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Global Trends in E-Banking Research: A Bibliometric Analysis

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Abstract: Electronic banking, or "e-banking," has become a crucial component of the contemporary banking sector, revolutionising the way both private citizens and commercial entities conduct financial transactions. Researchers need to comprehend the changing trends in e-banking research to stay up to date and recognise new areas of inquiry. The goal of this paper is to find patterns and trends in the e-banking research literature by performing a bibliometric analysis of the literature. This research attempts to gain insights into the development of research, influential authors and institutions, emerging topics, and collaboration patterns by analysing citation networks, co-authorship networks, and keyword co-occurrence. The main academic databases, Scopus, were thoroughly searched. Over the previous ten years, e-banking research has steadily increased, according to the analysis. The numerous report kinds with the most pertinent words, authors, affiliations, etc., are among the key findings. The results offer precise into the current body of knowledge and lay the groundwork for further investigation. This thorough summary of e-banking research trends is offered by this bibliometric analysis. The results draw attention to the different reports and the annual rise in the number of studies. In the end, these discoveries can help practitioners and researchers identify areas of cooperation and future research directions, advancing the field of e-banking and related fields. The keywords "banking and financial services," "electronic services & e-finance," "consumer behaviour," "mobile services," "risk," and "cryptocurrency" were used to search the Scopus database for relevant content.

Keywords: Bibliometrics, Prisma, E-Banking, Digital Finance, Mobile Payments, Research Trends

1. Introduction

The financial services industry has undergone significant changes due to the fourth industrial revolution, prompting a re-evaluation of practices and procedures and the adoption of new information technologies. Financial operations have continually innovated to address existing gaps in the fiscal system (Milian *et al.*, 2019). Improvements in internet speed and connectivity have significantly influenced the uptake of insurance plans. Machine learning, a straightforward type of financial technology, has been utilised in insurance practices to aid salespeople in acquiring new skills, developing client-friendly strategies, and creating optimal outcomes for clients, companies, and salespeople alike (Chen *et al.*, 2022). AI and data technology are revolutionising insurance business models. While some established insurers aim to improve their existing processes, others are adapting to leverage new technologies and attract new users. Concurrently, tech-savvy newcomers are disrupting the market. Despite this upheaval, it is resulting in the development of effective business strategies (Zarifis & Cheng, 2021). A bibliometric analysis conducted by (Mintah *et al.* 2024) scrutinised 2,391 Scopus-indexed publications spanning from 1994 to 2022. They noted a significant surge in publications starting in 2020. Sahar *et al.* (2024) took a close look at 124 research papers on e-banking. Through a co-word analysis, they found that the main topics of discussion revolved around customer satisfaction, the quality of service, and trust.

A new economic entity, e-banking, emerged in the financial system to address these gaps. E-banking leverages technology to automate financial services, thereby enhancing the efficiency of the fiscal system (Liu *et al.*, 2020; Gomber *et al.*, 2017). According to Fuster *et al.* (2019), the fiscal organisation and mediation processes facilitated by e-banking represent a vital step toward the sustainable expansion of financial procedures, with the potential to reduce the costs associated with delivering financial services. Consequently, scholars identify online

banking as a key driver of transformation in the financial sector (Haddad & Hornuf, 2019; Gomber *et al.,* 2018). This topic has proven relevant across various sectors because of the benefits of internet banking (Haddad & Hornuf, 2019). However, despite its importance, internet banking is still in its early stages and requires further investigation by technology experts and financial market managers (Thakor, 2020). As a contemporary field of inquiry, e-banking has attracted multidisciplinary interest and offers opportunities for analysis in areas such as the sharing economy, regulation, digital skills, and finance. Further scholarly and practical investigation is needed to better understand the organisational trends and developments associated with e-banking. Bibliometric approaches provide a useful way to understand the structure, development, and emerging directions of a research field. In the broader FinTech literature, recurring themes include artificial intelligence, robo-advisory services, blockchain, regulatory technology, decentralized finance, and cybersecurity. Increasing attention has also been given to regulatory compliance and digital threats such as phishing, malware, and biometric fraud. Together, these developments show that e-banking research is shaped not only by technological innovation but also by risk management and governance concerns.

The literature contains relatively few bibliometric publications on electronic banking, except studies by Liu *et al.* (2024), Milian *et al.* (2019), and Zavolokina *et al.* (2016). A more thorough bibliometric analysis is required despite notable advancements, particularly in light of the recent and substantial rise in research on electronic banking. A bibliometric analysis of technical papers on electronic banking published during the last 30 years (1991–2020) is the goal of this paper.

The idea of Islamic banking has gained popularity in Islamic societies as well, and the industry is expanding in both developed and developing nations. According to researchers' Islamic banks have launched several products that outperform traditional banking systems. By providing substitute goods that adhere to Islamic Shariah regulations, they have significantly boosted global economic growth (Azizah & Puspito, 2021; Metawa & Almossawi, 1998). Similar to traditional e-banking, Islamic e-banking enables online money transfers, utility bill payments, e-shopping, banking instrument requests, and e-purse capabilities via an online portal (Zouari & Abdelhedi, 2021).

There are three things that set this study apart from other bibliometric studies. Initially, looking at this phenomenon over 30 years reveals aspects that are missed in smaller studies. Because there have been different numbers of studies over time and subthemes have emerged during this time, this approach allows for both quantitative and qualitative analysis of the evolution of the e-banking phenomenon. Second, there are no regional restrictions on the investigation's scope. In contrast to bibliometric studies that concentrate on domains, this article looks at the global research behaviour in e-banking. Thirdly, three study groups are categorised in the paper along with their relationships and evolution.

To direct the analysis, the following research questions are addressed in this study:

1 RQ1: How have the publication trends in e-banking research changed over time, and what are the global trends from 1991 to 2020?

2 RQ2: When it comes to e-banking, which nations, organisations, and writers have made the biggest contributions?

3 RQ3: Which citation styles, keywords, and recurring themes are influencing the intellectual framework of e-banking research?

4 RQ4: What subfields have developed or diminished over the last three decades, and how has the research focus changed?

5 RQ5: What are the main unmet research needs in the literature on e-banking, and how can these be filled in future research?

2. Literature Review

Mintah and associates carried out a 29-year bibliometric analysis (1991–2020) with an emphasis on the development of research on e-banking. The study employed the Web of Science and Scopus databases to map thematic clusters, co-authorship networks, and publication trends. According to their findings, e-banking research accelerated dramatically after 2010, primarily due to advances in fintech, mobile banking, and cybersecurity.

Importantly, they pointed out that emerging economies have received little attention in research, with most studies focused on developed nations. Despite offering a comprehensive overview, the study did not go into detail to compare subfields like sustainable banking or Islamic e-banking.

The lack of thematic granularity, particularly about sector-specific e-banking applications and regional contexts, is the gap. Liu *et al.* (2024) used bibliometric tools to map scholarly attention between 2000 and 2019 to analyse technological adoption in e-banking. Their research revealed that issues like security, usability, and trust dominated the conversation. Although they pointed out methodological limitations when measuring aspects of the customer experience, they underlined that bibliometric methods offer insights into intellectual structure. Their research underrepresented Islamic and rural banking contexts and did not include new fintech integrations (blockchain, AI). In 2019, Milian *et al.* (2019) conducted a thorough bibliometric analysis of banking and fintech services. According to their research, fintech disruptors pose a threat to established banks by offering digital-first solutions. Three groups emerged from the bibliometric mapping: (i) financial services innovation, (ii) regulation and policy, and (iii) technology adoption. Although it established a solid basis, this work's treatment of e-banking as a subdomain was comparatively superficial because it was included under the more general heading of fintech. Insufficient attention to e-banking research paths and scant knowledge of e-banking customer satisfaction and service innovation.

The digital transformation of banking ecosystems was the subject of a bibliometric study carried out by co-authors Zavolokina *et al.* (2016). Peer-to-peer lending and mobile payment systems have become more popular, and their study demonstrated how these developments are changing banking. They highlighted, through co-citation analysis, that a lot of research focused on adoption models and technological design rather than user trust and long-term sustainability. The bibliometric approach fails to consider the impact of cultural and demographic factors on the adoption of e-banking.

Gomber *et al.* (2017) used quantitative bibliometric mapping to review the literature on e-banking and digital finance. Big data analytics, blockchain, and automation were emphasised as crucial research areas in their study. Crucially, they showed that research output was concentrated in North America and Europe, with little attention paid to Asian and African contexts. Gap: Absence of consumer-centric themes like digital literacy and a lack of attention to cross-country comparative bibliometric patterns.

Previous studies on FinTech and digital finance show that scholarly attention has gradually shifted from traditional banking risks toward digital transformation, financial inclusion, blockchain, digital payments, trust, and cybersecurity. Existing reviews also indicate that many studies focus on specific subareas, such as mobile banking, regulatory technology, sustainable finance, digital customer experience, and international research collaboration. Although these studies provide valuable insights, many remain limited in database coverage, thematic scope, methodological depth, or cross-regional analysis. In several cases, the emphasis is placed on keyword patterns or collaboration networks without sufficiently integrating thematic evolution, institutional contributions, and broader research trends. As a result, there is still a clear need for a more comprehensive bibliometric investigation of e-banking that combines thematic mapping, collaboration patterns, and global research developments within a single analytical framework.

3. Method

A bibliometric analysis was employed as the methodology for this study to provide a comprehensive overview of a specific research area. This approach aims to statistically present the evolutionary trends and data in academic journals for investigators in the field. Also, it allows for the assessment of research efficiency and value by counting the total number of publications and citations (Vanti, 2002).

To meet the objectives of this study, we adapted the bibliometric approach proposed by Campos-Teixeira and Tello-Gamarra (2022). The methodology was organised into three stages: (a) planning, (b) search, and (c) data arrangement and analysis. Figure 1 illustrates the systematic conduct of the study. To ensure theoretical consistency, this bibliometric approach is grounded in traditional scientometric concepts.

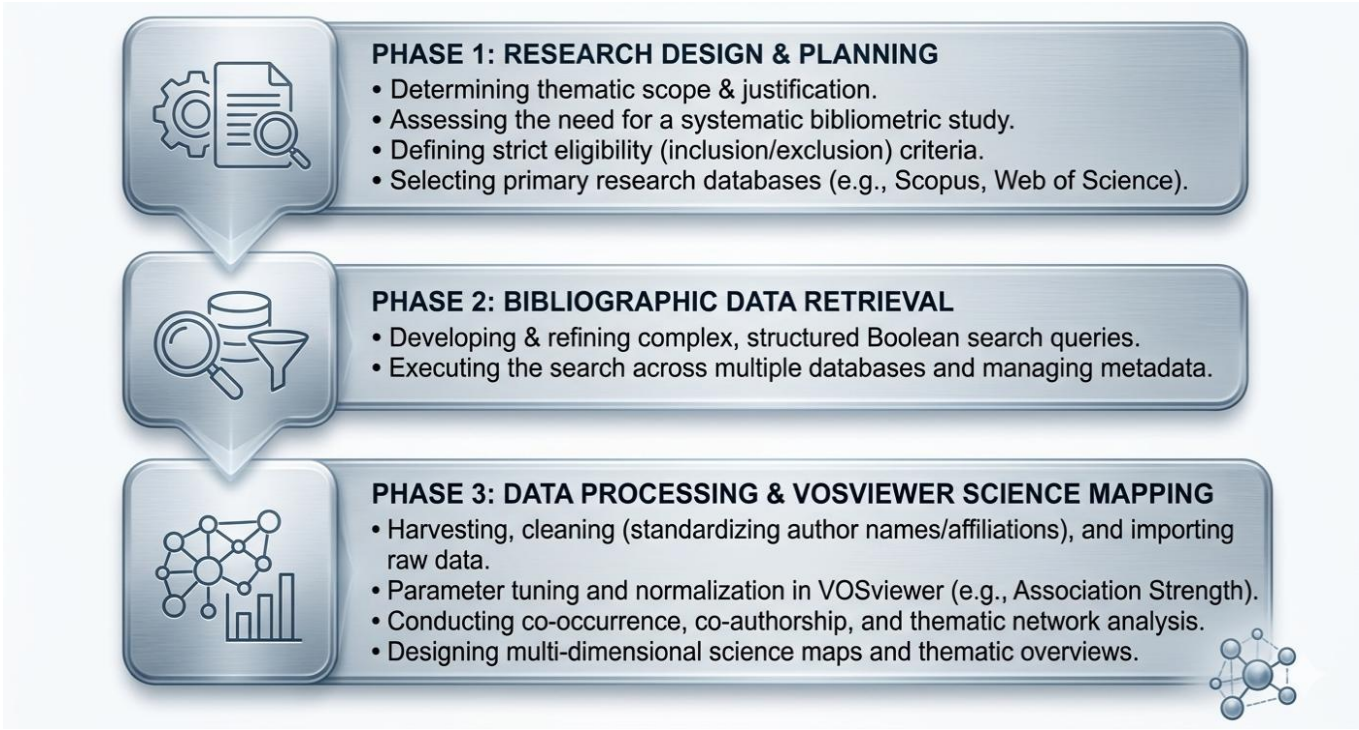

Figure 1. Systematic conduct of the bibliometric study.

Source: Adapted from Campos-Teixeira and Tello-Gamarra (2022).

In particular, Lotka's Law (Lotka, 1926) served as a guide for assessing author productivity patterns, emphasising the expected contribution distribution in which a small percentage of authors produce the majority of publications. Analysing source dispersion also considered Bradford's Law (Bradford, 1934), which postulates that a core group of journals contributes disproportionately to the body of literature on a subject. We chose productivity and source-related indicators based on these guidelines.

3.1. Planning

Primarily, we had a strong intuition that the study of history would be crucial for understanding the e-banking phenomenon. To gather relevant material, we conducted an initial exploration to assess the applicability of the e-banking topic in bibliometric analysis. We used the search term "e-banking" in the Scopus database, which yielded a total of 8939 documents published up to 2025. However, this research had two main drawbacks: First, the age of the discovered papers did not reflect the recent exponential growth of this research topic. Second, the research fields were narrow, focusing on specific places or regions. Therefore, we determined that a more comprehensive bibliometric study on e-banking was needed.

We narrowed the study's timeframe by excluding sources unrelated to the term e-banking. Ultimately, we chose the Scopus database due to its extensive coverage. The Scopus database describes itself as "the largest abstract and citation database of peer-reviewed literature, including scientific papers, manuscripts, and conference proceedings".

3.2. Search

Focusing on records from previous years, data was collected in June 2025. The term "e-banking" and its various applications led to the inclusion of eight additional terms: "mobile payment," "digital payment," "e-finance," "e-bank," "cyber currency," "digital currency," "mobile currency," and "crypto-currency." An asterisk and the operator "OR" were used to search the journals' "labels," "keywords," and "summaries" sections. When searching for keywords, the terms were enclosed in quotation marks and followed by an asterisk.

Table 1. Search strategy for the bibliometric review

String	Search Fields	Filter Results	
"E-Banking" OR "e-finance"	Abstract, Titles and Keywords	Subject area, Source – 950	
Database	Keywords Used	Records Retrieved	Unique Additions (not overlapping with main set)
Scopus	"digital payment" OR "crypto-currency" OR "cyber currency"	512	–
Scopus (Pilot)	Above + "electronic banking" OR "internet banking" OR "digital banking"	648	46
Web of Science	"digital payment" OR "crypto-currency" OR "cyber currency"	329	–
Web of Science (Pilot)	Above + "electronic banking" OR "internet banking" OR "digital banking"	402	37

The quotation marks in Scopus searches help find approximate terms, yielding results for variations with acute accents and punctuation, similar to terms short of them. The asterisk also allows for more comprehensive searches by truncating the word's suffix and searching for word stems.

To improve the study, the credentials underwent three pillars. The first filter restricted the search fields to the categories "Economics, Econometrics and Finance" and "Business, Management and Accounting." The second filter ensured the documents were in English. The final filter limited the selection to articles only, based on specific criteria (see Table 1).

4. Data arrangement and evaluation

Adding more general terms related to financial technology to capture the changing scope of e-banking research, which increasingly overlaps with digital finance, mobile payment ecosystems, and blockchain-based currencies, terms like "digital payment," "cryptocurrency," and "cyber currency" were included. Such inclusive terms are adopted by bibliometric analyses of financial technology to reflect the diversification of digital banking services beyond traditional platforms, as demonstrated by recent studies (Dissanayake *et al.,* 2023; Sahid *et al.,* 2023). Reasons to avoid depending exclusively on "digital banking," "internet banking," and "electronic banking" Our initial scoping review revealed that, despite their widespread recognition, these descriptors alone resulted in highly overlapping datasets that were dominated by early-generation studies (2000–2010). According to Mintah *et al.* (2024), limiting searches to just "electronic banking" or "internet banking" runs the risk of ignoring more recent studies that are framed under more general terms related to digital finance. Also, words like "digital banking" frequently occur alongside "FinTech" or "mobile payments," so our keyword selection indirectly covered them. Reduction of exclusion risk: We experimented with different queries that contained "electronic banking," "internet banking," and "digital banking" in order to reduce dataset bias. When we used these terms in our more general search string, we found records that were essentially duplicates in Web of Science and Scopus. The screening process included a manual verification of any unique records that appeared under these terms to ensure comprehensiveness.

The author, abstract, and title fields were the only ones used in the search. Three filters were applied to improve the results: (i) Publications in English; (ii) Topic categories: "Economics," "Business," "Management," and "Finance"; (iii) document type restricted to peer-reviewed journal articles. This procedure found 329 distinct, topic-relevant articles in WoS. A total of 950 documents were initially gathered, which were added to the 621 records that were obtained from Scopus. Predetermined inclusion and exclusion criteria were then used. The 211 duplicate studies were removed because they shared the same DOIs, authors, titles, volume numbers, and issue numbers. Seven papers written in languages other than English were disqualified based on our language rules. After all the reports were retrieved, thirty documents were eliminated because they weren't journal articles (e.g., book chapters, editorials, working papers). After discarding 11 more retracted articles, the final dataset contained 609 studies. The screening and selection process is presented in Figure 2.

In bibliometric practice, keyword selection often requires a balance between precision and inclusivity. To ensure conceptual inclusivity and temporal breadth, we prioritised terms that represent both legacy and emerging research vocabularies, as suggested by Campos-Teixeira and Tello-Gamarra (2022). The combined records were then imported into VOSviewer, which was used to create and analyse bibliometric maps. Web of Science (WoS) and Scopus CSV files were used for both quantitative and qualitative analyses. The extracted information included major universities, publication volume by country, leading authors, and publication trends. Section 3.2 has already described the procedure for retrieving content from Scopus. To maintain methodological consistency, we applied the same approach to the Web of Science database. We used the same set of keywords—"e-banking," "mobile payment," "digital payment," "e-finance," "e-bank," "cyber currency," "digital currency," "mobile currency," and "crypto-currency" when searching WoS in June 2025. Truncation (*) and Boolean operators (OR) were used to capture variations of these terms.

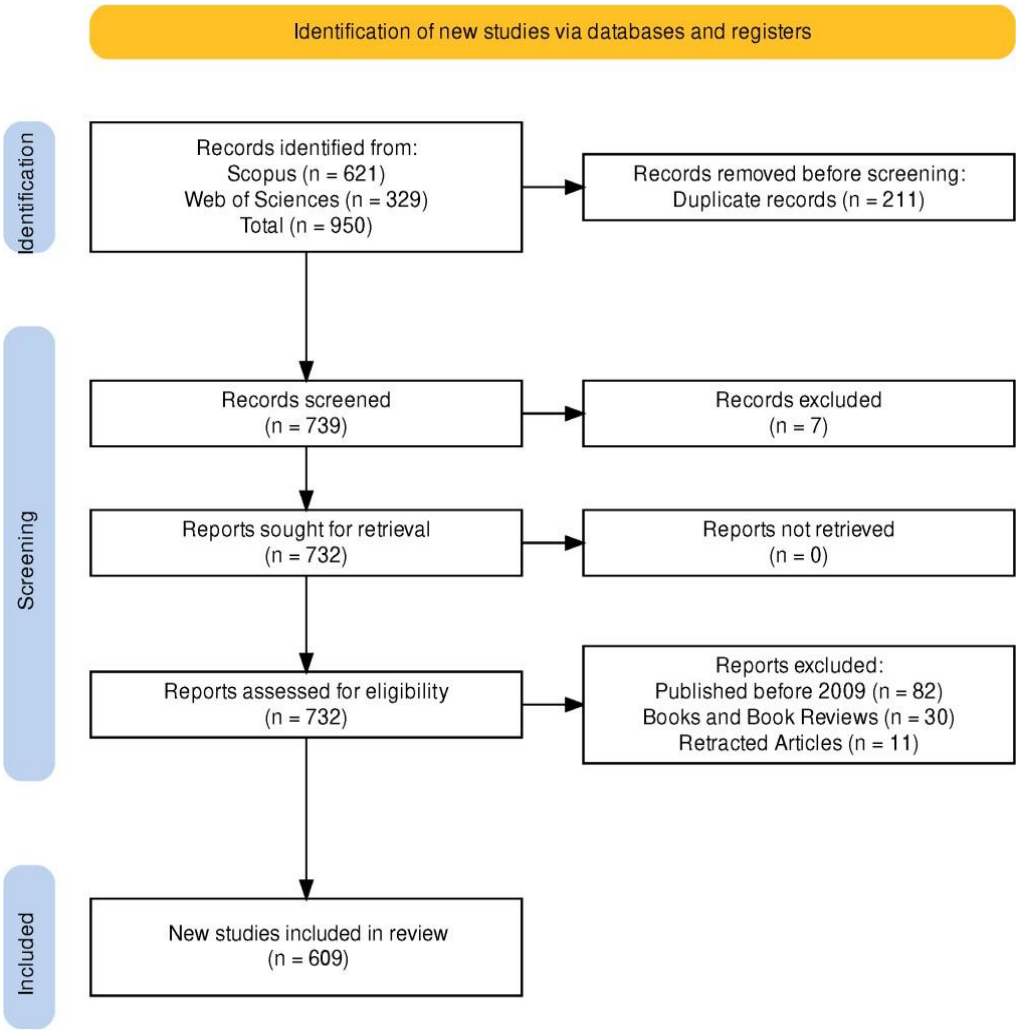

Figure 2. PRISMA 2025 flow diagram used for article screening and selection.

5. Result and Analysis

This section presents the major themes identified in the bibliometric analysis of e-banking research. It summarises the principal findings of the global review of this topic over the period 2002–2025.

5.1. Main Countries

We examined the total number of publications by country to identify the major research institutions focusing on e-banking-related topics. While this can be a sensitive subject, each country has its own perspective on the e-banking phenomenon and its operational aspects. Additionally, studies in this field may report on phenomena that

currently exist in a specific nation or may emerge in the future. On the map, nations that had not produced any works on this topic remained unmarked, while those with recognised contributions were highlighted. This visualisation indicates the timeframe utilised for the database search (Scopus Database). Figure 3 presents the geographical distribution of publications on e-banking.

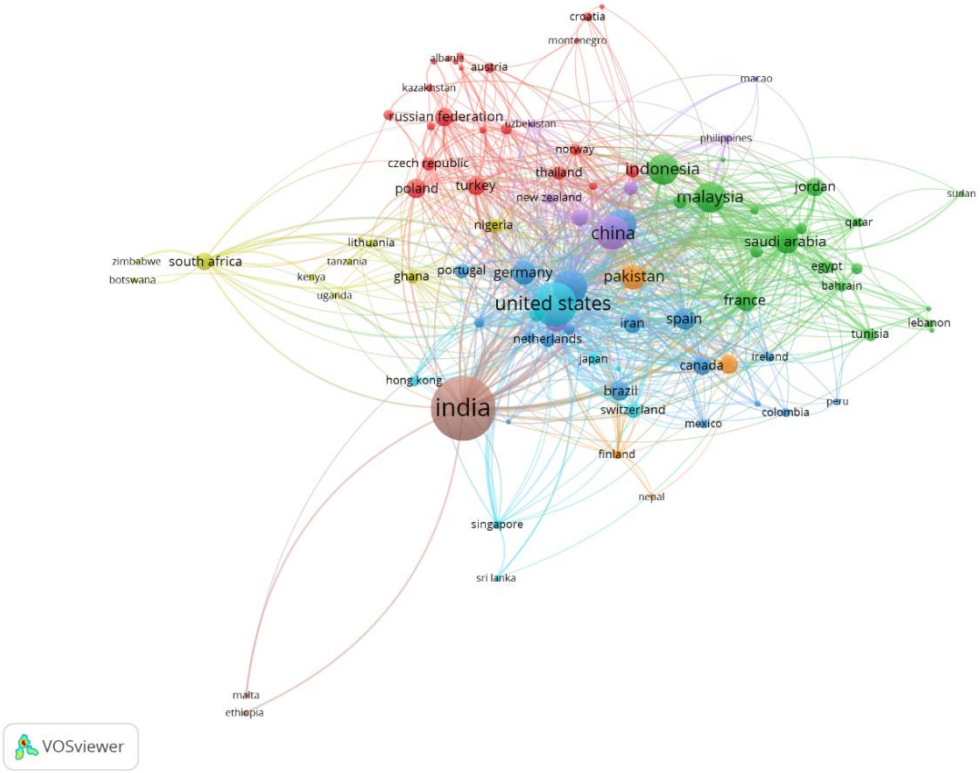

Figure 3. Countries with publications about E-Banking (Source: Vosviewer)

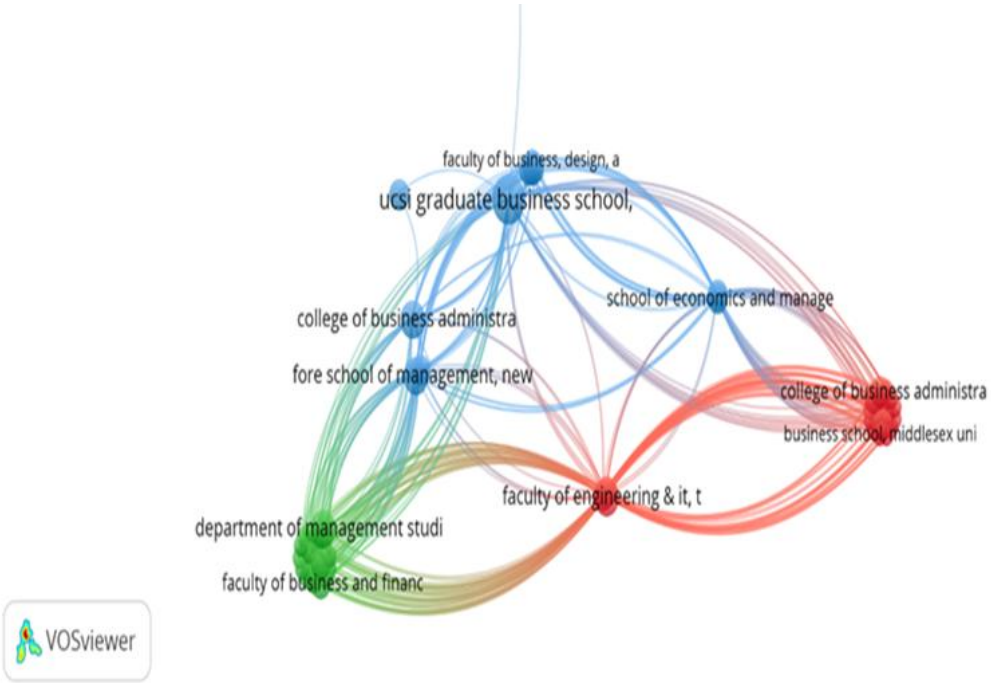

Figure 4. Documents by affiliation (Source: Scopus)

Among the nations with more than ten publications, the top 10 were identified, underscoring the recent nature of this evolving field and the ongoing development of studies related to it. These results highlight the dynamic

nature of research in this area. According to the Scopus database (2025), the United States leads the world with 1469 publications on e-banking. The United Kingdom follows with 413 publications. Additionally, emerging powers such as China (113) and India (122) are also represented on the list. This provides a performance parameter for research in this field. Usci graduate business school in Malaysia comes in second with 663 citations. Knowing which organisations write the most about e-banking is crucial. Since several of the primary authors may have had passing affiliations, this supplements the findings relevant to them. Figure 4 presents the distribution of documents by affiliation.

We incorporated the population element in the analysis to mitigate the impact of population size. Each country's population was considered to calculate the ratios between publication capacity (TP/Pop) and citation volume (TC/Pop). Consequently, India (8.4) emerged with the highest TP/Pop ratio, followed by Malaysia (7.48) and Iran (6.83). This highlights nations with smaller populations but effective research output.

In terms of institutions, the College of Business and Economics stands out as one of the most prolific in the field of e-banking, producing 20 publications, a volume greater than the combined output of 164 different nations. The Wydzial Zarzadzania University follows closely with 413 citations. Identifying the organisations contributing the most to e-banking research is crucial, considering that some primary authors may have affiliations that change over time.

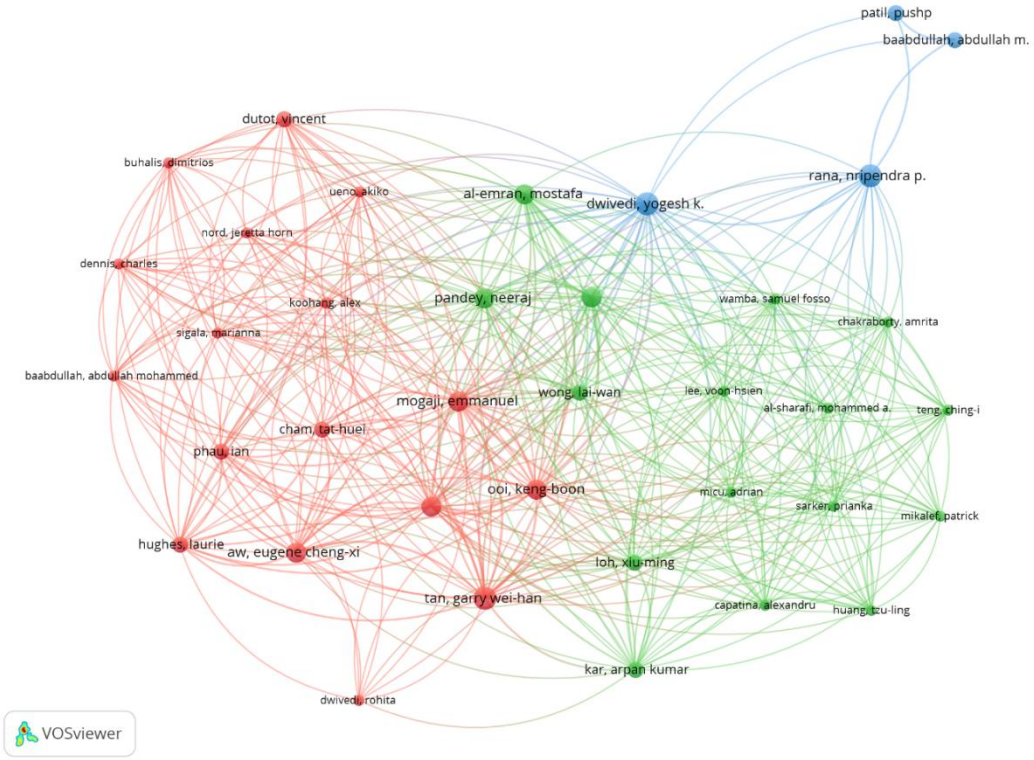

Figure 5. Documents by author (Source: Scopus database)

5.2. Main Authors

The productivity of writers who have had the most impact on e-banking studies during this research period was assessed based on the number of publications and citations. Among the authors with the most publications, only four had published more than 5 documents. Al Imran Mustafa with 16 publications, followed by Pandey Neeraj with 14, and Tan Garry with 12. It is worth noting that two of these top authors, C. Scallete and W. Raffoul, also rank at the top for most citations, with 72 and 64 citations, respectively. Figure 5 shows the distribution of documents by author.

5.3. Most Cited Documents

The analysis also scrutinises the pivotal publications addressing this topic. Upon reviewing the documents, one publication stands out as the oldest utilised in this examination. This observation indicates that this work laid the groundwork for subsequent theoretical inquiries. Furthermore, the inclusion of 180 references in the study underscores the validity of the analysis and the academic community's interest in the findings.

6. Evolution of Research over Time

Researchers and managers in financial markets are increasingly interested in the field of study encompassing e-banking, as evidenced by the growing number of publications on this topic. The significance of the annual publication count underscores the enduring relevance of the subject over time. This study's research confirms that the domain of electronic banking is rapidly expanding, particularly since 2008, marked by an upsurge in studies. Figure 6 presents the number of documents per year by source.

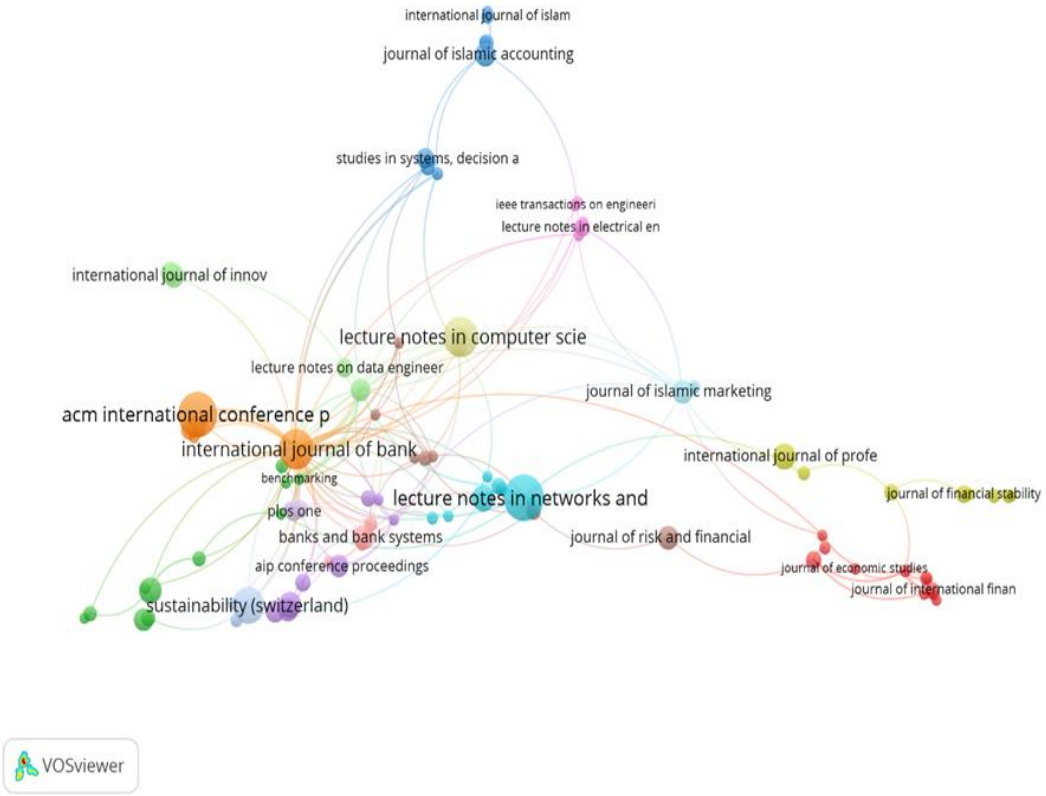

Figure 6. Documents per year by Source (Source: Scopus)

Three generations of the e-banking study trajectory were proposed based on quantitative and qualitative measures (see method). The transition from the first to the second generation was prompted by factors such as the 2008 global financial crisis and the simultaneous release of the iPhone and Android operating systems. This shift is further exemplified by the emergence of the first journal by the originator of Bitcoin (Nakamoto, 2008). The transition from the second to the third generation was influenced by analyses exploring e-banking and its ecosystem, the maturation of this knowledge, and the incorporation of cybernetic supporters in financial platforms. A timeline was constructed to illustrate the study course alongside historical and significant events related to the e-banking phenomenon. Subsequently, we delineated the main research topics, trends, and keywords for each of the three generations.

6.1 First Generation: Electronic Banking Foundations (1995–2008)

Early research focused on online transactions, ATM services, and early adoption factors like perceived security, ease of use, and trust. The dot-com boom and the growth of internet infrastructure coincided with this

wave, allowing banks to transition from branch-based to online services. Scholarly interest in consumer confidence and regulatory supervision was fuelled by the 2008 global financial crisis, which further highlighted the significance of openness, risk management, and trust in electronic financial systems.

6.2. Second Generation: Digital Expansion and Mobile Platforms (2009–2016)

The introduction and quick uptake of the iOS and Android platforms during this time period (2007–2009) signalled a move towards mobile-first financial services. When smartphones became widely available, user expectations for convenience, accessibility, and personalisation changed. At the same time, the emergence of fintech companies went beyond conventional banking to include topics like digital wallets, peer-to-peer lending, and mobile payments. Publications from this era include early regulatory frameworks intended to control mobile transactions and data privacy, as well as theories of consumer behaviour (such as digital literacy and technology acceptance).

6.3. Third Generation: AI, Blockchain, and Fintech (2017–present)

Following Bitcoin's widespread acceptance (after 2016) and the widespread adoption of artificial intelligence (AI) in fraud detection and customised banking services, the latest wave corresponds with the explosion of blockchain technologies and cryptocurrencies. Thematic clusters show that financial inclusion, cybersecurity, and consumer trust psychology are receiving more attention. The Unified Payments Interface (UPI) in India and the EU's PSD2 (2018) are two examples of regulatory frameworks that demonstrate how public policy managed systemic risks while fostering innovation. The convergence of consumer acceptance, regulatory governance, and technological disruption is exemplified by this generation, which supports the interdisciplinary character of e-banking research.

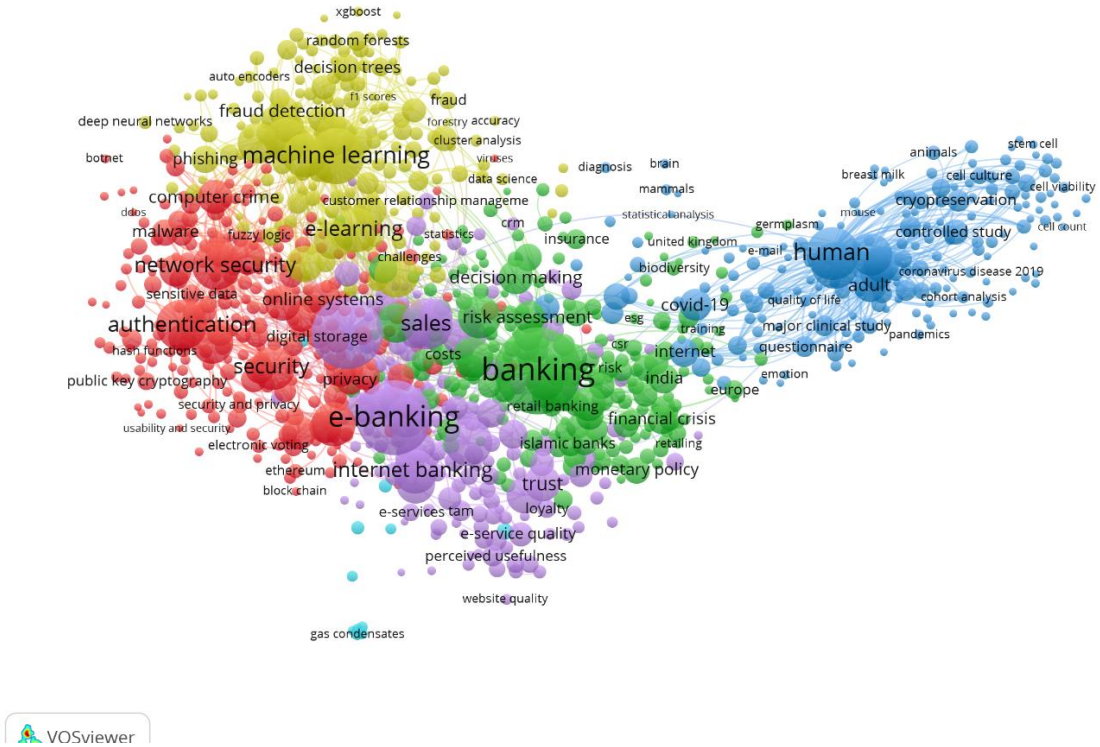

Figure 7. Mapping of keyword co-occurrences (Source: Vosviewer)

7. Discussion

This study examines the relationship and development of research over three different generations, emphasising the links between them and comparing these findings with earlier research. Each generation's growth and main research topics are examined, demonstrating both continuity and departure from previous findings. The first generation's subjects set the foundation for comprehending the e-banking phenomenon, even though none of them directly reflected what it would later become. Customer performance, electronic benefits, and financial services

were among the themes that were identified. These findings are consistent with earlier work that viewed the digitisation of banking services as a foundation for electronic transactions. In line with earlier studies that emphasise the path-dependent character of financial innovations, these fundamental subjects cleared the way for later generations and remained connected throughout all three generations.

The second generation of research is distinguished by a greater emphasis on the security and dependability of mobile banking, which is demonstrated by subjects like online payments, e-banking, volatility, and trust. The thematic relationships identified through keyword co-occurrence are presented in Figure 7.

This is consistent with the growing body of research showing that customers' adoption of online banking is closely related to security and trust. The advent of cryptocurrencies at this time also supports the view that technological disruptions can alter regulatory frameworks and consumer trust (Nakamoto, 2008). This pattern also reinforces the view that risk management and perceived reliability remain central to technology adoption in digital financial services. In the third generation, research on digital currencies and fiscal transaction encoding came together, with blockchain, Bitcoin, and cryptocurrency becoming the most often cited topics. This pattern is consistent with empirical research highlighting the revolutionary potential of blockchain technology in the financial services industry. Moreover, the growing popularity of fintech business models mentioned in previous studies is reflected in the growing usage of phrases like "crowdfunding" and "peer-to-peer lending" (Haddad & Hornuf, 2019). The incorporation of artificial intelligence (AI) into e-banking research aligns with earlier research that highlights AI's contribution to improving digital financial systems' efficiency, personalisation, and fraud detection (Chen *et al.,* 2022).

The subjects of study have clearly changed both quantitatively and qualitatively over the course of the three generations. The topics, which were initially generic and had a low rate of repetition, gradually became more complex and in-depth, supporting earlier bibliometric findings that financial research domains tend to diversify as technology advances (Liu *et al.,* 2024). In keeping with previous research that identifies banking and financial services as enduring pillars of the literature on digital finance, these themes recur frequently. Consumer behaviour has also evolved from a general theme into a broader interdisciplinary area that includes trust, satisfaction, adoption behaviour, and digital experience.

The emergence of new subjects like blockchain, cryptocurrency, and mobile payments demonstrates the interdisciplinary character of e-banking research. This trend towards interdisciplinary involvement is also acknowledged in earlier research, particularly in the fields of computer science and information systems. Significantly, the results also imply that e-banking research is dynamic and changes in response to technological, societal, and regulatory developments, supporting the claims of academics who highlight the dynamic co-evolution of financial services and technology. The development of e-banking research can be greatly aided by comprehending how topics have changed over the course of the three generations. While pointing out the necessity for future evaluations to monitor emerging trends like digital currencies, AI-driven banking, and sustainable finance, the results also confirm and expand on earlier research. This study advances a more thorough comprehension of the theoretical and empirical development of e-banking scholarship by placing these findings within the framework of previous research.

8. Conclusion

This study traced the intellectual structure and thematic development of e-banking research using bibliometric techniques. A second wave influenced by online security, trust, and mobile payments, a recent phase dominated by blockchain, cryptocurrency, and artificial intelligence, and early foundations in digital finance and service delivery were the three distinct stages identified by the analysis. The steadily increasing number of publications The interdisciplinary character of current research is highlighted by our findings, along with significant writers and organisations that have influenced the field. Consumer behaviour, digital inclusion, and regulatory issues continue to be major themes, while new fields, particularly blockchain and AI applications, indicate areas for future study. Crucially, we identify deficiencies in cross-regional comparisons and in analyses that concentrate on developing economies, where e-banking's transformative potential is substantial but not fully realised. The results provide value for both scholars and participants. For researchers, the study maps knowledge clusters and identifies underrepresented areas such as AI-driven personalization, blockchain adoption in low-resource contexts, and cross-country analyses of regulatory frameworks. For practitioners and policymakers, understanding these trends supports

evidence-based decision-making, regulatory alignment, and targeted investment in digital banking infrastructure. In summary, this bibliometric study contributes to clarifying the trajectory of e-banking scholarship, documenting its major themes, and identifying promising directions for future interdisciplinary inquiry.

9. Limitations

Depending on the study's particular focus, a global bibliometric analysis of E-banking research may reveal different implications across different dimensions. Nonetheless, take into account the following possible broad implications: accessibility and financial Inclusion. People who lack or have limited access to banking services, especially those living in rural or developing nations, may find it easier to obtain financial services thanks to e-banking. This can empower people and communities and advance financial inclusion. Convenience and Efficiency, users can manage their finances from anywhere at any time with the help of e-banking platforms, which provide 24/7 access to financial services. Both people and companies can benefit from this convenience in terms of time savings and increased productivity. Decreased Costs, when compared to traditional brick-and-mortar banking, e-banking may result in lower transaction costs for both banks and customers. This can increase the efficiency of the financial system as a whole and benefit all parties. Innovation and New Services, the financial industry is driven by e-banking innovation, which results in the creation of new financial services and products like online lending, mobile payments, and individualised financial advice. Economic Growth, at the individual, corporate, and governmental levels, e-banking can foster greater financial inclusion, efficiency, and innovation. It is crucial to recognise some of this study's limitations. Because the analysis was limited to a particular period, it might not have taken into account advancements in e-banking research that occurred after that time. Furthermore, the dataset's composition might have been impacted by the inclusion/exclusion criteria and database choices, which could have introduced bias. Further research endeavours may contemplate broadening the temporal scope and integrating supplementary data sources to augment the exhaustiveness of the examination. A bibliometric analysis could also highlight potential future research directions in E-banking, such as improving financial literacy and digital inclusion to bridge the digital divide. Developing more secure and privacy-conscious E-banking platforms. Understanding the impact of E-banking on traditional banking models and employment. Exploring the ethical implications of E-banking, including algorithmic bias and data ownership. Investigating the role of E-banking in supporting fiscal policy and economic change in initial economies.

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Jyoti Kumari: Conceptualization, Methodology, Formal analysis, Investigation, Writing - Original Draft. Praveen Singh: Validation, Investigation, Writing - Original Draft. Amar Johri: Writing - Review & Editing. Moin Uddin: Writing - Review & Editing. All the authors read and approved the final version of the manuscript.

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Generative AI Declaration

ChatGPT (GPT-5) was used only for English language improvement and content polishing. All scientific content, interpretations, and conclusions were developed and verified by the authors, who take full responsibility for the manuscript.

Data Availability

No new data were generated or analyzed in this study. All information discussed in this review is available within the manuscript and in the cited references.

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Yes

Conflict of Interest

The authors have no conflicts of interest to declare. There is also no financial interest to report. The author certifies that the submission is original work and is not under review at any other publication.

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