

Catalysing Economic Enfranchisement: An Erudite Exploration Of Financial Inclusion Dynamics In Bihar

¹Dr Manta Dey, ²Navtej Tiwari, ³Rupsha Dey

¹Associate Professor, Amity University, Kolkata, India

mantadey@yahoo.com

²Student, Amity University, Kolkata, India

navtejt看ari@gmail.com

³Research Associate, CAFRAL, Reserve Bank of India, Mumbai

rupshadev@gmail.com

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ABSTRACT

This paper embarks on an exploration into the realm of financial inclusion in Bihar, dissecting its current status and the multifaceted challenges it confronts. Going beyond mere statistics, the inquiry encompasses an understanding of income dynamics, occupational patterns, and the migratory trends of Bihar's populace, alongside their consequential impacts on the economy. As one of India's most populous states, Bihar's financial landscape is deeply intertwined with its socio-economic fabric. Employing a nuanced approach, this study delves into the existing financial infrastructure, regulatory frameworks, and socio-economic determinants influencing inclusion. Drawing from a blend of literature reviews and statistical analyses, the paper scrutinizes governmental interventions aimed at bridging financial disparities. Moreover, it explores the socio-economic ramifications of bolstered financial inclusion, offering valuable insights for policymakers, financial institutions, and development agencies. By dissecting the intricacies of Bihar's financial ecosystem, this research endeavours to inform targeted strategies that promote inclusive and sustainable economic growth, tailored to the unique context of the state. Exploring what has been attained in terms of awareness, participation, and its impact on financial inclusion is a crucial aspect of understanding Bihar's financial landscape. This analysis will shed light on the effectiveness of existing initiatives, the level of community engagement, and the tangible outcomes in terms of improved access to financial services and socioeconomic advancement. By evaluating these metrics, policymakers and stakeholders can better gauge the progress made and identify areas requiring further attention and investment.

Key words: financial inclusion, financial literacy, self-help groups, financial accessibility, socio-economic Inclusion, migration

INTRODUCTION:

It takes more than financial literacy to truly help people work toward a stronger financial situation. Attention must also focus on their behaviors, self-efficacy and, helping them develop systems to truly make a positive impact.

-Vince Shorb, CEO, NFEC

Financial inclusion pertains to ensuring that everyone has fair and equal access to financial services. It involves enabling individuals and businesses to easily obtain suitable, affordable, and timely financial products and services, such as banking, loans, investments, and insurance. Financial inclusion, the cornerstone of inclusive economic growth, stands as a beacon of hope in the pursuit of equitable access to financial services for all segments of society. As economies evolve and urbanization accelerates, the imperative to bridge the gap between the financially excluded and included becomes increasingly pronounced. At its essence, financial inclusion embodies the fundamental principle that every individual, regardless of socio-economic status or geographical location, should have access to a range of affordable and appropriate financial products and services. Beyond the mere provision of banking services, financial inclusion encompasses a broader spectrum of opportunities,

including access to credit, savings mechanisms, insurance, and digital financial services. However, achieving meaningful financial inclusion requires a concerted effort to understand the multifaceted barriers that impede access and utilization of financial services, particularly among marginalized and underserved populations. As we embark on this journey towards greater financial inclusion, it is imperative to delve into the nuances of this complex landscape, exploring innovative solutions and policy interventions that can pave the way for a more inclusive and resilient financial ecosystem ([Measuring Financial Inclusion: The Global Findex Database | Policy Research Working Papers, 2023](#)). Financial exclusion on the other hand refers to the lack of access to basic financial services like savings accounts, loans, and electronic transactions, mainly due to socio-economic status. This exclusion prevents individuals and communities from participating in the financial sector, hindering their ability to pursue opportunities for business growth, education funding, and overall improvement in quality of life. Without financial literacy, attaining financial inclusion is next to impossible. Hence 1st step of attaining financial inclusion is financial literacy which refers to the possession of skills, knowledge, and behaviours enabling individuals to make informed decisions about money. It involves understanding basic financial concepts, managing personal finances effectively, evaluating financial risks, and planning for the future. The terms "financial literacy," "financial education," and "financial knowledge" are often used interchangeably.

The index of financial inclusion is a measure that quantifies the extent to which individuals and businesses have access to and use financial services within a given area or population. It typically takes into account various factors such as access to banking services, availability of credit, usage of formal financial products, and overall financial literacy. This index helps policymakers, researchers, and organizations assess the level of financial inclusion and identify areas for improvement or intervention.

Bihar, India's third most populous state, accommodates around 8% of the nation's population. Despite its significant demographic presence, Bihar remains predominantly rural, with nearly 80% of its residents dwelling in rural areas. Alarming, 34% of the state's populace struggles with poverty, indicating profound socio-economic challenges. Bihar's position as the 32nd state in the CRISIL Inclusix index of financial inclusion and 29th in the financial education survey conducted by NCFE (February 2018) highlights disparities in access to financial resources and knowledge. Historically, Bihar has grappled with developmental disparities compared to its more prosperous counterparts, attributed to factors such as inequitable government policies, low literacy rates, soaring unemployment, and burgeoning population growth. Against this backdrop, this research aims to examine the prevailing financial conditions in the state

Objectives of the Research:

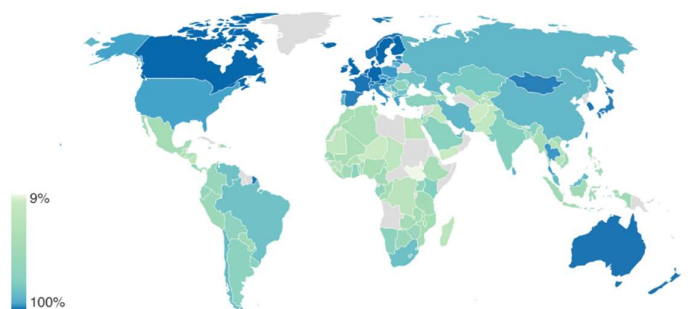
1. To empirically compare & contrast extent of financial inclusion in Bihar with other eastern states of India in banking, pension, and insurance sectors in order to strategize sustainable economic growth.
2. To comprehend existing policies and regulatory frameworks in Bihar and gauge their effectiveness in enhancing financial inclusion levels across diverse population segments in terms of awareness and participation for sustainable economic growth.

Literature Review:

3. A comprehensive view for developing the framework of present study has been formed based on literature reviews of previous studies. Literature from published reports, working papers of various national and international agencies, research articles on spread of Financial Inclusion along with causes of financial exclusion and emerging socio-economic challenges faced by policy makers have been extensively studied to form an informed interpretation.

The literature review of this paper is segmented into three sections

- Global overview,
- Examination of the Indian context; and
- Financial inclusion in Bihar

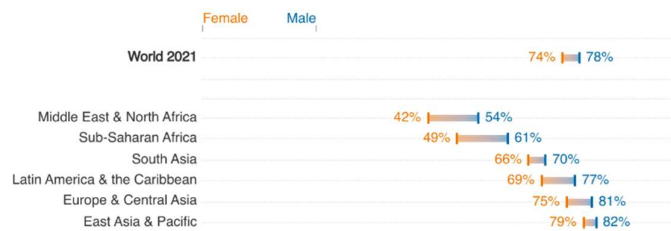


Account Ownership in 2021 - Global Findex Database

The 2021 edition of the Global Findex, the World Bank's comprehensive database tracking financial inclusion, highlights significant advancements over the past decade. Presently, 76% of the global adult population has access to financial accounts, a notable increase from 51% in 2011. Developing economies have particularly witnessed remarkable progress, with 71% of adults now holding financial accounts, reflecting a substantial 30-percentage-point rise over the last ten years. The

widespread adoption of digital financial services during the COVID-19 pandemic has played a pivotal role in advancing financial inclusion. Nearly two-thirds of adults globally engaged in digital transactions within the past year, including government transfers, remittances, and bill payments—a notable increase of 20 percentage points since 2014. Moreover, the global health crisis spurred a surge in digital merchant transactions within developing economies, with 37% of adults making digital payments to retail businesses. Remarkably, nearly one in four adults initiated such transactions for the first time during the pandemic period

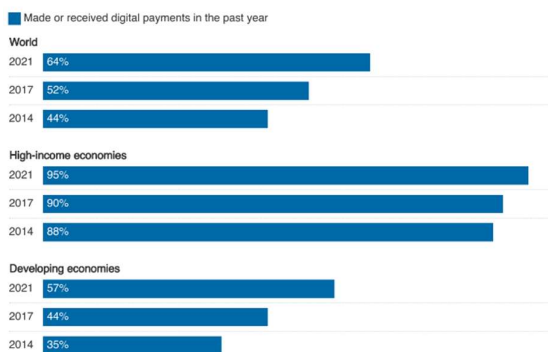
Global overview on financial inclusion:



Gender Gap in Account Ownership - Global Findex Database

A notable trend in financial inclusion is the gradual reduction of the gender gap in account ownership, which has now narrowed to 4 percentage points globally, down from 7 percentage points in 2017. Presently, 78% of adult men worldwide possess an account compared to 74% of adult women. In developing economies, the gender gap has decreased from 9 percentage points to 6 percentage points, marking a significant improvement. However, despite this overall progress, disparities persist in certain regions. In Sub-Saharan Africa and the Middle East and North Africa, the gap in account ownership between adult men and women remains substantial, standing at least 12 percentage points, double the average of developing economies. Moreover, the extent of the gender gap varies significantly across countries within the same region. For instance, in Mozambique and Nigeria, the gap is 22 and 20 percentage points, respectively, while in Uganda, it is merely 2 percentage points.

Financial resilience:



Digital Payments in 2021 - Global Findex Database

Financial resilience stands as a cornerstone in navigating unexpected financial setbacks, such as sudden job loss or unforeseen expenses. While government policies, social safety nets, and cultural norms play pivotal roles in shaping financial resilience, access to formal financial services remains a critical factor. However, individuals

facing poverty, women, and those with limited education often encounter barriers to accessing formal financial services, leaving them vulnerable during financial emergencies. According to the Global Findex 2021 report, formal savings emerge as the most reliable source of emergency funds. Nonetheless, 30% of adults in developing economies turn to informal sources like assistance from friends and family during crises. Significantly, the report highlights gender disparities, with women more likely to encounter difficulties in accessing emergency funds compared to men. In developing economies, 50% of women reported challenges in accessing emergency funds within 30 days, while 59% of men faced similar issues. Moreover, among those reliant on family support, 50% of women found it very difficult to obtain funds, contrasting with 44% of men.

Scrutiny of the Indian scenario:

Financial inclusion plays a vital role in promoting economic growth and reducing poverty ([Dhar, 2013](#)). It focuses on the poor who do not enjoy the formal financial institutional support and get them out of the clutches of local money lenders. The concept of financial inclusion in India has gained significant attention and importance, particularly for the rural population. This is because a large portion of India's population still resides in rural areas and faces numerous challenges in accessing formal financial services. Financial inclusion aims to address these challenges and ensure that individuals, regardless of their income or geographic location, have easy and affordable access to financial products and services. The Indian government has implemented several programs and initiatives to promote financial inclusion across the country. One of the notable programs is the Pradhan Mantri Jan Dhan Yojana, which aims to provide accessible and affordable financial services, including banking, credit, insurance, and pension, to the unbanked population. Additionally, the Direct Benefit Transfer scheme has been instrumental in ensuring that government subsidies and welfare benefits are directly transferred to the beneficiaries' bank accounts, thereby encouraging them to actively engage with formal financial institutions.

Furthermore, the government has also focused on strengthening the rural and cooperative banking network to extend financial services to remote areas. Initiatives such as the National Rural Livelihood Mission have been pivotal in promoting financial literacy and creating self-help groups for women in rural areas, thus empowering them economically.

In addition to government initiatives, various private sector organizations and fintech companies have introduced innovative financial products and digital payment solutions to cater to the diverse financial needs of the population. For example, microfinance institutions have been instrumental in providing small loans and financial services to individuals who are underserved by traditional banking institutions.

The effective collaboration between public and private entities, along with the integration of advanced technology, has resulted in significant progress towards achieving comprehensive financial inclusion in India. However, there are ongoing challenges such as enhancing financial literacy, addressing infrastructure gaps, and ensuring the sustainability of inclusive financial practices. These challenges require continuous efforts and multi-stakeholder involvement to create a more inclusive and resilient financial ecosystem for all Indians ([Thomas & Subhashree, 2020](#)).

Several measures have been implemented by financial regulators, government officials, and banking authorities in India since 2014. Some of these efforts, outlined below, are aimed at advancing the Government of India's comprehensive adoption of financial inclusion policies and its strategy for achieving complete digitization.

RBI on IFI in India: The Reserve Bank of India (RBI) introduced the Inclusive Finance Index (IFI) in India as a pivotal tool for gauging the extent of financial inclusion nationwide. In its pursuit of fostering a more inclusive financial system, the RBI stated, "The Inclusive Finance Index (IFI) is designed to capture the extent of financial inclusion across the country and is based on multiple parameters." This index serves as a holistic measure, encompassing various dimensions of financial inclusion, including access to banking services, usage of financial products, and availability of credit facilities, among others. By providing a comprehensive assessment of financial inclusivity, the IFI enables policymakers and financial institutions to identify areas of improvement and implement targeted interventions to enhance access to financial services for underserved populations, ultimately contributing to broader economic development and social welfare.

Table 2.1. AUTHOR'S TABULATION

<i>SCHEMES</i>	<i>YEAR OF ORIGIN</i>	<i>KEY COVERAGE</i>	<i>Number of Subscriber/Account holder</i>
Atal Pension Yojana (APY)\ (Swavalamban Yojana)	Originally launched: 2010 Relaunched on 9 th May, 2015 (in Kolkata)	A government-supported pension initiative aimed at the informal sector, closely	As of August 15, 2020, there were 2,25,53,000 individuals covered under PRFDA,

<i>SCHEMES</i>	<i>YEAR OF ORIGIN</i>	<i>KEY COVERAGE</i>	<i>Number of Subscriber/Account holder</i>
		tied to bank accounts.	constituting 62.29% of the total pension fund subscribers.
Pradhan Mantri Suraksha Bima Yojana (PMSBY)	9 th May, 2015(in Kolkata)	An accident insurance scheme launched by Government of India to bring the uninsured population under insurance cover	15.47 Crore.
Stand-up India Scheme	5 th April 2016	A groundbreaking scheme has been introduced to foster entrepreneurship at the grassroots level, specifically targeting women and SC/ST communities. This initiative aims at economic empowerment and job creation within these demographics.	75,155 accounts have been opened for women accounting for more than 81% of total account holding (as on February 2020)
Pradhan Mantri Vaya Vandana Yojana (PMVVY)	4 th May 2017 (extended upto March 2023 from May 2020)	A pension scheme announced exclusively for senior citizens aged 60 years and above	
Pradhan Mantri Mudra Yojana (PMMY)	8 th April 2015	A flagship scheme to “Fund the unfunded “by bringing such enterprises to the formal financial system and extending affordable credit to them.	As of FY 2018-19, there are 18.26 Crore accounts with a sanctioned loan amount of 8,93,376 crore. Three products - 'Sishu,' 'Kishore,' and 'Tarun' - have been introduced to cater to the improvement and funding requirements of micro units for the next growth phase.
Sukanya Samriddhi Yojana Girl Child Prosperity Account – as a part of Beti Bachao,Beti Padhao	22 nd January 2015	A savings scheme endorsed by the Government of India, designed for parents of girl children to encourage them in building a fund for the future education and marriage expenses of their daughters.	
Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)	9 th May, 2015	A government backed life insurance scheme available to people between 18 and 50 years of age with bank accounts	Total enrollment- 5.91 crore people as of 31 st March, 2019.
RuPay Debit cards	8 th May 2014	NPCI has introduced a pioneering initiative for a domestic multilateral card, allowing all banks and financial institutions	1 billion transactions (online and offline merchant payments) show a 135% growth, capturing a 33% market

<i>SCHEMES</i>	<i>YEAR OF ORIGIN</i>	<i>KEY COVERAGE</i>	<i>Number of Subscriber/Account holder</i>
		in India to access electronic payment services. In addition to offering banking convenience, this scheme includes an inherent accident insurance cover of 2,00,000 rupees for its account holders.	share in card transactions. About 1,100 banks have issued around 600 million cards.
Bank branches of Scheduled Commercial Bank : RURAL SEMI URBAN URBAN METROPOLITAN			51030 40166 25655 27148 143999

Table 2.2. Financial Literacy in Eastern India

Variable	Overall	By Sex		By Type of Household	
		Male	Female	Agricultural	Non-Agricultural
Proportion of Respondents having good Financial Knowledge	48.2	49.4	45.8	48.0	48.4
Proportion of Respondents having Positive Financial Attitude	42.5	42.3	43.1	39.1	45.6
Proportion of Respondents having sound Financial Behaviour	56.4	57.7	53.5	58.9	54.1
Proportion of Respondents assessed as having good Financial literacy	11.3	11.3	11.2	10.6	N/A

Financial Inclusion in Bihar:

Financial inclusion in Bihar, as explored in this paper, is a complex and critical aspect of the state's socio-economic landscape. Despite Bihar's rapid economic growth, significant portions of its population, particularly in rural areas, remain excluded from formal banking services. This exclusion stems from various factors such as limited access to banking infrastructure, low levels of financial literacy, and entrenched socio-economic disparities. Understanding the current status of financial inclusion in Bihar requires a nuanced examination of income

dynamics, occupational patterns, and migration trends. Bihar's economy is predominantly agrarian, with agriculture forming the backbone of livelihoods for many residents. Additionally, the state experiences substantial internal and external migration, which impacts both household income levels and expenditure patterns, further influencing financial behavior and access to services.

The financial infrastructure and regulatory frameworks in Bihar play a crucial role in shaping the landscape of financial inclusion. Initiatives like the Pradhan Mantri Jan Dhan Yojana (PMJDY) have made significant strides in expanding banking services, yet challenges such as last-mile connectivity and digital literacy persist, particularly in remote and underserved regions. Socio-economic determinants also significantly influence financial inclusion outcomes in Bihar. Factors such as education levels, income disparities, gender dynamics, and social norms contribute to disparities in access to financial services. Vulnerable groups, including women and marginalized communities, face heightened barriers to financial inclusion, exacerbating existing socio-economic inequalities.

Governmental interventions aimed at promoting financial inclusion in Bihar have been multifaceted, encompassing policy initiatives, regulatory reforms, and targeted programs. Assessing the effectiveness of these interventions is crucial for identifying gaps and refining strategies to enhance financial inclusion outcomes. Moreover, the socio-economic ramifications of enhanced financial inclusion extend beyond mere access to services. By providing individuals and households with access to formal financial services, financial inclusion can facilitate poverty alleviation, income generation, and improved standards of living. Through proper risk management and investment in productive assets, individuals can enhance their economic resilience and participate more actively in economic activities.

Table 3.1. Report on Account Opening in Bihar up to March 2022

Beneficiary at Rural /SemiUrban Centre Bank Branches	Beneficiary at Urban/Metro Centre Bank Branch	Total Beneficiary	Balance Beneficiary Accounts in (in Crores)	Number of Rupay Card to Beneficiaries
36,115,024	14,814,799	50,929,823	17260.36	38,172,810

Table 3.2. Educational Status of Women in Sample Area of Patna District

Educational Status	No. of Women	Percentage
Literate	180	80.0%
High school	20	8.9%
Intermediate	25	8.11%
TOTAL	225	100.0%

Evaluating the impact of existing initiatives on financial inclusion metrics, such as awareness, participation, and socio-economic advancement, is essential for guiding future interventions. Existing literature provides valuable insights into the effectiveness of governmental interventions and policy initiatives in Bihar. Through a synthesis of quantitative data and qualitative analyses, researchers have highlighted both successes and areas for improvement in promoting financial inclusion. By examining the outcomes of these initiatives, scholars have identified factors contributing to their success or limitations, including the role of local institutions, community engagement, and the accessibility of services. Such insights offer valuable lessons for policymakers and stakeholders seeking to refine strategies and allocate resources effectively.

In conclusion, enhancing financial inclusion in Bihar requires a holistic approach that addresses the multifaceted challenges facing the state. By leveraging existing infrastructure, regulatory frameworks, and policy initiatives while incorporating insights from socio-economic research, policymakers can devise targeted strategies to promote inclusive and sustainable economic growth in Bihar.

Research Gap:

The research on financial inclusion in Bihar has made significant strides in understanding the challenges and opportunities within the state's financial landscape. However, a notable gap in the existing literature is the lack of primary data specific to Bihar, which limits the depth and granularity of analysis. While secondary data sources provide valuable insights, the absence of primary data hampers a comprehensive understanding of the unique challenges facing Bihar's financial inclusion efforts. Moreover, the scarcity of research papers on financial inclusion in Bihar underscores the need for further scholarly inquiry into this critical area. Despite being one of India's most populous states with distinct socio-economic dynamics, Bihar remains underrepresented in academic

literature on financial inclusion. Bridging this gap requires prioritizing empirical studies that collect primary data from Bihar, providing insights into the determinants, challenges, and socio-economic impacts of financial inclusion initiatives in the state.

Research Methodology:

Empirical Method: An empirical method refers to a set of procedures or techniques used in scientific research to gather data and test hypotheses through direct observation or experience. Empirical methods rely on evidence gathered from real-world observations, experiments, or surveys, rather than relying solely on theory or speculation. These methods often involve systematic data collection, analysis, and interpretation to draw conclusions about phenomena under investigation. Examples of empirical methods include experiments, surveys, observational studies, and statistical analysis of data.

Data Collection: Secondary data is acquired from multiple reliable sources to ensure a comprehensive examination of financial inclusion in the eastern region of India. The various data sources include:

- Banking Reports: Annual reports from the Reserve Bank of India with significant operations in Eastern India.
- Government Publications: Reports and datasets available from the Reserve Bank of India (RBI), Ministry of Health and Family Welfare, Indian Post Office, Insurance Regulatory and Development Authority of India. These include data on banking penetration, financial inclusion initiatives, and regional economic indicators.

Data Processing and Preparation:

To compute the financial inclusion index for each state in the eastern region of India, the dimension index of each aspect of financial inclusion is initially calculated. The proposed financial inclusion index is expected to range from 0 to 1, where 0 indicates complete financial exclusion and 1 indicates full financial inclusion. Principal Component Analysis (PCA) is employed to construct the index by reducing the dimensionality of the collected data.

- To make the raw data unit free, the following formula is used to convert in to normalised form.

$$\text{Normalised Value of Indicator} = 1 - \frac{\{ \text{Best Value of } X_i - \text{Observed Value of } X_i \}}{\{ \text{Best Value of } X_i - \text{Worst Value of } X_i \}}$$

Where, Best value of X_i : The highest value of the given dimension

Worst value of X_i : The lowest value of the given dimension

For Principal Component Analysis following variables were considered:

1. Saving Accounts per 1000 population.
2. Post Offices per 1000 Population
3. Sukanya Samridhi Yojana per 1000 Population
4. PPF per 1000 Population
5. Pension per 1000 Population
6. Total Credit Amount per 1000 Population
7. Bank Offices per 1000 Population
8. Kisan Credit Card Scheme (Outstanding Amount per 1000 Population)
9. Life Insurance (in crore premium) per 1000 Population

The state-wise index of financial inclusion will be constructed using all these dimensions. All the factors are categorised into three dimensions the following table.

Dimensions	Factors
<i>Penetration Dimension</i>	<ul style="list-style-type: none"> • Saving Accounts per 1000 population. • Total Credit Amount per 1000 Population
<i>Availability Dimension</i>	<ul style="list-style-type: none"> • Post Offices per 1000 Population • Bank Offices per 1000 Population

<i>Usage Dimension</i>	<ul style="list-style-type: none"> • Kisan Credit Card Scheme (Number of issued cards in '000) • Life Insurance (in crore premium) per 1000 Population • PPF per 1000 Population • Pension per 1000 Population • Sukanya Samridhi Yojana per 1000 Population
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Findings of the Study:

Computation of Index of Financial Inclusion:

Depending on the values of IFI, states are categorized into three categories which are-

- 1.) $0.5 < \text{IFI} < 1$ – High financial inclusion
- 2.) $0.3 < \text{IFI} < 0.5$ – Medium financial inclusion
- 3.) $0 \leq \text{IFI} < 0.3$ – Low financial inclusion

Financial Inclusion Index Results 2020-2021**Raw Data (Table 4.1)**

State	Saving account	Post Office	Sukanya Samridhi Yojana	PPF	Pension	Credit	Bank Offices	Kisan Credit Card Scheme (Outstanding Amount)	Life Insurance (Premium)	Population ('000)
Bihar	19948927	9095	829951	58019	19635	163964	7584	37779.38	3513.024949	121302
Jharkhand	11578808	3822	362960	41663	6797	80679	3190	9666.05	2290.866241	37937
Odisha	8670687	8253	620139	30456	13629	155954	5289	38370.81	3787.562448	43852
West Bengal	16693875	9079	867965	152901	21394	437348	9379	27122.95	10234.84761	97516

Table (4.2)

State	Saving account	Post Office	Sukanya Samridhi Yojana	PPF	Pension	Credit	Bank Offices	Kisan Credit Card Scheme (Outstanding Amount)	Life Insurance (Premium)
Bihar	164.4567031	0.300671097	0.309565967	0.204985885	0.319502075	0.19567394	0.298089773	0.334510811	0.031105456
Jharkhand	305.2114822	0.126351284	0.135381563	0.147198796	0.110601253	0.096281976	0.125383225	0.085586323	0.020284068
Odisha	197.726147	0.272835466	0.231307546	0.107603546	0.221772028	0.18611484	0.2078846	0.339747523	0.033536299
West Bengal	171.1911379	0.300142153	0.323744925	0.540211773	0.348124644	0.521929244	0.368642402	0.240155344	0.090622641

(calculated by per '000 population) #: Own Calculations

Dimension Reduction (Table 4.3)

State	Saving account	Post Office	Sukanya Samridhi Yojana	PPF	Pension	Credit	Bank Offices	Kisan Credit Card Scheme (Outstanding Amount)	Life Insurance (Premium)
Bihar	0	1	0.924725498	0.225105149	0.879495787	0.233507818	0.7099693	0.9793961	0.153847127
Jharkhand	1	0	0	0.091526808	0	0	0	0	0
Odisha	0.236364578	0.840318604	0.509260304	0	0.468041378	0.211050021	0.339150105	1	0.188406309
West Bengal	0.047845159	0.996965674	1	1	1	1	1	0.608153491	1

Table 4.2 displays the normalized values of nine dimensions across the four states of the eastern region of India. Subsequent to normalization, indicators are assigned weights. These weights are determined through Principal Component Analysis (PCA). By conducting PCA using SPSS software, initial Eigen Values (Total) greater than one are identified. In this case, two Eigen values larger than one are found, specifically 5.340 and 3.197. These three factors collectively explain 94.854% of the variance in the analysis variables. Table 4.4 visually represents this information.

Total Variance Explained (Table 4.4)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.938	77.094	77.094	6.938	77.094	77.094	4.559	50.652	50.652
2	1.888	20.982	98.076	1.888	20.982	98.076	4.268	47.424	98.076
3	.173	1.924	100.000						

Extraction Method: Principal Component Analysis

The Component Matrix below demonstrates the extraction of the same number of components for each variable, determined by the count of Eigen values exceeding one. In this case, two components have been extracted, corresponding to the presence of two Eigen values greater than one.

Rotated Component Matrix (Table 4.5):

	Component	
	1	2
Kisan Credit Card Scheme	.974	-.129
Saving account	-.937	-.350
Post Office	.934	.348
Sukanya Samridhi Yojana	.817	.555
Pension	.786	.598
PPF	.106	.993
Life Insurance	.218	.956
Total Credit Amount	.286	.946
Bank Offices	.657	.741

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Weights of the Dimensions (Table 4.6):

Kisan Credit Card Scheme	7.005636623
Saving account	7.160696698
Post Office	7.138692782
Sukanya Samridhi Yojana	6.719257231
Pension	6.584148217
PPF	2.608483242
Life Insurance	3.31942194
Credit	3.769223679
Bank Offices	5.95890427
Grand Total	50.26446468

Now, each weight is multiplied by the respective dimension value from the dimension table 4.3. For example, in the table 4.5 provided above, the weight of the post office, 7.138692782, is multiplied by the post office column of the dimension reduction table 4.3. A similar process is carried out for each other dimension to determine the index of Financial Inclusion.

Author's Calculation (Table 4.7):

State	Savin g accou nt	Post Offi ce	Sukan ya Samrid hi Yojana	PPF	Pensio n	Credit	Ban k Offic es	Kisa n Credi t Card Sche me	Life Insuran ce	Sum
Bihar	0	7.13869 2 782	6.213468 488	0.5871 83 01	5.7907 30 617	0.8801 43 197	4.23063 9 096	6.86129 3 187	0.510683 52 7	32.21 28 3
Jhark hand	7.16069 6 698	0	0	0.2387 46 145	0	0	0	0	0	7.399 44 3
Odisha	1.69253 5 052	5.99877 6 354	3.421850 983	0	3.0816 53 807	0.7954 94 737	2.02096 3 009	7.00563 6 623	0.625400 03 5	24.64 23 1
West Beng al	0.34260 4 671	7.11703 1 662	6.719257 231	2.6084 83 242	6.5841 48 217	3.7692 23 679	5.95890 4 27	4.26050 2 368	3.319421 94	40.67 95 8

The formula for financial inclusion index is given below:

$$IFI = \frac{\sum X_i \sum (L_{ij}|E_j)}{\sum (L_{ij}|E_j)}$$

Or, $IFI = \frac{\text{Sum of all dimensions of a given state}}{\text{Sum of all the weights}}$

Where X_i : the indicator

L_{ij} : the factor loading of the i^{th} variable on the j^{th} factor

E_j : the Eigen value of the j^{th} factor

State -Wise Financial Inclusion Index (Table 4.8)

State	IFI	Category
Bihar	0.640866945	High
Jharkhand	0.147210219	Low
Odisha	0.490253119	Medium
West Bengal	0.809310863	High

Overall findings for 2020-2021

In the realm of financial inclusion, Bihar emerges as a beacon of progress, as evidenced by the data from 2020–2021. With an IFI score of 0.640866945, Bihar is classified as "High" in financial inclusion, showcasing substantial advancements in various key areas. Notably, there has been a significant surge in pensions, post offices, and the utilization of the Kisan Credit Card Scheme. These indicators point towards an encouraging trend of enhanced accessibility and utilization of financial services among the populace.

Comparatively, neighboring states like Jharkhand and Odisha present a mixed picture. Jharkhand, with an IFI score of 0.147210219, still grapples with challenges in financial inclusion despite a notable increase in savings accounts. However, minimal progress is observed in other critical areas like PPF and Sukanya Samridhi Yojana, suggesting lingering gaps in accessibility to financial services. Similarly, Odisha exhibits moderate progress with an IFI score of 0.490253119, albeit with persistent challenges in sectors like PPF and life insurance.

In contrast, West Bengal stands out for its remarkable strides in financial inclusion, boasting an IFI score of 0.809310863 and positioning the state in the "High" category. Strong initiatives in sectors such as life insurance, post offices, and the Sukanya Samridhi Yojana underscore the state's commitment to fostering equitable growth and financial inclusion.

For Bihar, this data underscores a narrative of success and progress in the realm of financial inclusion. It highlights the state's concerted efforts towards expanding access to financial services, thereby empowering its citizens economically. As Bihar continues on this trajectory of growth and development, leveraging these insights can further inform policy interventions and initiatives aimed at ensuring comprehensive financial inclusion for all segments of society.

Financial Inclusion Index Results For 2021-2022

Raw Data (Table 5.1)

State	Saving account	Post Office	Sukanya Samridhi Yojana	PPF	Pension	Credit	Bank Offices	Kisan Credit Card Scheme (Outstanding Amount)	Life Insurance (Premium)	Population('000)
Bihar	6032565	9109	1100740	57678	21820	195592	7640	39641.28	4153.635349	123083
Jharkhand	4121923	3852	315282	34006	7424	92188	3206	27426.7	2626.956	38471
Odisha	6290464	8258	783118	41891	15950	183405	5367	34965.54	4149.432373	44033
West Bengal	9609312	9078	955344	198042	22538	479463	9616	9136.11	10974.75797	98125

Table (5.2)

State	Saving account	Post Office	Sukanya Samridhi Yojana	PPF	Pension	Credit	Bank Offices	Kisan Credit Card Scheme (Outstanding Amount)	Life Insurance (Premium)
Bihar	49.01217065	0.074006971	8.943070936	0.46861	0.1773	1.589106538	0.06207194	0.306942307	0.033747
Jharkhand	107.1436407	0.100127369	8.195315952	0.88394	0.193	2.396298511	0.0833355	0.251255491	0.068284
Odisha	142.8579	0.187541	17.78479	0.951	0.362	4.165171	0.121885	0.87141030	0.094235

	474	162	777	35	2	576	86	6	
West Bengal	97.92929 427	0.092514 65	9.735989 809	2.018 26	0.229 7	4.886247 134	0.097997 45	0.27641222 9	0.111845

(calculated by per'000 population) #: Own Calculations

Dimension Reduction (table 5.3)

State	Saving account	Post Office	Sukanya Samridhi Yojana	PPF	Pension	Credit	Bank Offices	Kisan Credit Card Scheme (Outstanding Amount)	Life Insurance (Premium)
Bihar	0	0	0.077976 579	0	0	0	0	0.0897950 23	0
Jharkhand	0.619436 186	0.230066 357	0	0.268013 715	0.084876 001	0.244815 758	0.355495 228	0	0.442231 769
Odisha	1	1	1	0.311517 756	1	0.781302 757	1	1	0.774513 413
West Bengal	0.521250 133	0.163014 142	0.160662 889	1	0.283363 048	1	0.600621 313	0.0405652 55	1

Table 5.3 presents the normalized values of nine dimensions for all four states of the eastern region of India. Following normalization, weights are assigned to the indicators. These weights are determined through Principal Component Analysis (PCA). By conducting PCA using SPSS software, initial Eigen Values (Total) exceeding one are identified. In this case, two Eigen values larger than one are found, specifically 6.424 and 2.279. These three factors collectively explain 96.693% of the variance in the analysis variables. Table 5.4 provides a visual representation of this information.

Total Variance Explained (Table 5.4)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.424	71.372	71.372	6.424	71.372	71.372	5.362	59.573	59.573
2	2.279	25.320	96.693	2.279	25.320	96.693	3.341	37.120	96.693
3	.298	3.307	100.000						

Extraction Method: Principal Component Analysis.

The Component Matrix below demonstrates the extraction of the same number of components for each variable, determined by the count of Eigen values exceeding one. In this instance, two components have been extracted, corresponding to the presence of two Eigen values greater than one.

Rotated Component Matrix (Table 5.5)

	Component	
	1	2
Kisan Credit Card Scheme	.987	-.019
Post Office	.986	.137
Sukanya Samridhi Yojana	.975	.102
Pension	.956	.273

Bank Offices	.813	.578
Saving account	.786	.460
PPF	-.152	.983
Life Insurance	.331	.942
Total Credit Amount	.371	.915

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 3 iterations.

Weights of the Dimensions (Table 5.6)

Kisan Credit Card Scheme	6.298245106
Post Office	6.648538898
Sukanya Samridhi Yojana	6.497673142
Pension	6.764097844
Bank Offices	6.536730823
Saving account	6.094081891
PPF	1.262372802
Life Insurance	4.275975269
Credit	4.467466818
Grand total	48.84518259

Now, each weight is multiplied by the respective dimension value from the dimension table 5.3. For example, in table 5.6 above, the weight of post office, 7.138692782, is multiplied by the post office column of the dimension reduction table 5.3. A similar process is carried out for each other dimension to determine the index of Financial Inclusion.

Author's Calculation (Table 5.7)

State	Savin g accou nt	Post Offi ce	Sukan ya Samrid hi Yojana	PPF	Pensio n	Credit	Ban k Offic es	Kisa n Credi t Card Sche me	Life Insuran ce	Sum
Bihar	0	0	0.506666 321	0	0	0	0	0.56555 1 066	0	1.072 21 7
Jhark hand	3.77489 4 841	1.52960 5 121	0	0.3383 33 225	0.5741 09 576	1.0937 06 273	2.32377 6 617	0	1.890972 10 9	11.52 54
Odisha	6.09408 1 891	6.64853 8 898	6.497673 142	0.3932 51 542	6.7640 97 844	3.4904 44 142	6.53673 0 823	6.29824 5 106	3.311800 19 8	46.03 48 6
West Beng al	3.17654 0 995	1.08380 5 863	1.043934 942	1.2623 72 802	1.9166 95 385	4.4674 66 818	3.92609 9 848	0.25548 9 918	4.275975 26 9	21.40 83 8

Applying the same method to analyze the Financial Inclusion Index (IFI) using data from previous years provides valuable insights into the evolving landscape of financial inclusion over time.

State -Wise Financial Inclusion Index (Table 5.8)

State	IFI	Category
Bihar	0.021951344	Low
Jharkhand	0.235957717	Low

Odisha	0.942464766	High
West Bengal	0.438290548	Medium

Overall findings for 2021-2022:

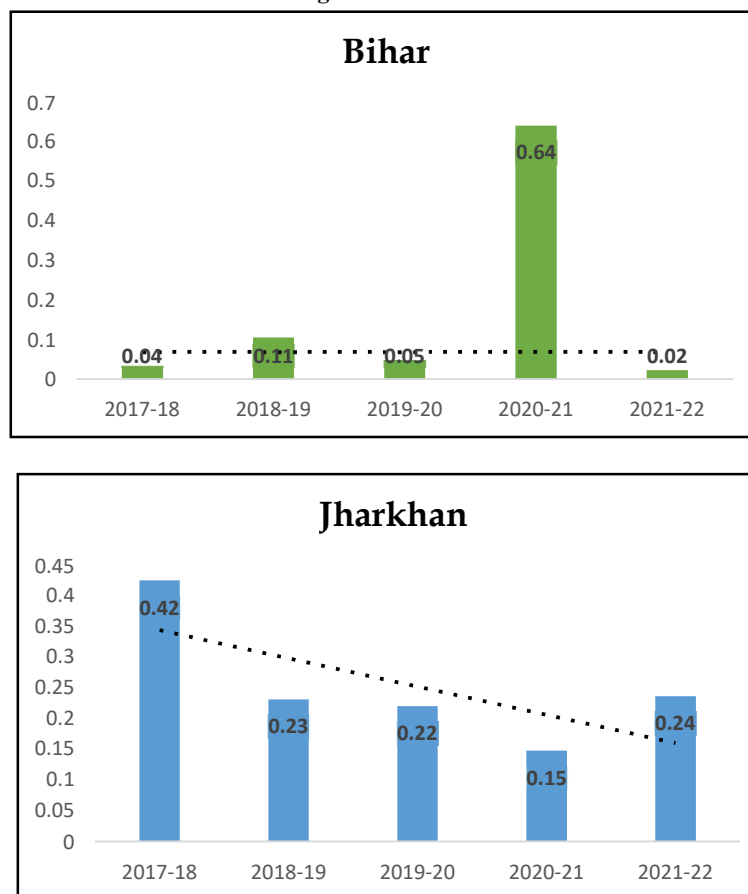
In the context of Bihar's financial landscape for the fiscal year 2021–22, the data reveals significant challenges in achieving comprehensive financial inclusion. Metrics pertaining to various indicators such as the Kisan Credit Card Scheme, Sukanya Samridhi Yojana, and savings accounts reflect limited activity, with notably low values. The state's IFI score of 0.021951344 places it in the "Low" category for financial inclusion, underscoring the urgent need for targeted interventions to enhance access to and utilization of financial services.

Comparatively, Bihar's performance trails behind neighbouring states like Odisha, which exhibits robust activity across all facets of financial inclusion. Odisha's proactive measures have resulted in high values across indicators such as life insurance, post offices, and savings accounts, culminating in an IFI score of 0.942464766 and a classification of "High" in financial inclusion.

While Bihar faces considerable challenges, there are lessons to be learned from states like Odisha, where concerted efforts have yielded significant progress. By prioritizing initiatives aimed at increasing financial service usage and accessibility, Bihar can embark on a path towards inclusive growth and development. This necessitates targeted policies and interventions tailored to address the unique needs and constraints of the state's populace, ultimately fostering economic empowerment and resilience.

In conclusion, Bihar's journey towards financial inclusion requires strategic planning and collaborative efforts from stakeholders across sectors. By leveraging insights from neighbouring states and adopting best practices, Bihar can overcome existing barriers and emerge as a frontrunner in promoting inclusive and sustainable development.

Visual Depiction of Financial Inclusion Progress Across Bihar and Jharkhand:



Overcoming Financial Inclusion Challenges in Bihar:

Efforts to advance financial inclusion in Bihar encounter various challenges, necessitating tailored solutions to enhance access to and utilization of financial services. Infrastructure, socioeconomic, regulatory, and

technological hurdles stand as formidable barriers to inclusive growth in the state.

Infrastructure Challenges:

Bihar grapples with inadequate physical infrastructure, particularly evident in the scarcity of bank branches and post offices, especially in rural and remote areas. This deficiency impedes access to financial services, hampering the state's progress in financial inclusion. Furthermore, limited transportation networks and connectivity exacerbate the accessibility issue, particularly for marginalized communities seeking banking services. Notably, Bihar lags behind Odisha in the availability of financial infrastructure, as indicated by lower values for post offices and bank offices.

Socioeconomic Challenges:

Low levels of financial literacy and awareness hinder the adoption of formal financial services, particularly among rural and disadvantaged populations in Bihar. This is reflected in the underutilization of financial products such as life insurance and the Sukanya Samridhi Yojana. High rates of poverty and income inequality exacerbate financial exclusion, as many struggle to meet basic needs, prioritizing immediate consumption over savings. Such socioeconomic factors contribute to Bihar's poor IFI ratings.

Regulatory Obstacles:

Strict Know Your Customer (KYC) guidelines and paperwork requirements pose barriers to accessing banking services for individuals without official identity documents in Bihar. This disproportionately affects disadvantaged groups, including women and immigrants, limiting their ability to apply for loans and open bank accounts. Additionally, inconsistent implementation of regulations and inadequate consumer protection measures foster reliance on unregulated informal financial services, perpetuating financial exclusion.

Technological Difficulties:

Limited access to digital infrastructure, such as smartphones and internet connectivity, hampers the adoption of digital financial services in Bihar, particularly in rural areas with insufficient connectivity. Poor digital literacy further complicates the adoption of digital financial services, hindering efforts to promote financial inclusion. Addressing these challenges requires targeted interventions and strategies tailored to Bihar's unique context. Investments in digital and physical infrastructure, alongside initiatives to improve financial literacy and streamline regulatory processes, are essential. Leveraging technology to enhance access to financial services for marginalized groups is paramount to fostering inclusive growth in Bihar.

Suggestions for the Government of Bihar

1. Implement a compulsory curriculum on fundamental financial structures and their operations in high schools to enhance financial literacy among students.
2. Launch additional outreach initiatives to disseminate information about government financial inclusion programs in rural regions.
3. Engage esteemed local figures from rural communities as ambassadors to promote awareness about financial literacy and government initiatives.
4. Enhance transparency in the public expenditure system, empowering citizens to track the allocation of funds by both central and state governments for community development, thereby fostering accountability and curbing corruption.
5. Collaborate with mobile network operators to facilitate mobile banking services in remote areas, making financial transactions more accessible to underserved communities.
6. Provide support and incentives for microfinance institutions to operate in Bihar, offering small loans and financial services to individuals and small businesses in rural areas.
7. Launch digital literacy programs to familiarize residents with online banking platforms, digital payments, and other financial tools to bridge the digital divide and promote financial inclusion.
8. Offer incentives to banking correspondents to expand their reach and provide banking services in remote areas, thereby increasing access to formal financial services.
9. Establish counselling centres staffed with financial experts to provide personalized advice and guidance to individuals and families on managing finances, planning for the future, and accessing government schemes and benefits
10. Introduce incentives such as tax breaks or matching contributions for individuals who save or invest through formal financial channels, encouraging a culture of saving and investment among the population.

Conclusion:

Based on the results of the Principal Component Analysis, Bihar emerges with glaring deficits in various financial inclusion measures, exemplified by notably low values in schemes such as the Kisan Credit Card Scheme, Sukanya Samridhi Yojana, and savings accounts. This underscores the urgent need for tailored policy interventions aimed at bolstering the state's financial infrastructure and promoting broader access to financial services among its populace. Without such targeted measures, Bihar risks lagging behind its eastern counterparts

in achieving robust financial inclusivity, impeding the state's overall economic development and social progress. To address these shortcomings, the government must prioritize the implementation of initiatives geared towards improving both the availability and utilization of financial services across Bihar. This could entail measures such as expanding banking networks, enhancing financial literacy programs, and incentivizing participation in various financial schemes. By undertaking concerted efforts to bridge the existing gaps in financial inclusion, Bihar can aspire to attain a level of inclusivity comparable to other eastern states, thereby fostering a more equitable and resilient economic landscape conducive to sustainable growth and development.

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