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Financial Inclusion and Human Development in India: An Inter-State Analysis

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Abstract :

This paper investigates whether financial inclusion contributes to economic development in India. This research paper was based on secondary data. The period of the study is 2019. In this paper, we are analysing the situation of financial inclusion in 28 states of India. The results suggest that the level of financial inclusion is very poor in most of the states and further analysis points a direct relation of financial inclusion with growth and standard of living while a negative relation with poverty. As a result of the work, we found that there is a positive correlation between financial inclusion and human development, demonstrated in the Pearson correlation matrix. Therefore, financial inclusion is an important drive for economic development, promoted through the access and use of formal financial systems, and it contributes in human development. Further, it contributes in economic development in India.

Keywords: *Financial Inclusion, HDI, Inter states, Financial Inclusion Index, Economic development*

1. Introduction

Financial inclusion is the recent concept, which helps achieve the sustainable development of the country, through available financial services to the unreached people with the help of financial institutions. Financial inclusion can be defined as easy access to formal financial services or systems and their usage by all members of the economy.

Financial inclusion is one of the most important aspects in the context of human development and inclusive growth. An inclusive financial system promotes efficient allocation of resources in a productive manner and therefore diminishes the cost of capital. Availability of proper financial services can have a major effect on improving the day-to-day management of finance related issues. It tends to curb the expansion of informal sources of credit such as moneylenders which are somewhat exploitative. During his tenure as UN Secretary-General, Kofi Annan stated in 2003 that the harsh reality lies in the fact that majority of the poor people around the world still do not have access to sustainable financial services which include deposit, credit etc. He stressed the fact that our main focal point should be to deal with the constraints that

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restrict complete participation of people in the financial sector and we must develop a financially inclusive economy to improve the lives of people.

The definitions of financial inclusion in India are given by Rangarajan Committee on financial inclusion (2008), stating financial inclusion to be a "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." Raghuram Rajan Committee on Financial Sector Reforms (2009), which defined financial inclusion as "expanding access to financial services such as payment services, savings products, insurance products and inflation-protected pensions.". These definitions focus on providing affordable access to financial services to each individual of the economy.

Financial inclusion cannot be restricted merely to the opening of savings accounts and/or providing credit for consumption/consumer spending. It needs to focus more on enhancing the capacity building of the poor. It needs to devise and deliver financial products that can help in risk and vulnerability management for the poor in the context of their fragile livelihoods and the vicious cycle of poverty, which is often caused by structural weaknesses and other factors (Arunachalam, 2008). While financial inclusion can be substantially enhanced by improving the supply side or the delivery systems, it is also important to note that many regions, segments of the population and sub-sectors of the economy have a limited or weak demand for financial services. In order to improve their level of inclusion, demand side efforts need to be undertaken including improving human and physical resource endowments, enhancing productivity, mitigating risk and strengthening market linkages (NABARD, 2008). It is also important to establish the linkage between the process of financial inclusion and the level of human development. Human Resource Development (HRD) is the process of increasing the capacity of human resources through the development. Human Resource Development is something that everyone does. Individuals do it as they work to develop themselves; managers do it as they work to support others' development and the Human Resource Development staffs does it, as they create the overall development tools for an organization. Thus, it is a process of adding value to individuals, teams and the organization as a human system. In a larger context, Human Resource Development refers to empowering people and enabling them to use their power for development of the organization to which they belong, and society at large. Human development is a process of enlarging people's choice. The first human development report of the United Nations Development Programme (UNDP) published in 1990 identified three important indicators reflecting reasonable choices of people for sustaining a life with dignity. The most important choices are considered to be: a long and healthy life, to be educated, and to enjoy a decent standard of living. Ensuring an access to financial services can be seen as an effective instrumental mechanism for meeting these ends. Undoubtedly, financial deepening is considered to be associated with a higher level of human development. Under the circumstances, attempts have been made in this paper to examine the inter-state variations in the level of financial inclusion and that of human development in order to establish the empirical relationship between them.

Financial development has an important bearing on the growth of human capital and thus, in turn, influences the level of human development. However, this causality is a complex process. There might be indirect channels whereby one reinforces the other. Several attempts have been made in the literature to establish the causal link between financial development and human development. In fact, income inequality and poverty act as a hindrance to human development. It has been argued that financial development disproportionately boosts the income growth of the poorest quintile, reduces income inequality, and is thus strongly associated with poverty alleviation (Beck, *et al.*, 2006). Intuitively, the lower the level of poverty, the higher is the level of human development. Thus, financial development positively influences the level of human development. This argument is further substantiated by the fact that the access to a banking network is negatively associated with the level of poverty and is thus positively associated with the level of human development. Over the period 1961-2000, the expansion of rural branches significantly lowered the level of rural poverty in India (Burgess, *et al.*, 2004; Pande, 2004). The enhancement of economic opportunities through banking inclusion has an indirect effect upon the attainment of education and health opportunities and this, in turn, induces the level of human development. The causal link between financial inclusion and human development is depicted in the figure below:

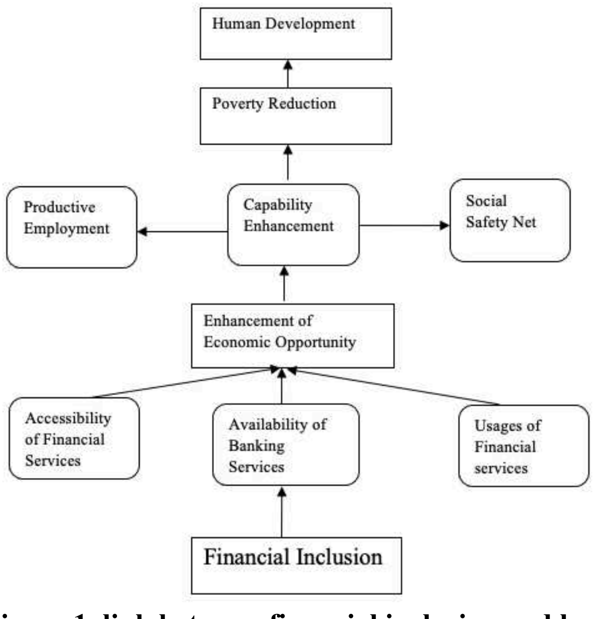

Figure 1. link between financial inclusion and human development
Source: Kuri & Laha, 2011

The economic opportunities created by growth need to be made available across the entire spectrum of the population including the vulnerable sections of society.
The process of financial inclusion facilitates the creation of an environment for providing better access to economic opportunities. In order to ensure equal access, it is necessary to strengthen human capabilities to enable the people to qualify for productive employment. On the other hand, a social protection system through the provision of a social safety net is required for the chronically poor, which would enable them to survive with dignity. The social safety net acts as a springboard for helping the vulnerable sections of the society break out of the poverty trap (Kuri, 2010).

2. Theoretical Background

Singh & Yadava (2021)'s study examine the technical efficiency of financial inclusion of Indian states by Data Envelopment Analysis using human development as input. They constructed three dimensional financial inclusion index for 28 states from 2010 to 2017. They found that technical efficiency states with better human development perform better in term of FII especially North-eastern and high-income Indian states. Santos & Filho (2021) examined the financial inclusion contribution in economic development in Brazil. They have used secondary data period from 2004 to 2017, and found that there is a positive statistical correlation between financial inclusion and economic development in Brazil. Chaudhary (2016) explored the relationship between financial inclusion and human development across countries. She found that levels of human development and financial inclusion in a country move closely with each other. The correlation coefficient between IFI and HDI values and ranks was calculated significant positive correlation between the two indices. It was also found that income level and financial inclusion in a country move closely with each other. Ahuja & Pathak (2017) analysing the situation of financial inclusion in Indian states. They found that the level of financial inclusion is very poor in most of the states and further analysis points a direct relation of financial inclusion with growth and standard of living while a negative relation with poverty. Kuri & Laha (2011)'s paper examined the association between the financial inclusion and the level of human development. They found that the ranking of the level of financial inclusion broadly follows the same pattern as the modified Human Development ranking. This study suggests that the level of human development and that of financial inclusion are positively correlated, means the states having a high level of human development are also the states with a relatively high level of financial inclusion.

The analysis is focussed on two main objectives namely

1. To analyse an inter-state extent of financial inclusion in India
2. To understand association between index of financial inclusion and HDI among Indian states.

3. Methodology

This research paper is based on secondary data collected from Reserve Bank of India, UNDP, Subnational HDI Global Data Lab, EPW research foundation, journals etc. The study covers all the 28 states of India and is carried out for the year 2019.

At first Financial Inclusion Index (FII) have been constructed based on three dimensions. Three dimensions (equal weight), such as number of Branches per 100,000 people (accessibility) number of total employees per 1000 population (availability), deposits accounts (utilization) are considered to show FII of 28 states of India. This study calculates financial inclusion index (IFI) for 28 states of India except union territories. A scale of measurement 0 (zero means no financial inclusion) to 1 (one means high financial inclusion). Depending on the values of IFI, states are categorized into three categories (Sarma, 2008, Chattopadhyay, 2011, Soni & Nath, 2017). (i) $0.5 < \text{IFI} \leq 1$ – high financial inclusion, (ii) $0.3 \leq \text{IFI} < 0.5$ – medium financial inclusion, (iii) $0 \leq \text{IFI} < 0.3$ – low financial inclusion.
The formulas used are:

$$\mathrm{Di} = \frac{\mathrm{Ai} - \mathrm{mi}}{\mathrm{Mi} - \mathrm{mi}} \tag{1}$$

$$\mathrm{IFIi} = 1 - \frac{\sqrt{(1-\mathrm{D1})^2 + (1-\mathrm{D2})^2 + \cdots + (1-\mathrm{Dn})^2}}{\sqrt{n}} \tag{2}$$

$$\mathrm{IFIi} = 1 - \frac{\sqrt{(1-d_1)^2 + (1-d_2)^2 + (1-d_3)^2}}{\sqrt{\mathrm{n}}} \tag{3}$$

The Human Development Index (HDI) is an index that measure key dimensions of human development. The three key dimensions are: 1) A long and healthy life- measured by life expectancy, 2) Access to education measured by expected years of schooling of children at school entry age and mean years of schooling of the adult population, 3) A decent standard of living measured by Gross National Income per capita adjusted for the price level of the country. In this study, we have taken Human Development Index of 28 states of India except union territories for the 2019 year.

According to Human Development Report (2020), HDI was categorised into three categories such as High (0.700-1.000); Medium (0.555- 0.699) and Low (0.350- 0.554). But surprisingly, lowest HDI value found .571 in 2019. Therefore, this paper has been taken two category high human development and medium human development.

4. Empirical Findings/Results

Using data on all three dimensions (availability, accessibility and utilization) for 28 states for the years 2019, IFI values have been computed. The IFI values computed for various states are presented in table below.

Table 1: Index of Financial Inclusion across Different States in India

States	d_1	d_2	d_3	IFI	Rank	Category
Maharashtra	.763	.733	1.000	.794	1	High Financial Inclusion
Uttar Pradesh	1.000	1.000	.577	.756	2	
Tamilnadu	.525	.635	.551	.568	3	
Karnataka	.452	.587	.459	.495	4	Medium Financial Inclusion
West Bengal	.566	.465	.392	.470	5	
Gujarat	.362	.462	.334	.384	6	
Rajasthan	.337	.422	.287	.346	7	
Bihar	.439	.389	.218	.342	8	
Madhya Pradesh	.386	.381	.246	.335	9	
Andhra Pradesh	.350	.403	.247	.330	10	
Kerala	.265	.369	.265	.298	11	Low Financial Inclusion
Punjab	.231	.375	.240	.279	12	
Telangana	.259	.297	.229	.261	13	
Haryana	.190	.278	.207	.224	14	
Odisha	.229	.279	.157	.220	15	
Jharkhand	.170	.167	.102	.146	16	
Assam	.162	.132	.101	.131	17	
Chhattisgarh	.140	.141	.081	.120	18	
Uttarakhand	.070	.113	.067	.083	19	
Himanchal Pradesh	.047	.082	.043	.058	20	
Goa	.018	.032	.021	.024	21	
Tripura	.020	.019	.014	.018	22	
Meghalaya	.007	.012	.007	.009	23	

States	d_1	d_2	d_3	IFI	Rank	Category
Manipur	.007	.002	.002	.004	24	
Mizoram	.001	.003	.001	.002	25	
Nagaland	.002	.001	.002	.002	26	
Arunchal Pradesh	.002	.001	.000	.001	27	
Sikkim	.000	.000	.000	.000	28	

Source: Author's Calculation

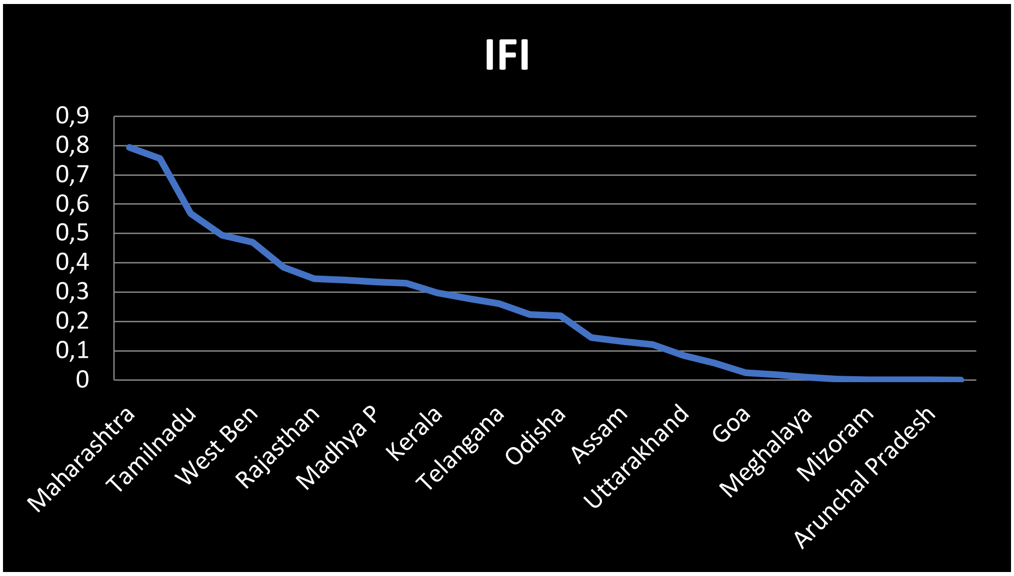

Figure 2: Financial Index of Inter-states (2019)

Source: Author's compilation

Table 2: HDI across Different States of India

States	HDI Value	Rank	Category
Kerala	.778	1	High HDI
Goa	.759	2	
Himanchal Pradesh	.721	3	
Punjab	.720	4	
Sikkim	.713	5	
Haryana	.705	6	
Mizoram	.701	7	
Maharashtra	.694	8	

States	HDI Value	Rank	Category
Manipur	.694	9	Medium HDI
Karnataka	.680	10	
Uttarakhand	.680	11	
Nagaland	.676	12	
Gujarat	.669	13	
Tamilnadu	.665	14	
Telangana	.665	15	
Arunachal Pradesh	.657	16	
Tripura	.655	17	
Meghalaya	.652	18	
Andhra Pradesh	.646	19	
West Bengal	.638	20	
Rajasthan	.625	21	
Chhattisgarh	.610	22	
Odisha	.608	23	
Assam	.602	24	
Uttar Pradesh	.600	25	
Jharkhand	.595	26	
Madhya Pradesh	.591	27	
Bihar	.571	28	

Source: Author's calculation based on Subnational HDI Global Data Lab

The human development is influenced by the financial inclusion. The financial inclusion provides the access, usage and availability of financial services to human beings. The financial services such as credit services, banking services are useful for people. The financial requirements of human beings can be fulfilled through the financial inclusion.

A comparison of index of financial inclusion (IFI) with human development index (HDI) for 28 Indian states has been presented along with their ranks.

Table 3: Financial Inclusion Index and Human Development Index (2019)

States	Financial Inclusion Index		Human Development Index	
	Value	**Rank**	**Value**	**Rank**
Maharashtra	.794	1	.694	8
Uttar Pradesh	.756	2	.591	27
Tamilnadu	.568	3	.665	14
Karnataka	.495	4	.680	10

States	Financial Inclusion Index		Human Development Index	
	Value	**Rank**	**Value**	**Rank**
West Ben	.470	5	.638	20
Gujarat	.384	6	.669	13
Rajasthan	.346	7	.625	21
Bihar	.342	8	.571	28
Madhya P	.335	9	.600	25
Andhra P	.330	10	.646	19
Kerala	.298	11	.778	1
Punjab	.279	12	.720	4
Telangana	.261	13	.665	15
Haryana	.224	14	.705	6
Odisha	.220	15	.602	24
Jharkhand	.146	16	.595	26
Assam	.131	17	.610	22
Chhattisgarh	.120	18	.608	23
Uttarakhand	.083	19	.680	11
Himanchal Pradesh	.058	20	.721	3
Goa	.024	21	.759	2
Tripura	.018	22	.655	17
Meghalaya	.009	23	.652	18
Manipur	.004	24	.694	9
Mizoram	.002	25	.701	7
Nagaland	.002	26	.676	12
Arunchal Pradesh	.001	27	.657	16
Sikkim	.000	28	.713	5

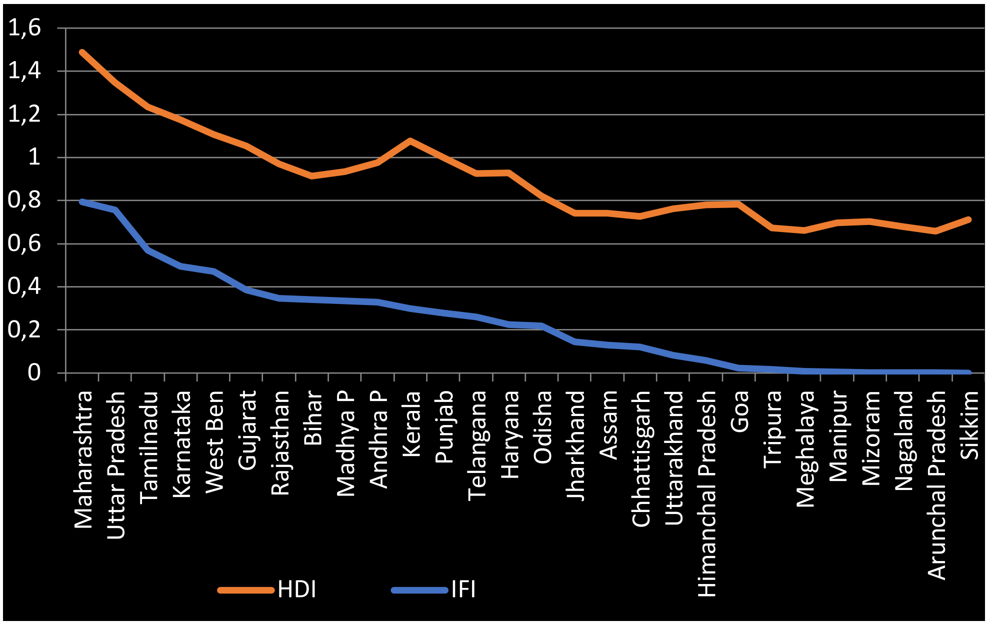

Figure 3: Financial Index of Inter-states (2019)

IFI and HDI of 28 Indian states seem variations between IFI and HDI. The states of Maharashtra, Tamilnadu, West Bengal and Rajasthan which rank the best in financial inclusion are also found to have high human development index. Furthermore, the states of Chhattisgarh, Odisha, Assam and Bihar which are among the lowest on index of financial inclusion perform poorly on human development index as well.

Table 4: Cross-Tabulation between FII and HDI

		HDI	
		High	Medium
FII	High		Maharashtra, Uttar Pradesh, Tamilnadu
	Medium		Karnataka, West Bengal, Gujarat, Rajasthan, Bihar, Madhya Pradesh, Andhra Pradesh,
	Low	Kerala, Punjab, Haryan Goa, Mizoram, Sikkim	Telangana, Odisha, Jharkhand, Assam Chhattisgarh, Uttarakhand, Tripura, Meghalaya, Manipur, Nagaland Arunachal Pradesh

Source: Author's Presentation

We can see clearly in the above table majority of states with low FII have medium HDI (11). However, seven states with high HDI found low FII. This indicates that there can be an association between FII and HDI. To check this association, we have used simple linear regression analysis as a tool where a unidirectional relationship among the variables. In this equation the dependent variable is HDI and α, and β are the parameters. μ_i is the stochastic error term. $Y_{HDI} = \alpha + \beta_{FII} + \mu_i$

The results suggest that HDI is affected by FII, in other words, financial inclusion impacts standard of living and economic growth. The coefficients value is .676 with positive sign. We can conclude that financial inclusion can lead to improvement in the living standards for a more number of members of society, and ensuring maximum inclusion can lead to better growth. But given the case of India, the objective is far from achieved. The reasons could be dearth of financial literacy, or lack of basic education for that matter, tight regulatory framework in the market, high maintenance cost of infrastructure or many others.

5. Conclusion

This paper throws some light on the extent of financial inclusion across 28 states on the basis of an index of financial inclusion. The paper also examines the association between the financial inclusion and the level of human development. The states like Maharashtra, Tamilnadu, West Bengal and Rajasthan which rank high in financial inclusion are also found to have high human development index. Furthermore, the states like Chhattisgarh, Odisha, Assam and Bihar which rank lowest on index of financial inclusion perform poorly on human development index as well. Therefore financial inclusion should be major objective of economic and social development. There is a need for coordinated effort towards encouraging financial inclusion.

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