

Empirical Study On Financial Inclusion: A Structural Equation Modeling Approach

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Abstract - Inclusive and sustainable development, collective access to assets, reduction in poverty and overall improvement in individuals' well-being can all stem from financial inclusion. However World Bank study estimated 2 billion working age adults globally, more than half of the total adult population have no access to the formal financial services. Cost of opening and maintaining a bank account, inadequate savings, a lack of physical accessibility to banks and a lack of trust in traditional financial institutions can act as hurdles to financial inclusion. Keeping in view the significance of financial inclusion the present study aims to identify the indicators of financial inclusion and assessing the impact of financial inclusion on economic development. Primary data are obtained personally from the beneficiaries of financial inclusion belonging to three districts of economically backward state of Chhattisgarh through structured questionnaire. The survey data was analysed using structural equation modeling (SEM) technique. The model fit indices were found to be significant for both the measurement model and structural model. The result suggests that, financial access; availability and usage of banking services are the significant predictors of financial inclusion, these parameters of financial inclusion can really boost the financial condition and standards of life of the poor and the disadvantaged population of the country. The study supports that financial inclusion has the positive and significant impact on economic development.

Key words Banking Services, Factors, Financial inclusion, Economic Development

I. INTRODUCTION

The financial reforms of the 1980s and 1990s that took place in most economies were likely to improve financial depth and the use of formal financial services such as loans, savings, payment services, and other associated services. Financial inclusion can improve the worth of government payment of social safety net transfers and the new types of financial innovation can lesser transaction costs which can add more private sector involvement in international development (Cull, Ehrbeck, & Holle, 2014). However, the level of access and use of formal financial services is still very low. In all likelihood, the financial inclusion schema will have a major role in the post 2015 sustainable development agenda by 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 reasonable cost

The definition of financial inclusion is not unanimous across countries as the study have been undertaken in context of Indian state of Chhattisgarh so the variables have been taken with reference to Indian perspective,

Developing a contextually relevant definition of financial inclusion can provide helpful direction not only by guiding what variables to measure, but also by identifying the benchmarks against which success or failure is measured. How financial inclusion is defined is therefore likely to influence the nature of the study undertaken.

Financial inclusion may be defined as the 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' (The Committee on Financial Inclusion, Chairman: Dr. C. Rangarajan).

Financial Inclusion, broadly defined, refers to universal access to a wide range of financial services at a reasonable cost. These include not only banking products but also other financial services such as insurance and equity products (The Committee on Financial Sector Reforms, Chairman: Dr.Raghuram G. Rajan). Inclusion by itself is a multi-faceted concept with a number of nuanced components, all or some of which may be relevant to the specific country agenda. Below we offer examples of four

commonly used lenses through which financial inclusion can be defined, in order of complexity:

Access:- This component is concerned primarily with the ability to use available financial services and products from formal institutions. Understanding levels of access may therefore require insight and analysis of potential barriers to opening and using a bank account for any purpose, such as cost and physical proximity of bank service points (branches, ATMs, etc).

Quality:- As a measure of the relevance of the financial service or product to the lifestyle needs of the consumer, quality encompasses the experience of the consumer, demonstrated in attitudes and opinions towards those products that are currently available to them. The measure of quality would therefore be used to gauge the nature and depth of the relationship between the financial service provider and the consumer as well as the choices available and their levels of understanding of those choices and their implications.

Usage:- Concerned with more than basic adoption of banking services, usage focuses more on the permanence and depth of financial service / product use. In other words, determining usage requires more details about the regularity, frequency and duration of use over time. Usage also involves measuring what combination of financial products is used by any one person or household.

Financial inclusion is a process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy (Sarma & Pais, 2008). This definition underlines numerous dimensions of financial inclusion, viz., accessibility, availability and usage of the financial system assists in building inclusive financial system (Commonwealth Secretariat & La Francophonie, 2011; Arputhamani & Prasannakumari, 2011 and Rao & Bhatnagar, 2012).

Owing to difficulties in accessing formal sources of credit, poor individuals and small and micro enterprises usually rely on their personal savings and internal sources or take recourse to informal sources of finance to invest in health, education, housing and entrepreneurial activities. The mainstream financial institutions like banks have an important role to play in helping overcome this constraint, not as a social obligation, but as a business proposition.

Despite a number of prior studies that have investigated the different dimensions of financial inclusion, but studies on indicators of financial inclusion and relationship between financial inclusions on economic development in India remains scarce. Hence, this present study fills the gap by investigating the indicators of financial inclusion in India.

II. LITERATURE REVIEW

The term 'Financial Inclusion' has received much attention since the late 1990s, as the policy-making issue of socially excluded people and research studies about the financial exclusion of socially excluded people have emerged (Leyshon and Thrift, 1993). Later, Kempson and Whyley (1999) examine the type of people that are excluded from formal finance systems in Britain and point out that a necessary financial service for low-income people is a basic bank account. On the other hand, the 2004 Pre-Budget Report (Treasury HM, 2004a) implements measures to enhance financial inclusion, such as easy access to financial intermediaries, appropriate credit services, and face-to-face debt consulting (Treasury HM, 2004b; Collard, 2010).

In compare with the early 2000s, where research studies addressed the question of the basic concept of financial inclusion and the characteristics of the financial excluded classes, after the late 2000s, research studies have tended to focus around the question of financial inclusion measures and the relationship between financial inclusion and economic development. Naceur and Samir (2007) have examined the relationship between financial development and economic growth for 11 countries of MENA (Middle East and North Africa) region. Although this study didn't directly mention the term 'financial inclusion', the instrument, such as 'bank development index' and 'credit to private sector', for measuring financial development level has a lot similarity with the financial inclusion. The empirical result of this study presented that bank development had a negative effect on economic growth. About this result, Naceur and Samir (2007) interpreted that underdeveloped financial systems in MENA region hamper economic growth.

Sarma and Pais (2011) assessed the relationship between the Human Development Index (HDI) and the Index of Financial Inclusion (IFI) and found that there is a close correlation between them. In specific, they propose that socio-economic and infrastructure related factors such as income, literacy, urbanization, and physical infrastructure for connectivity and information render an imperative role in financial inclusion. Pradhan et al. (2017) has presented an empirical result of the relationship between insurance market penetration, which is one of financial inclusion factors, and economic growth. This study has investigated the causality interaction of insurance market penetration, broad money, stock-market capitalization, and economic growth focusing on Association of South East Asian Nations (ASEAN) Regional Forum (ARF). In analysis result, it revealed that all variables are co integrated and mutually causal. This study concluded that there exists the short-run bidirectional causality between insurance market and economic growth.

Khan (2011) opines that policy makers in Nigeria have identified financial inclusion as a veritable tool for the attainment of sustainable economic growth and development. There is substantial evidence in literature that countries with high financial inclusion index tend to achieve high level of economic growth and development.

Ashraf N, Karlan D, Yin W (2006) posit that as more people become financially included in the economic system, there is a higher the level of investment in real or productive activities leading to higher levels of output, income per capita and, by extension, economic growth and development. Inclusive engagement of economic agents in productive activities promotes growth, development and sustainability of an economy. On the other hand, from another point of view, Boukhatem (2016) has provided the analysis results about the financial development effect on poverty. This study examined the role of the level of financial development to poverty reduction in 67 low- and middle-income countries over the 1988–2012 periods

As we can see from the above mentioned literature reviews, although financial inclusion has in recent times attracted much interest from policy-makers and scholars, the research in this area is still in the early stages and little research has been carried out on this topic. There have been research studies that studied the relationship among economic growth and financial development, stock market development, economic growth, etc. (Hassan et al., 2011; Yu et al., 2012), but they are few in number. The recently released Global Financial Inclusion Database by World Bank allows researchers to examine financial inclusion and other related factors, but there still exists a limitation, as the financial inclusion-related data are only not available.

Literature which is available so far highlights the various dimensions of financial inclusion but studies on predictors of financial inclusion and relationship between financial inclusion on economic development in India remains scarce. So, need arises to empirically establish the relationship between indicators of financial inclusion and test the relationships, between financial inclusion and economic development

III. DATA SET AND METHODOLOGY

A systematic approach was used to achieve objectives of the study. In order to generate items pertaining to different dimensions of financial inclusion and to elicit the perception of beneficiaries about the predictors of financial inclusion, both quantitative and qualitative approaches were employed. A structured questionnaire with 37 items was identified as critical variables from the literature for evaluating the predictors of financial inclusion and impact of financial inclusion on economic development. To process the items in the primary questionnaire, a pilot survey was carried out, resulted in few modifications in the

initial list. Some items were deleted due to their duplication in form of other items or their likely irrelevance to the Indian perspective. Some additional items were included as per recommendations received during the pilot phase. As a result of this exercise, a list of 29 items was finalized to be included in the questionnaire. The data are collected on five point Likert scale (5<----1>) where 5 denotes strongly agree and 1 denotes strongly disagree. The study is confined to three districts of Chhattisgarh namely Bilaspur, Raipur, Rajnandgaon and beneficiaries of financial drive belonging to three banks i.e., State bank of India, Apex bank, and Chhattisgarh Grameen bank. Secondary information has been collected from journals published information from internet, RBI reports. A total 280 questionnaire were distributed of which 250 completed questionnaire were received and were used for further analysis.

Hypothesis formulation

On the basis of literature review following hypothesis were formulated

H₁: Access of banking services is Key for financial inclusion

H₂: Availability of banking significantly predicts the financial inclusion.

H₃: Usage significantly predicts the financial inclusion.

H₄: Financial inclusion has direct impact on economic development

IV. DATA ANALYSIS AND RESULTS

The data collected through questionnaire survey was analyzed, using the statistical package for the social sciences (SPSS v23), for estimation of the Cronbach's alpha, factor analysis. SEM (AMOS Software Package, which is available on SPSS platform) was used to carry out the confirmatory factory analysis (CFA), the inter-relationships/structural relationships between the different factors and for testing the hypotheses of the conceptual model.

4.1 Demographic Profile of Respondents

Table 1 illustrates the demographics profile of respondents. In terms of gender, respondents were closely divided between males (58%) and females (42%). The majority of respondents were up to the age of 29 years old which constitute 37% of the total respondents. Respondents in the age group of between 30- 39 years consist of 24% i.e., 60 respondents. The age group above 50 years comprises of 45 respondents that contributes 18% to the total. Thus, it reveals that middle age people are more interested in opening accounts and availing the benefits of government schemes. In terms of beneficiaries bank account out of 250 respondents 46% respondents are covered by SBI, 31% belongs to Apex Bank, 23% belongs

to Chhattisgarh Rajya Gramin Bank (CRGB). Thus, it is found that SBI has the largest share followed by Apex bank

Table 1: Profile of The Respondents

Variable s	Categories	Frequenc y	Percentag e
Gender	Male	145	58%
	Female	105	42%
Age	Upto 29	92	37%
	30-39	60	24%
	40-49	53	21%
	Above 50	45	18%
Bank	SBI	115	46%
	Apex Bank	77.5	31%
	CRGB	57.5	23%
Educatio n	Primary School	35	14%
	Secondary School	60	24%
	Bachelor Degree	112.5	45%
	Master Degree Or Above	42.5	17%
Income	Upto Rs 9,000	115	46%
	Rs 10,000-19,000	82.5	33%
	Rs 20,000-29,000	37.5	15%
	Rs 20,000 And Above	15	6%
District	Bilaspur	150	60%
	Raipur	60	24%
	Durg	40	16%

As for education level, most respondents were well-educated as 62% of the respondents were holding bachelor's degrees or above. It is clear that financial inclusion drive is covering different education background. District-wise analysis shows 105 respondents out of 250 are from Bilaspur district which comprises of 60% of the total respondents. Raipur district has 24% contribution in the total respondents' percentage. Only 16% respondents belong to Durg district. Thus, it is found out that majority of beneficiaries of financial inclusion from this study are from Bilaspur followed by Raipur and Durg

V. FACTOR ANALYSIS

Factor analysis (FA) was utilised as a statistical technique to identify a relatively small number of individual factors that can be used to represent relationships among sets of many interrelated variables (Norusis, 2008). This technique is powerful to reduce the large set of interrelated variables into grouped factors. Due to the large number of factors in this study it was important to define a set of commonalities. The number of individual factors would be required to represent that set of data was determined by examining the total percentage of variance explained by each individual factor. In this study, maximum likelihood

with Promax rotation was used to identify the underlying grouped factors because of its simplicity and distinctive In order to obtain a clearer image, extraction with Promax rotation and Kaiser normalization was conducted through the Statistical Package for Social Sciences (SPSS). In fact, various methods of rotation including Varimax, Oblimin Quartimax, and Equamax were also tried out. However Promax gave the highest individual factor loadings for the same set of individual factors and more interpretable results overall, therefore Promax rotation method was finally selected for further evaluation

5.1 Kaiser-Meyer-Olkin Measure: The sampling adequacy using Kaiser-Meyer-Olkin (KMO) and Barlett's test of sphericity can be used to analysis out the appropriateness (Fox and Skitmore 2007). The KMO statistic ranges from 0 and 1, value of 0 suggest that the sum of partial correlations is large relative to the sum of correlations, indicating diffusion in the pattern of correlations and, hence, FA would be inappropriate (Norusis 2008). In contrast, a value close to 1 indicates that patterns of correlations are relatively compact and FA would yield distinct and reliable individual factors. The KMO value should be higher than the acceptable threshold of 0.5 for a satisfactory FA to proceed (Norusis 2008).

Various tests were required to examine the appropriateness of FA for the extraction. The KMO measure of sampling adequacy and Barlett's test of sphericity for the extraction individual factors were conducted in this research. The KMO value of this research is 0.815 which shows a good degree of common variance (Table 5).

Table 2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.815
Bartlett's Test of Sphericity	Approx. Chi-Square	3516.627
	df	210
	Sig.	.000

5.2 Barlett's Test for Sphericity: To reinforce the appropriateness of FA, the Barlett's test for sphericity is also carried out to highlight the presence of correlations

The value of the test statistic for Barlett's sphericity is large (chi-square value=3516.627) and the related significance level is small (p -value=0.000), implying that the population correlation matrix is not an identity matrix. As the requirement of KMO value and the Barlett's test of sphericity are both met, it can be concluded that FA was appropriate for this research.

5.3 Community

Community is the proportion of common variance within a variable. Table shows the communalities before and after extraction. The community of extracted 21 items ranges

from 0.491 to 0.895 to indicating moderate to high degree of linear association among the variables.

Table 3 Communalities

	Initial	Extraction
AC_1	.499	.528
AC_2	.734	.815
AC_4	.672	.688
AC_6	.570	.587
AC_7	.586	.607
AV_1	.709	.668
AV_3	.796	.764
AV_4	.818	.860
AV_5	.850	.895
AV_6	.695	.705
AV_7	.550	.517
US_1	.524	.567
US_2	.554	.589
US_3	.592	.639
US_6	.444	.453

ED_1	.585	.599
ED_2	.622	.675
ED_3	.683	.788
ED_5	.545	.491
ED_7	.587	.557
ED_8	.497	.540

Extraction Method: Maximum Likelihood

Communalities for all extracted 21 variables are higher than 0.5 (Table 3) indicating it to be an optimum solution

5.4 Interpretation of the Results of factors emerged

Factor loading in the final factorial design are coherent with conservative criteria, thereby resulting into four factor solution using Kaiser criteria (i.e. eigen value ≥ 1) with 63% of the total variance explained. The factor loading ranges from 0.449 to 0.981 and the cumulative variance extracted ranges from 38.34 to 63 percent. A brief description of factors emerged are as under

Table 4 Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.692	41.390	41.390	8.053	38.348	38.348
2	2.657	12.651	54.041	2.368	11.277	49.625
3	2.158	10.278	64.319	2.038	9.706	59.331
4	1.185	5.642	69.961	.772	3.674	63.005
5	.804	3.827	73.788			
6	.594	2.827	76.615			
7	.545	2.593	79.208			
8	.520	2.475	81.683			
9	.488	2.325	84.008			
10	.445	2.119	86.128			
11	.395	1.879	88.007			
12	.375	1.784	89.791			
13	.364	1.733	91.523			
14	.335	1.597	93.121			
15	.299	1.426	94.547			
16	.272	1.297	95.844			
17	.231	1.098	96.942			
18	.216	1.027	97.968			
19	.194	.926	98.894			
20	.131	.625	99.519			
21	.101	.481	100.000			

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Four underlying grouped factors were extracted in this case, totally accounted for 63% of the variance in responses. The 21 original variables were all included in one of these four underlying grouped factors. The criteria for group classification were that a variable, which has the highest loading with a value larger than 0.50 in one component, belongs to that component (Awakul and Ogunlana 2002).

All loadings of the 21 individual factors were greater than 0.5. The higher the absolute value of the individual factor loading which cannot exceed a maximum of 1.0, the more a particular individual factor contributes to its underlying

grouped factor (Proverbs et al. 1997). The values reflect the degree of contribution of individual factors to each underlying grouped factor. It is observed that the factor loadings and the interpretation of the individual factors extracted were reasonably consistent.

5.5 Four Underlying Grouped Factors

The field data collected on the above 29 variables from the 250 respondents are analyzed using exploratory factor analysis (EFA) for data reduction and summarization. The EFA retained 21 variables which were properly loaded on

four factors with 63.05% cumulative variance explained. The resulting four factors were labelled as (1) Availability of Banking Services (2) Access to Banking Services (3) Economic Development (4) Usage of Banking Services which were shown in Table 4

The EFA did not support retaining eight variables, ‘Attractive saving schemes are available’, ‘ATM service is nearby from your place’, ‘Mobile ATM Van visits frequently’, ‘Bank has sufficient staff to meet its customers requirements’, ‘You are using bank for the repayment of loan’, ‘You frequently use credit facilities of the bank’, ‘FI has led to progress of the village’, ‘FI has led to increase in value of your assets’, as the factor loadings obtained for these variables were insignificant and less than the recommended threshold factor loading (<0.5). These factors or constructs along with the respective measured variables shown in Below Table 5

Table 5 Pattern Matrix^a

	Factor			
	1	2	3	4
AC_1		.750		
AC_2		.894		
AC_4		.839		
AC_6		.719		
AC_7		.758		
AV_1	.775			
AV_3	.795			
AV_4	.961			
AV_5	.981			
AV_6	.860			
AV_7	.674			
US_1				.692
US_2				.766
US_3				.779
US_6				.626
ED_1			.692	
ED_2			.862	
ED_3			.928	
ED_5			.449	
ED_7			.557	
ED_8			.529	

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.^a

a. Rotation converged in 6 iterations.

Maximum likelihood with Promax rotation conducted on the 29 independent variables produced four underlying grouped factors. A new underlying grouped factor was appropriately labelled in accordance with the set of individual factors it contained. It is however stressed that the suggested label is subjective and other researchers may use a different label. For the four underlying grouped factors the labels identified were:

- Factor 1:- Availability;

- Factor 2:- Access;
- Factor 3:- Economic Development and
- Factor 4:- Usage

5.6 Explanation of the Underlying Grouped Fs of PPP

The meanings of the four underlying grouped Factors of PPP in this study are interpreted as follows.

Factor 1:-Availability of Banking Services

Maximum likelihood with Promax rotation extracted 6 statements out of 7 statements which are actually kept in the construct of availability. The communalities for 6 statements range from 0.517 to 0.895, indicating reasonable to high degree of relationship among the variables. The factor loading ranges from 0.674 to 0.981 to which reveals that the variables significantly and positively contribute to the factor. Moreover the factor 1 explains 38.32 % of total variance more than any other component. The variables which are extracted after rotation are:

- 1) Bank provide insurance services;
- 2) Debit card facility is available;
- 3) Loan is easily available;
- 4) Employees’ are helpful in making information available;
- 5) Bank follows quick problem solving approach;
- 6) Field workers promotes various schemes of bank

The EFA did not support retaining the ‘Attractive saving schemes are available’ item as the factor loadings obtained for the variable were insignificant and less than the recommended threshold factor loading (<0.5)

Factor 1:- Access of Banking Services

Maximum likelihood analysis with Promax rotation extracted 5 statements out of 8 statements after extraction i.e 1) Account opening formalities are easy; 2) The bank is conveniently located; 3) Banking institution or its substitute is easily approachable; 4) Employees’ of bank are cooperative, friendly and knowledgeable; 5) You have easy access to the information which is useful. The factor loadings from 0.719 to 0.894 and communalities from .528 to .815 The statement ‘The bank is conveniently located’ adjudged to be most important and strongest among all with highest factor loading (.894) & communality (.815). The beneficiaries perceives that easy procedure for availing loan that too within time frame is must for achieving efficiency.

The EFA did not support retaining the three items ‘ATM service is nearby from your place’, ‘Bank has sufficient staff to meet its customers requirements’, ‘Mobile ATM Van visits frequently’, as the factor loadings obtained for the variable were insignificant and less than the recommended threshold factor loading (<0.5)

Factor 3:- Economic development

Maximum likelihood analysis with Promax rotation extracted 6 statements out of 8 statements which are actually kept in the construct of economic development.

The communalities for 6 statements are in between .540 to .788, indicating moderate to high degree of linear association among the variables. The factor loading ranges from .449 to .928 The communalities and percentage of variance explained by each factor is displayed in the Table 3 and 4. The variables which are extracted after rotation under this factor are: 1) FI has increased life expectancy of your family members; 2) FI has increased access to education of the society; 3) FI has empowered the members of the society; 4) FI has increased productivity in agriculture sector; 5) FI has increased per capita income of your family; 6) By and large, FI has led to the economic development. This factor emphasises on usage of banking services not merely opening of account. The EFA did not support to retain the other two items ‘FI has led to progress of the village’ and ‘FI has led to increase in value of your assets’ as the factor loadings obtained for these two variable were insignificant and less than the recommended threshold factor loading (<0.5)

Factor 4:- Usage of banking service

The Promax rotation extracted 4 statements out of 6 statements which are actually kept in the construct of usage. The communalities for 4 statements range from .453 to .639, indicating high degree of linear association among the variables. The factor loading ranges from .626 to .779. The communalities and percentage of variance explained by each factor is displayed in the Table 4.2. A brief description of factors emerged are as under: 1) You are using bank for depositing money; 2) You are a regular visitor of the bank; 3) You save money frequently; 4) Advance schemes of bank are frequently used by you.

Reliability

The Cronbach α is a model for checking internal consistency reliability between 0 and 1, based on the average inter item correlation. The standard rule is that

must be greater than approximately 0.70 to conclude that the scale is reliable (SPSS 2003) The overall value for the 21 variables is 0.924, indicating that there is good internal consistency reliability.

VI. STRUCTURAL EQUATION MODEL

SEM is an effective technique for conceptualizing a theoretical model, confirming relationships between variables and gaining insight into the underlying nature and strength of identified relationships (C. Fornell & D. F. Larcker, 1981). SEM was employed in this study for two main tasks: (1) confirmatory factor analysis (CFA) to support the constructs established through exploratory factor analysis (i.e. testing the measurement model); and (2) testing the structural model by testing the hypotheses using path significance analysis for every construct of the research model for the each path.

6.1 Assessing Validity and Reliability of the Constructs of the Measurement Model

the CFA empirical results of the relationships among variables and constructs represented by the data is performed to assess the fitness, reliability and validity of four measured constructs, viz., financial inclusion (FI) consists of three main dimensions i.e., access, availability & usage and economic development (ED). The default estimation procedure is maximum likelihood.

Construct validity was established in this study by establishing the face validity, factor loading, Cronbach’s alpha, convergent validity and discriminate validity. To test the reliability of the constructs (Anderson and Gerbing, 1988) suggested to use composite reliability (CR) and average variance extracted (AVE). To achieve convergent validity, the factor loadings and composite reliability (CR) should be greater than 0.7 and average variance extracted (AVE) of the constructs should be greater than 0.50 as suggested by (Fornell & Larcker 1981)

Table 6: Convergent and Discriminant validity

	CR	AVE	MSV	MaxR(H)	ED	AC	US	AV
ED	0.870	0.634	0.011	0.938	0.796			
AC	0.896	0.695	0.320	0.977	0.485	0.834		
US	0.836	0.716	0.391	0.983	0.358	0.566	0.846	
AV	0.938	0.706	0.391	0.987	0.446	0.357	0.625	0.840

As can be seen from Table 6, all the measured variables are having the significant average variance extracted (AVE), The AVE for each construct is >0.5 and CR is >0.70, which support the convergent validity of the constructs. Discriminant validity was assessed by comparing the AVE with the corresponding inter-construct squared correlation estimates. It was found from the data analysis that the AVE values of all the factors are greater than the inter-construct correlations (Table 6) which support the discriminant validity of the constructs (C. Fornell & D. F. Larcker, 1981). Thus, the measurement model has an adequate validity and constructs reliability.

6.2 Assessing Model Fit of Measurement Model

The initial proposed measurement model fit demonstrated inadequate fit on certain parameters with the observed data, indicating the model could be further better by modifications. The model to be acceptable, all goodness-of-fit indices should be greater than 0.9 and RMSEA should be less than 0.08 (M. Zain, R. C. Roase, I. Abdullah, and M. Masrom, 2005) in initial model the (CMIN/DF = 9.963, GFI = .874, TLI = .827, NFI =.849, CFI = .862, RMSEA = .134) so modification are required. Modifications are made to the hypothesised model based on the modification index (Byrne 2001). After incorporating these modifications to the model, the modified model demonstrated a better model fit and is used as the final model for hypothesis testing (CMIN/DF= 1.672, GFI = .935, NFI = .918, TLI = .925, CFI =.965, RMSEA = .052) see the table

Table 7. Goodness-of-fit (GOF) of the initial SEM.

GOF Measures	Final SEM	Recommended Levels	Evaluation
2 /degrees of freedom (CMIN/DF 2/df)	1.672	1–2	Acceptable
Root mean square error of approximation (RMSEA)	.052	<0.1	Acceptable
Goodness-of-fit index (GFI)	0.935	>0.9	Acceptable
Comparative fit Index (CFI)	0.965	>0.9	Acceptable
Normal fit Index (NFI)	0.918	>0.7	Acceptable
Tucker-Lewis Index (TLI)	0.925	>0.9	Acceptable

The model to be acceptable, all goodness-of-fit indices should be greater than 0.9 and RMSEA should be less than 0.08 (Hooper, D., Coughlan, J., & Mullen, M. 2008). As shown in Table 7, the values of the goodness-of-fit indices obtained for the measurement model indicate a reasonable fit of the measurement model with data. In short, the CFA of SEM model confirms to the four-factor structure containing 21 measured variables, which contributes significantly to respective constructs all the 21 items loaded significantly (p< 0.001) on the relevant latent constructs or factors.

The final refined SEM with standardized coefficients and standard regression weights are shown in Figure 1 and Table 8 presents the standardized regression weights and covariance estimates for the final SEM with the corresponding standard effort of estimates and p-values

Figure 1: The final SEM model

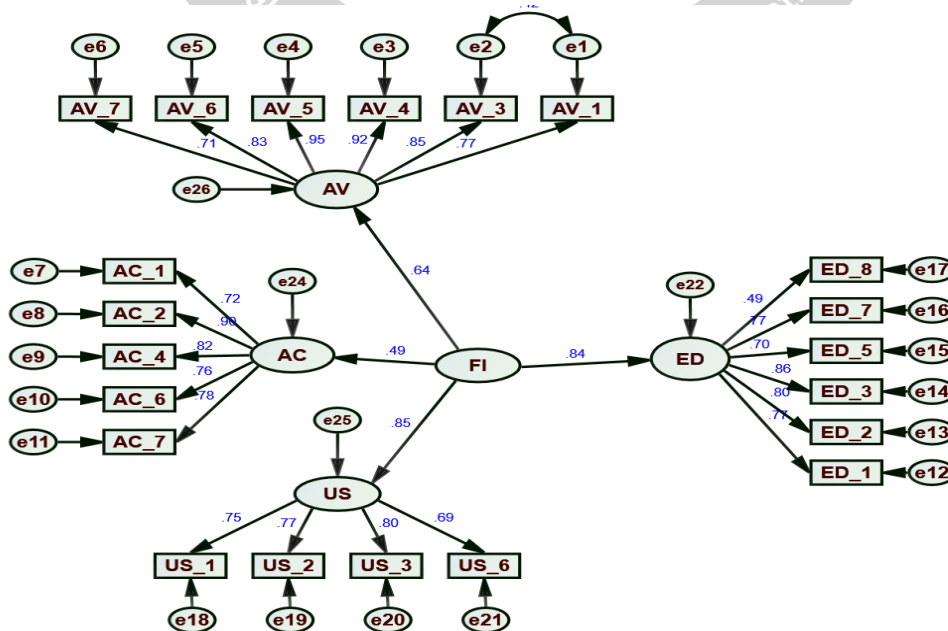


Table 8: Standardized regression weights

Paths	Estimate	P-Value
AV_1 <--- AV	.775	***
AV_3 <--- AV	.847	***
AV_4 <--- AV	.924	***
AV_5 <--- AV	.948	***
AV_6 <--- AV	.831	***
AV_7 <--- AV	.710	***
AC_1 <--- AC	.715	***
AC_2 <--- AC	.903	***
AC_4 <--- AC	.824	***
AC_6 <--- AC	.762	***
AC_7 <--- AC	.782	***
ED_1 <--- ED	.771	***
ED_2 <--- ED	.800	***
ED_3 <--- ED	.857	***
ED_5 <--- ED	.704	***
ED_7 <--- ED	.766	***
ED_8 <--- ED	.486	***
US_1 <--- US	.749	***
US_2 <--- US	.770	***
US_3 <--- US	.805	***

The variable of ‘Employees are helpful in making information available’(AV_5) and ‘Loan is easily available’ (AV_4) owns the highest loading 0.948 and 0.924 respectively indicating these variable has the highest influence in characterising the Availability indicator (AV) of financial inclusion. ‘The bank is conveniently located’ (AC_2) owns the highest loading (0.903) indicating this variable has the highest influence in characterizing the Access indicator (AC) of financial inclusion followed by ‘Banking

institution or its substitute is easily approachable’ and ‘Account opening formalities are easy’.

Moreover ‘FI has empowered the members of the society’ (ED_3) and ‘FI has increased access to education of the society’ (ED_2) are the most contributing variables in the formation of economic development component with the factor loading of 0.875 and 0.800 respectively

6.3 Hypotheses testing

On the basis of SEM results, the framed hypotheses have been tested (Table 9) and the results are as under:

H1: Access of banking services is Key for financial inclusion (has positive and significant effect).

H2: Availability of banking is the significant indicator of financial inclusion.

H3: Usage significantly predicts the financial inclusion.

H4: Financial inclusion has direct impact on economic development.

It becomes evident from the SEM results (Figure 1 & Table 9) that Availability ($\beta = .643, p = .000$), Access ($\beta = .488, p = .000$) and Usage ($\beta = .853, p = .000$) significantly predicts financial inclusion. Thus, hypotheses H1, H2 and H3 stands accepted. Moreover SEM results indicate that financial inclusion has positive significant and direct impact on economic development ($\beta = .844, p = .000$). Therefore, hypotheses H4 are also accepted.

Table 9: Results of Hypothesis Testing 3

Hypothesis	Hypothesized path / Structural relationship	Standardized Estimates	P-values	Is hypothesis Supported?
H1 Availability significantly predicts the financial	AV <--- FI	.643	.000	Supported
H2 Access significantly predicts the financial	AC <--- FI	.488	.000	Supported
H3 Usage significantly predicts the financial	US <--- FI	.853	.000	Supported
H4 Financial inclusion has direct impact on economic development.	ED <--- FI	.844	.000	Supported

VII. CONCLUSION AND RECOMMENDATIONS

Despite the broad international agreement concerning the importance of access to finance as

a crucial poverty alleviation tool, it is estimated that globally over two billion people are currently excluded from access to financial services (United Nations, 2006a). In most developing countries, including India a large segment of

society, particularly low-income people, has very little access to financial services, The situation is worse in most eastern states including Chhattisgarh, where more than 90 per cent of the population is excluded from access to the formal financial system (United Nations, 2006a) The present study investigates the drive to financial inclusion from the economically backward state of Chhattisgarh in the form Predictors of financial inclusion and relationship between financial inclusion and economic development.

The result suggests that, financial access; availability and usage of banking services are the significant predictors of financial inclusion, these parameters of financial inclusion can really boost the financial condition and standards of life of the poor and the disadvantaged population of the country. The study supports that financial inclusion has the positive and significant impact on economic development. Access to safe, easy and affordable credit and other financial services by the poor and vulnerable groups, disadvantaged areas and lagging sectors is accepted as a pre-condition for accelerating growth and reducing income disparities and poverty. Access to a well-functioning financial system, by creating equal opportunities, enables economically and socially excluded people to integrate better into the economy and actively contribute to development and protects themselves against economic shocks.

Lack of accessible, affordable and appropriate financial services has always been an Indian problem. Reserve bank of India (RBI) and government plays an important role in promoting financial inclusion for economic growth to increase the banking diffusion, installation of new ATMs and implementation of various schemes in the country (Raman, 2012). The Reserve Bank has used financial inclusion plans (FIPs) for ensuring significant access to banking services to the excluded population. In spite of this there should be a need for proper financial inclusion regulation in the country to access financial services and customer awareness E-banking training and financial literacy programmes should be organized. Thus, financial inclusion is a big

road which India needs to travel to make it completely successful.

Financial literacy in India particularly with reference to study area in current study Chhattisgarh state, is considered as the main hurdles in expanding the coverage of financial services to the poorer segments of society. Banks should come forward to set up counselling centres and guide their clients about the features, benefits and risk of various financial products. It can be effectively promoted by utilising the services of postmen and school teachers. Moreover, appropriate and efficient mechanism for receiving & redressing customer grievance; ATM network in rural & unbanked areas be enhanced to serve poor villagers; procedure for granting adequate & timely credit to the customers be simplified by using clear & lucid language; for generating awareness some common promotional programmes be instituted by the regulators or banks through electronic & print media and direct feedback system must be established to enhance the financial inclusion drive. In addition to these, the existing literature also enticed some strategies to enhance the level of financial inclusion such as, multi-language ATMs with audio-video services could be considered; higher commission provision to BCs be proposed; subscription to financial services be made mandatory and national programme of 'Pradhan Mantri Jan Dhan Yojana' be properly implemented.

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