

PAPER

Trends and Insights in Financial Inclusion and Mobile Money: A Decade of Bibliometric Analysis (2014–2023)

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ABSTRACT

This study conducts a comprehensive bibliometric analysis to explore research trends in financial inclusion and mobile money over the last decade (2014–2023), using data from the Scopus database. Analyzing 439 publications, this study identifies key trends, influential authors, and leading countries in the field. The analysis, supported by tools such as VOS Viewer, reveals dominant themes such as “financial inclusion,” “mobile money,” and “financial system,” with a particular focus on technological advancements and their regional impacts, especially in developing countries. The findings highlight the growing academic interest in mobile money’s role in promoting economic development and poverty alleviation. Moreover, this study underscores the significant geographical disparities in research output, with developed economies producing the most research. Insights from this analysis provide guidance for policymakers and researchers to support future financial inclusion initiatives. The study concludes by recommending further exploration of under-researched regions and the qualitative impact of mobile money on socio-economic outcomes.

KEYWORDS

financial inclusion, mobile money, bibliometric analysis, Scopus database, VOS viewer

1 INTRODUCTION

Over the past few years, the intersection of mobile money and financial inclusion has garnered significant attention, emphasizing the transformative impact of digital financial services on global economies. [1] illustrates how Kenya’s mobile money revolution has reduced transaction costs and enhanced risk-sharing mechanisms. The [2] underscores the pivotal role of fintech in advancing financial inclusion worldwide. Studies by [3] and [4] emphasize the profound economic effects of mobile banking, particularly in Africa, with Kenya’s M-Pesa system serving as a prime example. Furthermore, [5] reveals the long-term benefits of mobile money in alleviating poverty and promoting gender equality. [6] provide comprehensive overviews of mobile money’s contributions to financial inclusion. The importance

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of these digital pathways is further emphasized by [7], talking about how they help achieve sustainable development objectives. [8] outlines a strategy framework for utilizing digital financial services to improve financial inclusion, while [9] reviews recent impact evidence of such initiatives. Collectively, these studies underscore the critical role of mobile money in fostering financial inclusion and driving economic development.

Even with the substantial amount of research, there are still questions about how academic interest in mobile money and financial inclusion has changed over the last ten years in particular. The method's usefulness in detecting research gaps and trends has been proved by recent bibliometric studies conducted in other domains, such as vocational education. To look at advancements in virtual reality (VR) and augmented reality (AR) in career education, for example, [10] we conduct a bibliometric study, highlighting important research gaps, trends, and obstacles in the use of these technologies. Similarly, [11] examined research trends in virtual reality applications for vocational learning, showing how bibliometric analysis can reveal significant patterns and research priorities. [12] further emphasized how AR enhances motivational design in educational contexts, offering insights into the broader applicability of bibliometric analysis for tracking technological impacts [20], [21] and [22].

Examining articles on mobile money and financial inclusion from 2014 to 2023 statistically is the goal of this project. It makes use of bibliometric analysis, a technique that is especially well adapted to this study as it makes it possible to identify trends, significant writers, and cooperative networks within the industry. This study seeks to bridge the information gap about the development of the academic focus on mobile money and financial inclusion by examining publications spanning over ten years.

The goal of this project is to statistically examine articles on mobile money and financial inclusion from 2014 to 2023. It employs bibliometric analysis, a technique that is particularly well-suited for this study, as it enables the identification of trends, significant authors, and collaborative networks within the industry. This study seeks to bridge the information gap regarding the development of the academic focus on mobile money and financial inclusion by examining publications spanning over ten years.

This study aims to address the following research questions:

1. How has the distribution of publications on financial inclusion and mobile money changed over the past decade?
2. Which journals and authors are most influential in the fields of financial inclusion and mobile money?
3. Which countries lead in productivity in the research areas of financial inclusion and mobile money?
4. What are the main research keywords associated with financial inclusion and mobile money over the past ten years?

This study quantitatively examines mobile money and financial inclusion publications from 2014 to 2023 to thoroughly understand the research landscape. It uses bibliometric analysis, a statistical method to measure and evaluate trends in a specific study area [13], [14]. This approach has been frequently employed to

evaluate academic results in many fields, such as [15], [16], [17], [18], [19], [11], [12], and [13]. Based on an analysis of 439 publications from the Scopus database, [14], [15], [23], [24] and [25] examined the framework, patterns, and current status of research on financial inclusion and mobile money. They identified leading journals and contributors while also depicting the scientific interconnections. In a similar vein, [39], [26], [27], [28], [29], [16] and [17] conducted a quantitative analysis of research articles in the field of Computers and Education. Their study emphasized scientific collaborations, author profiles, and key research topics.

While previous research highlights the transformative role of mobile money, gaps remain in understanding how the academic discourse on this topic has evolved. This study fills that gap by providing a structured, data-driven analysis of publications from 2014 to 2023, focusing on the trends, collaborations, and key contributors in the field of the study. By visualizing the landscape of research, this study also identifies emerging trends and unexplored areas that could inform future research directions.

The novelty of this study lies in its ability to map scientific collaborations and identify influential contributors and research clusters, adding a new layer of insight to existing knowledge. Additionally, the study's findings will guide future research in mobile money by highlighting key areas of focus and the evolving nature of financial inclusion.

2 MATERIALS AND METHODS

This review profiles studies on financial inclusion and mobile money conducted over the past decade using bibliometric and visualization methods. Bibliometric analysis tracks and analyzes studies on a specific topic based on various characteristics [30]. We selected relevant publications from the Scopus database, excluding conferences and proceedings, to ensure high-quality articles.

On June 29, 2024, we searched for English-language articles using keywords related to “mobile money” and “financial inclusion” in the title, abstract, or keywords, using the “Topic” option. Scopus was chosen for its robust tools for visualizing, analyzing, and tracking research outputs, particularly in social science, economics, econometrics, and finance [31], [32], [33].

The decision to rely solely on Scopus for this bibliometric analysis was intentional. While other databases such as Web of Science may seem complementary, they have limitations in this specific field, and there is a risk of redundancy between the two sources. As for Google Scholar, its broader range of articles lacks the stringent quality filters of Scopus, which could introduce varying levels of reliability. To maintain data quality and avoid redundancy, we prioritized Scopus as a trusted source.

To ensure relevance, we manually screened publications according to specific criteria detailed in Table 1. This rigorous process identified 439 publications for further analysis. The inclusion and exclusion criteria are summarized in Table 1, and the analytical research methodology is depicted in Figure 2.

Figure 1 illustrates the structure, indicators, and tools employed in this study. These methods offer valuable insights into the advancements in mobile money and financial inclusion. The analysis also identifies the top academic institutions and authors, making it a valuable resource for future research. Therefore, the findings serve as a comprehensive guide for scholars interested in this field.

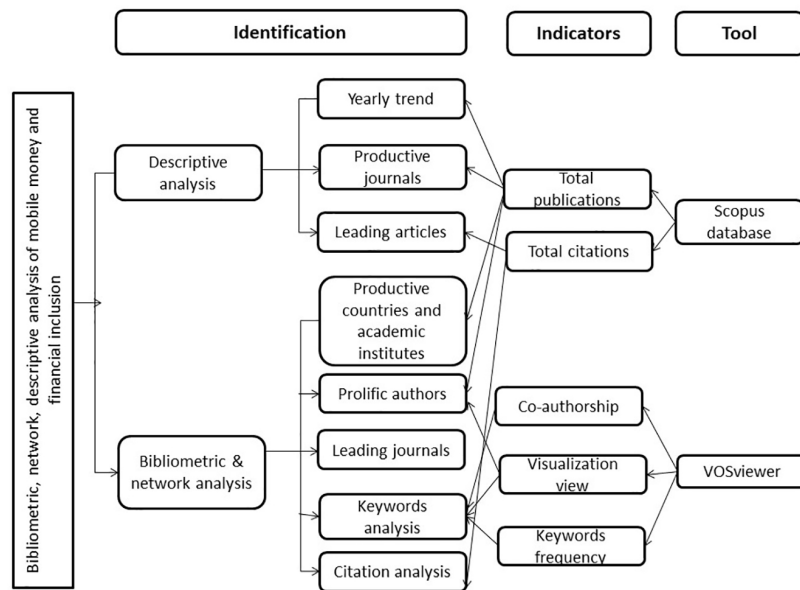


Fig. 1. Analytical flowchart

3 THE BIBLIOMETRIC ANALYSIS

The study used bibliometric analysis to explore various aspects of research on financial inclusion and mobile money. This included identifying the most used keywords, top-cited and published journals, leading countries, international collaborations, keyword relationships, most cited authors, author connections, co-cited journals, and key research areas. Network visualization was done using VOS viewer, a popular tool for visualizing bibliometric networks.

This review has two key objectives: first, to explore the thematic structure of financial inclusion and mobile money on large datasets; second, to identify key topics and trends in the field.

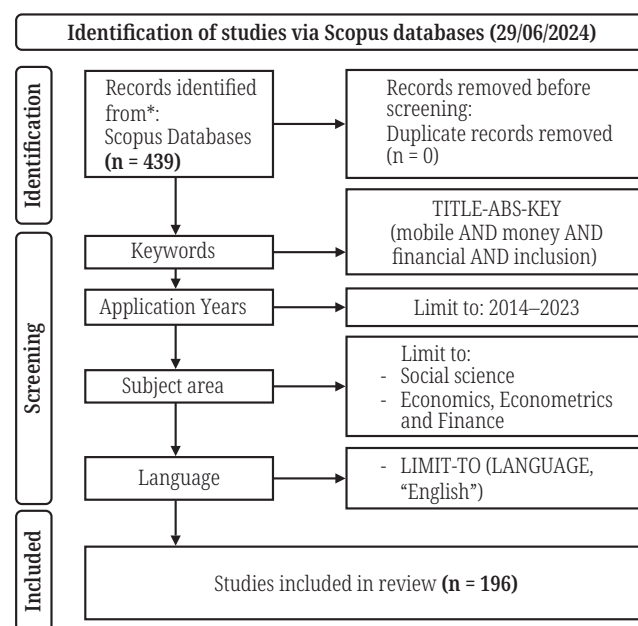


Fig. 2. The PRISMA framework

Table 1. Criteria for data screening: Inclusion and exclusion

Inclusion criteria	Mobile money and financial inclusion
	Financial system, electronic money
Exclusion criteria	Mobile money and financial inclusion in (medical and engineering fields) It is not being used in the financial context.
	Conference papers, non-indexed publications and proceedings papers

4 FINDINGS

This study examines research conducted over the past ten years on mobile money and financial inclusion, discussing the findings based on the research questions addressed.

4.1 Research question 1 (RQ1)

The publication analysis in Figure 3 shows a clear upward trend. From 2014 to 2017, there was modest growth. Significant increases occurred between 2018 and 2020, reflecting the growing recognition of these technologies. From 2021 to 2023, publications rapidly accelerated, driven by technological advancements and the COVID-19 pandemic, emphasizing the need for accessible digital financial solutions. This growth highlights the rising importance of mobile money and financial inclusion.

Distribution of Mobile Money and Financial Inclusion Publications by Year (Last Decade)

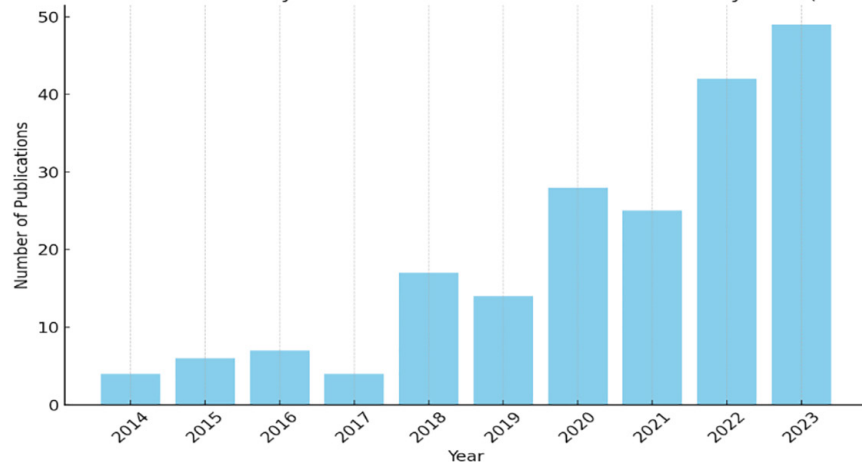


Fig. 3. Distribution of publications by years (2014–2023)

4.2 Research question 2 (RQ2)

The content analysis of the most cited journals, as shown in Table 2, considered factors such as “Total Publications,” “Total Citations,” “Journal Cite Score,” “Most Cited Article,” “Times Cited,” and “Publisher.”

Table 2. The top 10 highly productive journals on mobile money and financial inclusion in the years (2014–2023)

Journal	TP	TC	Cite Score	The Most Cited Article (Reference)	Times Cited	Publisher
Telecommunications Policy	385	4143	10.8	“Reaping digital dividends: Digital inclusive finance and high-quality development of enterprises in China” [34]	62	Elsevier
Cogent Economics and Finance	1056	3116	3.0	“Modeling the impact of green energy consumption and natural resources rents on economic growth in Africa: An analysis of dynamic panel ARDL and the feasible generalized least squares estimators” [35]	20	Taylor & Francis
Sustainability (Switzerland)	55991	381357	6.8	“Chatbots in Education and Research: A Critical Examination of Ethical Implications and Solutions” [36]	125	Multidisciplinary Digital Publishing Institute (MDPI)
Information Technology for Development	135	1519	11.3	“Does digitalization contribute to lesser income inequality? Evidence from G20 countries” [37]	19	Taylor & Francis
International Journal of Social Economics	394	1268	3.2	“Impact of financial inclusion on economic growth: review of existing literature and directions for future research” [38]	16	Emerald Publishing
Review of Development Economics	389	1227	3.2	“Internet use and consumption diversity: Evidence from rural China” [39]	32	John Wiley & Sons
World Development	1212	15447	12.7	“Does environmental regulation increase domestic value-added in exports? An empirical study of cleaner production standards in China” [40]	40	Elsevier
Cogent Social Sciences	1093	2328	2.1	“Role of teachers in reinforcing students cultural and heritage awareness at Abu Dhabi schools to meet global challenge” [41]	17	Cogent OA
Global Social Welfare	118	387	3.3	“Agriculture Productivity and Farmers’ Health in Tanzania: Analysis on Maize Subsector” [42]	15	Springer Nature
International Journal of Financial Studies	414	1545	3.7	“Islamic Finance in the Era of Financial Technology: A Bibliometric Review of Future Trends” [43]	24	Multidisciplinary Digital Publishing Institute (MDPI)

Note: TP = Total publications, TC = Total citations.

Table 2 highlights the top journals in mobile money and financial inclusion research. “Telecommunications Policy” leads with 385 publications and 414 citations, followed by “Cogent Economics and Finance” with 1,056 publications and 311 citations. “Sustainability (Switzerland)” stands out with 55,991 publications and 381,357 citations.

RQ2 aimed to identify the most prolific writers within the discipline. The evaluation considered “total publications,” “h-index,” “citations,” “affiliation,” and “country.” Simplice Asongu from Cameroon leads with 529 publications, an h-index of 61, and 5,636 citations. Uganda’s George Bongomin follows with 34 publications, a 13 h-index, and 542 citations. Hassan Ahmad from the UK ranks third with 32 publications, a nine h-index, and 317 citations. Detailed information on top authors is in Table 3.

Table 3. List of 15 most prolific authors in the research area of mobile money and financial inclusion, highlighting their contributions and impact in terms of publications, h-index, and total citations

	Author	Year of 1st Publication	TP	h-Index	TC	Current Affiliation	Country
1	Simplice, Asongu Anutechia	2011	529	61	5,636	African Governance and Development Institute (AGDI)	Cameroon
2	Okello Candiya Bongomin, George	2016	34	13	542	Makerere University Business School	Uganda
3	Ahmad, Hassan Ahmad	2009	32	9	317	Loughborough University,	United Kingdom
4	Odhiambo, Nicholas M.	2002	313	38	3,986	University of South Africa	South Africa
5	Chamboko, Richard	2016	12	7	57	The World Bank Group	United States
6	Matsumoto, Tomoya	2006	25	12	642	Otaru University of Commerce	United States
7	Ackah, Charles GodfredInfo	2011	35	12	353	College of Humanities, University of Ghana	Ghana
8	Apiors, Emmanuel Kwablah	2016	6	4	57	University of Energy and Natural Resources	Ghana
9	Simplice, Asongu Anutechia	2011	529	61	5636	African Governance and Development Institute (AGDI)	Cameroon
10	Atta-Aidoo, Jonathan	2023	5	2	16	University of Science & Technology	Ghana
11	Avortri, Christine	2021	3	3	21	CSIR-Institute for Scientific and Technological Information	Ghana
12	Biekpe, Nicholas B.	1998	77	25	2076	University of Cape Town Graduate	South Africa
13	Bizoza, Saidi	2023	2	1	1	International Institute of Tropical Agriculture (IITA)	Burundi
14	Bokpin, Godfred Alufar	2008	65	20	1298	University of Ghana	Ghana
15	Cassimon, Danny P.	2001	56	16	930	Universiteit Antwerpen	Belgium

Note: TP = Total publications, TC = Total citations.

Table 3 lists the top 15 researchers in mobile money and financial inclusion. Simplice Asongu from Cameroon leads with 529 publications, a 61 h-index, and 5,636 citations. George Bongomin from Uganda ranks second with 34 publications, a 13 h-index, and 542 citations, followed by Hassan Ahmad from the UK, with 32 publications, a nine h-index, and 317 citations. Notably, the top three maintain their rankings when sorted by h-index. Further details on other key authors are included in the table.

4.3 Research question 3 (RQ3)

The research ranked nations according to their overall number of publications and the most prolific academic institutions within each country. The findings of this study are shown in Table 4 and Figure 4.

Table 4. List of 15 most productive countries in the domain, specifying the total number of publications and the leading academic institution for each country

Rank	Country	TP	Most Productive Academic Institution	Rank	Country	TP	Most Productive Academic Institution
1	South Africa	37	University of South Africa	9	Germany	8	University of Kiel
2	United States	31	World Bank	10	Japan	8	National Graduate Institute for Policy Studies
3	United Kingdom	28	University School of Business and Economics	11	Nigeria	7	Lagos Business School, Pan-Atlantic University, Ajah
4	India	17	Management Development Institute	12	Belgium	5	Vrije Universiteit Brussel
5	Ghana	16	Network for Socioeconomic Research and Advancement (NESRA)	13	Cameroon	5	United Nations Development Programme
6	France	10	Université Côte d'Azur	14	China	5	University of Finance and Economics
7	Uganda	9	University Business School	15	Tanzania	5	The Institute of Finance Management
8	Australia	8	University of New England				

Note: TP = Total publications.

The Table above and Figure 4 showcase the 15 most prolific countries in mobile money and financial inclusion research, highlighting the distribution of topics across key regions and institutions. The top three countries are South Africa, with 37 publications from the University of South Africa, followed by the United States, with 31 publications from the World Bank, and the United Kingdom, with 28 publications from the University School of Business and Economics. While many countries exhibit broad interest in various related topics, some focus on specific areas. Additional information on other leading countries, including their publication counts and institutions, is detailed in Table 4.

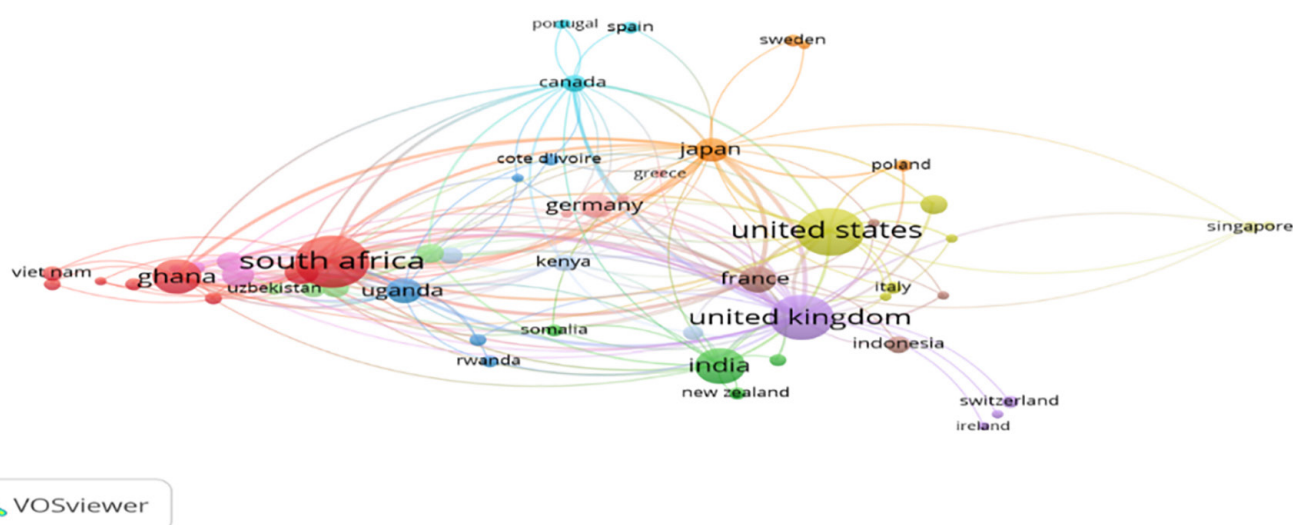
**Fig. 4.** Analysis results of productive countries in mobile money and financial inclusion research

Figure 4 presents the analytical results identifying the most productive countries in mobile money and financial inclusion research, showing that institutions within these countries focus on specific topics within the field. The leading country is South Africa, followed by the United States and the United Kingdom. Other prominent countries in the top 15 include India, Ghana, France, Uganda, Germany, Japan, Nigeria, Belgium, Cameroon, China, and Tanzania. The analysis indicates that institutions within the same countries, regions, and continents with similar research interests often collaborate more frequently in the areas of mobile money and financial inclusion.

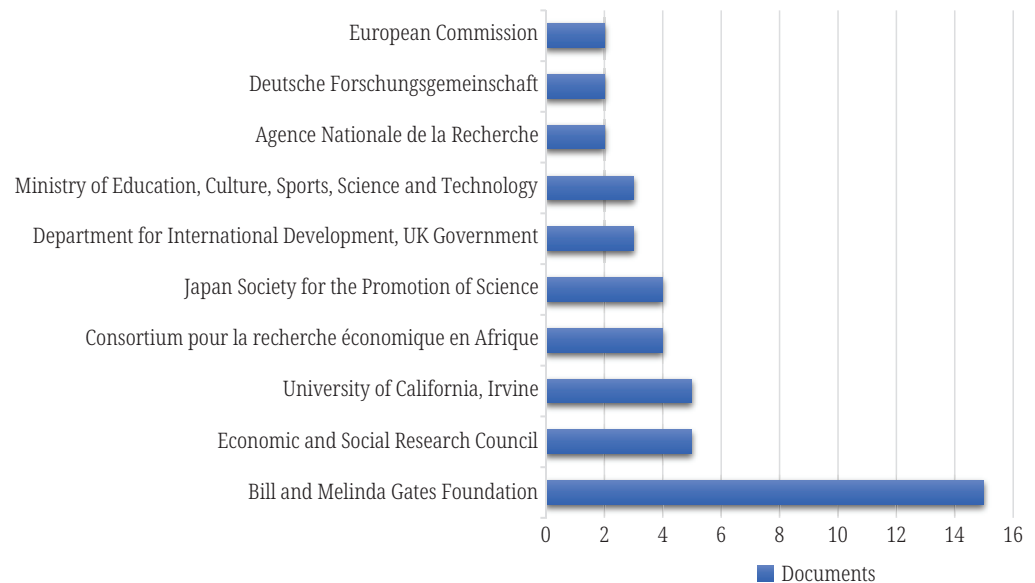


Fig. 5. Documents by funding sponsor

The funding chart (see Figure 5) and Table 4 of the most productive nations contribute to addressing regional inequities and discrepancies in institutional support and financing in research on financial inclusion and digital financial services.

According to the table, South Africa, the United States, and the United Kingdom have the highest research output. However, emerging nations such as Ghana, Nigeria, and India emerge, demonstrating the geographic variety of financial inclusion research. This distribution demonstrates that financial inclusion is a worldwide issue affecting both emerging countries and industrialized ones.

Nevertheless, there are clear disparities in terms of productivity between regions. African nations, especially South Africa and Ghana, lead in this domain, likely due to the importance of solutions like M-Pesa in Kenya and the pressing need for financial inclusion. On the other hand, regions such as Latin America or parts of Asia are less represented, indicating that these areas may be underfunded or underrepresented in research efforts.

The chart on top funders reveals key organizations such as the “Bill and Melinda Gates Foundation” and the “Economic and Social Research Council” (ESRC) as major players in financing research on financial inclusion. This highlights the significant role private foundations and international public bodies play in supporting research, especially in developing countries.

However, there are notable differences in how countries receive funding. African nations, despite their high research productivity, seem to rely heavily on external support from international foundations or development programs like the

World Bank. In contrast, countries such as the United States and the United Kingdom benefit from more robust national funding from well-established universities and public organizations.

Incorporating this data offers a more nuanced understanding of the global research dynamics. Highly productive countries that depend on external funding (such as many African nations) may face challenges in maintaining research continuity if international funding dries up. On the other hand, wealthier nations with strong institutional support may have an advantage in terms of stability and growth in this field of research.

4.4 Research question 4 (RQ4)

Using the “Co-occurrence” method for bibliometric analysis and focusing on “Author Keywords,” we identified 792 distinct keywords. This is illustrated in Figure 6.

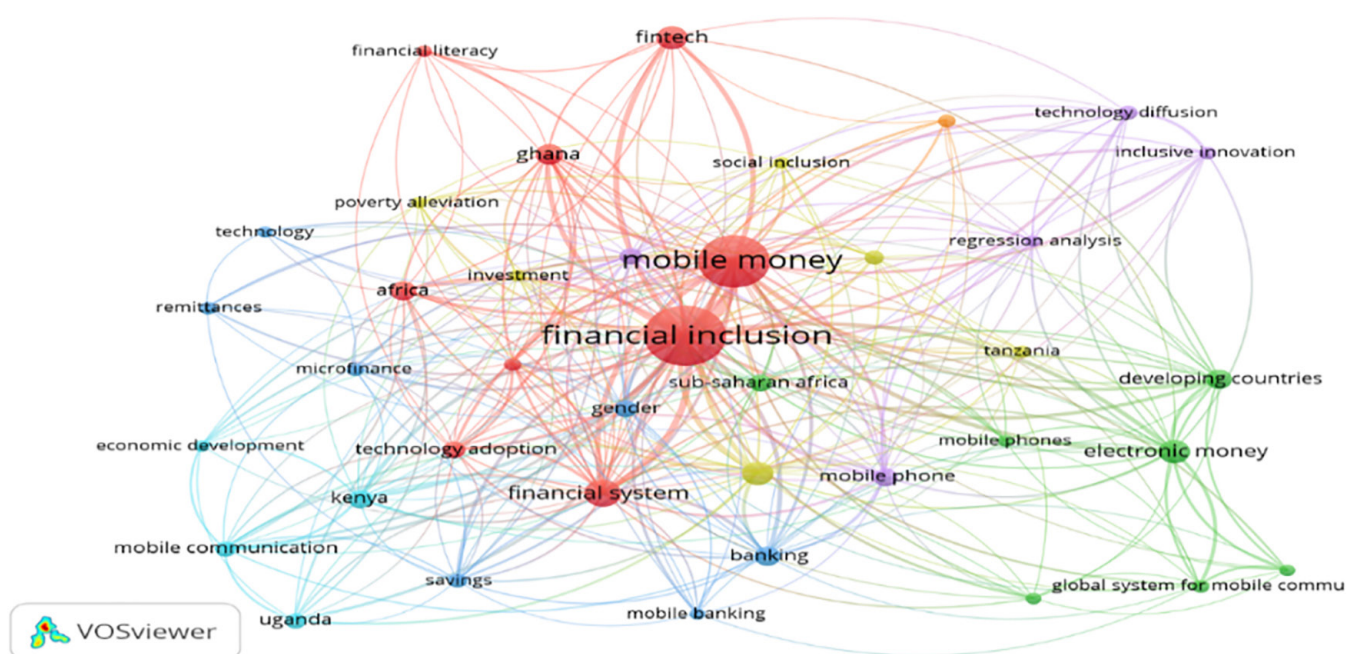


Fig. 6. Analysis outcomes of publications by keywords

In Figure 6, the keyword co-occurrence network analysis reveals that “financial inclusion” (128 occurrences, 397 total link strength) and “mobile money” (96 occurrences, 312 total link strength) are the most dominant themes in the literature, indicating their significant impact and frequent discussion. Other notable keywords include “financial system” (27 occurrences, 135 total link strength), “electronic money” (20 occurrences, 113 total link strength), and “microfinance” (seven occurrences, 25 total link strength), highlighting their important roles in the discourse.

Keywords such as “Sub-Saharan Africa,” “social inclusion,” “economic development,” and “digital financial services” show numerous connections, reflecting comprehensive studies in these areas. The strong associations and high occurrences of these keywords suggest a focused interest in the technological and regional aspects of financial inclusion, especially in developing countries. The relatively lower

occurrences of keywords such as “gender” and “savings” indicate potential research gaps that could be explored further.

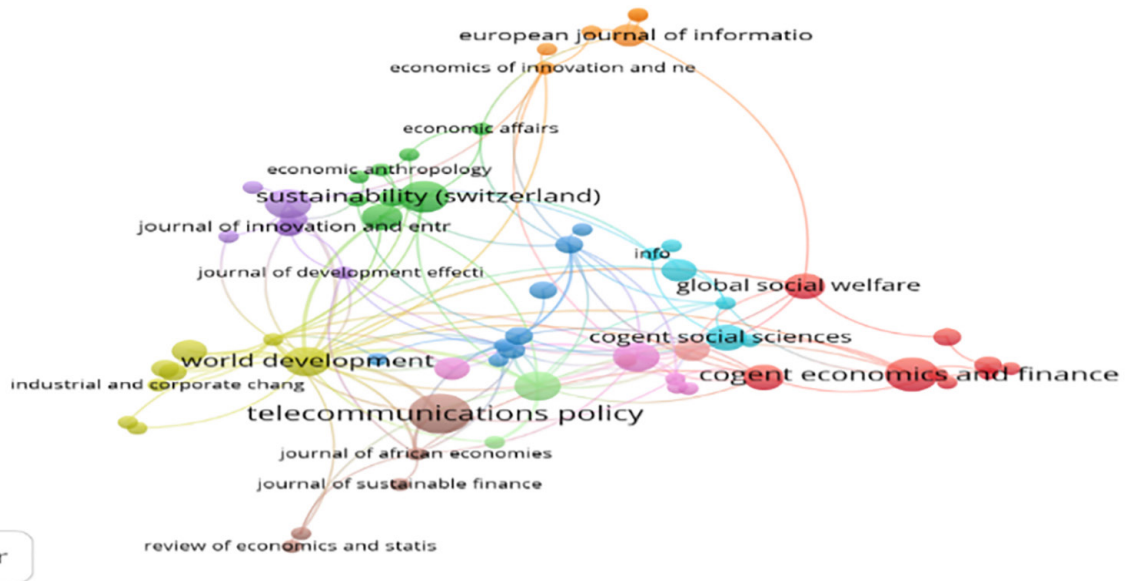


Fig. 7. Highly cited journals

When reviewing Figure 7, the following highlights the top four journals ranked by citation count: First, “Telecommunications Policy” with the article titled “Reaping digital dividends: Digital inclusive finance and high-quality development of enterprises in China,” which has 62 citations. Second, “Cogent Economics and Finance” with the article titled “Modeling the impact of green energy consumption and natural resources rents on economic growth in Africa: An analysis of dynamic panel ARDL and the feasible generalized least squares estimators,” which has 20 citations. Third, “Sustainability (Switzerland)” with the article titled “Chatbots in Education and Research: A Critical Examination of Ethical Implications and Solutions,” which has 125 citations. Finally, “Information Technology for Development” with the article titled “Does digitalization contribute to lesser income inequality? Evidence from G20 countries,” which has 19 citations. Figure 7 displays the findings of the citation study of the most cited journals (Items = 66, Cluster = 11, Links = 144, and TLS = 174).

5 DISCUSSIONS

This review, based on scopus research papers, provides insightful information about mobile money and financial inclusion by using bibliometric and content analysis methods. The trend analysis shows a growing interest in the field, positioning it as a promising area for future research. This aligns with [44], who emphasize the role of digital financial services, particularly mobile money, in advancing financial inclusion and promoting economic growth. Similarly, [1], highlighted mobile money’s significant contribution to poverty reduction in Kenya by expanding financial access.

The analysis of publishing sources shows the research is largely interdisciplinary, with a focus on technology’s role in financial inclusion.

This is consistent with [6], who noted mobile technology’s transformative impact in developing countries, and [4], who highlighted its importance in Africa, especially in South Africa.

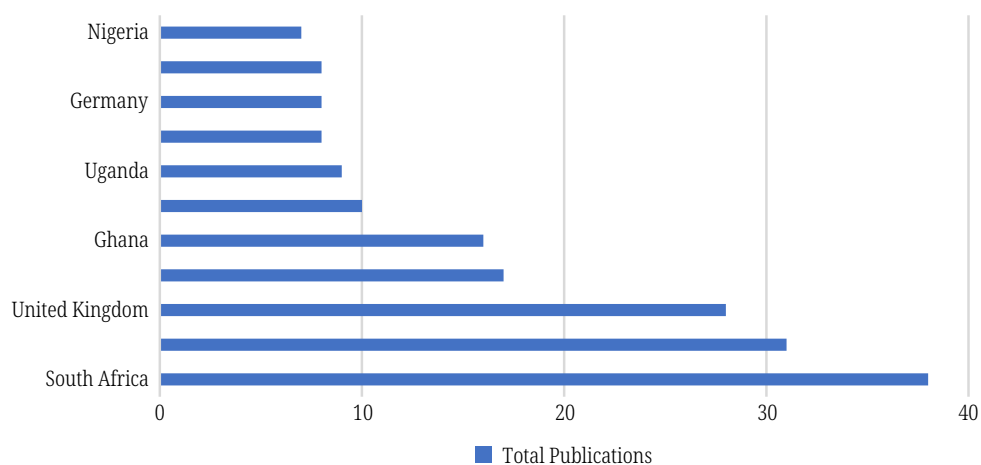


Fig. 8. Country distribution and total publications

Figure 8 reveals disparities in research output, with South Africa leading (38 documents), followed by the US (31) and the UK (28). This trend aligns with [45], who identified Sub-Saharan Africa, particularly South Africa, as a leader in mobile money innovation. In contrast, countries such as Nigeria, Japan, Germany, and Australia contribute fewer than 10 documents, reflecting differences in research focus, funding, and infrastructure, as discussed by [46].

The prominence of South Africa, the US, and the UK indicates a strong emphasis on technological solutions to financial exclusion, as noted by [47].

Meanwhile, lower contributions from other countries suggest opportunities for building research capacity. As [48] argues, increasing funding and infrastructure in underrepresented regions could create a more balanced global research landscape.

International collaboration is key to advancing research, particularly in regions such as Sub-Saharan Africa [49]. Encouraging partnerships between high-output countries such as South Africa and those with fewer resources, such as Nigeria, could foster knowledge-sharing and innovation. [50] also highlight the importance of collaborative networks in boosting research productivity, especially in developing regions.

A more balanced collaborative model could offer fresh insights into how mobile money systems adapt to various socio-economic contexts. Structural barriers, such as limited internet access and weak infrastructure, may prevent countries such as Nigeria from fully leveraging mobile financial services [51].

While this study’s findings align with previous research on the role of mobile technology in expanding financial access [52], it uniquely provides a global perspective and highlights the interdisciplinary nature of the field.

6 CONCLUSION AND IMPLICATIONS

This study offers a comprehensive bibliometric analysis of the past decade’s literature on mobile money and financial inclusion, highlighting a surge in academic interest post-COVID-19. Key contributors such as Simplice Asongu

Anutechia and George Okello Candiya Bongomin, along with leading journals such as *Telecommunications Policy*, *Cogent Economics and Finance*, and *Sustainability (Switzerland)*, have driven progress in the field. However, research output remains concentrated in regions such as South Africa, the US, and the UK, reflecting potential regional disparities.

The dominant themes, “financial inclusion” and “mobile money,” underscore the importance of technology, especially in developing countries. These findings are valuable for policymakers and practitioners aiming to enhance financial inclusion, emphasizing the need to promote research in underrepresented regions and leverage mobile technologies to bridge financial gaps.

A key limitation of the study is the reliance on Scopus data, which excludes research from other databases that may offer additional regional insights. Future research should consider qualitative methods and alternative data sources to provide a more holistic understanding of global financial inclusion and the role of financial technologies.

By addressing these gaps, this study helps lay the groundwork for more balanced research and practical applications, enabling scalable and sustainable financial inclusion efforts globally.

7 LIMITATION

This study’s limitations include its reliance on the Scopus database, potentially missing relevant publications in regional or less prominent journals. The analysis covers publications from 2014 to 2023, excluding recent developments. The focus on bibliometric analysis means qualitative aspects are not deeply explored, and the exclusion of conference papers and non-indexed publications might omit significant research contributions. Despite manual screening efforts, human error or subjective bias may still influence the selection process. Acknowledging these limitations allows future research to address these gaps and build on this study’s foundation.

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