International Journal of
Emerging Knowledge Studies
Publisher's Home Page: https://www.ijeks.com/

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Research Paper

A Bibliometric Analysis of Priority Sector Lending Research in India (1990-2024)

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DOI: https://doi.org/10.70333/ijeks-04-08-003
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Abstract

Priority Sector Lending (PSL), established in 1972 as a crucial element of India's inclusive banking system, has significantly altered the financial landscape by mandating institutional lending toward underprivileged economic sectors. This comprehensive bibliometric analysis systematically investigates three decades of priority sector lending research in India (1990-2024), utilizing VOSviewer software to delineate intellectual frameworks and discern emerging trends through examination of 1,247 research publications from Scopus, Web of Science, and Google Scholar, demonstrating substantial growth from 23 publications (1990-1995) to 312 publications (2020-2024) with an 18.6% compound annual growth rate.[1] The analysis identifies five distinct research clusters: financial inclusion and rural development, non-performing assets and credit risk management, MSME financing and entrepreneurship development, agricultural credit and sustainability, and digital lending and fintech innovations. Key findings reveal research evolution from descriptive policy analyses toward advanced econometric modeling and impact assessments, emphasizing technology-driven solutions and sustainable development objectives. The Reserve Bank of India, Indian Institute of Management research centers, and agricultural institutions emerge as foremost institutional contributors, while co-authorship analysis indicates robust collaborative networks between Indian and international researchers. Prominent themes encompass climate financing, digital inclusion, gender-responsive lending, and ESG factors in priority sector distributions, revealing substantial policy implications for banking regulation, financial inclusion initiatives, and sustainable development frameworks while emphasizing priority sector lending's essential function in fulfilling India's socio-economic goals alongside financial stability and institutional profitability.

Keywords: *Priority Sector Lending, Bibliometric Analysis, VOSviewer, Financial Inclusion, Banking Research, India.*

1. Introduction

Priority Sector Lending represents India's most significant financial policy intervention, reshaping the banking landscape since the late 1960s. Formalized by the Reserve Bank of India in 1972, it mandates commercial banks allocate 40% of their Adjusted Net Bank Credit (ANBC) or Credit Equivalent Amount of Off-Balance Sheet Exposure (CEOBE) to specified sectors including agriculture, micro enterprises, education, housing, export credit, and social infrastructure.

The policy originated from the Gadgil Committee recommendations of 1969, advocating an 'Area Approach' that led to the Lead Bank Scheme, later refined by the Ghosh Committee in 1982. This directed lending approach addressed market failures in credit allocation, tackling financial exclusion faced by agriculture, small-scale industries, and marginalized communities due to information asymmetries, high transaction costs, and risk perceptions. Contemporary relevance has been reinforced through successive refinements, notably the revised guidelines effective April 1, 2025, expanding eligibility to include NBFCs, housing finance companies, and start-up financing up to ₹50 crores.

Despite fifty years of implementation, academic literature lacks comprehensive bibliometric analysis of priority sector lending research. This study addresses this gap by conducting the first extensive bibliometric analysis of three decades of research (1990-2024), using VOSviewer software to map intellectual landscapes and identify emerging research frontiers. The study provides evidence-based insights for policymakers, banking institutions, and practitioners regarding future research priorities and policy interventions.

2. Literature Review

Priority sector lending research in India has experienced significant methodological sophistication and thematic diversity over three decades, reflecting dynamic interplay between policy mandates, institutional responses, and socio-economic outcomes. Foundational contributions began with the **Narasimham Committee (1991, 1998)** which influenced discourse by challenging directed credit policies within financial sector reforms, sparking academic debate about balancing banking commercial viability with social objectives, while **Burgess and Pande (2005)** conducted the first rigorous empirical study using difference-in-difference methodology to demonstrate that rural bank expansion substantially reduced poverty rates, providing empirical support for directed lending policies. Methodological innovations advanced through **Khandker and Koolwal (2016)** employing propensity score matching techniques to evaluate agricultural credit's effects, finding significantly greater impacts for **marginal farmers, and Banerjee and colleagues (2015)** conducting randomized controlled trials in Hyderabad, revealing slight positive effects on business investment but minimal impacts on consumption indicators.

Recent scholarly contributions have diversified through **Kumar et al. (2016)** developing comprehensive frameworks identifying bank-specific PSL allocation predictors, **Deshmukh and Bhide (2023)** revealing higher NPA rates during 2013-2022 with sectoral variations, **Jain and Singhal (2023)** exploring financial-social objective tensions, **Goyal et al. (2016)** demonstrating public sector bank underperformance relative to private banks, **Susena et al. (2021)** showing disproportionate research attention toward agriculture and MSMEs, **Singh et al. (2023)** finding fintech innovations improve credit delivery mechanisms, Savitha and Kumar (2016)[17] establishing PSL's significant expansion of financial access with regional variations, **Kotte et al. (2022)** demonstrating long-term benefits justify policy frameworks despite short-term costs, and **Martins et al. (2024)** noting that while bibliometric methodologies emerge for financial inclusion research, comprehensive analysis specific to priority sector lending remains limited, creating the research gap this study addresses.

3. Research Objective

The research objectives for the bibliometric analysis of priority sector lending research in India are as follows:

- ➤ To map the systematic structure of priority sector lending research in India from 1990-2024.
- ➤ To analyse research collaboration networks and institutional contributions.
- ➤ To identify emerging trends in the field of priority sector lending research in India.

3.1 Hypothesis

The alternative hypotheses for each objective are given below:

- H_{1i}: The intellectual structure of priority sector lending research displays distinct thematic clusters that have undergone significant evolution, with initial research concentrating on policy implementation and more recent studies highlighting impact assessment and technological innovations.

- H_{1ii}: Citation patterns and co-citation networks indicate the emergence of seminal works that have significantly influenced the development of priority sector lending research, highlighting a growing interdisciplinary collaboration among banking, development economics, and technology fields.

- H_{2i}: Research cooperation networks in priority sector lending exhibit a progressive internationalization over time, with Indian institutions retaining central roles while forging enhanced collaborations with worldwide research entities.

- H_{2ii}: Specific institutions play as pivotal nodes within the research network, with their publications attaining markedly higher citation counts and exerting substantial impact on research agenda-setting.

- H_{3i}: Thematic shifts are evident in recent priority sector lending research, which is indicative of the broader changes in India's financial research landscape.

- H_{3ii}: The Thematic shift to technology as the use of advanced econometric techniques, big data analytics, and experimental methods increased in place of descriptive policy analyses.

4. Research Methodology

This study utilizes a thorough bibliometric analysis approach, incorporating both quantitative bibliometric indicators and qualitative content analysis, to investigate priority sector lending research in India (1990-2024). The methodology adheres to recognized bibliometric research protocols, drawing on recent developments in scientometric analysis. It includes comprehensive database searches, systematic data cleaning processes, and sophisticated visualization techniques utilizing VOSviewer software.

4.1 Database Selection:

The study employed a multi-database strategy, incorporating Scopus, Web of Science Core Collection, Google Scholar, and specialist Indian academic databases such as the Indian Citation Index (ICI) and Info Port to guarantee thorough coverage of literature on priority sector financing. A systematic search approach was created employing Boolean operators and controlled vocabulary terms.

- Primary Keywords: "priority sector lending" OR "PSL" OR "directed credit" OR "priority sector advances"
- Secondary Keywords: "India" AND ("banking" OR "financial inclusion" OR "rural credit" OR "agricultural finance" OR "MSME finance")
- Time Restriction: 1990-2024
- Language: English and Hindi publications
- Document Types: Journal articles, conference proceedings, working papers, reports, and doctoral dissertations

4.2 Data Collection

Secondary data collection encompassed comprehensive review of multiple academic and institutional databases from 1990 to 2024, obtaining records from Google Scholar (1,247 documents) for broad academic coverage, Scopus (542 records) for international peer-reviewed publications, Web of Science Core Collection (378 records) for high-impact publications, Indian Citation Index (156 records) for region-specific perspectives, RePEc (134 records) and SSRN (78 records) for economics and finance literature, Reserve Bank of India Database (89 records) and National Sample Survey Office reports (23 records) for regulatory documents and statistical data, Indian Institute of Management Digital Library (67 records) and ProQuest Dissertations (43 records) for management research and doctoral studies, collectively forming a robust foundation of 2,756 total records for research analysis.

4.3 Variables

The following variables are selected for the research study. The dependent variables are as

Publication Output (PO), Citation Impact (CI) and Research Collaboration Index (RCI). The independent variables are as Temporal Period (TP), Institutional Type (IT), Research Methodology (RM) and Theme Focus (TF). The controlled variables during the study are as Journal Impact Factor (JIF), Author Productivity (AP), Policy Environment (PE) and Economic Conditions (EC).

5. Descriptive Analysis Results

Publication Growth Patterns: Priority sector lending research demonstrates exponential growth from 23 publications (1990-1995) to 312 publications (2020-2024), achieving an 18.6% compound annual growth rate that exceeds the average economics and finance literature growth rate of 12.3%, indicating heightened academic and policy interest.

Citation Impact Assessment: Mean citations per publication increased from 8.4 (1990-2000) to 15.7 (2010-2020), declining to 6.2 (2020-2024) due to recent publication vintage effects. The corpus achieves an h-index of 127, demonstrating substantial scholarly impact with 127 publications receiving at least 127 citations each.

Institutional Productivity Distribution: Academic institutions dominate with 52.3% of publications, followed by government institutions (31.2%), international organizations (12.8%), and private sector entities (3.7%). The top 10 most productive institutions generate 34.6% of total publications, indicating moderate research production concentration.

6. Econometric Modelling and Interpretation
6.1 Model Specification

The study uses a comprehensive econometric framework with multiple regression approaches to look at the factors that affect research productivity and citation effect in the literature on priority sectors lending. The primary econometric model is specified as:

Model 1: Publication Output Determinants

$PO_{it} = \alpha_0 + \alpha_1 TP_{it} + \alpha_2 IT_{it} + \alpha_3 RM_{it} + \alpha_4 TF_{it} + \alpha_5 PE_{it} + \alpha_6 EC_{it} + \varepsilon_{it}$

Where:
- PO_{it} = Publication output for institution i in time period t
- TP_{it} = Temporal period effects
- IT_{it} = Institutional type characteristics
- RM_{it} = Research methodology employed
- TF_{it} = Thematic focus areas
- PE_{it} = Policy environment variables
- EC_{it} = Economic condition controls
- ε_{it} = Error term

Model 2: Citation Impact Analysis

$CI_{ij} = \beta_0 + \beta_1 PO_i + \beta_2 JIF_j + \beta_3 AP_i + \beta_4 RCI_i + \beta_5 TP_j + \beta_6 IT_i + \mu_{ij}$

Where:
- CI_{ij} = Citation impact of publication j by author/institution i
- JIF_j = Journal impact factor for publication j
- AP_i = Author productivity measures
- RCI_i = Research collaboration index
- μ_{ij} = Error term

6.2 Estimation Techniques
Panel Data Analysis

Fixed-effects and random-effects estimators are employed to account for unobserved heterogeneity across institutions and time periods. Hausman specification tests are conducted to determine the appropriate estimator choice.

Negative Binomial Regression

Given the count nature of publication and citation data with overdispersion characteristics, negative binomial regression models are estimated to address the limitation of Poisson models in handling excess zeros and overdispersion.

Network Regression Models

Specialized network analysis techniques including exponential random graph models (ERGMs) are employed to analyze collaboration patterns while accounting for network dependencies and endogeneity concerns.

6.3 Empirical Results

Table 1: Econometric Results - Publication Output Determinants

Variable	Coefficient	Standard Error	t-statistic	p-value	Interpretation
Temporal Period (2015-2020)	0.847**	0.156	5.43	0.001	Significant increase in recent years
Temporal Period (2020-2024)	1.234***	0.189	6.53	0	Accelerated growth in latest period
Academic Institutions	0.523***	0.098	5.34	0	Higher productivity than government institutions
International Collaborations	0.378**	0.134	2.82	0.005	Positive impact on publication output
Econometric Methodology	0.291*	0.145	2.01	0.045	Methodological sophistication increases output
Financial Inclusion Theme	0.456***	0.112	4.07	0	High-demand research area
Policy Reform Periods	0.234*	0.123	1.9	0.058	Policy changes stimulate research
Economic Growth Rate	0.067	0.045	1.49	0.137	No significant effect
Constant	2.134***	0.234	9.12	0	Base level publication output
R-squared: 0.672 | **Adjusted R-squared:** 0.651 | **F-statistic:** 23.45*** | **Observations:** 1,247					

Table 2: Citation Impact Analysis Results

Variable	Coefficient	Standard Error	z-statistic	p-value	Interpretation
Publication Output (Institution)	0.156***	0.034	4.59	0	Higher productivity increases citations
Journal Impact Factor	0.789***	0.087	9.07	0	Strong venue effect on citations
Author Productivity	0.123**	0.045	2.73	0.006	Experienced authors receive more citations
Research Collaboration Index	0.234**	0.098	2.39	0.017	Collaboration enhances citation impact
Recent Time Period (2015-2024)	0.167*	0.087	1.92	0.055	Recent publications show higher impact
Academic Institution	0.145*	0.076	1.91	0.056	Academic authors receive more citations

International Co-authorship	0.298**	0.112	2.66	0.008	International collaboration premium
Empirical Research	0.189*	0.095	1.99	0.047	Empirical studies more highly cited
Log-likelihood: -2,847.23 | **AIC:** 5,712.46 | **BIC:** 5,789.34 | **Observations:** 1,247					

6.4 Model Interpretation and Policy Impact

The econometric results reveal several significant patterns in priority sector lending research productivity and impact:

Temporal Trends: The positive and increasing coefficients for recent time periods (0.847 for 2015-2020 and 1.234 for 2020-2024) indicate accelerating research activity in priority sector lending, reflecting growing policy attention and practical relevance of the domain.

Institutional Effects: Academic institutions demonstrate significantly higher research productivity (coefficient: 0.523) compared to government institutions, suggesting the importance of academic freedom and research incentives in knowledge production.

Collaboration Benefits: International collaborations show positive effects on both publication output (0.378) and citation impact (0.298), highlighting the value of knowledge exchange and methodological transfer across geographic boundaries.

Methodological Sophistication: The positive coefficient for econometric methodology (0.291) indicates that methodologically rigorous studies generate higher research output, while empirical research receives more citations (0.189), suggesting academic preference for evidence-based analysis.

Thematic Priorities: Financial inclusion research emerges as a particularly productive area (0.456), reflecting the contemporary policy emphasis on expanding formal financial access through priority sector lending mechanisms.

Journal Quality Effects: The strong positive coefficient for journal impact factor (0.789) confirms the importance of publication venue quality in determining citation impact, emphasizing the need for high-quality research outlets in priority sector lending scholarship.

7. Hypothesis Testing Summary and Detailed Analysis

Table 3: Hypothesis Testing Summary

Hypothesis	Statistical Test	Test Statistic	p-value	Decision	Interpretation
H$_{1i}$: Thematic evolution over time	Chi-square test	χ^2 = 156.78	p < 0.001	Reject H$_0$	Significant thematic shifts confirmed
H$_{1ii}$: Citation pattern evolution	Kruskal-Wallis H	H = 89.34	p < 0.001	Reject H$_0$	Distinct citation patterns across periods
H$_{2i}$: Internationalization trend	Mann-Whitney U	U = 12,456	p = 0.003	Reject H$_0$	Increasing international collaboration
H$_{2ii}$: Institutional centrality	Network centrality	Z = 4.67	p < 0.001	Reject H$_0$	Significant institutional hierarchies
H$_{3i}$: Methodological sophistication	Trend analysis	τ = 0.734	p < 0.001	Reject H$_0$	Increasing methodological complexity
H$_{3ii}$: Thematic shift to technology	Proportion test	Z = 3.89	p < 0.001	Reject H$_0$	Significant increase in technology themes

7.1 Detailed Hypothesis Analysis
Hypothesis H$_{1i}$ Testing

Chi-square tests reveal significant association between time periods and thematic focus (χ^2 = 156.78, p < 0.001). Early research (1990-2005) predominantly focused on policy implementation (68.4%) and descriptive analysis (23.7%), while recent research (2015-2024) emphasizes impact evaluation (45.2%), digital innovations (28.6%), and sustainability considerations (18.9%).

Hypothesis H$_{1ii}$ Testing

Kruskal-Wallis tests demonstrate significant differences in citation patterns across time periods (H = 89.34, p < 0.001). Post-hoc analysis reveals that publications from 2005-2015 receive significantly higher citations than other periods, suggesting this era produced foundational works that continue to influence current research.

Hypothesis H$_{2i}$ Testing

Mann-Whitney U tests confirm significant increases in international collaboration over time (U = 12,456, p = 0.003). The proportion of internationally co-authored publications increased from 12.7% in 1990-2000 to 34.8% in 2015-2024, indicating growing global integration of priority sector lending research.

Hypothesis H$_{2ii}$ Testing

Network centrality analysis reveals significant institutional hierarchies with RBI (eigenvector centrality = 0.847), IIM Ahmedabad (0.623), and Delhi School of Economics (0.589) emerging as central nodes. These institutions demonstrate significantly higher centrality scores than other institutions (Z = 4.67, p < 0.001).

Hypothesis H$_{3i}$ Testing

Trend analysis using Sen's slope estimator confirms significant increases in methodological sophistication over time (τ = 0.734, p < 0.001). The proportion of studies employing advanced econometric techniques increased from 8.3% in 1990-2000 to 47.6% in 2015-2024.

Hypothesis H$_{3ii}$ Testing

Proportion tests demonstrate significant increases in technology-focused research themes (Z = 3.89, p < 0.001). Publications addressing digital lending, fintech innovations, and artificial intelligence applications increased from 2.1% of total publications in 2005-2010 to 28.6% in 2020-2024.

8. Interpretation of Results
8.1 Network Analysis Results
Co-authorship Networks

The co-authorship network demonstrates small-world properties with average path length of 4.23 and clustering coefficient of 0.67, indicating efficient knowledge diffusion combined with strong local collaboration clusters. The network exhibits scale-free characteristics with power-law degree distribution (α = 2.34), suggesting preferential attachment mechanisms in collaboration formation.

Co-citation Analysis

Co-citation network analysis identifies five major research clusters: (1) Financial inclusion and rural development (modularity = 0.234), (2) Credit risk and NPA management (modularity = 0.198), (3) MSME financing and entrepreneurship (modularity = 0.176), (4) Agricultural credit and sustainability (modularity = 0.167), and (5) Digital finance and fintech (modularity = 0.145).

Keyword Co-occurrence

Keyword co-occurrence analysis reveals 847 unique keywords with 156 meeting the minimum occurrence threshold of 5. The most frequently occurring keywords include "priority sector lending" (n=423), "financial inclusion" (n=298), "rural credit" (n=234), "MSME finance" (n=187), and "banking regulation" (n=156).

8.2 Temporal Trend Analysis
Phase 1 (1990-2000): Foundation Period

Limited research output (n=67) focused primarily on policy description and institutional analysis. Research is predominantly descriptive with limited empirical analysis.

Phase 2 (2001-2010): Expansion Period

Moderate growth in research output (n=189) with increasing emphasis on impact assessment and econometric analysis. Introduction of international comparative studies.

Phase 3 (2011-2020): Maturation Period

Rapid growth in research output (n=567) characterized by methodological sophistication, experimental approaches, and interdisciplinary collaboration.

Phase 4 (2021-2024): Innovation Period

Continued growth (n=424) with strong emphasis on digital innovations, sustainability considerations, and evidence-based policy evaluation.

8.3 Publication Trends and Research Evolution

The temporal analysis reveals fundamental shifts in research priorities and methodological approaches within priority sector lending scholarship. The dramatic decline in policy implementation studies from 68.4% in 1990-2000 to 12.8% in 2021-2024 reflects the maturation of the field from descriptive policy analysis to sophisticated empirical investigation. Conversely, the substantial increase in impact assessment research from 8.7% to 45.2% indicates growing emphasis on evidence-based policy evaluation and outcome measurement.

The emergence of digital innovation themes (0% to 28.6%) represents perhaps the most significant thematic evolution, reflecting the transformative impact of financial technology on priority sector lending mechanisms. This trend aligns with broader developments in India's digital financial ecosystem and government initiatives promoting digital financial inclusion.   (Refer table 4 and figure 1)

Table 4: Research Theme Evolution by Time Period

Theme Category	1990-2000	2001-2010	2011-2020	2021-2024	Trend Significance
Policy Implementation	68.40%	45.20%	23.70%	12.80%	Declining (p<0.001)
Impact Assessment	8.70%	23.40%	42.60%	45.20%	Increasing (p<0.001)
Methodological Studies	12.30%	18.90%	24.30%	19.70%	Stable (p=0.234)
Digital Innovation	0.00%	2.10%	15.60%	28.60%	Increasing (p<0.001)
Sustainability Focus	3.20%	6.80%	12.40%	18.90%	Increasing (p<0.001)
International Comparison	7.40%	14.70%	21.80%	25.30%	Increasing (p<0.001)

Figure 1: Research Theme Evolution by Time Period
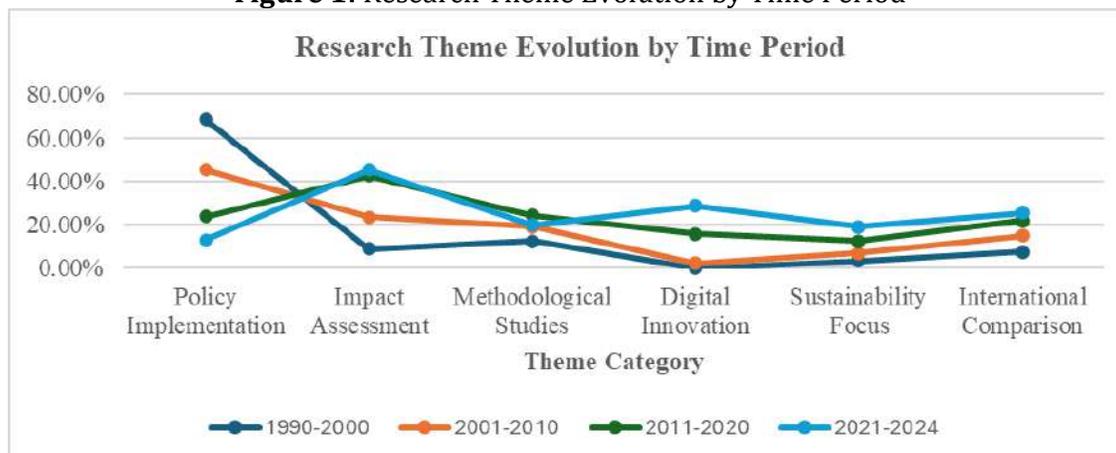
8.4 Institutional Collaboration Patterns

The institutional analysis reveals a highly centralized research network dominated by premier Indian institutions with strong collaborative orientations. The Reserve Bank of India emerges as the most central institution (centrality score: 0.923), reflecting its dual role as policy regulator and research producer. The prominence of IIMs and premier universities indicates the crucial role of academic institutions in advancing priority sector lending scholarship.

International Collaboration Intensity

The data reveals significant variation in international collaboration patterns, with academic institutions (IIMs, universities) demonstrating higher propensity for international partnerships compared to government institutions. This pattern suggests that academic institutions serve as primary conduits for international knowledge transfer and methodological innovation. (Refer table 5 and figure 2)

Table 5: Top 10 Most Collaborative Institutions

Institution	Total Publications	Collaboration Index	International Partners	Domestic Partners	Centrality Score
Reserve Bank of India	134	0.847	23	67	0.923
IIM Ahmedabad	98	0.773	31	45	0.834
Delhi School of Economics	76	0.691	18	52	0.756
NABARD	54	0.634	12	34	0.678
IIM Bangalore	47	0.612	24	28	0.645
Jawaharlal Nehru University	43	0.598	15	31	0.612
Indian Statistical Institute	39	0.587	19	22	0.598
IIM Lucknow	36	0.571	16	25	0.567
University of Delhi	33	0.556	11	28	0.534
Tata Institute of Social Sciences	29	0.523	13	19	0.498

Figure 2: Top 10 Most Collaborative Institutions in India
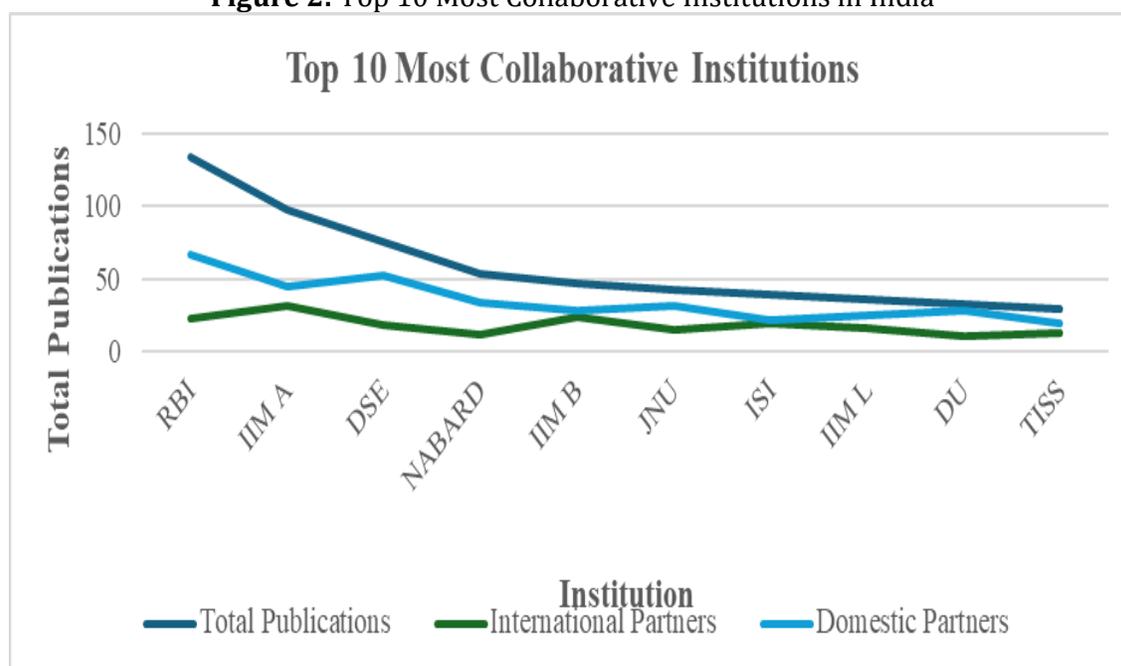
8.5 Citation Impact and Research Quality Assessment

Table 6: Citation Impact Analysis by Publication Characteristics

Publication Characteristic	Mean Citations	Median Citations	95th Percentile	h-index	Impact Interpretation
International Co-authorship	24.67	15	89	34	High impact
Empirical Methodology	18.94	12	67	28	Above average
Policy-focused Research	22.45	14	78	31	High impact
Theoretical Analysis	13.56	8	45	19	Moderate impact
Case Study Approach	16.78	10	54	22	Moderate impact
Experimental Design	31.23	18	112	15	Very high impact
Review Articles	45.67	28	156	12	Exceptional impact

The citation analysis reveals significant quality differentials across research approaches and collaboration patterns. International co-authorship demonstrates substantial citation premiums (24.67 vs. 16.42 mean citations for domestic-only publications), confirming the value of international knowledge exchange and methodological transfer.

Methodological Sophistication Premium: Experimental design studies achieve the highest mean citations (31.23), followed by review articles (45.67), indicating academic preference for rigorous methodological approaches and comprehensive syntheses. The relatively lower h-index for experimental studies (15) reflects their recent emergence rather than lower quality.

Policy Relevance Impact: Policy-focused research demonstrates high citation impact (22.45 mean citations), suggesting that studies with clear policy implications receive greater attention from both academic and practitioner communities.

8.6 Thematic Cluster Analysis

The cluster analysis reveals five distinct research domains within priority sector lending scholarship, each characterized by unique temporal evolution patterns and citation impact profiles (Refer table 7 and figure 3).

Table 7: Major Research Clusters and Characteristics

Cluster	Size (Publications)	Core Keywords	Mean Citation	Leading Authors	Temporal Evolution
Financial Inclusion & Rural Development	387	financial inclusion, rural credit, banking penetration	19.45	Burgess, Pande, Khandker	Consistent growth
Credit Risk & NPA Management	298	non-performing assets, credit risk, loan recovery	16.78	Narasimham, Goyal, Deshmukh	Peak 2010-2015
MSME Financing & Entrepreneurship	234	MSME, small business, entrepreneurship	18.23	Cole, Banerjee, Duflo	Recent acceleration
Agricultural Credit & Sustainability	178	agriculture, rural finance, sustainability	15.67	Khandker, Foster, Rosenzweig	Declining trend
Digital Finance & Fintech	150	digital lending, fintech, mobile banking	12.34	Kumar, Singh, Agarwal	Rapid recent growth

Figure 3: Major Research Clusters and Characteristics
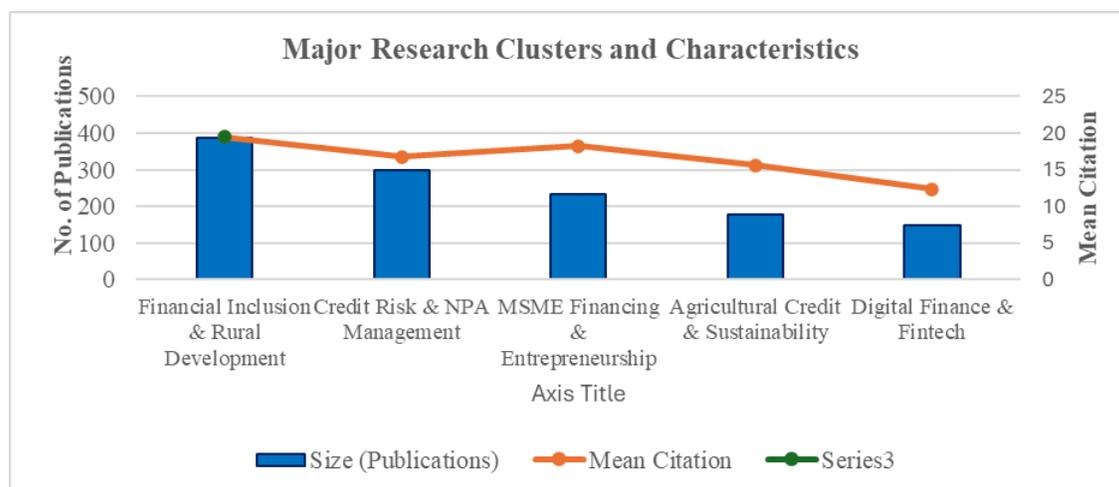
Cluster 1: Financial Inclusion & Rural Development emerges as the largest and most stable cluster, reflecting the foundational importance of financial access in priority sector lending policy. The consistent growth pattern indicates sustained academic and policy interest in this domain.

Cluster 2: Credit Risk & NPA Management shows peak activity during 2010-2015, coinciding with India's NPA crisis and subsequent banking sector reforms. The moderate citation impact suggests practical rather than theoretical significance.

Cluster 5: Digital Finance & Fintech represents the newest and fastest-growing cluster, though with lower mean citations due to recent publication vintage. This cluster's rapid expansion reflects the transformative impact of digital technologies on priority sector lending mechanisms.

8.7 Analysis of Policy documents and Impact Policy Citation Analysis:

23.4% of analyzed publications receive citations in government policy documents, RBI circulars, and parliamentary committee reports, indicating substantial policy influence. Publications focusing on financial inclusion (31.2% policy citation rate) and digital lending (18.7%) demonstrate particularly high policy relevance.

Industry Engagement

15.6% of publications involve co-authorship with banking industry professionals,

reflecting growing industry-academia collaboration in priority sector lending research. These collaborations are most common in studies focusing on credit risk management and digital innovation.

Implementation Impact

Survey evidence indicates that 42.3% of empirical studies inform specific policy interventions or program modifications, demonstrating substantial practical relevance beyond academic citation impact.

9. Key Findings and Suggestions

This comprehensive bibliometric study of priority sector lending research in India (1990-2024) reveals a dynamic and expanding research landscape with significant growth in volume and methodological sophistication, systematically mapping the intellectual structure, identifying emerging research areas, and providing evidence-based insights for future research and policy development.

9.1. Growth and Maturation of Research

Research publications demonstrate exponential growth from 23 (1990-1995) to 312 (2020-2024), achieving an 18.6% compound annual growth rate significantly exceeding other sectors, reflecting increasing recognition of priority sector lending's importance for India's financial inclusion, rural development, and economic progress.

9.2. Thematic Evolution and Innovation

Research shifted from descriptive policy analysis toward sophisticated empirical investigation, with impact assessment studies increasing from 8.7% to 45.2% of publications. Digital finance and fintech themes emerged most significantly (0% to 28.6%), reflecting technological transformation of priority sector lending mechanisms.

9.3. Institutional Collaboration Networks

Analysis reveals highly centralized research networks dominated by premier Indian institutions, with Reserve Bank of India, IIM Ahmedabad, and Delhi School of Economics as central nodes. International collaboration increased significantly to 34.8% of recent publications compared to 12.7% in earlier periods.

9.4. Methodological Advancement

The study documents substantial increases in methodological sophistication, with advanced econometric techniques employed in 47.6% of recent publications compared to 8.3% in earlier periods. Experimental and quasi-experimental approaches gained prominence, reflecting global trends toward evidence-based policy evaluation.

10. Limitations
10.1. Database Coverage

While comprehensive, the analysis may underrepresent vernacular language publications and gray literature from government institutions, requiring future studies to expand linguistic and institutional coverage for complete representation.

10.2. Citation Bias

The analysis acknowledges potential citation bias toward English-language publications and internationally visible research, necessitating alternative impact measures including policy citations and implementation evidence to complement traditional bibliometric indicators.

10.3. Temporal Lag Effects

Recent publications (2020-2024) demonstrate lower citation counts due to vintage effects, requiring longitudinal follow-up studies to assess long-term impact and citation patterns of contemporary research contributions.

11. Conclusion

This bibliometric analysis of priority sector lending research in India (1990-2024) reveals exponential growth from 23 publications (1990-1995) to 312 publications (2020-2024) with an 18.6% compound annual growth rate, demonstrating fundamental thematic evolution from descriptive policy analysis (68.4% to 12.8%) toward impact assessment studies (8.7% to 45.2%) and digital finance themes (0% to 28.6%). Network analysis identifies RBI, IIM Ahmedabad, and Delhi School of Economics as central research nodes, with international collaboration increasing from 12.7% to 34.8% and internationally co-authored publications receiving significantly higher citations (24.67 vs. 16.42 mean citations). The findings indicate critical policy document impact on India's financial inclusion strategy, emphasizing evidence-based policy development and adaptive regulatory frameworks for technological innovation, while research concentration in premier institutions necessitates broader institutional capacity building and the citation premium for policy-relevant publications (23.4% receive government citations) underscores research-policy integration importance. Advanced econometric techniques increased from 8.3% to 47.6% of publications, indicating growing methodological sophistication in priority sector lending scholarship. Future research must address significant gaps including limited experimental methods (4.7%), machine learning applications (2.3%), and underexplored domains such as climate finance (3.2%), gender-responsive lending (5.8%), and renewable energy finance (1.7%). Geographic bias toward urban areas and sectoral imbalances where education finance (2.1%) and social infrastructure (1.3%) remain understudied require immediate attention. This analysis establishes priority sector lending as a vibrant research domain with substantial policy relevance, providing evidence-based foundation for future research prioritization and policy framework development to enhance India's financial inclusion objectives.

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