Supply-Side Dimension of Financial Inclusion in India: A Composite Index Analysis of Availability of Financial Services across Indian States

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ABSTRACT

This study examines the availability dimension of financial inclusion in India from a supply-side perspective by analysing state-wise disparities in the availability of financial services during 2012–2024. The study is based on secondary data collected from official sources and evaluates the performance of states and union territories across four reference years. The availability dimension reflects the physical presence and outreach of financial institutions and infrastructure across regions. A comparative and categorisation approach has been adopted to identify the top and bottom performing states in terms of financial service availability.

The findings indicate considerable regional disparities in the availability of financial services across India. Maharashtra, Uttar Pradesh, and Tamil Nadu consistently remained among the top-performing states throughout the study period, while Karnataka also showed sustained improvement. In contrast, Andaman and Nicobar Islands, Dadra and Nagar Haveli, Mizoram, and Sikkim consistently ranked among the bottom-performing regions. The study concludes that economically advanced and urbanised states possess better financial infrastructure, whereas geographically remote and less developed regions continue to lag behind in financial service availability.

Keywords: Availability, Financial Inclusion, Supply-Side, Financial Services and Financial Institutions

INTRODUCTION

Financial inclusion has emerged as a critical component of inclusive economic development and financial sector reforms across developing economies. It refers to the process of ensuring access to affordable, timely, and adequate financial services such as banking, credit, insurance, and pension facilities for all sections of society, particularly vulnerable and economically weaker groups. An efficient and inclusive financial system enhances economic participation, promotes savings and investment, reduces poverty, and supports sustainable economic growth (Sarma, 2008).

In recent decades, the Government of India and the Reserve Bank of India have implemented several policy initiatives to strengthen financial inclusion through banking expansion, digital financial services, insurance penetration, and pension outreach programs. Schemes such as the Pradhan Mantri Jan Dhan Yojana, financial literacy campaigns, expansion of Automated Teller Machines (ATMs), and social security programs have significantly contributed to the development of the formal financial system. Despite these efforts, substantial regional disparities continue to exist in the outreach and availability of financial services across Indian states and union territories.

Financial inclusion is broadly analysed from both demand-side and supply-side perspectives. The demand side focuses on the usage, affordability, and behavioural aspects of financial services, whereas the supply side emphasizes the institutional presence and outreach of financial infrastructure. The supply-side perspective is particularly important in developing economies because the absence of financial institutions and service delivery mechanisms acts as a major barrier to financial inclusion (Rangarajan Committee, 2008). Therefore, the availability of financial services constitutes a fundamental prerequisite for achieving inclusive financial development.

The availability of bank offices reflects the physical outreach of banking institutions and their ability to provide formal financial services to the population. Credit accounts indicate the extent of institutional credit penetration and access to formal borrowing facilities. Similarly, ATM deployment measures technological expansion and transactional accessibility within the banking sector. Insurance offices and insurance policies capture the outreach of financial protection and risk management services, while pension subscribers represent the inclusion of individuals within long-term financial security and social protection systems. Together, these indicators comprehensively reflect the supply-side outreach of financial services in an economy.

LITERATURE REVIEW

Prashasti Keshari and Awadhesh Kumar Tiwari (2026) conducted a systematic review on financial inclusion in rural regions and observed that most existing studies primarily focused on access and usage dimensions, whereas the availability aspect remained relatively underexplored. The study further emphasized that regional disparities in banking infrastructure continue to affect inclusive financial development in emerging economies.

Similarly, Meenakshi P et al. (2026), in their systematic review of demand-side financial inclusion indices, argued that a majority of financial inclusion studies rely heavily on supply-side indicators such as bank branches, ATMs, and institutional outreach. The study highlighted that availability indicators are commonly used as proxies for measuring financial inclusion, particularly in developing economies like India.

Rituparna Choudhury and Sumeet Gupta (2025) examined the evolution of financial inclusion in India and found that considerable progress had been achieved in terms of accessibility and availability of banking infrastructure through government initiatives and digital financial services. However, the study pointed out that regional inequalities in financial infrastructure still persist across states and union territories.

Palak Mittal and Ravi Inder Singh (2025) analysed the changing landscape of financial inclusion through fintech and observed that technological innovations have significantly improved the outreach of financial services. The study concluded that digital financial infrastructure plays an important role in strengthening the supply side of financial inclusion, especially in underserved regions.

Rajesh Barik and Sanjaya Kumar Lenka (2022) investigated the demand-side and supply-side determinants of financial inclusion across Indian states during the post-liberalization period. Their findings revealed that supply-side factors such as road connectivity, electricity supply, and social sector expenditure positively influenced financial inclusion in Indian states. The study emphasized that infrastructure availability is a significant determinant of banking outreach and financial inclusion.

Omika Bhalla Saluja et al. (2023) reviewed barriers to financial inclusion and found that inadequate banking infrastructure and limited institutional outreach remain major obstacles to inclusive financial development, particularly among vulnerable and rural populations.

Earlier studies also contributed significantly to understanding the role of financial service availability. Kavita and Suman (2019) reviewed the determinants of financial inclusion in India and highlighted the importance of institutional and infrastructural factors such as banking facilities, financial literacy, and government initiatives in expanding financial access.

The available literatures show that the availability dimension is an important supply-side component of financial inclusion. Despite significant expansion in banking infrastructure, regional disparities still persist across Indian states and union territories, highlighting the need for more studies on state-level variations in financial service availability.

Objective

- To analyse the supply-side outreach of financial services in India during the study period.
- To construct a composite index for availability dimension of financial services.

METHODOLOGY OF THE STUDY

Area of the Study: The area of the research is the states and union territories in India. Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Chandigarh, NCT Delhi, Ladakh, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Bihar, Jharkhand, Odissa, Sikkim, West Bengal, Andaman & Nicobar Madhya Pradesh, Chhattisgarh, Uttar Pradesh, Uttarakhand Goa, Gujrat, Maharashtra, Dadra and Nagar Haveli, Daman and Diu Andhra Pradesh, Karnataka, Kerela, Tamil Nadu, Lakshadweep, Puducherry, and Telangana.

Data Source and Period: The present paper is based on secondary data that ae collected from various-Government regulatory bodies such as RBI, IRDAI and PFRDA. The study period of the time has been taken from 2012 to 2024 and points of time are: 2012, 2016, 2020 and 2024.

Dimension and Variables: The study constructs a composite index using six major variables of availability of financial services:

Box- 1

Dimension of financial services	**Variables**
Availability **of Financial Services (ai)**	**1 Availability of Number of Bank Offices (ai_1)** **2. Availability of Number of Credit Accounts (ai_2)** **3. Availability of Number of Deployment ATMs (ai_3)** **4. Availability of Number of Insurance Offices (ai_4)** **5. Availability of Number of Individual Insurance Policies (ai_5)** **6. Availability of Number of Pension Subscribers (ai_6)**

Method of the study

Step- 1: Normalization is performed separately for each year to ensure comparability among states and union territories. Normalized index value of each variable has been calculated from this manner:

1) Step 1: Normalisation of Variable

Normalised Index of Variable (NVi)= $\frac{X_{ij}-X_{min}}{X_{max}-X_{min}}$

X_{ij} stands for actual value of the ith variable of jth State

X_{min} stands for minimum value of the ith variable of jth State

X_{max} stands for maximum value of the ith variable of jth state

Step- 2: The Composite Index of Dimension (CID) has been constructed by taking the arithmetic mean of the normalized values of all six indicators included under the availability dimension of financial services. The composite index is calculated as:

Composite Index of Dimension (CID)= $\sum_{i=1}^{6} \frac{NVi}{6}$

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where NV_i represents the normalized value of each variable related to the availability of financial services. The composite index integrates information from all six indicators into a single numerical value ranging between 0 and 1. A value closer to 0 indicates a lower level of availability of financial services and higher financial exclusion, whereas a value closer to 1 represents a higher level of financial service availability and greater financial inclusion within the economy. Thus, the Composite Index of Dimension provides a comprehensive measure of the supply-side outreach and availability of financial infrastructure across Indian States and Union Territories.

To provide a comparative assessment of the availability dimension of financial services, the States and Union Territories have been categorised into different groups based on the values of the Composite Index of Dimension (CID). In defining these categories, the all-India score of composite indices (CRISIL Inclusix - 50.1 for 2013) has been used as the benchmark.

Box-2

Sr. No.	Composite Index Value of Dimension	Level of Availability of Financial Services
1.	CID >. 65	High
2.	.65 ≥ CID >.50	Above Average
3.	.50 ≥ CID ≥ .35	Below Average
4.	.35 > CID	Low

Analysis of the Study

The present study examines financial inclusion from a supply-side perspective by focusing on the availability dimension of financial services in India. The analysis of the Availability Dimension Index of Financial Services across Indian states and union territories during 2012–2024 reveals considerable regional disparities and uneven growth in the supply-side outreach of financial services. The findings indicate that financially advanced and economically developed states consistently maintained higher availability scores, whereas geographically remote and smaller states/UTs continued to lag behind.

Among all states, Uttar Pradesh, Maharashtra, Tamil Nadu, Karnataka, Gujarat, Rajasthan, and Andhra Pradesh recorded comparatively high values throughout the study period, indicating a stronger banking and financial infrastructure network. Uttar Pradesh emerged as the highest-performing state in all reference years, increasing from 0.797 in 2012 to 0.855 in 2024. Maharashtra also maintained a very high level of availability, though its score slightly fluctuated from 0.959 in 2012 to 0.858 in 2024. Tamil Nadu remained among the leading states despite a gradual decline from 0.755 in 2012 to 0.586 in 2024. Karnataka and Gujarat showed relatively stable performance with moderate fluctuations over time.

Rajasthan and Madhya Pradesh demonstrated significant improvement in the availability dimension during the study period. Rajasthan increased from 0.353 in 2012 to 0.395 in 2024, while Madhya Pradesh improved from 0.342 to 0.433, reflecting expansion in banking outreach and financial infrastructure in these states. Bihar and Odisha also exhibited gradual and consistent growth, indicating increasing penetration of financial services in relatively less developed regions.

In contrast, several North-Eastern states and small union territories continued to register very low availability scores. Arunachal Pradesh, Mizoram, Nagaland, Meghalaya, Sikkim, and Tripura consistently remained below 0.05 throughout the period. These low values indicate inadequate banking infrastructure, difficult geographical conditions, sparse population distribution, and limited institutional penetration. Similarly, Lakshadweep, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, and Puducherry also recorded extremely low scores due to their small geographical and demographic size.

The data further reveal fluctuations in some economically advanced states. Kerala declined from 0.421 in 2012 to 0.312 in 2024, while Andhra Pradesh experienced a sharp fall from 0.741 to 0.400 after state bifurcation and restructuring effects. Punjab and Delhi also witnessed moderate declines during the study period, suggesting relative stagnation in the expansion of financial service infrastructure compared to rapidly growing states.

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The emergence of Telangana after 2014 showed moderate performance, with the index increasing slightly from 0.302 in 2016 to 0.308 in 2024. Jammu & Kashmir and Himachal Pradesh recorded gradual improvement, though their overall scores remained comparatively low due to geographical constraints and difficult terrain.

Table- 1: Dimension Index of Availability (CID) of Financial Services in India

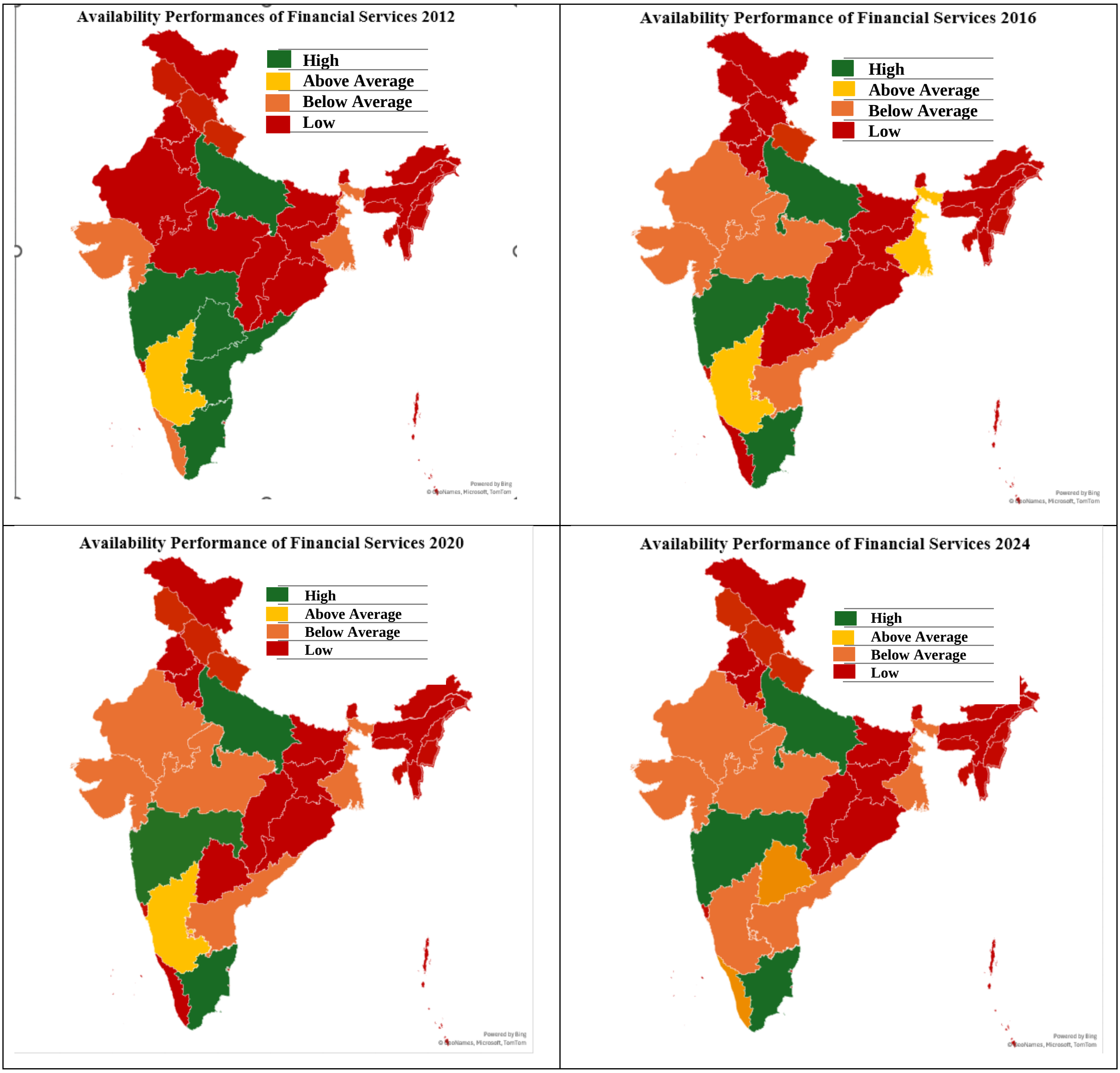
State/Union Territory	**Year**			
	2012	**2016**	**2020**	**2024**
Haryana	**0.214**	**0.224**	**0.238**	**0.233**
Himachal Pradesh	**0.074**	**0.091**	**0.081**	**0.088**
Jammu & Kashmir	**0.067**	**0.102**	**0.095**	**0.096**
Punjab	**0.282**	**0.264**	**0.257**	**0.227**
Rajasthan	**0.353**	**0.413**	**0.442**	**0.395**
Chandigarh	**0.029**	**0.023**	**0.022**	**0.018**
Delhi	**0.279**	**0.216**	**0.219**	**0.222**
Ladakh	**-**	**-**	**0.002**	**0.003**
Arunachal Pradesh	**0.006**	**0.010**	**0.010**	**0.011**
Assam	**0.151**	**0.192**	**0.188**	**0.191**
Manipur	**0.008**	**0.020**	**0.021**	**0.018**
Meghalaya	**0.012**	**0.014**	**0.015**	**0.014**
Mizoram	**0.004**	**0.007**	**0.007**	**0.007**
Nagaland	**0.006**	**0.013**	**0.013**	**0.013**
Tripura	**0.020**	**0.020**	**0.023**	**0.021**
Bihar	**0.326**	**0.339**	**0.347**	**0.351**
Jharkhand	**0.148**	**0.167**	**0.161**	**0.160**
Odisha	**0.241**	**0.268**	**0.282**	**0.284**
Sikkim	**0.005**	**0.009**	**0.009**	**0.009**
West Bengal	**0.491**	**0.405**	**0.453**	**0.428**
Andaman & Nicobar Islands	**0.003**	**0.002**	**0.002**	**0.002**
Chhattisgarh	**0.119**	**0.223**	**0.183**	**0.169**
Madhya Pradesh	**0.342**	**0.460**	**0.436**	**0.433**
Uttar Pradesh	**0.797**	**0.843**	**0.871**	**0.855**
Uttarakhand	**0.094**	**0.106**	**0.096**	**0.090**
Goa	**0.033**	**0.039**	**0.033**	**0.029**
Gujarat	**0.421**	**0.393**	**0.403**	**0.420**
Maharashtra`	**0.959**	**0.838**	**0.847**	**0.858**
Dadra & Nagar Haveli*	**0.002**	**0.002**	**0.003**	**0.004**
Daman & Diu	**0.001**	**0.002**	*****	*****
Andhra Pradesh	**0.741**	**0.409**	**0.372**	**0.400**
Karnataka	**0.551**	**0.505**	**0.516**	**0.496**
Kerala	**0.421**	**0.313**	**0.328**	**0.312**
Tamil Nadu	**0.755**	**0.751**	**0.612**	**0.586**
Lakshadweep	**0.000**	**0.000**	**0.000**	**0.000**
Puducherry	**0.015**	**0.018**	**0.017**	**0.014**
Telangana	**-**	**0.302**	**0.298**	**0.308**

Sources: Calculated by Author, Data Available on RBI, IRDAI &PFRDA

-: Data Not Available

*: Dadra and Nagar Haveli and Daman and Div have been merged in 2022

Figure- 1: Mapping the Progress of Financial Service Availability in India from 2012 to 2024



Source: Figure- 1 is based on Table- 1

Table 2 shows significant interstate disparities in the average availability index (Cai) of financial services in India. Maharashtra (0.875), Uttar Pradesh (0.842), and Tamil Nadu (0.676) recorded the highest average availability index values, indicating strong supply-side financial infrastructure in terms of banking, credit, ATM, insurance, and pension services. Other states such as Karnataka, Andhra Pradesh, West Bengal, Madhya Pradesh, and Gujarat also demonstrated relatively high financial service availability.

Moderate levels of availability were observed in Kerala, Bihar, Telangana, Odisha, Punjab, and Haryana. In contrast, northeastern states such as Arunachal Pradesh, Mizoram, Nagaland, and Meghalaya recorded very low index values, reflecting inadequate financial infrastructure and weak institutional outreach.

Among Union Territories, Lakshadweep, Ladakh, and Andaman and Nicobar Islands showed negligible availability levels. Overall, the findings indicate that supply-side financial inclusion in India remains regionally uneven, with economically advanced states exhibiting stronger financial infrastructure compared to geographically remote and economically weaker regions.

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Table- 2: State wise Average Index of Availability of study Points of Time

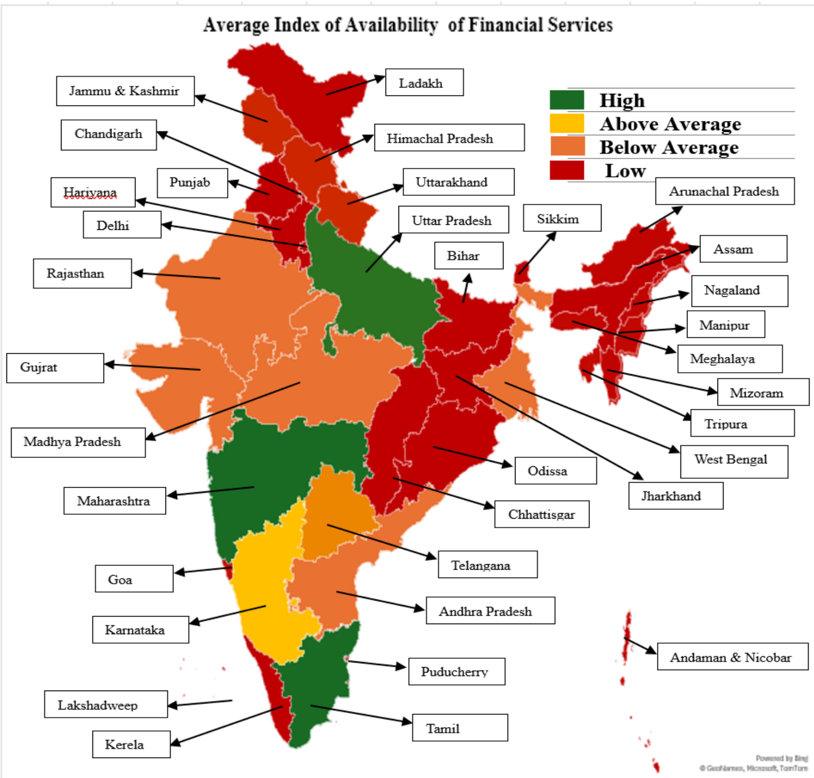
Sr. No	State/Union Territory	Average Index of Availability of Financial Services	Sr. No	State/Union Territory	Average Index of Availability of Financial Services
1	Haryana	0.227	20	West Bengal	0.444
2	Himachal Pradesh	0.083	21	Andaman & Nicobar Islands	0.002
3	Jammu & Kashmir	0.09	22	Chhattisgarh	0.173
4	Punjab	0.257	23	Madhya Pradesh	0.418
5	Rajasthan	0.401	24	Uttar Pradesh	0.842
6	Chandigarh	0.023	25	Uttarakhand	0.096
7	Delhi	0.234	26	Goa	0.034
8	Ladakh	0.002	27	Gujarat	0.409
9	Arunachal Pradesh	0.009	28	Maharashtra`	0.875
10	Assam	0.18	29	Dadra & Nagar Haveli	0.003
11	Manipur	0.017	30	Daman & Diu	0.002
12	Meghalaya	0.014	31	Andhra Pradesh	0.48
13	Mizoram	0.006	32	Karnataka	0.517
14	Nagaland	0.011	33	Kerala	0.344
15	Tripura	0.021	34	Tamil Nadu	0.676
16	Bihar	0.341	35	Lakshadweep	0
17	Jharkhand	0.159	36	Puducherry	0.016
18	Odisha	0.269	37	Telangana	0.303
19	Sikkim	0.008	38	Average Value of States & UTs	0.216

Sources: Calculated by Author, Data Available on RBI, IRDAI & PFRDA

-: Data Not Available

*: Dadra and Nagar Haveli and Daman and Div have been merged in 2022

Figure- 2: Mapping of Average Index of Availability of Financial Services



Source: Figure- 2 is based on Table- 2

FINDINGS OF THE STUDY

The analysis of the Availability Dimension of Financial Services during 2012–2024 reveals substantial regional disparities in the distribution and accessibility of financial infrastructure across Indian states and union territories. States such as Maharashtra, Uttar Pradesh, and Tamil Nadu consistently ranked among the top performers throughout the study period, reflecting strong banking networks, higher institutional outreach, better financial infrastructure, and greater penetration of formal financial services. Karnataka and Madhya Pradesh also demonstrated significant improvement, indicating gradual strengthening of financial service availability over time. In contrast, geographically remote and less developed regions such as Andaman & Nicobar Islands, Dadra & Nagar Haveli, Mizoram, and Sikkim consistently remained among the bottom-performing regions, highlighting persistent structural, geographical, and infrastructural constraints in expanding financial services. The inclusion of Ladakh in the bottom category in 2024 further indicates the challenges associated with administrative transition, difficult terrain, and limited financial infrastructure. The findings establish that economically advanced, urbanized, and densely populated states tend to exhibit higher financial service availability, whereas hilly, remote, and sparsely populated regions continue to lag behind. The study therefore confirms the existence of significant regional imbalance in financial infrastructure and accessibility across India.

Table- 3: Top five and Bottom Five states in Availability of Financial Services

Availability Dimension of Financial Services					
Top 5		**2012**	**2016**	**2020**	**2024**
	1	Maharashtra`	Uttar Pradesh	Uttar Pradesh	Maharashtra`
	2	Uttar Pradesh	Maharashtra`	Maharashtra`	Uttar Pradesh
	3	Tamil Nadu	Tamil Nadu	Tamil Nadu	Tamil Nadu
	4	Andhra Pradesh	Karnataka	Karnataka	Karnataka
	5	Karnataka	Madhya Pradesh	West Bengal	Madhya Pradesh
Bottom 5	**1**	Daman & Diu	Dadra & Nagar Haveli*	Dadra & Nagar Haveli*	Andaman & Nicobar Islands
	2	Dadra & Nagar Haveli*	Daman & Diu	Daman & Diu	Ladakh
	3	Andaman & Nicobar Islands	Andaman & Nicobar Islands	Andaman & Nicobar Islands	Dadra & Nagar Haveli*
	4	Mizoram	Mizoram	Mizoram	Mizoram
	5	Sikkim	Sikkim	Sikkim	Sikkim

Table– 4: State Categorisation on the Basis of Availability Dimension of Financial Services

Category	**Four Points of Time**	**Three Points of Time**	**Two Points of Time**	**One Point of Time**
Top 5 States	**Maharashtra, Uttar Pradesh, Tamil Nadu**	**Karnataka**	**Madhya Pradesh**	**Andhra Pradesh, West Bengal**
Bottom 5 States/UTs	**Andaman & Nicobar Islands, Dadra & Nagar Haveli, Mizoram, Sikkim**	**Daman & Diu**	**Ladakh**	—

POLICY RECOMMENDATION

The findings suggest that the Government of India should focus on expanding banking and digital financial infrastructure in remote, hilly, and underdeveloped regions to reduce regional disparities in the availability of financial services. Instead of adopting a uniform national strategy, region-specific financial inclusion policies should be designed by considering the geographical, economic, and socio-cultural differences among states and union territories. Greater emphasis should be placed on promoting digital banking, mobile banking, and fintech services to improve financial accessibility in sparsely populated and underserved areas. Strengthening the Banking Correspondent (BC) network is also essential for delivering financial services in villages and inaccessible locations where physical bank branches are limited. In addition, banks should be provided with financial incentives and regulatory support to encourage expansion in low-performing regions. Improvement in transport, internet connectivity, and communication infrastructure is equally important for enhancing the outreach and efficiency of financial institutions. Further, financial literacy and awareness programmes must be intensified to ensure effective utilisation of financial services, particularly in rural and backward areas. Continuous monitoring and evaluation of regional financial disparities are necessary to achieve balanced, inclusive, and sustainable financial development across India.

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