

Operationalising Financial Inclusion Index as a Policy Lever: Uttar Pradesh (in India)-A Case Study

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Abstract

The inter relationship between financial development and economic growth is well accepted. In the recent years, the debate has expanded to include the notion of financial “exclusion” as a barrier to economic development and the need to build an inclusive financial system (Beck et al. 2008). Recent empirical evidence using household data indicates that access to basic financial services such as savings, payments, insurance and credit can make a substantial positive difference in improving poor people’s lives (Caskey et al. 2006, Dupas and Robinson 2009). India with its diversities in extent of development across provinces and within them across regions badly needs a ‘multi-variate index’ to reflect extent of financial penetration so that policy measures can be effectively organized in sync with requirements. This paper aims at using a Financial Inclusion Index (FII) to rank considered 71 districts of Uttar Pradesh (in India) in terms of level of financial penetration. Based on the secondary data on some of the available factors, suitable FII has been enumerated for the districts. The main objective of the study is to provide a statistically justified method for assignment of appropriate weights to the factors according to their importance and devise a method to obtain individual factor indices. Instead of one, four methods are discussed and compared extensively. The proposed index lies between 0 to ∞ , where 0 represents complete financial exclusion. This ranking will help policy makers choose appropriate levers to mitigate the complex problem of financial penetration-deficit.

Keywords: Financial Inclusion, Financial Development, GDP, Principal Component Analysis (PCA).

Introduction

The relationship between financial development and economic growth is well explained in the literature (Beck et al. 2000, Beck et al. 2004, Demirguc-Kunt and Maksimovic 1998, Demirguc-Kunt et al. 2008, King and Levine 1993, Klapper et al. 2006, Levine 2005). For firms, especially Small and Medium Enterprises (SMEs), access to finance is often the main obstacle to growth (Beck et al. 2005, Beck et al. 2006, Cressy 2002, Demirguc-Kunt et al. 2008, IADB 2004, Schiffer and Weder 2001). The term Financial Inclusion (FI) has gained importance since the early 2000s. It is argued that as banking services are public goods. Availability of banking services to all the citizens without discrimination is desirable. Mostly, low income segments of an economy are excluded from such services and therefore the poor are the prime focus of FI. It may be noted that although in the well developed countries the financial system is advanced, still they are not all-inclusive, and mainly the poorer section of the society are deprived of the facilities. The importance of an all-inclusive financial system is essential for any economy either developing or developed and it is desired for many more reasons. Firstly, it enables efficient allocation of productive resources. Secondly, it enhances the regular management of finance. Thirdly, it reduces the upsurge of illegal/ informal financial sources. Thus an all-inclusive financial system enhances efficiency and welfare by providing avenues for secure and safe saving practices and by facilitating a whole range of efficient financial services. Financial inclusion has therefore become a common objective for many central banks among the countries.

According to Leeladhar (2006) “FI is delivery of banking services at an affordable cost to the vast sections of disadvantaged and low income groups. Unrestrained access of public goods and services is the sine qua non of an open and efficient society. As banking services are in the nature of public goods, it is essential that availability of banking and payment services to the entire populations without discrimination is the prime objective of the public policy.” As banking system is the prime source of providing financial services to the general public and hence FI and banking inclusion are somewhat synonymous and therefore the availability and utility of the banking services by people from all parts of the society are of main concern for any economy.

Thorat (2007) described “By FI we mean the provision of affordable financial services (viz., access to payments and remittance facilities, savings, loans and insurance services) by the formal financial system to those who tends to be excluded.” According to the working definition of the (Rangarajan Committee 2008), “FI may be defined as the process of ensuring access to financial services and timely

and adequate credit where needed by vulnerable group such as weaker sections and low income groups at an affordable cost.” But in this study we focused global definition of FI which states ease of availability, accessibility and usage of the formally formed financial system to all the members of an economy. All financial services viz. savings, credit, insurance and payments, etc. should be provided by formally formed financial systems according to their convenience, affordability, safety and dignity of treatment to everyone including poor, rural, informal and groups who are often discriminated like woman, minority, disabled etc. According to FATF (2011), FI is providing access to an adequate range of safe, convenient, and affordable financial services to disadvantage and other vulnerable group, including low income, rural and undocumented persons, who have been underserved or excluded from the formal financial sectors. Global definition has been taken into consideration so as to make it comparable globally. According to Mandira Sarma (2010) FI has been defined as “the process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy”. The author took global definition of FI and approached to device an index of FI. That paper is based on the data on many countries and in the study mainly three factors were used viz. banking penetration, availability of banking service and usage of the financial system which are further influenced by many factors. A multidimensional approach has been followed in the paper. Chattopadhyay (2011) demonstrated an axiomatic measurement approach developed in the human development literature to measure FI. He referred his proposed index to be suitable for policy making point of view. This index can be broken down into factor wise components that indicate the individual percentage contributions. He employed his measure to make a cross-country comparison of FI and as well as to analyze FI across sub-natural regions of India. According to Chakraborty and Pal (2010) all the factors were given equal weights and Kolkata’s (a district in West Bengal state of India) FII came out to be 1, i.e. complete FI, which signifies that every person in Kolkata has a proper account in a formal financial institution and the credit facilities are equal for each individual. The latest World Bank working papers (Beck et al. 2004, Beck et al. 2008, Demirguc-Kunt et al. 2008, Demirguc- Kunt and Klapper 2012) on FI have not provided any particular methodology for obtaining the index. They procured factors of FI through surveys and depicted the FI through graphical technique. They considered the adult population with age 15 or more. They represented the level of FI through many factors in different economies, different societies of people classified according to gender, income level, profession, etc. Mishra et al. (2012) discussed four methodologies to formulate the Systematic Liquidity Index (SLI) and compared them according to the variability explained by the methods. In the paper, time-series data has been used and the method of PCA chosen as one of the methods to obtain the required

index. Initially, the First Principal Component (FPC) was taken as the index and subsequently, this method and the rank-percentile method were suppressed and the other two methods i.e. the relative method and the normal standardization method were tested and obtained as the best methods for getting the index. The Indian Banks' Association (IBA) sub-committee in their approach paper on IT-enabled FI mentioned that technology can play a big role in enhancing the FI in India. According to them "FI initiative primarily aims to deliver financial services to all the people in a fair, transparent and equitable manner at an affordable cost". Their focus areas for FI were community banking, business correspondent/facilitator model, credit counselling, customer education, credit offtake etc. Noelia Cámara and David Tuesta (2014) believe demand and supply-side information to gauge FI for an economy. They mainly focused on three factors viz. usage, barrier and access to measure the level of FI. They claim the factor access to have a threshold limit. Above the limit, this factor should not impact FI. They have used a two stage PCA in order to evaluate an index of FI. In the first stage, they have modelled usage, barrier and access using the respective variables and then combining them with proper weights. Goran Amidžić et al. (2014) states "FI can broadly be defined as an economic state where individuals and firms are not denied access to basic financial services based on motivations other than efficiency criteria". They have defined it on three factors viz. outreach, usage, and quality of financial services. A multidimensional approach was adopted to derive an index of FI. They used Factor Analysis (FA) after normalizing the factors and weighted geometric mean was used for getting appropriate weight for the computation of the composite indices.

Methodology and Analysis

This study aims to develop a measure of FI. As discussed in the literature review, there is a scope to improve the methodologies used in the earlier literature to create such an index. The methodology in the study is focused to develop a statistically justified method for obtaining FII with a proper weighing technique so as to make use of it to compare FI among the districts within the state and across the states as well. Unlike the earlier papers, an effort has been made to develop a comprehensive methodology to assign appropriate weights to the influencing factors according to their importance. It is felt that the methodology of assigning weights is sensitive to the data changes. Suitable methods for obtaining individual factor index are proposed. The proposed index would lie between zero to infinity, where zero indicates complete financial exclusion. There is no upper bound for FII as complete FI is not achievable. There is always a scope for improvement in any district regarding FI. Thus the proposed FII does not have an upper bound.

Since globally accepted definition of FI is taken into consideration, it is therefore imperative to look into the study from that angle. As per the definition, there are two entities: banks and common citizen. A common person should have access to the banks to avail various financial services it offers. Accessibility to the bank's services depends on the ease of their availability as and when required/demanded by the other entity, e.g. the common man. Thus, it is possible to imagine a concept of the popular 'demand-supply chain' to explain the activity of FI in which banks may be considered as the supplier of the services and access to the services may be considered as demand in the economy. With this approach, appropriate factors are considered on both the sides of the chain and based on the results we may suggest suitable policy framework to the concerned governing or regulatory bodies. The whole process of the delivery of FI as a product can be nuanced in a 'place specific' and 'demand specific' manner. The performance of the indicator/s – social or economic – to boost the aim of FI at a particular region can be reviewed and suitable change in policy paradigm may be recommended for implementation.

Unlike any other indices like price indices (wholesale price index or consumer price index or cost of living index) where there is only one party i.e. the customer, in this case there are two parties which are equally responsible for FI. They are the banks and the citizen. There are many influencing factors from both sides which affect FI. Establishment of a bank is one of the fundamental supply affecting factors and therefore number of bank branches has been considered in the study. We have used its per-capita figure to make it comparable. It may be assumed that any bank open its branche/s at the place/s where there is/are demand for their services. It could be deposits-intensive or loans-intensive. But viability of the business is considered before ensuring its supply at any particular place. Consequently, if business is not achieved at the desired level, closure of the same is examined. From the bank side other affecting factors are number of ATMs, banking staff (male and female) and Banking Correspondences (BC). Number of branches has been used as proxy of these parameters. Since any commercial activity depends on potential economic activities, we may consider per-capita income of the district or per-capita Gross State Domestic Product (GSDP), number of Self Help Groups (SHG), number of unbanked villages, etc. to judge the demand. GSDP alone may be used as other two factors are highly correlated with GSDP. Credit plays an important role for the development of any economic activity and therefore per-capita credit may be considered. As per the definition all citizens should have access to the banks irrespective of gender and therefore deposit and credit accounts and total amounts in deposit accounts are considered separately for male and female. Demand may rise when people are aware about the financial services and that may happen with the literacy. Hence, literacy rate of male and female may also contribute to the level of FI. Some other factors

like willingness can be taken as one of the relevant factors for FII but unfortunately such information is not available. It may be assumed that willingness has strong linkage with literacy and therefore literacy may be considered as proxy parameter of willingness.

In this study the factors, whose data are readily available, are taken into consideration and therefore secondary data has been used rather than primary. Data on 71 districts of Uttar-Pradesh (UP), a state of India, have been taken into account rather than all 75 districts (the present status) as districts-wise data on some parameters are not readily available for all 75 districts. The population figures and the literacy rates are taken from census of India - 2011, district-wise GSDP figures are obtained from Department of Economic Analysis and Research of UP and the bank related data as on 31st March, 2010 are obtained from the Basic Statistical Returns publications of Reserve Bank of India (RBI). The data on male and female accounts are separately obtained from the RBI database.

Analysis and Discussion

The main objective of this study is to provide a proper statistical technique for obtaining the weights corresponding to each factors according to their importance in explaining FI. PCA methodology has been used as defined by Smith (2002) and Johnson and Wichern (2007) to obtain such weights. In this methodology, firstly, the correlation coefficient matrix for the whole set of factors is obtained. Then the corresponding eigenvalues of the matrix and the eigen vector of each of the eigenvalues are obtained. Based on the eigen vectors, the principal components are calculated. The basic objective is to transform the variables into another set of variables by using an orthogonal transformation such that the resultant set of vectors become independent. It is known that if there are distinct eigenvalues corresponding to a symmetric matrix then the eigen vectors corresponding to the eigenvalues will be orthonormal to each other i.e. if we consider linear combination of the original set of variables with coefficients as the elements of the eigen vectors then the respective linear combinations will be uncorrelated to each other and the variability explained by each linear combination will be represented by the corresponding proportion of the eigenvalue. It may be noted that the sum of the proportions of all eigenvalues will be unity as it represents the total variability. In the study only the FPC has been taken into account as the factor is to be reduced from 9 to 1, assuming that the variables are linearly related to the measurement of FI and the FPC explains maximum variability of the total variability.

Individual factor indices i.e. D_{ij} corresponding to the factor i of the district j are obtained using any of the following four methods and a comparative analysis has been carried out.

Method I

One of the methods was proposed by Mandira Sarma (2010), where in D_{ij} was obtained in following manner;

$$D_{ij} = \frac{A_{ij} - Min_i}{Max_i - Min_i}$$

A_{ij} : Actual value of the factor i for the district j

Min_i : Minimum among the factor i for all the districts

Max_i : Maximum among the factor i for all the districts

In this method, the index for each factors lies between 0 and 1, where 0 represents complete financial exclusion and 1 represents complete FI. Higher the value of D_{ij} , higher the achievement for the district j in factor i . Complete FI cannot be achieved because there is always scope for its improvement, therefore the index should not have an upper bound. Besides this, range of the factor was used, which over-estimates the measure of dispersion and hence it will under-estimate the index as a whole. If some outliers are present in the data, then it will influence the whole analysis. Moreover, range does not take into account any clustering of results in the data set. Further, only three factors viz. banking penetration, availability of banking service and usage have been considered by the author and arbitrary weights i.e. 1, 0.5, and 0.5 were assigned to them respectively. No proper justification was provided in this regard. Additionally, the final index was measured by using normalized inverse euclidean distance between the observed point and the ideal point. Thus, with the aforesaid drawbacks, this method may not be appropriate.

Method II

To deal with the problems of the first method, another method has been proposed in the study, which is normal standardization technique. In this method D_{ij} is calculated as under;

$$D_{ij} = \frac{A_{ij} - M_i}{SD_i}$$

M_i : Mean of the factor i for all the districts

SD_i : Standard deviation of the factor i for all the districts

In this method since mean of the data set is subtracted from actual observations, some of the observation may lie below the mean. Thus, some of the indices may come out to be negative. The index will be lying between $-\infty$ to $+\infty$. In this method standard deviation is used which is a good measure of dispersion. It takes into account of clustering of data, if present, and gives a reasonably good estimate of

spread in the data. Using this method, it can also be checked whether it is normally distributed, which is useful for further studies like test for any parameter, estimating confidence interval, etc. In this method the index is not bounded and relative judgment may be obtained. The negative index may be interpreted as low value rather than a negative value in true sense. A district will be more financially included than another district if it scores more on FII than the other district. The index for each factor will not be underestimated as in the case of method I and proper indexing can be carried out.

Method III

Another method that can be taken into account for finding out individual factor index is to standardize the actual figures but taking modulus sign in the numerator. Using this method D_{ij} is obtained as follows;

$$D_{ij} = \frac{|A_{ij} - M_i|}{SD_i}$$

In this method the index will lie between 0 and $+\infty$. This method overcomes the difficulty of interpreting the negative index, which is present in method II. This method contains all the advantages of Method II. Comparative study may be carried out using only the numerical figures of the index. But it has a serious drawback as all negative values will be converted into positive, which will result in over-estimation of the indices for some of the districts and leads to wrong conclusion. This method will, therefore, not be a proper measure to implement. Similar measure can be defined by squaring the numerator. Same conclusion can be drawn on that measure as that will also over-estimate the indices for some of the districts.

Method IV

All the three methods discussed above, have some inherent drawbacks. To overcome those drawbacks, another methodology has been proposed to obtain individual factor index for each districts. In this methodology D_{ij} is obtained as follows;

$$D_{ij} = \frac{A_{ij} - Min_i}{SD_i}$$

In this method, minimum value of particular factor is used rather than their mean. This is the only difference between this method and method II and III. Moreover, standard deviation is used as the measure of dispersion, so it takes care of the drawback of the first method. It is assumed that the minimum value is the worst situation. This index will lie between 0 to $+\infty$. That implies that there is no upper limit of the index. It does not assign higher ranks to districts with lower FII as in the case of method II and III.

Subsequently, the principal component method has been used and FPC is obtained which explains maximum variability. Weights corresponding to each factors are obtained by taking proportion of corresponding FPC to the sum of all the FPCs.

It is needed to combine all considered nine individual factor indices into a single index that will reflect the level of FI of a particular district. In the study, the weighted arithmetic mean have been used to obtain the desired index. For a particular district j , let the factor indices are $D_{1j}, D_{2j}, \dots, D_{9j}$ and the corresponding weights w_1, w_2, \dots, w_9 are available. Then FII for a particular district j is calculated as under;

$$FII_j = [(D_{1j} * w_1) + (D_{2j} * w_2) + \dots + (D_{9j} * w_9)] / (w_1 + w_2 + \dots + w_9)$$

Since the sum of the weights is unity i.e. $(w_1 + w_2 + \dots + w_9) = 1$, the above formula may be re-written as follows;

$$FII_j = \sum_{i=1}^9 (D_{ij} * w_i)$$

FII can be obtained using the above formula for each of the districts and then compared. The same methodology can be used for states also to obtain the status of their respective FI.

The correlation matrix for all the considered factors is given in table 1. From the correlation matrix it is noted that correlation of number of banks with male deposit accounts, female deposit accounts, deposit amount, amount outstanding and credit amount are quite high (more than 0.50). With this result it may be interpreted that male accounts will be higher than female accounts as any bank branch opens. This may be because in the Indian context, usually males hold account/s on behalf of entire family. The correlation between deposit amount and number of banks is not so high implying people have accounts irrespective of the amount they are depositing. Correlation between the number of banks and credit accounts is very low but with credit amount it is relatively high. This suggests that as number of banks increases amount credited increases but credit accounts does not increase with the same pace or banks provide credit only to few customers. There is no significant relationship between the number of banks and the literacy rates which is intuitive because banks take their branch opening decisions on business activity rather than literacy rate in an area. Likewise, there is low correlation between number of banks and per-capita GSDP. Even presence of rich people may not attract banks to open branch in an area unless potential business exists there. The correlations of female deposit accounts with male deposit accounts, deposit amount, female literacy, credit amount and GSDP are quite high and more than 0.50. High correlation between

female deposit accounts and male deposit accounts are justifying above mentioned clarification as if there are economic activities at particular place then whether male or female both will be involved. At any place the ratio of male and female are near to one therefore if avenues are open, it will be opened for all either male or female. But lower correlation reflects that males get more opportunities than the females. Though male and female literacy each does not have much correlation with number of banks, number of deposit and credit accounts and deposit and credit amount, but high correlation between female deposit accounts and female literacy implying that high female literacy rate will increase female deposit accounts. It is also noted that the correlation of male deposit accounts with deposit amount and credit amount outstanding is quite high (more than 0.70) which is quite obvious. As amount outstanding and credit amount are denoting the same thing thus the factor amount outstanding can be eliminated and the factor credit amount is taken into consideration as it is one of the main factors influencing FII. Very high correlation between deposit amount and credit amount reflects that if the banks are able to mobilize large amount of deposits they provide more credit. The correlation between credit accounts and deposit amounts is 0.425 which is very low, showing that banks are providing credit to only a smaller section of the society. It reflects that banks are not willing to provide credit to a broader section of society, which leads to financial exclusion. The correlation of GSDP with and deposit amount and credit amount is moderately high. Hence based on the above study only on correlations it may be concluded that the main obstacle for FI is lack of economic activities, which may be improved with required infrastructure, availability of resources, improved political situation etc.

Table 1. Shows correlation matrix for all the factors (calculated on per-capita).

	No. of banks	Female deposit accounts	Male deposit accounts	Deposit amount	Male literacy	Female literacy	Credit accounts	Amount outstanding	Credit amount	GSDP
No. of banks	1.000	0.566	0.709	0.547	0.185	0.425	0.176	0.523	0.611	0.386
Female deposit accounts	0.566	1.000	0.760	0.717	0.340	0.518	0.366	0.700	0.713	0.591
Male deposit accounts	0.709	0.760	1.000	0.844	0.479	0.583	0.356	0.785	0.818	0.549
Deposit amount	0.547	0.717	0.844	1.000	0.310	0.439	0.425	0.982	0.974	0.798

Male literacy	0.185	0.340	0.479	0.310	1.000	0.887	0.034	0.265	0.266	0.223
Female literacy	0.425	0.518	0.583	0.439	0.887	1.000	0.103	0.417	0.441	0.368
Credit accounts	0.176	0.366	0.356	0.425	0.034	0.103	1.000	0.495	0.510	0.636
Amount outstanding	0.523	0.700	0.785	0.982	0.265	0.417	0.495	1.000	0.985	0.849
Credit amount	0.611	0.713	0.818	0.974	0.266	0.441	0.510	0.985	1.000	0.830
GSDP	0.386	0.591	0.549	0.798	0.223	0.368	0.636	0.849	0.830	1.000

The table 2 shows FPCs and weights corresponding to each factors. It may be noted from the table that the weights corresponding to the female factors are quite high implying woman empowerment is quite influential in case of FI.

Table 2. Shows FPC and weight corresponding to the factors.

Standardized factor	FPC	Weight
Per-capita number of banks	0.4334	0.1619
per-capita female deposit accounts	0.3754	0.1402
per-capita male deposit accounts	0.0780	0.0291
per-capita deposit amount	0.4226	0.1578
per-capita male literacy	0.0059	0.0022
per-capita female literacy	0.2537	0.0948
per-capita credit accounts	0.2797	0.1045
per-capita credit amount	0.4324	0.1615
per-capita GSDP	0.3961	0.1480

Based on the obtained weights and the available data on the factors, the FII is obtained using formula given in method IV. Table 3 shows the FII and corresponding ranks of considered 71 districts. From the table it is clear that Gautam Buddha Nagar is the most financially included districts in UP with FII of 6.055 followed by the state capital Lucknow with FII of 4.038, Kanpur Nagar with FII of 2.572 and finally Balrampur came out to be the least financially included district in UP with FII of 0.307.

Table 3. FII of the districts of UP

District	FII	Rank
Gautam Buddha Nagar	6.055	1
Lucknow	4.038	2
Kanpur Nagar	2.572	3
Ghaziabad	2.274	4
Meerut	2.247	5
Kanpur Dehat	1.893	6
Agra	1.859	7
Jhansi	1.838	8
Varanasi	1.665	9
Mathura	1.590	10
Saharanpur	1.394	11
Muzaffarnagar	1.381	12
Baghpat	1.330	13
Mahamayanagar	1.288	14
Aligarh	1.269	15
Bijnor	1.228	16
Hamirpur	1.203	17
Jalaun	1.196	18
Allahabad	1.196	19
Moradabad	1.184	20
JyotibaPhule Nagar	1.182	21
Raibareli	1.158	22
Barabanki	1.155	23
Bareilly	1.136	24
Farrukhabad	1.129	25
Banda	1.123	26
Etawah	1.111	27
Mahoba	1.091	28
Bulandshahr	1.089	29
Etah	1.022	30
Lalitpur	1.018	31
Gorakhpur	1.014	32
Unnao	1.005	33
Faizabad	0.990	34
Sultanpur	0.983	35

Kanauj	0.964	36
Mirzapur	0.954	37
Mainpuri	0.933	38
Chitrakoot	0.933	39
Rampur	0.933	40
Pilibhit	0.931	41
Firozabad	0.922	42
Auraiya	0.916	43
Azamgarh	0.916	44
Pratapgarh	0.900	45
Shahjahanpur	0.899	46
Ballia	0.857	47
Ambedkar Nagar	0.835	48
Mau	0.817	49
Sitapur	0.814	50
Sonbhadra	0.778	51
Fatehpur	0.766	52
Jaunpur	0.762	53
Shravasti	0.746	54
Ghazipur	0.743	55
SantRavidas Nagar	0.741	56
Kheri	0.686	57
Hardoi	0.666	58
Kanshiram Nagar	0.661	59
Basti	0.650	60
Chandauli	0.649	61
Budaun	0.585	62
Deoria	0.516	63
Kaushambi	0.506	64
Gonda	0.465	65
SantKabir Nagar	0.455	66
Sidharthanagar	0.398	67
Maharajganj	0.394	68
Kushinagar	0.351	69
Bahraich	0.334	70
Balrampur	0.307	71

According to each factors which influence FII, we may divide all the districts into four quartiles (segments) based on value of such factors. Districts in the lowest (forth) segment may be improved and carried to the next (third) segment followed by improvement to take it to second and subsequently to first quartile, although further improvement in FI is always possible. From the policy makers' point of view, it is essential to know which district is lacking in terms of FI on account of which factor. If it is known, then corresponding improvement on such factor/s may be incorporated in order to improve the level of FI. The study may provide proper indications to the policy makers for further improvement in FI in each districts of UP based on each factors.

Conclusions

It may be concluded that the proposed methodology is simple and comprehensive and the index will lie between zero to infinity, where zero represents complete financial exclusion. Using proposed methodology, FII can be calculated at any point of time for a specified region and leaves scope for updating over time. Moreover, if more factors are available, they can easily be incorporated in the study. From the results, it comes out that more financially included districts are urbanized whereas the lower financially included districts are rural in nature. Policy makers can look into factors that affect FI in a given area while forming policies aimed at improving FI. It is also concluded that although banking service is one of the most important factors among considered factors but other factors like credit and deposit amount and female accounts are also important and therefore female empowerment may play a vital role in improving FI.

As an extension to this discussion, now-a-days the easiest and effective mode of advertising or showcasing of products is through internet. It can be assumed that a person using internet will have more probability of having the knowledge of banking products than a person who does not have the facility to use internet. Hence, internet penetration rates can enlarge the view of FI status. The study is mainly based on the secondary data available for some of the factors. But, they are not the complete set of factors and therefore it is possible to improve the study with augmented data set.

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