000
	XL	.011	.001	.344	9.199	.000

a) Dependent Variable: Y

The overall model has been found to be significant with  $F(1, 630) = 84.62$ ,  $p < .001$ , and accounted for 11.8% of the variance.

Since the second variable Work participation turns out to be non-significant and it was found from the results of FII, that most of the financially excluded districts are those where primary sector is the main source of livelihood so it was thought pertinent to replace the Work Participation rate of all the workers with the Cultivators Participation Rate (XAG) as agriculture is the main source of employment in India. As per census data, total workers are divided into four categories viz. cultivators, agriculture laborers, household industry workers and other workers which includes all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. The polite of the

workers from agriculture sector can be very well judged from the fact about half of the working population is engaged in agriculture sector that is contributing just 14% to India's GDP. The service sectors which employ just 27% of the workers contribute about 58% of the GDP of India. In India, there are huge gaps between the earnings per worker in agriculture and non-agriculture sector which is reported to be at the ratio of 1:6. Low per capita earnings in the agriculture sector and the financial exclusion of the primary sector dominated districts further strengthened the need to consider work participation rate of cultivators and see whether it turned out to be significant variable or not.

The results of the step-wise regression analysis are given in the following tables. It is seen from the Table 5 that as the Work-Participation rate of cultivators is taken instead of all the workers, the variable enters into the regression model and turns out to be important indicator explaining variations in FII.

**Table 5:** Variables Entered/ Removed (a)

Model	Variables Entered	Variables Removed	Method
1	XL	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	XAG	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a) Dependent Variable: Y

The two variables namely Literacy Rate and Work-Participation Rate of cultivators together explained 16.3% of the variations in FII (R square value .163 (Table 6). The

model is found to be statistically significant in predicting the dependent variable as  $p < .001$  (Table 7).

**Table 6:** Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.344(a)	.118	.117	.29646
2	.404(b)	.163	.160	.28908

a. Predictors: (Constant), XL

b. Predictors: (Constant), XL, XAG

**Table 7:** ANOVA(c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.437	1	7.437	84.620	.000(a)
	Residual	55.372	630	.088		
	Total	62.809	631			
2	Regression	10.245	2	5.122	61.294	.000(b)
	Residual	52.564	629	.084		
	Total	62.809	631			

a. Predictors: (Constant), XL

b. Predictors: (Constant), XL, XAG

c. Dependent Variable: Y

**Table 8:** Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	49.217	.086		572.542	.000
	XL	.011	.001	.344	9.199	.000
2	(Constant)	49.425	.091		541.985	.000
	XL	.009	.001	.297	7.953	.000
	XAG	-.009	.002	-.217	-5.796	.000

a. Dependent Variable: Y

Table 8 gives the coefficients of regression. The level of financial inclusion and literacy show a positive relation indicating that as the level of literacy increases, the level of financial inclusion also moves upward. However an interesting finding is the association between agriculture work-force rate and financial inclusion which has been found to be significant but negative. Both the FII and work participation rate of cultivators move in opposite direction. It seems to be true also there is already a large proportion of working poor and under employed who are engaged in low productivity activities in agriculture sector and further increase in the ratio will not serve any purpose rather there is a need to switch some force from this sector to other sectors like service and industry.

## Conclusion

From the above analysis it is clear that India continue to face major challenge in terms of levels of financial inclusion as majority of the population continue to be financially excluded and there is a presence of glaring disparities across different districts of the country. About two-third of the total districts

are still financially excluded which constitute a very high proportion. No doubt, government is making efforts and giving incentives to people to open accounts in banks but along with this, there is a need to encourage people to make use of these accounts for savings and borrowings. Lots of efforts are required to spread financial literacy among the disadvantaged groups. Further, the financial institutions need to find out why people are not using their services despite having accounts. One way to improve financial inclusion level is by investing in education. There is a considerable scope of investment in education. In India, any one, aged 7 years and above, who can both read and write with understanding in any language is taken to be literate. There are no minimum standards of formal education for being treated as literate. Thus even if a person has not gone to any school but can read or write is treated as literate. However, this type of level of literacy does not add to any skill and enhance the level of knowledge of the person unless some formal education and training is received. For economic empowerment and reducing income inequalities, it is a must to improve the level of education. As per census 2011, of the total literates 65.49%

are below matric i.e. 10<sup>th</sup> grade (Table 9). So there is a considerable scope for improvement in this field as with such

a low level of education, it is very difficult to achieve inclusive growth.

**Table 9:** Level of Education of Population in India

Level of Education	Proportion in Total Literates (%)
Literates without educational level	04.60
Below Primary	19.24
Primary	24.12
Middle	17.53
Matric/Secondary	13.87
Senior Secondary	10.21
Non-Technical Diploma not equal to Degree	00.14
Technical Diploma not equal to Degree	00.95
Graduate and Above	08.94
Unclassified	00.40
Total	100.00

Source: Census 2011

The negative relation between the work rate participation of cultivators and FII clearly depicts the presence of undisguised employment in agriculture sector which calls for investment in short-term skill oriented and vocational courses to shift the people from low productive jobs to better and productive jobs. As the structure of labor market and its pattern of employment are crucial in shaping the development of a nation so there is an urgent need to restructure Indian labor market by improving the skills of labor force to switch some workforce to other sectors like secondary and service. Indian labor market is currently very informal and dominated by low paying and relatively unproductive jobs. The rate at which India's labor force is growing, it is expected that by 2030, India will have a workforce larger than that of China. Thus, to reap the benefits of 'Demographic Dividend', India needs to work on war footing to provide education and skill to this growing young population. Thus investment in education and skill development hold the key to speed up the process of inclusive growth.

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