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Original Research Article

A Bibliometric Analysis on Landscape of Mobile Banking: A Study on Trends, Influential Contributions, and Forecasting (2010–2024)

Kulenso Pul[1], Dr. Philip Modi[2*]

[1]Ph.D Research Scholar Dept. of Commerce, Rajiv Gandhi University, Rono Hills, Papum Pare, Arunachal Pradesh
[2]Associate Professor, Department of Commerce, Rajiv Gandhi University, Rono-Hills, Papum Pare, Arunachal Pradesh

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Abstract: The present study examines the evolution, impact, and emerging trends in mobile banking research from 2010 to 2024, using VOS viewer version 1.6.20 software and data from dimension.ai. A total of 1,482 documents were reviewed, with 921 meeting citation thresholds, showcasing the significant contributions of influential authors such as Zhou (2010) and Alalwan (2017). The analysis identifies foundational studies and highlights research areas like consumer behavior, technological adoption, and security advancements as pivotal to the field. Journals such as the *International Journal of Bank Marketing* and *Computers in Human Behavior* emerged as key platforms, reflecting their critical role in disseminating impactful research. Citation analysis reveals a robust network of interlinked studies, emphasizing collaborative contributions from leading institutions, including Swansea University and the University of Jyväskylä. While the findings underscore significant academic achievements, limitations such as reliance on citation metrics and database-specific publications highlight the need for broader data inclusion and qualitative assessments.This study provides valuable insights into mobile banking's academic trajectory, offering guidance for future research on emerging technologies like AI and block chain, as well as cross-disciplinary collaboration. It also emphasizes the importance of addressing consumer-centric challenges and technological innovations to enhance adoption and satisfaction. By uncovering past contributions and mapping future trends, this research contributes to advancing the understanding of mobile banking systems and their role in shaping financial ecosystems.

Keywords: Bibliometric Study, Citation Analysis, Consumer Behavior, Digital Banking Trends and Mobile Banking.

INTRODUCTION

The term "mobile banking," or "m-banking," describes the practice of managing and accessing financial services at any time and from any location using mobile devices like smartphones and tablets (Anene *et al.,* 2021). Through safe mobile applications or websites offered by banks, it allows users to carry out a variety of financial operations, such as checking account balances, moving funds, paying bills, and applying for loans (Sitinjak *et al.,* 2023). Because it is quick, easy, and accessible, mobile banking has completely changed the financial industry, particularly in areas where traditional banking infrastructure is scarce (Van, 2021). Furthermore, mobile technology has improved security and user experience with features like biometric authentication and real-time notifications, which make mobile banking a crucial component of contemporary financial services (Patra *et al.,* 2022). For customers to receive financial services that are quick, easy, and accessible, mobile banking is crucial. It saves time and effort by doing away with the need to physically visit banks (Haralayya, 2021). In today's fast-paced world, it promotes financial inclusion, particularly in rural areas, and improves user convenience by facilitating transactions, fund transfers, and bill payments while on the go (Feyen *et al.,* 2023).

Globally and in India, mobile banking has grown significantly. Among the nations under observation, South Korea had the greatest penetration rate of mobile banking in 2023. In Korea, 82 percent of respondents performed financial transactions using a smartphone or tablet. However, when it came to online banking, Japan had the highest penetration rate, with

***Corresponding Author:** Dr. Philip Modi
Associate Professor, Department of Commerce, Rajiv Gandhi University, Rono-Hills, Papum Pare, Arunachal Pradesh

62% of respondents processing financial transactions on a PC or laptop. While mobile banking was more common in Asia (South Korea, India) and Latin America (Brazil, Mexico), online banking was more common in European nations like Switzerland, Poland, the Netherlands, and France (Statista, 2023). Mobile banking has also gained popularity quickly in India. For instance, A P Mahesh Co-op Urban Bank Ltd handled 12,259 transactions of ₹457,431.08 thousand in October 2023, with 4,692 active mobile banking users, according to data from the Reserve Bank of India (RBI, 2023). Similarly, Abhyudaya Co-op. Bank Ltd. served 210,706 active mobile banking users and reported 5,728,789 transactions totaling ₹8,877,544.50 thousand. These numbers highlight the growing dependence on mobile banking services, which is indicative of the global shift toward digital financial solutions.

The ability to access banking services from anywhere at any time has revolutionized the financial landscape. By enabling rapid financial transfers, bill payments, loan applications, and account management, mobile banking promotes unparalleled convenience and efficiency (Jameaba, 2023; Wewege and Thomsett, 2019; Nnaomah *et al.,* 2024). Moreover, it plays a crucial role in advancing financial inclusion by reaching unbanked populations in rural areas. Additionally, advanced technologies like real-time alerts and biometric authentication enhance security, making mobile banking a safer option for users (Shaikh *et al.,* 2018). Furthermore, businesses rely on mobile banking for seamless transactions, solidifying its importance in contemporary financial ecosystems and driving the digital transformation of the financial sector (Mohan, 2020).

Bibliometric Analysis on Mobile Banking

A crucial tool for comprehending the development, trends, and research patterns in this rapidly changing sector is a bibliometric study. Due to rising Smartphone usage and technology improvements, mobile banking has become more popular over the last few decades (Tam and Oliveira, 2017). Bibliometric techniques have been used by researchers to investigate several topics, including the global distribution of publications, important themes, well-known authors, and the effects of mobile banking on security and financial inclusion. By highlighting trends and changes in mobile banking research, this literature seeks to shed light on the field's evolution and potential future paths. The emergence of mobile banking as a crucial component of contemporary financial services has been mapped in Table 1.

Table 1: Showing the past literature on mobile banking

Sl. No.	Authors	Research Title	Tools	Findings
1	Kohli *et al.,* 2024	Mobile banking: a bibliometric analysis	cite space	The study found global trends, increased mobile banking research, and shifts in terminology, highlighting mobile telecommunication technologies as a prominent theme.
2	Tuli, E. (2024).	Exploring digital banking adoption in developing Asian economies: Systematic literature review and bibliometric analysis	VOS viewer	The study identified key themes, challenges, and research gaps in digital banking adoption, highlighting future research areas like crowd funding.
3	Minta *et al.,* (2024)	Banking without limits: a bibliometric analysis of scholarly works on electronic banking	VOS viewer.	The study identifies publication trends, influential authors, research themes, and collaboration patterns in electronic banking, highlighting future research avenues.
4	Ali *et al.,* (2024)	Barriers to the adoption of Islamic banking: a bibliometric analysis	VOS viewer	The study identifies three main barriers to the adoption of Islamic banking: service efficiency, behavioral factors, and personal attributes, categorized into research clusters.
5	Sharma and Sharma (2023)	Mapping the Intellectual Structure of Mobile Payment Research: A Bibliometric Analysis	. VOS viewer	The study evaluates the performance and impact of contributors to mobile payment research, identifies foundational themes, and charts future research directions.
6	Thangavel and Chandra (2023)	The Evolution of FinTech in Scientific Research: A Bibliometric Analysis	VOS viewer	The study reveals an increasing trend in FinTech research publications, a shift towards financial inclusion, dominance by U.S. authors, and growing international collaborations. It also discusses future development opportunities and challenges in the field.

7	Sahabuddin *et al.,* (2023)	Two Decades of M-Commerce Consumer Research: A Bibliometric Analysis	R Bibliophagy	Mobile commerce research is rising, with emerging themes like mobile payments, fintech, and mobile social commerce, replacing older models.
8	Patel and Sidique (2023)	Banking service quality literature: a bibliometric review and future research agenda	VOS viewer	The SERVQUAL model is the most commonly used framework to study banking service quality. Three research streams are identified: retail, internet, and mobile banking service quality, with retail banking being the most studied. The study provides 44 future research questions to explore further.
9	Alsmadi *et al.,* (2022)	Twenty Years of Mobile Banking Services Development and Sustainability: A Bibliometric Analysis Overview (2000–2020)	VOS viewer	The study reveals that mobile telecommunication systems are the most prominent topic in mobile banking research. It identifies significant changes in the development of key terms, offering insights into the evolution of mobile banking over time. The study contributes to the literature by providing a framework for future research directions.
10	Gupta *et al.,* (2022)	Mobile Banking and Customer Acceptability: A Bibliometrics analysis	R Bibliophagy	The study reveals key contributors, foundational themes, and future research avenues in mobile payment, emphasizing post-COVID-19 trends.
11	Kumar *et al.,* (2022)	Past, present and future of bank marketing: a bibliometric analysis of International Journal of Bank Marketing (1983–2020)	VOS viewer	The study identifies six major themes in bank marketing: relationship marketing, consumer behavior, customer satisfaction, electronic banking, Islamic banking, and service failure recovery.
12	Zainuldin and Lui (2022)	A bibliometric analysis of CSR in the banking industry: a decade study based on Scopus scientific mapping	cite space	The study highlights CSR literature's growth in the banking sector from 2009 to 2019. Key trends include stakeholder focus, financial performance, Islamic banks, and corporate governance, with increasing publications post-2015.
13	Mittal and Gupta (2021)	A Bibliometric Review of Mobile Banking Adoption Literature	(Bibliometric R-package)	Asian and European regions dominate mobile banking adoption literature. India leads in publications, while Finland ranks first in citations.
14	Aziz *et al.,* (2021)	Bibliometric Analysis of Literature on Digital Banking and Financial Inclusion between 2014-2020	bib excel	Digital banking and financial inclusion positively impact economic and social development, with key studies analyzing authorship, geography, and research approaches.
15	Abdulla and Naved (2021)	Determining mobile payment adoption: A systematic literature search and bibliometric analysis	VOS viewer	M-payment research is growing, with thematic clusters identified using bibliometric coupling and co-citation. Future research directions proposed.
16	Xu *et al.,* (2021)	Bibliometric analysis of technology adoption literature published from 1997 to 2020	Cite space and VOS viewer	Research on technology adoption highlights trends from theoretical models to practical applications in areas like mobile banking, e-learning, and healthcare. Future studies will explore the roles of demographics and environment in adoption.

Research Questions

1. What are the past trends in mobile banking research from 2010 to 2024, and how are these trends projected to evolve from 2025 to 2040?
2. Who are the top researchers, institutions, and countries contributing to mobile banking research from 2010 to 2024?
3. Which papers, journals, or sources have received the highest number of citations in mobile banking research from 2010 to 2024?

RESEARCH METHODOLOGY

Bibliometric analysis is a research method that examines published literature using statistical and mathematical techniques, focusing on the quantity, quality, and impact of academic papers. It looks at various factors such as citation patterns, authorship, research trends, and journals to assess the advancement and influence of scientific knowledge (Gauthier, 1998; Passas, 2024). This approach is important because it helps identify key publications, emerging research areas, and collaboration networks, offering valuable insights for institutions, researchers, and policymakers. Moreover, bibliometric analysis facilitates academic collaboration, aids in determining future research goals, and evaluates the effectiveness of research funding (Ravi *et al.,* 2015).

- **Data Sources:**

Bibliometric analysis utilizes various data sources, including academic databases such as Scopus, Web of Science, Google Scholar, and PubMed, which provide access to peer-reviewed papers and conference proceedings (Meho and Yang, 2006). Citation indices from these databases help track citation patterns, assess publication impact, and identify research trends. Other sources like institutional repositories, thesis databases, and subject-specific journals offer specialized insights. By integrating these diverse sources, bibliometric analysis enables a comprehensive evaluation of research outputs, citation networks, and emerging trends across disciplines. In this study, data were collected from Dimension.ai on 20th January 2025 using the database. Dimension.ai is a reputable and reliable platform for bibliometric analysis, providing comprehensive, accurate, and up-to-date data on academic publications (Thelwall, 2018). Its robust database, coupled with advanced citation tracking, ensures credible insights into research trends, author contributions, and institutional impact, making it a trusted tool for bibliometric studies (Hook *et al.,* 2021). We concentrated mostly on the "topic" search criterion, which includes titles and abstract, to guarantee thorough coverage and accuracy in our research by utilizing search term "Mobile Banking", from 2010 to December 2024, a total of 4843 papers were published; based on the type of literature as shown in table 2 including contributions from early as 2010.

Table 2: Showing the data sources, its counts and percentages

Ranking	Classification	Paper Count	Percentage %
1	Article	3753	78
2	Chapters	420	8.5
3	Proceedings	424	9
4	Preprint	218	4
5	Monograph	18	0.3
6	Edited Books	10	02
Total		**4843**	**100**

Sources: *Compiled by the researcher after extracting data from dimension.ai*

- **Inclusion and Exclusion Criteria**:

The inclusion criteria for the study focused on research articles only published between 2010 and 2024, specifically those indexed in UGC Care List II, which accounts for 1523 total papers. Out of which 1482 were considered for the final documents after doing data screening. Only articles directly relevant to the research topic and peer-reviewed for academic rigor were considered. Studies published in English to ensure accessibility and comprehension were included. The exclusion criteria eliminated articles published outside the specified time frame, non-research materials such as chapters, proceedings, preprints, monographs, edited books, and publications not listed in UGC Care List II. Additionally, duplicate articles and those lacking relevance to the study's objectives were excluded. Exclusion criteria were followed to ensure the study remained focused on high-quality, relevant, and credible research articles aligned with the study's objectives. By eliminating non-research materials, outdated publications, and irrelevant or duplicate articles, the study-maintained accuracy and upheld academic rigor.

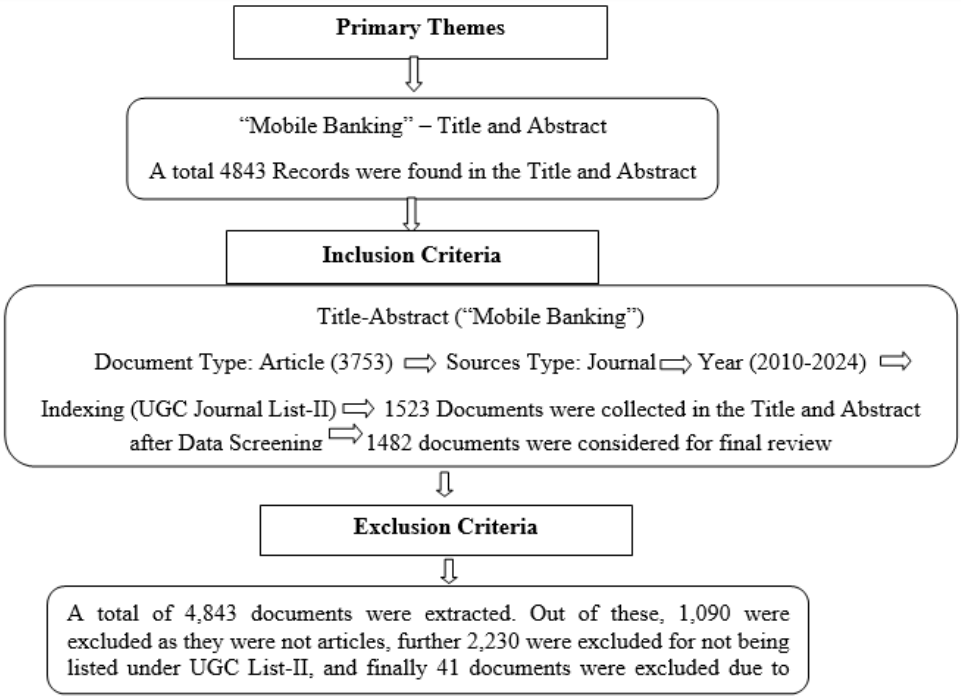

Figure 1: Showing the Data Extraction methods of inclusion and exclusion of documents

- **Analysis Method:**

For the current study VOS viewer has been used to analyze the extracted data. VOS viewer is a widely recognized and reliable tool for bibliometric analysis, providing accurate and comprehensive data visualizations of academic publications (Van and Waltman, 2010). Its ability to handle large datasets and generate detailed networks of citations, co-authorship, and co-occurrence makes it a trusted resource for mapping research trends and relationships (Liu *et al.,* 2015). Bibliometric analysis employs various methods to evaluate and interpret scholarly literature. Development trend analysis examines the temporal progression of publications to identify growth patterns, emerging topics, and research focus over time (Donthu *et al.,* 2021). Further they stated that research author analysis investigates the contributions of individual authors, highlighting prolific researchers, citation counts, and collaboration networks. The analysis of research institutions affiliated with the literature explores the impact and productivity of institutions, identifying key contributors to specific fields (Podsakoff *et al.,* 2008). Sources of literature analysis evaluate journals, conference proceedings, and other publication outlets to assess their influence and relevance. Highly cited literature analysis in Mobile Banking identifies foundational studies, significant contributions, and influential works shaping the field (Annarelli *et al.,* 2021). Lastly, forecasting research trends uses historical data and patterns to predict future research directions, enabling scholars and policymakers to prioritize and plan for emerging areas of interest (Sheng *et al.,* 2021). For a bibliometric analysis of mobile banking, several methods were employed across key themes. Development Trend Analysis examined publication trends over time to identify growth patterns and the evolution of mobile banking research. Research Author Analysis focused on identifying prolific authors, their contributions, and collaborative networks using co-authorship and productivity metrics. Analysis of Research Institutions evaluated leading institutions that contributed to the field, exploring their impact and collaboration patterns. Sources of Literature assessed core journals and databases where mobile banking research was predominantly published. Highly Cited Literature Analysis identified influential works that revealed foundational theories and trends. Lastly, Forecasting Research Trends applied techniques like predictive modeling to anticipate emerging topics and future directions in mobile banking research. These methods collectively provided a comprehensive understanding of the field's development and potential trajectory.

Document Characteristics of Research in Mobile Banking

Analysis of document characteristics in mobile banking research examines key features such as publication types, research methods, and author affiliations (Jun and Cai, 2001). It identifies trends in the format and structure of published works, highlighting dominant methodologies and institutional contributions (Osei *et al.,* 2023). This analysis provides a deeper understanding of the nature of mobile banking research, offering insights into its academic rigor, diversity, and focus areas (Pramanik *et al.,* 2019). Development Trend Analysis in mobile banking research tracks publication growth over time, identifying emerging topics and shifts in focus (Chawla and Goyal, 2021; Pere *et al.,* 2010). It highlights the increasing interest in specific areas, reflecting the evolving landscape of the field. This

analysis helps forecast future trends, uncover research gaps, and guide scholars in exploring timely and relevant areas within mobile banking (Choudire *et al.,* 2018).

The graph shows a trend analysis of the number of publications on mobile banking from 2010 to 2024. There is a consistent upward trend in publication numbers, starting at 28 in 2010 and peaking at 172 in 2021. The early years (2010–2014) show gradual growth, with publications increasing from 28 to 54. The subsequent period (2015–2019) reflects a steeper rise, from 80 in 2015 to 145 in 2019, indicating growing research interest. After reaching its peak in 2021, there is a slight decline in the number of publications to 168 in 2022, followed by a decrease to 157 in 2023 and a marginal rise to 159 in 2024. Overall, the trend highlights a significant increase in scholarly attention to mobile banking over the years, with a recent stabilization in research output.

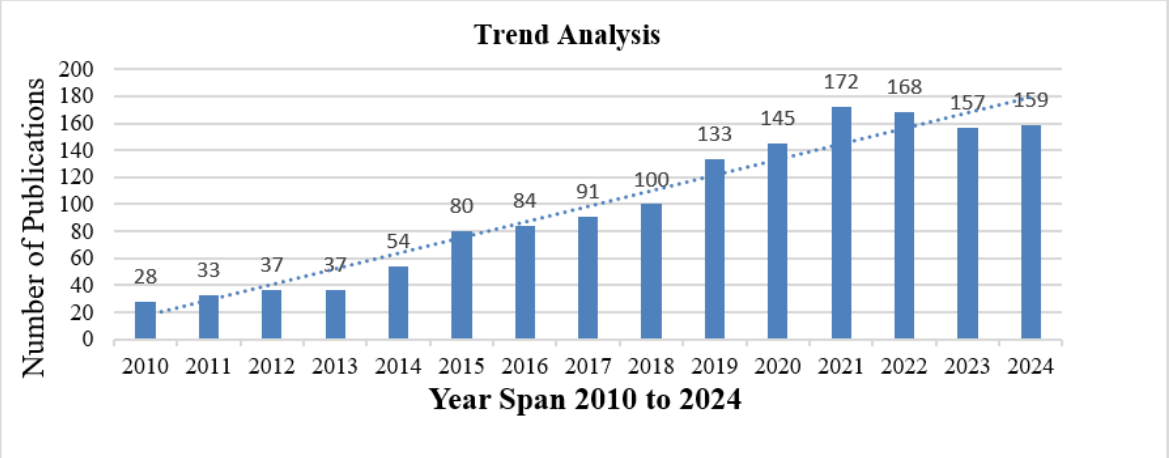

Figure 2: Trend Analysis of Mobile Banking Publications (2010–2024)
Sources: *Compilation of Trend Data extracted from dimension.ai*

Co-Authorship Analysis

Co-author analysis using VOS viewer provides valuable insights into collaborative networks in mobile banking research. By considering individual authors as units of analysis, this method identifies key contributors, their co-authorship patterns, and the extent of collaboration among researchers (Mastur *et al.,* 2021). It highlights influential authors, their interconnectedness, and the formation of research clusters based on shared contributions (Olawumi and Chani, 2018). This approach not only maps the structure of research networks but also uncovers influential groups and potential gaps in collaboration. Such analysis is instrumental in understanding the dynamics of scholarly partnerships and fostering future research collaborations in mobile banking (Bresciani *et al.,* 2021).

- **Co-Authorship Analysis considering Author as a unit of Analysis**:

In the co-author analysis, a total of 3,452 authors were identified after excluding documents with more than 25 authors per document. Among these, 262 authors met the threshold of having at least two documents and citations per author. Out of the 262 authors, 11 were found to have the largest set of connected items, as illustrated in Figure 3.

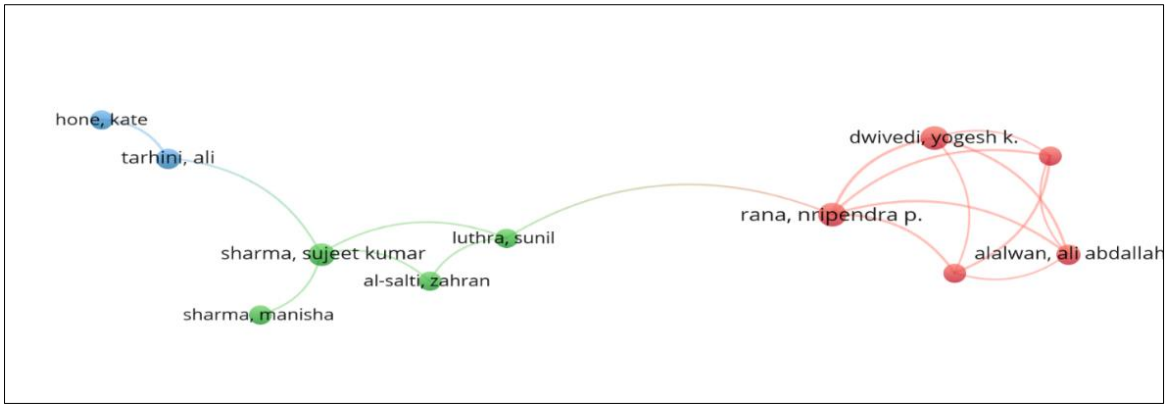

Figure 3: A screenshot of the bibliometric map created based on co-authorship, with network visualization mode based on the author as a unit of analysis
Sources: *Compilation by researcher using VOS viewer Software after extracting data from dimension.ai*

The Table 2 provides an analysis of authors in the field of mobile banking research, focusing on their total citations and average citations per article. Aijaz A. Shaikh stands out with 1,341 total citations and an average of 121.91 citations per article, indicating his significant impact in the field with 11 publications. Tiago Oliveira, with 8 publications, has the highest average citations per article (279) and a total of 2,232 citations, marking him as one of the most influential authors. Heikki Karjaluoto, with 10 publications, also maintains a high average citation per article (139.8), suggesting that his work has a notable impact despite fewer articles. Tao Zhou, with 7 publications, has the highest average citation per article (312.86), signaling a strong individual contribution to mobile banking research. Other authors like Walid Chaouali, Deepak Chawla, Himanshu Joshi, and Amit Shankar, each with 7-8 publications, show varying citation trends, but they also contribute significantly to the field. Richard Glavee-Geo, though with only 6 publications, maintains a solid citation count (456) and an average citation per article of 76. The data reflects a mix of authors with varying publication output but substantial individual contributions to mobile banking research, showcasing both quantity and impact in the literature.

Table 4: Top 10 Authors Publication, Citations and Average Citation per Article

Rank	Author	Publication	Citation	Average Citation Per Article
1	Simplice A. Asongu	11	661	60.09091
2	Aijaz A. Shaikh	11	1341	121.9091
3	Heikki Karjaluoto	10	1398	139.8
4	Walid Chaouali	8	454	56.75
5	Deepak Chawla	8	356	44.5
6	Himanshu Joshi	8	356	44.5
7	Tiago Oliveira	8	2232	279
8	Amit Shankar	8	696	87
9	Tao Zhou	7	2190	312.8571
10	Richard Glavee-Geo	6	456	76

Sources: *Compilation by researcher after extracting data from dimension.ai*

- **Co-Author analysis considering the organization as a unit**:

Co-author analysis in VOS viewer, with organizations as units, examines institutional collaboration in mobile banking research. It identifies key institutions, maps their networks, and highlights influential contributors (Hassan *et al.,* 2021; Manta *et al.,* 2024). This analysis uncovers collaboration patterns and gaps, providing insights to strengthen partnerships and foster impactful research initiatives (Skute *et al.,* 2019). In the co-author analysis, a total of 1622 organizations were identified after excluding documents with more than 25 organizations per document. Among these, 394 organizations met the threshold of having at least two documents and citations per Organization. Out of the 394 organizations, 239 were found to have the largest set of connected items, as illustrated in Figure 4.

Figure 4: A screenshot of the bibliometric map created based on co-authorship with network visualization mode based on organization as the unit of analysis

Sources: *Compilation by researcher using Vos viewer Software after extracting data from dimension.ai*

The Table 5 ranks the top 10 academic institutions based on their publications, citations, and average citations per article. Swansea University leads with the highest average citations per article (310.44) despite publishing only nine papers, indicating exceptional research impact. The University of Jyväskylä follows with a high citation rate of 123.33 per article from 12 publications, reflecting significant academic influence. King Abdulaziz University and Kyung Hee University also show strong performance with average citations of 82.33 and 66.22, respectively. On the other hand, Yonsei University and King Saud University, while publishing nine papers each, have lower average citations (22 and 25.56), suggesting a need for greater research influence. The University of South Africa, with the highest number of publications (14), has a moderate average citation rate of 39.71, pointing to higher output but less impactful research. Similarly, the University of Cape Town demonstrates a comparable trend with 12 publications and an average citation rate of 37.58. This data highlights the differences in research impact and productivity among institutions, emphasizing that both publication volume and citation quality are essential for evaluating academic performance.

Table 5: Table shows Research Performance of Top 10 Academic Institutions Based on Publications, Citations, and Average Citations per Article

Rank	Organization	Publication	Citation	Average Citation Per Article
1	University of South Africa	14	556	39.71429
2	University of Cape Town	12	451	37.58333
3	University of Jyväskylä	12	1480	123.3333
4	International Management Institute	10	372	37.2
5	King Fahd University of Petroleum and Minerals	10	329	32.9
6	King Abdulaziz University	9	741	82.33333
7	King Saud University	9	230	25.55556
8	Kyung Hee University	9	596	66.22222
9	Swansea University	9	2794	310.4444
10	Yonsei University	9	198	22

Sources: *Compilation by researcher using Microsoft Excel Software after extracting data from dimension.ai*

- **Co-Authorship analysis considering Countries as a unit of analysis**:

Co-authorship analysis in VOS viewer, with countries as units, examines international collaboration patterns in mobile banking research. It identifies key countries, maps their research networks, and highlights influential contributions from different regions (Goksu, 2021; Oladinrin, 2023). This analysis uncovers global collaboration trends and gaps, offering insights into the geographic distribution of research, fostering international partnerships, and guiding future cross-country collaborations in mobile banking research (Lashitew, 2019). In the co-author analysis, a total of 160 countries were identified after excluding documents with more than 25 countries per document. Among these, 104 countries met the threshold of having at least two documents and citations per country. Out of the 104 countries, 83 were found to have the largest set of connected items, as illustrated in Figure 5.

The Table 6 ranks countries based on their research publication, citations, and average citations per article. The United States leads with 155 publications and the highest citation average of 56.7, suggesting a significant global research impact. The United Kingdom follows closely with 99 publications and an impressive average of 62.5 citations per article, indicating high-quality research. China, while having fewer publications (107) than the U.S. or the U.K., achieves a solid average citation rate of 44.46, reflecting its growing academic influence. India, with the highest number of publications (170), has an average citation rate of 32.98, pointing to high output but moderate research impact. Other countries like Malaysia, Saudi Arabia, and South Korea also show notable research contributions, with Malaysia achieving 35.59 average citations and Saudi Arabia slightly lower at 33.86. Indonesia, with 30 publications and an average of 22.2 citations, has the lowest research impact in the table.

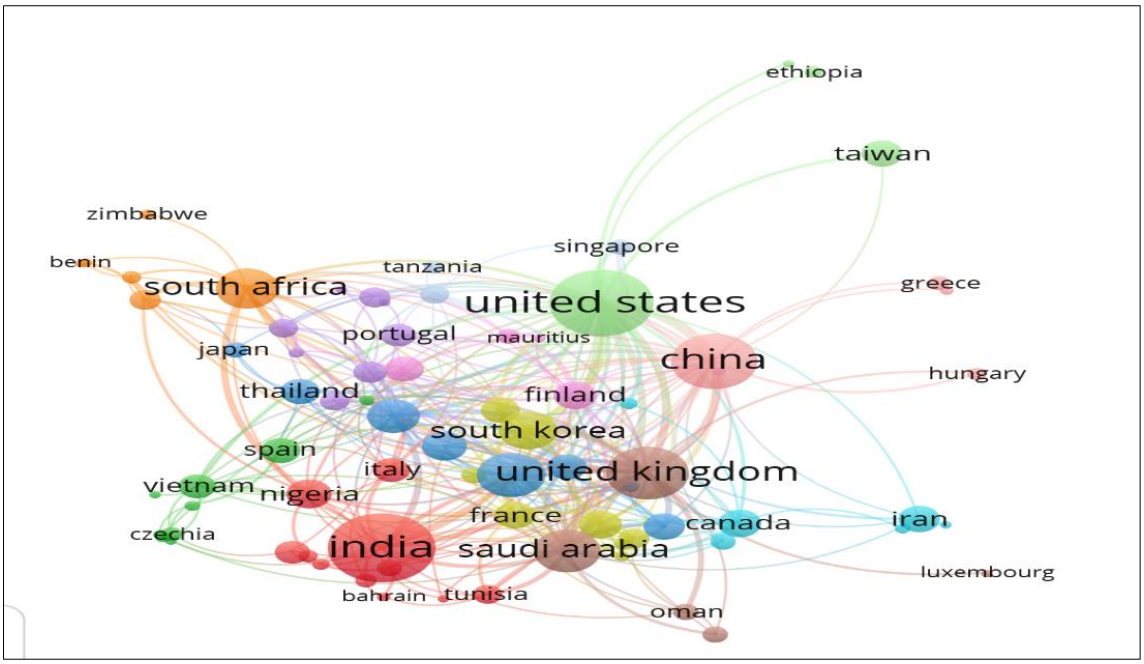

Figure 5: A screenshot of the bibliometric map created based on co-authorship with network visualization mode based on country as unit of analysis

Sources: *Compilation by researcher using Vos viewer Software after extracting data from dimension.ai*

Table 6: Research Performance of Top 10 Countries Based on Publications, Citations, and Average Citations per Article

Rank	Country	Publication	Citation	Average Citation Per Article
1	India	170	5607	32.98235
2	United States	155	8788	56.69677
3	China	107	4757	44.45794
4	United Kingdom	99	6191	62.53535
5	Malaysia	66	2349	35.59091
6	Saudi Arabia	63	2133	33.85714
7	South Africa	56	1407	25.125
8	South Korea	51	2323	45.54902
9	Australia	39	1723	44.17949
10	Indonesia	30	666	22.2

Sources: *Compilation by Researcher using Microsoft Excel Software after extracting Data from dimension.ai*

Citation Analysis Through VOS Viewer Software

Citation analysis through VOS viewer software visualizes citation networks and identifies influential works in mobile banking research (Utami *et al.,* 2024). It maps relationships between articles based on citation counts, revealing key references and their impact on the field (Small, 1999). This analysis helps uncover highly cited literature, track knowledge flow, and explore foundational studies, providing insights into the evolution and authority of research within the mobile banking domain (Granic, 2019).

- **Citation Analysis Considering Documents as a Unit of Analysis**:

In this analysis, a total of 1,482 documents were reviewed. Out of these, only 921 documents met the threshold criteria, which required each document to have a minimum of five citations. Among the 921 qualifying documents, 628 were identified as having the largest set of connected items, as illustrated in Figure 6.

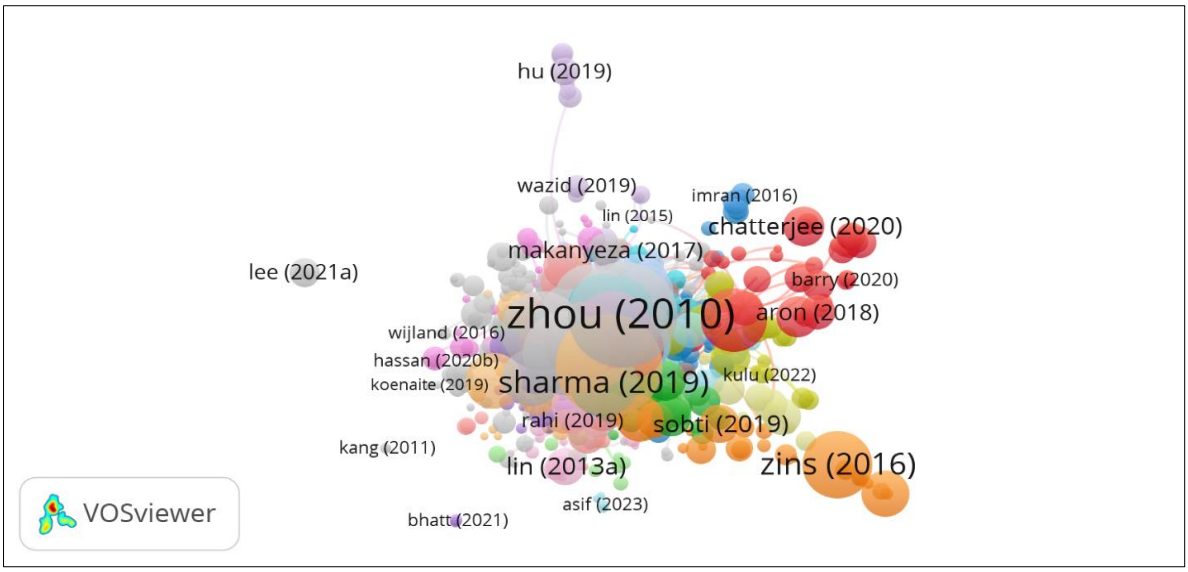

Figure 6: A screenshot of the bibliometric map created based on co-citation with network visualization mode based on documents as unit of analysis

Sources: *Compilation by researcher using Vos viewer Software after extracting data from dimension.ai*

The findings from the citation rankings of the documents suggested that studies from Zhou (2010) and Alalwan (2017) were the most influential in the mobile banking field, with substantial citations reflecting their significant contributions. Zhou's research laid foundational principles or offered key insights into the early adoption and development of mobile banking. Alalwan's more recent work, focus on building on prior studies, further emphasized the importance of consumer engagement and technological adoption. Luo (2010), Baptista (2015), and Shaikh (2015) also showed considerable academic recognition, indicating their importance in the evolution of mobile banking, mainly focusing on user behavior, security and technological advancements. Lower-ranked studies, such as those by Laukkanen (2016) and Hanafizadeh (2014), still held relevance but with lesser impact, possibly contributing niche or emerging trends in mobile banking. Overall, the studies collectively shaped understanding and progress in mobile banking adoption, satisfaction, and user experience. Ranks of Researcher based on the number of citations is shown in Table 7.

Table 7: Research Performance of Top 10 authors based on Publications and Citations of Article

Rank	Document	Citations
1	Zhou (2010)	1192
2	Alalwan (2017)	1114
3	Luo (2010)	750
4	Baptista (2015)	662
5	Shaikh (2015)	648
6	Lin (2011)	612
7	Oliveira (2014)	585
8	Laukkanen (2016)	500
9	Hanafizadeh (2014)	477
10	Zins (2016)	475

Sources: *Compilation by researcher using Microsoft Excel Software after extracting data from dimension.ai*

- **Citation analysis considering sources as a unit of analysis:**

It examines the impact and influence of journals in mobile banking research (Lin, 2011). Using VOS viewer, it identifies key journals with high citation counts, uncovering their contribution to advancing the field (Ding, 2022). This analysis highlights influential sources, their citation networks, and emerging publication trends (Duncombe and Boateng, 2009). By mapping journal influence, it provides insights into core platforms for disseminating mobile banking research, guiding scholars toward impactful publication outlets and fostering a better understanding of knowledge dissemination patterns (Gregson *et al.,* 2015). In this analysis, a total of 634 documents were reviewed. Out of these, only 225 documents met the threshold criteria, which required each document to have a minimum of two citations. Among the 225 qualifying documents, 192 were identified as having the largest set of connected items, as illustrated in Figure 7.

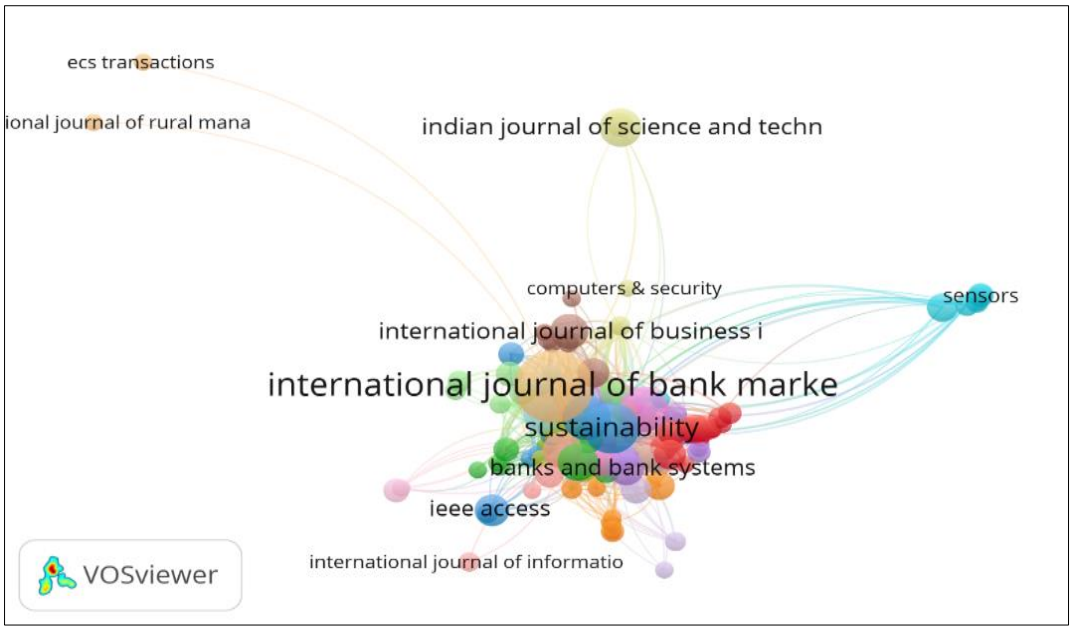

Figure 7: A screenshot of the bibliometric map created based on co-citation with network visualization mode based on sources as unit of analysis

Sources: *Compilation by researcher using Vos viewer Software after extracting data from dimension.ai*

The Table 8 showcases the top journals contributing to mobile banking research, ranked by citations and key metrics. The International Journal of Bank Marketing leads with 6,165 citations and 77 publications, demonstrating its significant influence in the field. The International Journal of Information Management, despite only 10 publications, stands out with the highest Cite Score (53.1) and Impact Factor (20.1), reflecting exceptional quality and impact. Similarly, Computers in Human Behavior exhibits strong influence with 3,408 citations and a high Cite Score (19.1). Other notable contributors include Telematics and Informatics and the Journal of Retailing and Consumer Services, which focus on technological and consumer aspects, boasting Cite Scores of 17 and 20.4, respectively. Journals like Decision Support Systems and Journal of Business Research show consistent contributions to decision-making and business-related insights. Despite a lower Impact Factor, Sustainability stands out for its 34 multidisciplinary publications, highlighting its relevance in diverse research areas. The publishers include prestigious names like Elsevier, Emerald Publishing, and MDPI, ensuring the journals' credibility and authority.

Table 8: Top Cited Journals in Mobile Banking Research with Key Metrics (2023)

Rank	Sources	Citation	Publication	Cite Score	Quartile	Impact Factor	Publisher	Snip	Sjr	H-Index
1	International Journal of Bank Marketing	6165	77	10.7	Q1	6.3	Emerald Publishing	2.014	1.328	104
2	International Journal of Information Management	3993	10	53.1	Q1	20.1	Elsevier	5.825	5.775	177
3	Computers In Human Behavior	3408	10	19.1	Q1	9	Elsevier	3.429	2.641	251
4	Telematics and Informatics	1761	7	17	Q1	7.6	Elsevier	2.426	1.827	106
5	Journal of Retailing and Consumer Services	1599	16	20.4	Q1	11	Elsevier	2.751	2.99	143
6	Journal of Business Research	1024	8	20.3	Q1	10.5	Elsevier	3.194	3.128	265
7	Journal of Enterprise Information Management	1019	7	14.8	Q1	7.4	Emerald Publishing	1.846	1.648	82
8	Decision Support Systems	963	4	14.7	Q1	6.7	Elsevier	2.613	2.211	180

9	Internet Research	854	5	11.2	Q1	7.9	Emerald Publishing	2.035	1.819	109
10	Sustainability	816	34	6.8	Q1	3.3	(MDPI)	1.086	0.672	169

Sources: Compile by researcher using Microsoft Excel Software after extracting data from dimension.ai and sites of above journals.

Trend Forecasting of Mobile Banking Research

Trend forecasting of mobile banking research using VOS viewer involves visualizing bibliometric data to identify emerging themes, key research areas, and influential authors (Alsmadi *et al.,* 2022). The software analyzes co-citations, keywords, and collaborations to map research trends (Rossetto *et al.,* 2018). For the present study researcher has only forecast for single metrics which is trend analysis of mobile banking in numbers of research from 2025 to 2040. The figure 8 represents a steady increase in research output or interest in mobile banking from 2025 to 2040, with a gradual rise in figures each year. The trend suggests that mobile banking research has gained significant momentum since 2025, possibly due to the growing adoption of digital banking services and mobile technologies. The consistent upward trajectory from 2025 to 2040 indicates a continuous focus on innovation and improvements in mobile banking systems, reflecting both consumer demand and industry advancements. It highlights an ongoing shift towards mobile banking in response to evolving financial needs and technological progress.

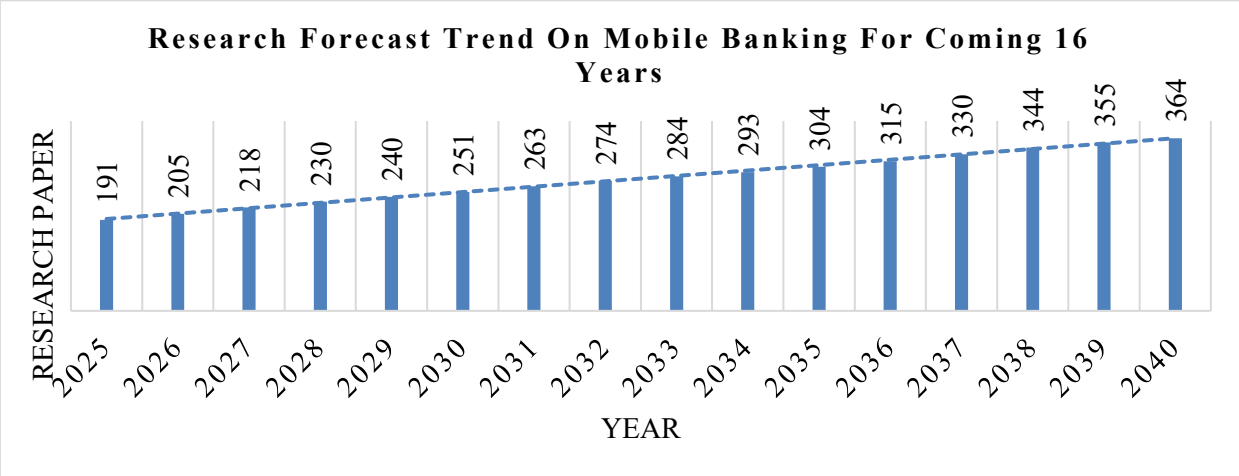

Figure 8: Trend Analysis of Mobile Banking Research Output (2025–2040) based on 2010-2024 data
Sources: *Compiled by researcher using Microsoft Excel Software after extracting data from dimension.ai*

DISCUSSION AND CONCLUSION

The bibliometric analysis of mobile banking research reveals significant insights into the evolution and impact of this field. A clear upward trend in publication numbers from 2010 to 2024 underscores growing academic interest, particularly in the years 2015 to 2021, indicating a peak in scholarly attention. Authors like Tiago Oliveira and Tao Zhou emerge as influential figures, with high citation counts signaling their substantial contributions to the field. The co-author and institutional analysis further highlight the importance of collaboration, with top institutions like Swansea University and the University of Jyväskylä leading in both publications and citations, demonstrating their research dominance in mobile banking. Citation analysis of documents identifies seminal works, with Zhou (2010) and Alalwan (2017) at the forefront, suggesting foundational and contemporary shifts in mobile banking research, particularly regarding consumer behavior and technological adoption. Journals such as the *International Journal of Bank Marketing* and *Computers in Human Behavior* dominate the citation landscape, reinforcing their role in advancing knowledge. Forecasting research trends indicates sustained growth in mobile banking studies, pointing to an ongoing focus on digital banking innovations driven by consumer demand and technological advancements. This bibliometric overview not only charts the historical progression but also provides valuable insights into the future directions of mobile banking research.

LIMITATIONS

The main limitation of this bibliometric analysis lies in the reliance on citation counts and publication data, which may not fully capture the quality or novelty of the research. While highly cited works reflect academic recognition, they may not represent emerging trends or cutting-edge research. Additionally, the analysis focused on documents published in specific databases, potentially overlooking important publications from other sources. The time frame, primarily covering data from 2010 until 2024, may also limit the ability to capture recent shifts in research focus. Lastly, the study is constrained by its reliance on publicly

available data, which may not account for unpublished or non-traditional research outputs.

Future Works

Future research could expand on this bibliometric analysis by incorporating a broader range of sources, including closed journal publications, chapters and edited books, proceedings, preprint, monograph and industry reports, to capture emerging trends more comprehensively. Additionally, a deeper analysis of qualitative factors, such as research impact or innovation, could complement citation counts. Future studies could also explore the geographical and institutional influences on mobile banking research in more detail, focusing on collaboration networks and cross-country research trends. Lastly, investigating the role of new technologies like AI and block chain in mobile banking could provide valuable insights into future research directions.

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