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Digital Banking to Neobanking in India: An Exploratory Bibliometric Review of Research Trends, Emerging Technologies, and Future Directions

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Abstract:

The swift evolution of banking via digital technologies has led to a continuum from internet and mobile banking to integrated digital banking, FinTech-based solutions, neobanking and the use of artificial intelligence in the financial sector. The aim of the current research is to provide an exploratory bibliometric review of literature based on the data from 50 papers selected from a larger corpus comprising 82 bibliographic entries in Mendeley. The selection of works was guided by the importance of papers addressing such topics as digital banking, neobanking, FinTech, digital transformation, cybersecurity, digital payments, financial inclusion, as well as other banking innovative technologies. The current study employs bibliometric assessments based on available metadata and focuses on synthesis of titles, abstracts and keywords used in the selected articles. The studies selected for the review show a substantial growth of research in this area, especially since 2022, which indicates the influx of scientific interest in the processes of digital transformations and new banking models. Neobanking has especially become a prominent subfield, with studies focusing on consumer insights, adoption hurdles, risks, profitability, growth, models of business operations and performance comparison.

The research discusses a framework for Evolutionary Digital Banking based on the research findings. The framework consists of six stages which overlap with each other and comprise internet banking, mobile banking, digital banking, FinTech banking, neobanking and AI-enabled banking. The significance of technological evolution as a catalyst for changes in customer relations, various organizational processes and business models, market players and governance is emphasized. The research identifies knowledge gaps in terms of empirical studies on the introduction of neobanking in India as well as comparative analysis of different neobanking business models in a sustainable way. In addition, the paper outlines certain implications of the research findings for banks and policymakers involved in the digital banking industry. However, as the dataset comes from Mendeley rather than Scopus or Web of Science, the results derived from it may not be representative of the entire host of literature on the topic.

Keywords: Digital Banking, Neobanking, FinTech, Digital Transformation, Bibliometric review, Cybersecurity, Emerging Technologies.

Introduction:

The banking industry is experiencing one of the most remarkable changes in its history. While traditionally banking services were rendered with the help of branches and physical documents, nowadays they are increasingly carried out through websites, (- & -, 2023; Baldegger et al., 2020; Pratap Singh, 2024) mobile applications, digital platforms and technology-enabled ecosystems. Internet banking made it possible to carry out transactions from a distance, while mobile banking provided an opportunity to use banking services anytime. Digital banking improved accessibility and convenience of banking services due to the combination of Internet and mobile banking technologies. Changes in banking became particularly prominent after the advent of

FinTech, which introduced payment systems, services based on platforms, and technologies in data management. Recently neobanks and digital banking models have made it possible to question conventional views on the necessity of a branch-based banking system.

India is an important place to study these events. The rapid growth of online financial services, advances in mobile communication technology, and improvements in cashless payments systems have created an environment within which banks, fin-tech companies, and new digital banking models co-exist (Pratap Singh, 2024). The works included in the corpus reflect this rapidly altering environment. The studies that appear in the selected corpus involve digital banks being adopted, customer experience, cyber security, financial inclusion studies, digital transformation studies, new technologies, and neobanks.

Even though the number of publications in the field is growing, the research is disconnected. Research on adoption is mainly focused on behavioral aspects; research on technology deals with specific innovations; cybersecurity research focuses on risk; research on neobanks deals with characteristics of digital-first banks (Bhatnagr et al., 2025.) A broader research approach was necessary to find out how these sections are related to one another.

This article will provide an exploratory bibliometric analysis of 50 selected works out of Mendeley corpus of initial 82 works. The goal is not to present complete research on all the studies in the area but rather provide a transparent and structured overview of all relevant works included in the author's collection.

Background of the Study:

Digital banking refers to the delivery and transformation of banking services by technological means through digital channels. Digital banking includes the use of internet banking, mobile banking meaning, automated systems and data-driven banking services (Bhatnagr et al., 2025). FinTech is broadening digital banking by integrating financial services with software technology, platforms, data analysis, and alternative providers of services.

Neobanking develops further, as it relates to digital-only or digital-first banking models. The difference here makes sense, since the term digital banking can mean the digitised transformation of a bank, while neobanking relates to the concept of a new business model that relies on digital solutions, partnership, technology. In addition to this, the literature on the analysis suchaspects as neobanks knowledge creation and risks and prospects of such banks (Sai KoteswaraRao et al., 2022; A. Sharma, 2022).

Problem Statement and Research Gap:

The existing literature has identified several gaps. Firstly, most research work regarding neobanking, its adoption, technology, risk, customer behavior and business model studies has not been integrated sufficiently as it should have been. Secondly, neobanking has quite recently been introduced into the market, while digital banking has been a subject of numerous studies, its application in the case of India should undergo extensive research. Finally, there are major technologies like AI, blockchain, big data and cloud computing but they are usually discussed apart from each other (Pranay S. Dhande et al., 2022). In this case, there is another gap, which refers to technology change being not linked to governance sufficiently. Thus, digital banking and neobanking grant many options for convenience, inclusion and efficiency but they raise some questions about cybersecurity, privacy, customer protection, compliance with regulations, responsible AI and future sustainability of a company (C.P, 2024).

Objectives of the Study:

1. To create a comprehensive publication and theme profile based on the selected studies about neobanking and digital banking.
2. To establish leading research themes about neobanking, FinTech, digital banking, and modern technology.

3. To explore how neobanking arose as a specific trend.
4. To identify a developmental framework that will connect all stages of digitalization in banking.
5. To highlight future possibilities and gaps in research in the Indian context.

Research Questions:

- RQ1: What are the main research themes of literature about neobanking and digital banking?
- RQ2: How has the focus of researchers spread toward neobanking and digital-first banking models lately?
- RQ3: Which new technologies and risks have appeared as a result of digital transformation in banking?
- RQ4: What gaps can be found in research on digital banking and neobanking as regards India?

Review of Literature:

This study is formed by a careful selection of 50 publications from the initial group of 83 papers. When choosing studies for review, the relevance of their content in the area of digital banking, neobanking, financial technologies, digital transformation, online banking, cybersecurity, electronic payments, financial inclusion, and other modern technologies in banking was taken into account. Instead of analyzing each of the studies provided separately, the literature was analyzed by way of thematic synthesis that allowed revealing important trends, emerging concepts, problems, and science gaps. The outcome of the above-mentioned synthesis will provide grounds for further bibliometrics and thematic analyses, and will lay the foundations of the proposed Evolutionary Digital Banking Framework which will include major stages and new dimensions presented in the reviewed literature.

1. **Kaur et al. (2021) — Digital Banking Adoption:** The study examines the adoption of digital banking channels in an emerging economy and highlights the role of banking institutions in encouraging digital adoption. It provides a useful foundation for understanding customer adoption of digital banking services.
2. **Ali (2023) — Factors Affecting Digital Banking Adoption:** This study investigates factors influencing the adoption of digital banking services in India using evidence from the World Bank's Global Findex Survey. It is particularly relevant for understanding digital banking adoption within the Indian context.
3. **Barodawala (2022) — Emergence of Neobanking:** The study presents neobanking as an innovative development in the banking sector and discusses its potential to transform conventional banking practices. It is useful for establishing the conceptual foundation for the emergence of neobanks.
4. **Monis and Pai (2023) — Neobanking Transformation:** The study conceptualises neobanks as a paradigm shift within the banking industry. It contributes to understanding how digital-first banking models are changing traditional approaches to banking services.
5. **Bhatnagr et al. (2024) — Neobanking Customer Experience:** This study examines online brand experience in Indian neobanking and highlights the importance of customer experience in digital-first banking. It provides a strong basis for examining the relationship between digital service experience and neobank development.
6. **Bhatnagr et al. (2025) — Digital Banking Adoption:** The study examines digital banking adoption in India using UTAUT-3 and perceived risk perspectives. It is particularly relevant to the continuing importance of adoption, perceived risk and customer behaviour in the evolving digital banking environment.
7. **Krishna (2024) — Cybersecurity in Digital Banking**: The study examines cybersecurity threats in Indian digital

banking and emphasises security as a major challenge accompanying digital transformation. It supports the argument that trust, privacy and cybersecurity must be considered alongside technological advancement.

8. **Mumthas (2022) — FinTech Development:** The study examines emerging trends in the technological ecosystem influencing financial services. It is relevant to the transition from conventional digital banking towards FinTech-enabled banking.
9. **Chandran et al. (2025) — Neobanks in India:** The study specifically examines neobanks in India and contributes to understanding their development within the Indian banking ecosystem. It is useful for supporting the discussion of neobanking growth and its emerging role in the future of banking.
10. **Chanda and Ayesha (2025) — Digital Transformation in Indian Banking:** The study examines the impact of digital transformation on banking in India and provides recent evidence of the changing nature of banking services. It supports the broader argument that digital banking involves institutional transformation rather than merely the adoption of digital channels.

Methodology:

1. **Research Design:** This study seeks to embark on an exploratory bibliometric review design where thematic content analysis will also be used. The bibliographic collection has been exported from the researcher's Mendeley library. An initial number of 82 records were screened based on bibliographic relevance indicators. As a result, 50 papers that were deemed highly relevant to digital banking, neobanking, FinTech, digital transformation, mobile/internet banking, cybersecurity, digital payments, financial inclusion or other banking-related new technologies have been included in the study.
2. **Selection Criteria:** The preference was given to papers that had direct references to digital banking, digital banks, neobanking, neo banks, challenger banks, FinTech, mobile banking, internet banking or other bank technologies. Studies related to India were given extra contextual preference. Papers that focused mainly on the non-posed banking problems were given lower preference.
3. **Data Analysis:** The metadata was analysed for its distribution by publication year and thematic categorisation. Themes were derived from analysing titles, abstracts and keywords identified in the metadata. The analysis performed is descriptive, rather than citation-based, since Mendeley does not give a validated citation database for citation counts and co-citation and bibliographic coupling analysis. Thus, there were no manipulated citation rankings or VOSviewer clusters.
4. **Scope and Transparency:** The study is to be viewed as an exploratory literature review of a specific literature database, not as a systematic enumeration of all the publications. This point is essential for complying with the rules of academic honesty. Future research may enlarge the analysis by replicating the search through Scopus or Web of Science, extending it with PRISMA screening, Bibliometrix and VOSviewer network analysis.

Results and Analysis:

1. **Overall Literature Profile:** The total collection consists of 50 documents carefully gathered from 82 entries. Research topics in the papers focus on the areas of direct digital banking and neobanking. In particular, the titles show a great number of India-oriented papers dedicated to the trends, opportunities, issues and prospects of digital banking, cybersecurity, financial inclusion group of

papers dedicated to the examination of neobanking development, its future, public attitude, knowledge and awareness, consequences, financial performance and hindrances in the real implementation of such model of banking (KARHTIKEYAN, 2019).

2. **Digital Banking as the Dominant Transformation Stream:** As for digital banking, it is the most developed academic topic in the selected related literature. The papers analyze the development of digital banking in India, it's recent developments and possibilities. Studies devoted to customer adoption demonstrate that still customer interaction is the most important area(Ali, 2023). At the same time, research devoted to digital transformation shifts its emphasis from clients' interaction to the processes of private financial institutions other important areas.
3. **Neobanking as an Emerging Research Stream:** Neobanking is one of the key emerging concepts in the research agenda. Some of the reviewed papers analyze the phenomenon of neobanks in the Indian market. This research is focused on the aspects including consumers' opinion on neobanks, their level of awareness and perceptions, barriers to adoption, risks, profitability, and prospects. The presence of various modern works implies that neobanking is shifting from a theoretical issue to an empirical research field(Sardar & Anjaria, 2023). It is worth noting that most researchers do not treat neobanks as just another digital channel since this concept has an enormous importance in terms of transforming the structure of banking services. Digital-first companies can adopt different technologies, cooperate with partners, and implement various delivery models, which raises questions regarding acquiring clients, profitability, trust, regulatory compliance, and sustainable competitive advantages.
4. **FinTech and Emerging Technologies:** FinTech offers the environment for the development of digital banking innovations. The literature reviewed contains studies about the Indian FinTech market as well as studies linking FinTech to neobanking. The involvement of new technologies such as artificial intelligence, blockchain, big data and cloud computing is also present in these studies. Such technologies are expected to contribute to automation, data analytics, fraud detection and other aspects of modern banking (Shettar, 2020). Nevertheless, only having technology is not enough for successful digital banking development as the literature analysis shows that adoption, trust, risk, customer experience and regulations are also considered to be crucial. This favours the integrated approach when technology is analysed together with behavioural aspects.
5. **Cybersecurity, Risk and Trust:** Cybersecurity constitutes an important subject of study as digital banking affects how much and how often people engage with other parties using digital means and how reliant they are on information systems. The papers in question analyze cybersecurity threats and risks that might impact customers. The neobanking research provides information on risk factors and what has caused the failures. The results show the need to conduct research that connects cybersecurity with customers' trust and usage of services instead of treating cybersecurity as an issue of technology.
6. **Financial Inclusion and Digital Payments:** The nature of the digital banking domain suggests the connection between digital banking and financial inclusion and development of digital payment systems. Nevertheless, studies in the selected area examine digital payments and very to increase of accessibility but at the same time result in complications for

those people who lack skills, access or trust (Garg & Sahu, 2024).

Proposed Evolutionary Digital Banking Framework:

Based on the synthesis, this study proposes six overlapping stages of banking transformation.

Stage	Primary Characteristic	Research Focus	Key Challenge
1. Internet Banking	Remote access to conventional banking	Convenience, usefulness, trust	Usability and security
2. Mobile Banking	Continuous mobile access	Adoption and customer experience	Mobile security
3. Digital Banking	Integrated digital delivery	Transformation, efficiency, inclusion	Cybersecurity and governance
4. FinTech-enabled Banking	Technology and ecosystem partnerships	Innovation, platforms and payments	Competition and regulation
5. Neobanking	Digital-first banking model	New customer journeys and business models	Profitability, trust and regulation
6. AI-enabled Banking	Intelligent, automated and predictive services	Personalisation, automation and analytics	Privacy, bias and explainability

The paper develops a so-called Evolutionary Digital Banking Framework on the basis of the analysis of the literature reviewed. The framework presents a conceptualization of the process of banking transformation distinguished into the following six stages which overlap one another: Internet Banking, Mobile Banking, Digital Banking, FinTech-Enabled Banking, Neobanking, and AI-Enabled Banking. These stages do not have to be treated purely chronologically and in a mutually exclusive way as different banks may be operating simultaneously at several of these stages (Jaglan, 2021). The framework shows a progressive evolution of banking technologies, customer experiences, business models, service delivery mechanisms along with regulatory agenda. It offers an analytical perspective on the evolution of digital banking and ways to discover avenues of future research initiatives occurring in a rapidly changing financial services environment

Discussion:

From forefront of research focus, neobanks emerging in the financial market underline the importance of virtual channel adoption distinguishing it from real digital banking concepts. The issues of trust, cyber security, privacy and perceived risk continue to play a crucial role in a successful implementation of digital channels by neobanks. The platforms of new technologies, such as machine learning, blockchain, big data and cloud computing, should become an object of research only as interconnected competences accompanied by (Jacob, 2020; S. Sharma, 2024) responsible governance system. As per the Indian context, the future studies may research how technology, regulation and financial inclusion interact with one another in the process of evolution of organizations within the digital banking market.

Research Gaps and Future Research Agenda:

Research Gap	Suggested Future Research
Neobanking adoption in India	Develop validated behavioural models examining awareness, trust, perceived usefulness, risk, digital literacy and intention to use neobanks.
Neobank profitability and sustainability	Compare revenue models, cost structures and financial performance with conventional banks.
Customer experience	Study onboarding, service quality, digital brand experience, customer effort, satisfaction and retention together.
Cybersecurity and trust	Examine whether perceived security and actual security practices influence adoption and loyalty.
Responsible AI	Investigate explainability, fairness, privacy and customer acceptance of AI-enabled banking.
Financial inclusion	Assess whether digital-first models genuinely improve access for underserved groups.
Regulatory governance	Study the relationship between innovation, partnerships, consumer protection and regulatory requirements.
India-global comparison	Compare Indian research and banking models with international neobanking ecosystems.
Longitudinal research	Track how customer adoption and institutional performance change over time.

Theoretical Contribution:

The major theoretical contribution of the research consists of merging technological adoption, digital transformation, FinTech, neobanking, cyber security and emerging technologies into a single stage model. This model allows treating the innovations not as separated research topics but as progressive steps in banking transformation. Thus, the model can be used afterward for bibliometric network analysis and empirical structural analysis.

Managerial Implications:

Traditional banks should consider digital transformation as a complex strategy covering all security, service recovery and sustainable economics. Financial organizations should develop such skills as data analysis and AI without losing responsible governance. Another important conclusion from the literature is that the customer experience is being turned into competitive advantage. The institutions which provide easy onboarding, secure transactions, clear communication and good security have better chances to retain the digital customers.

Limitations:

There are a number of drawbacks concerning this research. To begin with, the corpus of literature has been received from Mendeley and is not representative of all international studies. Moreover, the selection criterion was bibliographic relevance instead of a complete text systematic screening scheme(Arti Modi, Priyanka Sharma, Rupali More, 2025). In addition, it would be impossible to obtain citation counts, co-citation maps, bibliographic coupling, or keyword-network statistics since there are no necessary validated database conditions available. Finally, thematic classification follows from titles, abstracts, and keywords, which needs to be validated at the full text level before a paper is submitted to the journal. All these limitations are mentioned to ensure that the study findings are not overstated.

Conclusion:

As can be seen in the findings, digital banking research is now moving from electronic services towards a wide-ranging approach to the study of digital transformation, FinTech ecosystems and neobanking, with the 50 articles reviewed showing a clear tendency in terms of increasing academic output with regard to such

advances in digital banking, especially in India. Neobanking comes out as an important research domain in terms of investigating customer behaviour, risk, profit, business model and regulation.

The proposed Evolutionary Digital Banking Framework connects internet banking, mobile banking, digital banking, FinTech-enabled banking, neobanking and AI-enabled banking. It is an invaluable framework that could be used for subsequent studies where technology should go hand in hand with customer behaviour, cybersecurity, financial inclusion and governance (Banerjee & Sinha, 2023).

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