



# Inclusive Financial Sector Growth in Haryana: Challenges and Perspectives through Structural Equation Modeling

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**Abstract.** Background: Haryana, an Indian state, depends heavily on the financial industry to sustain its economic development. Achieving inclusion in financial services is still difficult, given different obstacles, including the digital gap, financial literacy, and gender inequalities. Objective: This study seeks to investigate the dynamics of inclusive financial sector development in Haryana, therefore pointing up important issues and viewpoints influencing its terrain. The aim is to grasp the interaction of socioeconomic elements affecting financial inclusiveness, market mechanisms, and regulatory systems. Methodology: Using structural equation modeling (SEM), the study examines data gathered from many stakeholders, including financial institutions, legislators, and recipients. The study aims to separate the several interactions influencing financial inclusiveness in Haryana. Findings: Although Haryana has made great progress in improving access to financial services, the results show that full financial inclusiveness is hampered by ongoing issues such as the digital divide, financial literacy, and gender inequalities even in this state. The SEM study emphasizes the important role that creative financial solutions, focused regulatory changes, and stakeholder involvement in removing these obstacles play. Conclusion: This study provides useful information for legislators and financial institutions as well as helps to theoretically clarify the concept of financial inclusion. It emphasizes the need for a coordinated approach to handling the several issues of financial inclusion, therefore opening the path for sustainable economic development in Haryana.

**Keywords:** Inclusive, Financial Sector, Growth, Haryana, Challenges

## 1. Introduction

One of India's northern states, Haryana, makes a major contribution to both industry and agriculture. Haryana, with its strategic location around the national capital, New Delhi, has seen significant economic development throughout the past few years. But without a close look at its financial sector, which is so important for general state economic growth, the development storey of Haryana is incomplete. Comprising banks, "non-banking financial companies" (NBFCs), micro lending institutions, and other financial services, the Haryana financial industry is at a turning point where inclusiveness could determine the course of its future expansion.

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The idea of inclusive financial sector development highlights the necessity of a broad spectrum of financial services available to all spheres of life, especially rural areas and poor groups. Financial inclusion is clearly a major enabler of other developmental goals as well as a goal in and of itself. Maintaining Haryana's economic growth, lowering poverty, and attaining fair development over its varied demographic terrain depend on this inclusiveness.

The scene of financial inclusion within the state still shows a notable difference, notwithstanding the development. Different obstacles prevent Haryana from reaching an inclusive financial industry. These difficulties span geographical differences in the availability of financial services, a lack of knowledge and understanding of financial goods among rural people, and technological obstacles impeding the flawless delivery of financial services. Furthermore, very important in determining the inclusiveness of the financial industry are legislative and regulatory issues.

This research is necessary since the continuous challenges in achieving equitable financial sector growth in Haryana call for it. Notwithstanding several initiatives, financial inequities remain rather important. This work aims to provide a comprehensive knowledge of the elements influencing financial inclusion by means of structural equation modeling. The results of the study will assist legislators and stakeholders in determining efficient plans to remove obstacles and advance equitable financial growth, therefore advancing the overall social development of the area.

This paper seeks to pinpoint and examine the obstacles preventing the expansion of an inclusive banking industry in Haryana. This work aims to investigate the intricate interaction among several elements affecting financial inclusiveness by using structural equation modeling (SEM). The study has several goals:

[1] To do a thorough study of Haryana's present level of financial inclusion, pointing up the main areas of strength and those needing immediate focus.

[2] From the standpoint of both purchasers and financial agencies, help us to grasp the obstacles to financial inclusion.

[3] To assess how current policies affect the financial inclusion scene in Haryana and point out areas for policy change.

[4] Based on empirical data and best practises from both national and international environments, we aim to provide a strategic framework aimed at improving the inclusion of the financial sector in Haryana.

With an eye toward helping to further the more general objective of sustainable and fair economic development, this study aims to clarify the important topic of financial inclusiveness in Haryana. By means of a thorough investigation of issues and points of view, it aims to provide practical insights for "policymakers, financial institutions, and other stakeholders" engaged in the future development of Haryana's financial sector.

## 2. Literature Review

According to Chattopadhyay (2011), a recent analysis of banking activity in West Bengal and India reveals significant differences between urban and rural areas,

despite enhanced banking outreach. Rural households have worsened credit and loan records, while urban families have improved. The research developed an index (IFI) to gauge financial inclusion, but 38% of respondents in West Bengal lack funds to open a bank account.

According to Dhar (2020), Indian banks have grown both functionally and geographically since 1969; nonetheless, many Indians still live outside the official financial network. This study compares financial inclusion in Indian states by using SPSS principal component analysis and an index of financial inclusion (IFI). Assam has shown low performance on all three measures of financial inclusion, suggesting much still to be done. Notwithstanding various programmes meant to increase financial inclusion, the outcomes have been unsatisfactory. Everybody has to cooperate to raise financial inclusion.

According to Dixit's (2013) study, India's fast-expanding economy suffers difficulties in its economic development because of its unequal distribution of growth benefits. Indian economic development depends on inclusive growth; meanwhile, financial inclusion is crucial for resource generation and mobilization. Using secondary data including GDP per capita, literacy rate, unemployment rate, and financial inclusion index, this paper investigates inclusive development, its need, and financial inclusion as a strategy in Indian states in order to assess natural hierarchical clustering clusters.

According to Hastak & Gaikwad's 2015 report, the banking industry, despite its growth, still lacks basic financial services for the underprivileged. Financial inclusion is crucial in underdeveloped countries, as poverty and exclusion are linked. Despite efforts to improve loan delivery systems, educate financial literacy, and bridge the gap, India ranks second in financial exclusion, despite government and RBI initiatives since 1969.

Banking exclusion, according to Nair (2016), refers to policies that prevent underprivileged and impoverished socioeconomic groups from entering the financial system, increasing regional income and economic development disparities. On the other hand, financial inclusion ensures that, equitably and openly, via controlled, mainstream institutional actors, all sections of the population, including underprivileged and low disposable income groups, have access to appropriate financial goods and services at acceptable rates. Major, regulated financial players can invest in the build-up phase, provide a wide range of commodities, and cross-subsidize services until they become self-sustaining. This mechanism affects unequal development and promotes the total economy of a society.

Focusing on areas including agriculture, poverty, education, technology, food security, employment, the social sector, and regional inequities (Pandey, 2009), the paper "Inclusive Growth in India: Major Dimensions" notes the difficulties and performance of inclusive growth in India. Focusing on sectoral social and geographical disparities to provide a macro framework for inclusive development, it examines human development issues and addresses policy concerns. The report stresses the importance of economic changes accompanied by fair development.

Financial inclusion is vital for inclusive growth in a nation, according to Poonam (2017), covering banks, self-help groups, LICs, post offices, and microfinance

institutions. This page covers banking services, including accounts, offices, KCC, ATMs, loans, and savings. The financial inclusion index of UNDP helps one measure district-wise decadal financial inclusiveness. Most underprivileged people have now opened bank accounts, thanks to Prime Minister Narendra Modi's "Jan Dhan Yojna." Small business owners can now get microcredit up to 10 lakhs according to the new Mudra Bank lending strategy, "Fund the unfunded." RBI (2015) suggests financial literacy camps to inform urban and rural people about financial services.

According to Sethy's 2015 paper, inclusive growth in developing countries like India—where many people are deprived of participation—depends on financial inclusion. Like the "Human Development Index, Human Poverty Index, and Gender Development Index," a multidimensional financial inclusion index allows one to monitor financial inclusion's expansion throughout time. From 2010 to 2012, India was ranked as full or high in financial inclusion; from 1987–1988 and 1989–2009, it was ranked as weak in supply-side features. Tracking its change over time and comparing financial inclusion across nations, the index shows that India's financial inclusion status results from high demand-side dimensions but low supply-side features.

India has seen fast economic growth following 25 years of economic liberalization, according to Turaga et al. (2018) in the paper "State of Inclusive Growth in India: Some Perspectives," but despite general agreement on the drop in poverty rates, issues of gender, rural-urban disparities, and socioeconomic level persist or worsen.

According to Zhu and Guo (2024), the Chinese banking sector is utilising FinTech to improve loan availability and inclusive finance, addressing impulsivity and charge reduction behaviors. The study explores FinTech's impact on bank performance and risk mitigation mechanisms. It reveals that traditional inclusive loans can lead to cost-benefit asymmetry, negatively impacting small and micro companies. Banks should consider the risks and benefits of digital platforms and promote inclusive digital finance accordingly.

The study by Oboeda et al. (2024) found that financial inclusion, financial regulation, and institutional quality significantly impact economic growth in Africa. Institutional quality enhances financial inclusion's impact, while financial regulation dampens its effect. The study recommends public policies promoting inclusive finance, citizen involvement in governance, accountability, corruption control, and strengthening institutions and regulatory frameworks. Strong, independent institutions and a sound financial regulatory framework are necessary for African countries' growth.

According to Temitayo Oluwaseun Jejenewa et al. (2024), artificial intelligence can address developmental and economic challenges, particularly financial inclusion and poverty reduction. However, challenges like data privacy, ethical implications, and accessibility in underprivileged areas require adaptive policy frameworks, teamwork, and effect evaluation. Emerging AI technologies like blockchain and improved regulatory controls show promise.

### 3. Theoretical Framework:

SEM is a statistical method used to analyse complex relationships among variables, particularly in finance. It combines factor analysis and multiple regression analysis, allowing researchers to assess direct and indirect effects. In Haryana, SEM is useful for examining financial inclusion and interdependencies between factors as access to credit, financial literacy, digital services, and socio-economic factors.

1. Hypothesis 1 (H1): There is a positive togetherness between financial literacy and the use of financial services.
2. Hypothesis 2 (H2): Access to digital financial services significantly impacts the level of financial insertion.
3. Hypothesis 3 (H3): Socio-economic factors, such as income and education, have a direct impact on financial insertion.

### 4. Methodology

The methodology of this study employs a quantitative research design to examine inclusive financial sector growth in Haryana, focusing on the application of structural equation modeling (SEM) for analysis. A quantitative approach is chosen to facilitate the objective measurement and statistical analysis of the relationships between variables related to financial inclusion.

A stratified random selection approach will be used in the research to guarantee representation from various demographic and socioeconomic categories in Haryana. The sample size is 250.

Primary data will be collected through a structured questionnaire designed to capture information on financial behaviors, access, and literacy. Secondary data will be sourced from authoritative reports, financial records, and government publications relevant to the financial sector in Haryana.

#### 4.1 Reliability Analysis:

**Table 1:** Reliability Analysis

<b>Case Processing Summary</b>		
		N
Cases	Valid	250
	Excluded <sup>a</sup>	0
	Total	250
<b>Reliability Statistics</b>		

Cronbach's Alpha	N of Items
0.902	24

Source: Created by Authors

Table 1 describes that there are 250 valid cases that have been analyzed. The Cronbach's alpha for the 24 questions is 0.902 (excellent).

## 5Data Analysis and Results:

### 5.1Factor Analysis:

**Table 2:** KMO & Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.89
Bartlett's Test of Sphericity	Approx. Chi-Square	104.478
	df	91
	Sig.	.00

Source: Created by Authors

Table 2 describes the KMO statistic as.89, which is above the commonly accepted threshold of.6. This suggests that the sampling adequacy is marginal, indicating that the data might be perfectly suited for factor analysis due to the potential for shared variances among variables being high enough. The test yields an approximate Chi-Square value of 104.478 with 91 degrees of freedom and a significance level (Sig.) of.00. Since the significance level is less than.05, it indicates that the variables are significantly intercorrelated.

**Table 3:** Total Variance Explained

Total Variance Explained								
Comp onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Communalities	
	T otal	% of Variance	Cumul ative %	T otal	% of Variance	Cumul ative %	In itial	Extra ction
1	1.	10.3	10.360	1.	10.3	10.360	1.	0.379

	450	60		450	60		000	
2	1. 344	9.59 8	19.958	1. 344	9.59 8	19.958	1. 000	0.448
3	1. 272	9.08 3	29.041	1. 272	9.08 3	29.041	1. 000	0.523
4	1. 175	8.39 4	37.435	1. 175	8.39 4	37.435	1. 000	0.522
5	1. 148	8.20 3	45.638	1. 148	8.20 3	45.638	1. 000	0.484
6	1. 074	7.67 4	53.312	1. 074	7.67 4	53.312	1. 000	0.581
7	0. 991	7.08 2	60.394				1. 000	0.511
8	0. 950	6.78 7	67.181				1. 000	0.468
9	0. 882	6.30 3	73.484				1. 000	0.556
10	0. 844	6.02 5	79.509				1. 000	0.656
11	0. 814	5.81 2	85.322				1. 000	0.714
12	0. 767	5.47 5	90.797				1. 000	0.497
13	0. 672	4.79 7	95.594				1. 000	0.604
14	0. 617	4.40 6	100.00 0				1. 000	0.520
"Extraction Method: Principal Component Analysis."								

Source: Created by Authors

Table 3 presents the eigen values and the percentage of variance explained by each component before and after extraction. It also includes the extraction sums of squared loadings and the initial eigen values. The initial eigen values show how much of the total variance is accounted for by each factor. With the first component explaining 10.360% of the variance, followed by slightly decreasing percentages for subsequent components, it suggests a gradual distribution of variance across factors.

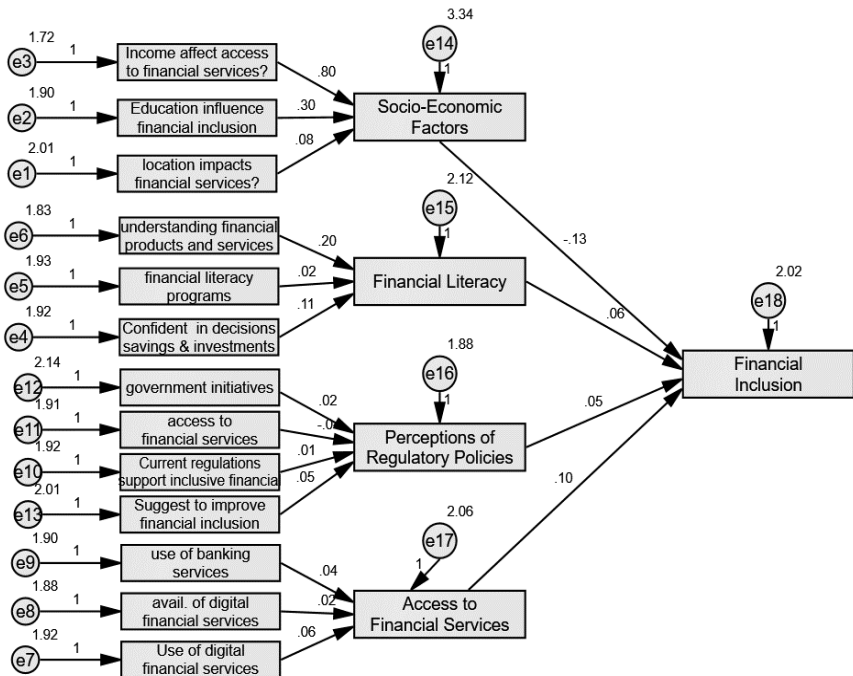
**Communalities:** This section indicates how much of each variable's variance is accounted for by the extracted factors. Initial communalities are all set at 1.000, as this is the starting assumption before extraction. The extraction communalities vary, suggesting that the extracted factors account for different proportions of each variable's variance, with values ranging from 0.379 to 0.656 before dropping off, indicating varying degrees of representation by the extracted components.

**5.2 Interpretation:**

Sampling Adequacy and Data Suitability: The KMO measure and Bartlett's test results suggest the data's suitability for conducting factor analysis, a component of SEM. This could imply that the dataset may capture the complexity of relationships among variables adequately. Factor Analysis: The total variance explained by the extracted components indicates that the principal component analysis has found underlying elements that account for a considerable percentage of the variation in the data, despite the early problems shown by KMO and Bartlett's tests. However, the relatively low percentage of variance explained by each individual component indicates that the factors do not dominate the variance, suggesting a more distributed effect across multiple factors.

Implications for SEM: For SEM analysis, these results underline the importance of carefully considering which variables are included and how they are modeled. The data indicates multiple factors influencing financial inclusion, supporting the multi-faceted nature of hypotheses H1, H2, and H3. However, the adequacy of the sample and the clear delineation of variables need careful attention to ensure robust SEM analysis.

**5.3 Structure Equation Model:**



**Fig 1. Structural Equation Model**

Source: Created by Authors



**Latent Variables:**

- Socio-Economic Factors
- Financial Literacy
- Perceptions of Regulatory Policies
- Access to Financial Services
- Financial Inclusion

**Paths (Arrows):**

- The arrows between the rectangles represent hypothesised relationships between the latent variables.
- Each path has an associated standardised regression weight (e.g.,.06,.05), which represents the strength and direction of the relationship. For example, the path from financial literacy to financial inclusion has a weight of.06, indicating a positive, albeit small, direct effect on financial inclusion.

**Interpretation of the Model:**

- Socio-economic factors seem to have a strong direct relationship with financial inclusion, as indicated by the path coefficient of.34. This suggests that factors like income, education, and location have a significant impact on financial inclusion.
- Financial literacy has a smaller but beneficial effect on financial inclusion (.06), indicating that as financial literacy improves, so does financial inclusion.
- Perceptions of regulatory policies also positively affect financial inclusion (.05), suggesting that the more favourable individuals view regulatory policies, the greater their level of financial inclusion.
- Access to financial services has the highest direct effect on financial inclusion (.10), which supports the hypothesis that ease of access is crucial for financial inclusion.

The model also shows that financial literacy is impacted by socio-economic factors (-.13), suggesting a potential negative association between these two constructs; however, this relationship may need further investigation as it is counterintuitive to general expectations. Lastly, the magnitude of the coefficients needs to be interpreted in the context of the dataset and should be compared against other models and empirical thresholds to determine their substantive significance.

**6. Discussion of Findings:**

With a path coefficient value of 0.06, the study confirmed the theory that financial literacy is favorably correlated with the consumption of financial services. Though the effect is statistically significant, the small coefficient value indicates the need of

financial literacy programs. This is consistent with research noting financial literacy as a required but insufficient prerequisite for financial inclusion. Thus, financial literacy initiatives should be combined with additional support systems to guarantee that more information results in practical behavior in the usage of financial services.

Access to Digital Financial Services (H2): With a path coefficient of .10, the theory on how digital financial services affect financial inclusion is rather highly supported. This implies that, in line with worldwide patterns towards digital banking solutions and mobile money services, digital services are a main enabler of financial inclusion. This emphasizes to legislators and service providers the need of investing in digital infrastructure and tackling issues including internet access, digital literacy, and confidence in digital platforms to maximize the whole potential of digital financial services for inclusive development.

Socio-Economic Factors (H3): The study validates that financial inclusion is significantly directly impacted by socio-economic factors given their strongest path coefficient of .34. This suggests that an individual's access to financial services is determined in great part by income and education level as well as by urban or rural location. These results support the idea that efforts towards financial inclusion have to be customized to meet the particular demands and obstacles encountered by various socioeconomic levels (reference to pertinent research). Targeting subsidy programs, educational scholarships, and location-based approaches to address the inclusion gap could be part of interventions.

## **7Conclusion:**

The structural equation modeling (SEM) investigation carried out in this work has produced interesting new perspectives on the dynamics of financial inclusion in the state of Haryana. The study has empirically supported numerous important hypotheses by investigating the interactions among financial literacy, digital financial service access, and socioeconomic considerations. Though with a small impact size, the results support Hypothesis 1 (H1), therefore confirming a favorable relationship between financial literacy and the use of financial services. This emphasizes the need of financial education but also implies that literacy by itself would not cause substantial improvements in financial behavior. Therefore, financial literacy campaigns have to be included inside a more comprehensive framework of support systems in order to convert knowledge into practice.

Supporting Hypothesis 2 (H2), the findings show that financial inclusion of people depends much on access to digital financial services. Digital platforms are becoming more and more important for financial transactions, so the government and businesses both clearly have to support digital infrastructure, change the regulatory environment, and increase the security and simplicity of digital financial services.

Strongly validating Hypothesis 3 (H3), the study reveals that financial inclusion is much influenced by socioeconomic circumstances. This result is essential since it implies that any plan meant to improve financial inclusion has to include population heterogeneity and solve particular obstacles faced by various socioeconomic levels.

Policymakers, financial institutions, and development organizations all have great ramifications from the study. It will take a coordinated effort to establish an environment that not only guarantees fair access to financial services throughout all levels of society but also advances financial literacy. This covers focused measures meant to solve financial inequalities, educational gaps, and infrastructure flaws. Future studies should try to use a longitudinal design and maybe a bigger and more representative sample in view of the limitations found, particularly the suitability of the sampling and the restrictions of cross-sectional data. By means of such initiatives, we would improve our knowledge of the temporal dynamics of financial inclusion as well as the long-term effects of particular policies and programs.

Finally, by stressing the complex character of financial behavior in Haryana and by offering a disciplined research of underlying factors, this study adds to the body of knowledge on financial inclusion. These revelations should guide more complex and successful policies and initiatives aiming at driving the agenda of equitable financial sector development not only in Haryana but also as a model for other areas facing comparable difficulties.

### **7.1 Practical Implication:**

The study's findings have several practical implications. Firstly, they suggest that financial education initiatives need to be part of a broader strategy that includes improving access to financial services. Secondly, the significant role of digital financial services points towards a need for regulatory frameworks that promote digital financial literacy and trust. Lastly, the strong influence of socio-economic factors implies that financial inclusion policies must be intersectional, considering the multifaceted nature of economic disparities.

### **7.2 Limitations and Further Research:**

While the findings are insightful, the limitations of this study should be acknowledged. The modest KMO value indicates that the data may not be ideal for factor analysis, potentially affecting the reliability of the SEM results. Furthermore, the cross-sectional nature of the study limits the ability to infer causality. Future research could employ Cohort studies data to better understand the directionality of the relationships and to explore the effects of interventions over time.

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