

A BIBLIOMETRIC ANALYSIS OF E-PAYMENT SYSTEMS AND THEIR IMPACT ON FINANCIAL INCLUSION

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Abstract

Purpose: This study examines the role of e-payment systems in promoting financial inclusion by enhancing accessibility, affordability, and convenience in financial transactions.

Methodology/Design/Approach: A bibliometric analysis was conducted using data from Scopus and Dimensions to identify influential authors, major themes, and collaborative research trends related to e-payment systems and financial inclusion.

Findings: The findings indicate a growing scholarly interest in e-payment technologies such as mobile wallets, online banking, and contactless payments. These systems contribute significantly to financial inclusion by reducing reliance on traditional banking and enabling underserved populations to access formal financial services. However, challenges, including digital literacy gaps, cybersecurity risks, and infrastructural limitations, remain critical barriers.

Implications: The study highlights the importance of supportive regulatory policies, technological innovation, and cross-sector collaboration to maximize the benefits of e-payment systems and ensure inclusive financial participation.

Originality/Value: This study provides a comprehensive bibliometric overview of e-payment systems and financial inclusion while identifying future research directions, particularly concerning AI, blockchain, and regional disparities in digital financial adoption.

Keywords: Accessibility, e-payments, fintech, inclusion, innovation

JEL Classification: D14, E42, G21, L86, O16

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Introduction

The rapid advancement of technology has significantly transformed the financial landscape, particularly through the adoption of electronic payment systems (e-payment). These systems are digital platforms that enable the transfer of funds between parties without the need for physical cash. E-payment systems encompass a range of technologies, including mobile wallets, online banking, digital currencies, and QR-code-based solutions, which have made financial transactions more accessible, efficient, and secure (Kumar et al., 2021; Shakya et al., 2024).

Financial inclusion, defined as the ability of individuals and businesses to access affordable financial products and services, is a crucial driver of economic growth and poverty alleviation. Despite global efforts, an estimated 1.4 billion adults remain unbanked, with a majority in developing regions (World Bank, 2021). E-payment systems have emerged as a potential solution to bridge this gap, offering underserved populations access to formal financial services through digital means (Chatterjee et al., 2022; Sharma & Karki, 2025).

The integration of e-payment systems with financial inclusion strategies has shown promise in addressing the challenges faced by the unbanked. By reducing reliance on physical infrastructure and lowering transaction costs, these systems facilitate broader access to banking services, improve transparency, and foster economic empowerment (Agyekum et al., 2020). However, despite their potential, e-payment adoption remains uneven, influenced by factors such as digital literacy, infrastructure limitations, and socio-economic barriers.

Financial inclusion is the cornerstone of sustainable economic development. It ensures that individuals, especially in marginalized communities, have access to essential financial services such as savings accounts, credit, and insurance (United Nations, 2022). Traditional banking models, reliant on physical branches, often fail to serve remote and low-income populations due to high operational costs and limited reach. E-payment systems address these challenges by providing low-cost, scalable solutions that extend financial services to underserved regions (Kebede & Sinha, 2021).

While e-payment systems are increasingly recognized for their role in enhancing financial inclusion, their adoption is influenced by various factors, including regulatory frameworks, technological infrastructure, and cultural acceptance. Understanding these dynamics is critical to maximizing their potential for social and economic impact. This research explores the intersection of e-payment systems and financial inclusion, analyzing their impact, challenges, and opportunities for promoting equitable financial access.

In the current scenario, while e-payment systems are growing rapidly in urban areas, their penetration in rural and low-income segments remains limited. This disparity highlights the need for targeted strategies to ensure inclusive adoption and equitable access to financial services.

The motivation for this research lies in the transformative potential of e-payment systems to address global financial inequality. The increasing availability of mobile phones and internet connectivity presents a unique opportunity to extend financial services to the unbanked. However, the uneven adoption and persistent barriers highlight the need for deeper understanding and strategic interventions.

By investigating the impact of e-payment systems on financial inclusion, this research aims to contribute to the global efforts of poverty reduction and economic empowerment through technology-driven solutions. This study seeks to fill these gaps by evaluating the impact of e-payment systems on financial inclusion while providing actionable insights for policymakers, financial institutions, and technology providers.

This study aims to bridge the gap in existing literature by conducting a bibliometric analysis to examine trends and insights related to the role of e-payment systems in enhancing financial inclusion. Key factor such as socio-economic benefits on e-payment adoption for underserved populations. This study seeks to analyze the barriers to the adoption of e-payment systems and recommend solutions and evaluate the effectiveness of regulatory frameworks in facilitating e-payment integration.

This study holds significant implications for various stakeholders such as policymakers, financial institutions and development organizations. Ultimately, the study contributes to the broader agenda of sustainable development by addressing the financial needs of underserved populations through technology-driven solutions.

Literature Review

Digital wallet and their impact on financial inclusion reviews that how people perceive and adopt new information systems and technologies and how this adoption affects financial inclusion and provides the understanding of the current state of research on digital wallet acceptance and financial inclusion, and to identify any gaps or areas for further investigation. Arner et al. (2016) found that new start-ups and established technology company have begun to sell financial products and services directly to business and the general public, as well as to banks, since 2008, in what we refer to as FinTech 3.0. The new era since 2008 has been defined not by the financial products and services offered but by who offers them digitally. It is a technological development led by FinTech startups that are not only enhancing financial services but also competing with or even replacing traditional banks in the provision of financial services by delivering financial services via FinTech products and services such as mobile wallets, payment apps, cryptography, rob advisors (which use algorithms and surveys to enable investors to build portfolios) and crowd funding (Karki et al., 2025; Makina, 2019). These findings may reflect the use and acceptance of FinTech in banking sector.

Second, researchers have investigated how digital wallet effectiveness is associated with financial performance. For example, digital wallet is defined by Wadhera et al. (2017) as a form of smart phone application that merges a physical wallet, money, payment cards, and other cards allowing users to utilize all of these cards using simply a smart phone using Near Field Communication (NFC) technology (Palumbo & Dominici, 2015). According to Wadhera et al., there are four types of wallets based on reload ability, linkage with the bank, and cash withdrawal option Scott-Briggs (2020) concluded that the world of mobile wallet and more merchants are beginning to accept mobile payments. It showed that digital wallet has been becoming one of the tools to effective financial inclusion. In Nepal, the concept of digital payment service providers began with Nabil Bank's issuance of a credit card in 1990. Kumari bank pioneered online banking in Nepal. After F1 Soft International launched eSewa in 2009, the concept of digital/mobile wallets was first introduced and transformed the concept of digital payment. Since the advent of eSewa, some of the most popular providers in Nepal include ConnectIPS, eSewa, Khalti Digital Wallet, IME Pay, and Prabhu PayFonepay. Utility payments (electricity, water bills), airline ticketing, movie ticketing and so on are the most common uses for digital payment systems. These providers offer a range of services, including utility payments, bill payments for mobile and landline devices, and ticket purchases for airlines and movies. These providers require both a merchant account (for the seller) and a user account (for the buyer) to facilitate transactions, and they offer various security measures, such as PIN and biometric authentication, to protect against unauthorized use. In order to transact large amounts, users must undergo KYC (know your customer) verification, which typically involves providing a personal identity card, such as a citizenship card. These providers also offer various rewards and cashback incentives to encourage customers to use their services (Timsina, 2022). Because of the requirement to connect the services of mobile service providers

and financial institutions that operate within the legislation of that nation, each country provides its own form of mobile wallet (Shaw, 2014).

E-banking services are being deployed rapidly across emerging markets as a key tool to further the goal of financial inclusion. Hussien and El Aziz (2013) stated that rapid growth in the e-banking services has led to increased access for the less privileged and disadvantaged population to affordable financial services not only within but also across the borders. The integration of banking technologies with mobile technologies that have much wider penetration hold new promise of financial inclusion for the mass. Nwudeet al. (2020) stated that e banking transactions have increased at a rapid pace for the success of financial inclusion. Thus, the rapid growth of e-banking services user has made an important platform for extending banking services. The affordability of e-banking services means e-banking services is a useful avenue towards increased financial inclusion, making it is important in countries where financial inclusion is high or where people are informally served (Casaloet al., 2008). The efficiency of cashless payments channel significantly encourages the use of financial products and services. The desire to own bank account and excessive digital payments charges have significant influence on financial inclusion. E-banking payments have enhanced equal access and use of financial products and services (Eze and Markjackson, 2020). Ozili (2018) observed that digital finance has a positive effect on financial inclusion in emerging and advancing economies. According to Lumsden (2018), implementing e- banking financial systems can increase financial inclusion and improve economic development. E-banking is a powerful instrument that banks can employ to drive financial inclusion because of its convenience and cost effectiveness (Bizahet al., 2013). Digital financial services can be more convenient and affordable than traditional banking services. It enables low-income and poor people in developing countries to save and borrow in the formal financial system, earn a financial return, and smooth their consumption.

In the context of Nepal, Dangol and Humagain (2020) concluded financial innovation and quality of financial services are the significant determinants of financial inclusion. Financial literacy plays a moderating role between financial innovation and financial inclusion. The study revealed that the tendency of higher level of financial inclusion was influenced by gender, educational level and monthly income and internet banking. Many countries have introduced comprehensive measures to improve access to and usage of tailored financial services. Greater financial inclusion is achieved when all economic activities and segments of the society have access to financial services with ease and at minimum cost. According to Pant (2016), most of the measures could not be executed to the degree desired due to problems of low financial literacy, paucity of infrastructural facilities as well as inadequate technology-based facilities. Likewise, Simkhada (2013) found that co-operative model should receive increased attention in Nepal, allowing existing cooperatives to be strengthened and more cooperatives to be established, reaching more remote rural communities. The digital finance improves the services provided by banking and financial institutions which plays positive role in encouraging financial accessibility. Likewise, Rana (2016) stated those consumers are interested in electronic banking services because of ease and time saving. Increase in use of internet banking services has also led to increase in the number of customers. The study also stated that people are encouraged to engage in banking and financial institutions due to increase in technology and research.

Lastly, a few studies have examined the specific activities of Fintech on financial inclusion. Shaw (2014) examined the factors that influence consumers to adopt the mobile wallet. Similarly, Rathore (2016) and Oliveira et al. (2016) revealed that compatibility, perceived technology security, performance expectations, innovativeness and social influence have a significant direct and indirect impact on the adoption of mobile payment systems as well as individuals' intentions to recommend them. Ridaryanto et al. (2019) analyzed the influence of trust, social influence and promotion on the intention to use e-wallets and revealed that trust and promotion had a substantial

effect on e-wallet intention. However, they did not found effect of social influence on the intention to use an e-wallet.

Research Methods

This study will employ a bibliometric analysis approach to analyze the impact of financial inclusion on e-payment systems. The research will focus on articles, studies, and academic papers published in reputable databases such as dimensions. The selection criteria will include peer-reviewed articles published in the last 10 years, focusing on digital finance and customer satisfaction.

The research utilizes Bibliometric software to analyze various aspects of the field. Citation analysis helps identify the most influential papers and authors, while co-citation analysis examines the relationships between key studies and recurring research topics. By analyzing keyword frequency, the study highlights common themes that dominate discussions in the literature. Additionally, network analysis provides a visual representation of connections between authors, journals, and institutions, offering insight into the collaborative nature of research in this area.

This study employs a bibliometric analysis using the **Dimensions** database.

Relevant articles were selected based on the following criteria:

- Keywords: ("e-payments" OR "inclusion" OR "accessibility") AND ("innovation") AND ("fintech")
- Document type: Peer-reviewed articles
- Publication period: 2015-2024
- Open-access availability

Data was extracted in CSV format from reputable academic databases such as Scopus and Dimensions and analyzed using VOSviewer and Biblioshiny (R programming package). Citation analysis identified influential authors and research trends, while network analysis visualized collaboration patterns.

The results of the bibliometric analysis will be presented using visualizations like network maps and graphs, highlighting the evolution of research trends, the impact of key authors, and the global discourse on consumer spending behaviour in digital payments. Ethical considerations will be adhered to by properly citing all sources of data and ensuring that the analysis is conducted transparently and objectively.

The detailed process, as suggested by Donthu et al. (2021), is explained below.

The methodology consists of the following steps:

Database Selection:

Data was retrieved from Scopus and Dimensions, ensuring high research credibility.

Search Keywords:

The search was performed using combinations of terms such as “E-payments”, “Inclusion”, “Accessibility”, “Innovation”, “Fintech”.

Filters Applied:

The study focused on peer-reviewed articles from 2016 to 2024, prioritizing open-access sources.

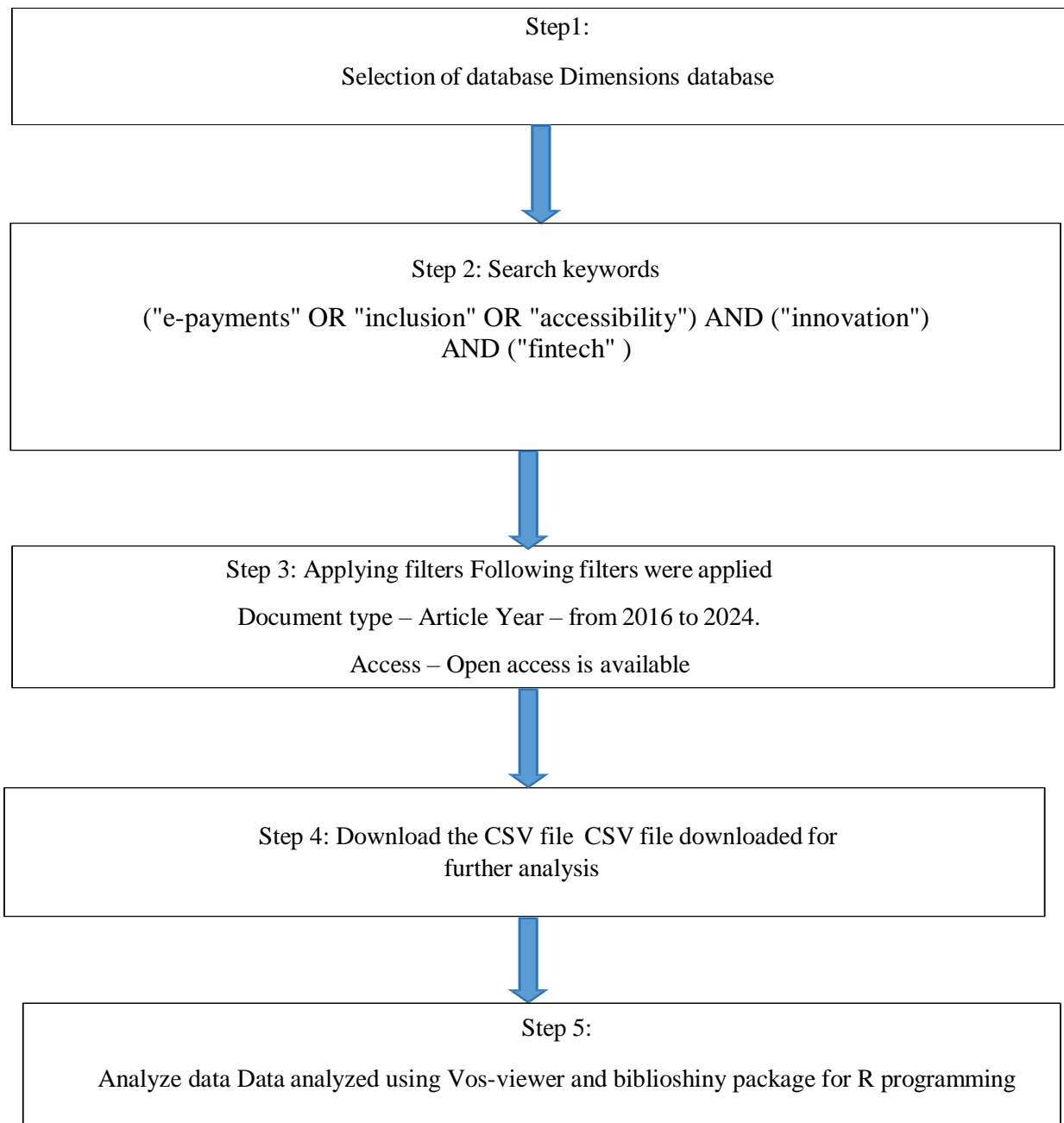
Data Extraction:

Data was downloaded in CSV format and analyzed using bibliometric tools like VOS viewer and Biblioshiny.

Analysis Techniques:

Citation analysis, co-authorship mapping, and keyword trend analysis were used to identify patterns in digital payment psychology research.

Figure 1
Steps in bibliometric analysis



Data Analysis

Main information

The table provides a detailed overview of bibliometric data spanning from 2016 to 2025, encompassing 348 sources and 494 documents. The annual growth rate of 29.15% indicates a rapid increase in publication output, with documents having an average age of 2.59 years, suggesting a focus on recent research. On average, each document has been cited 11.86 times, reflecting their impact. The dataset includes 52 Keywords Plus and 52 author-provided keywords, highlighting the main themes of the research. References data is not provided, which might indicate it is not applicable or missing.

Table 1

Information Regarding the Data

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	2016:2025
Sources (Journals, Books, etc)	348
Documents	494
Annual Growth Rate %	29.15
Document Average Age	2.59
Average citations per doc	11.86
References	0
DOCUMENT CONTENTS	
Keywords Plus (ID)	52
Author's Keywords (DE)	52
AUTHORS	
Authors	1222
Authors of single-authored docs	117
AUTHORS COLLABORATION	
Single-authored docs	126
Co-Authors per Doc	2.62
International co-authorships %	7.49
DOCUMENT TYPES	
article	424
chapter	11
monograph	1
preprint	51
proceeding	7

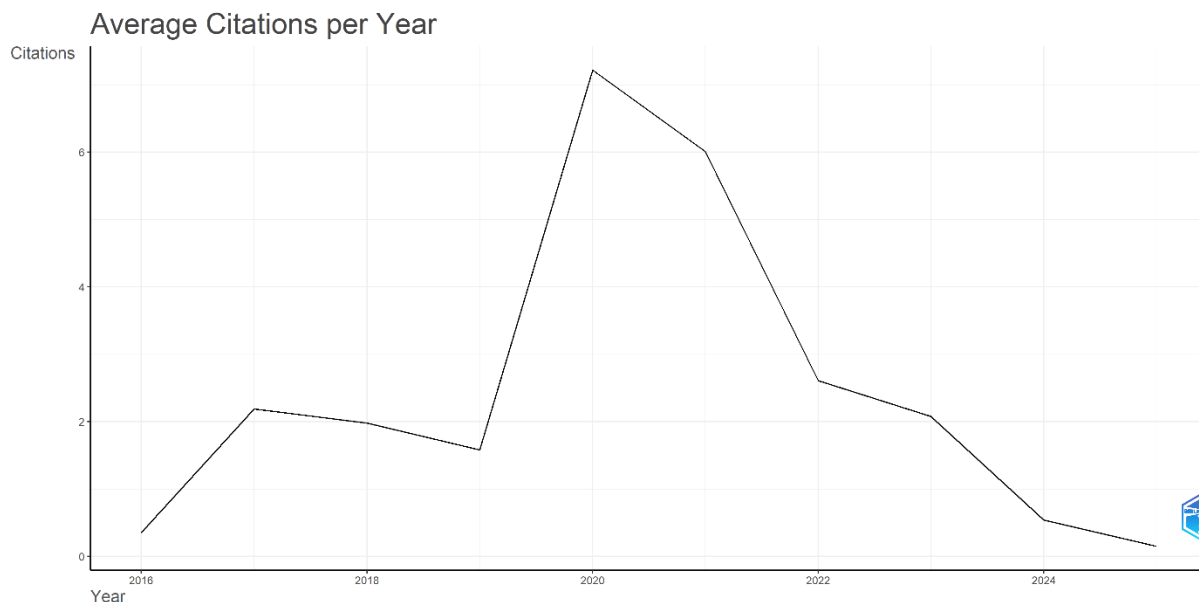
The dataset involves 1,222 authors, with 117 authors contributing single-authored documents. Collaboration is moderate, with an average of 2.62 co-authors per document, and international co-authorships make up 7.49% of the total. The majority of documents are articles (424), followed by preprints (51), book chapters (11), proceeding papers (7),

and one monograph. This summary underscores the rapid growth of the field, the level of collaboration, and the types of documents being produced, providing valuable insights into the research dynamics over the specified period.

Average Citation per year

Figure 2

Average citation per year



It lists specific years (2018, 2019, 2020, 2022, and 2024) but does not include the corresponding citation values. Typically, such a chart would illustrate how the average number of citations per document varies over these years, highlighting trends in the impact or influence of research outputs.

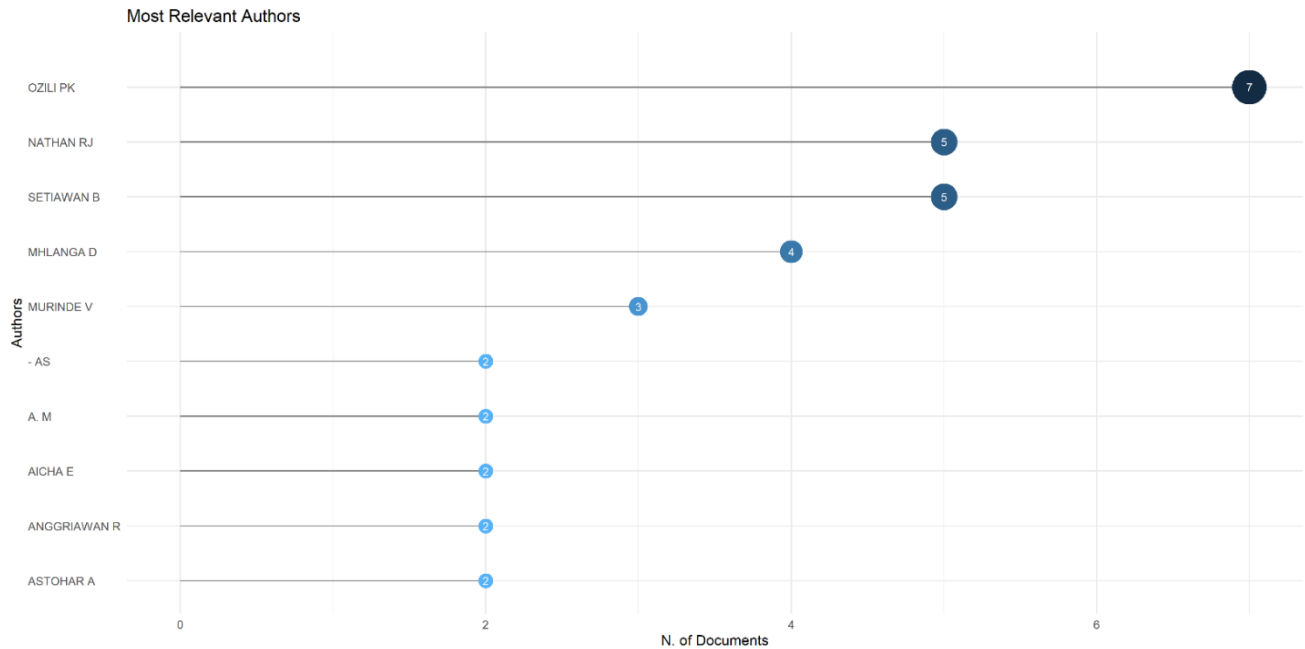
In the graph, we can see a line or bar plot where the x-axis represents the years and the y-axis represents the average number of citations. Peaks or troughs in the graph would indicate years with higher or lower citation rates, respectively. This information is crucial for understanding the temporal dynamics of research impact, identifying periods of increased scholarly attention, and assessing the long-term influence of publications within a specific field.

Most Relevant Authors

This section lists several authors, with OZILI PK and NATHAN RJ being prominently mentioned. The content suggests that these authors are among the most relevant in the dataset, likely based on their contributions to the field, such as the number of documents they have published or their influence measured by citations.

Figure 3

Most relevant authors



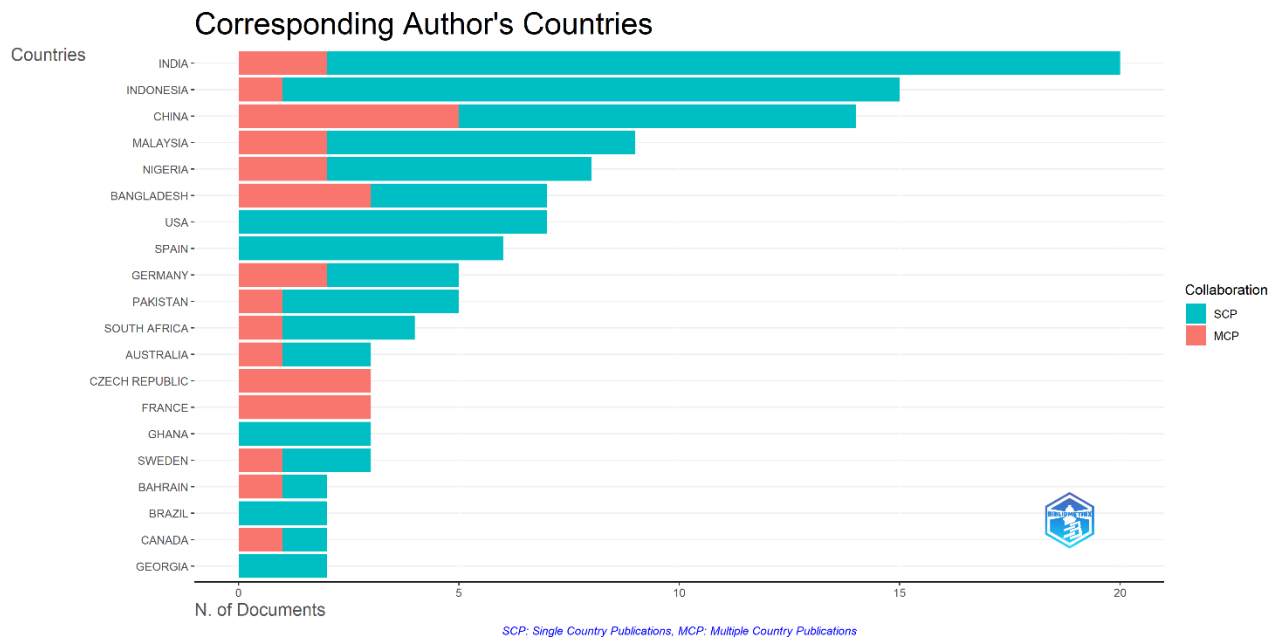
The figure at the bottom indicates that one of the authors (possibly OZILI PK or another listed author) has 6 documents, which is highlighted as a significant number. This metric is often used to identify key contributors in a research field. The absence of specific citation counts or other metrics suggests that the focus here is on productivity (number of documents) rather than impact (citations). Overall, this chart likely serves to highlight the most active and relevant authors in the dataset, providing insights into who is driving research in the field.

Corresponding Authors Countries

It lists various countries, including INDIA, INDONESIA, CHINA, MALAYSIA, NIGERIA, BANGLADESH, USA, SPAIN, GERMANY, PAKISTAN, SOUTH AFRICA, AUSTRALIA, CZECH REPUBLIC, FRANCE, GHANA, SWEDEN, SAUDI ARABIA, BRAZIL, CANADA, and GEORGIA. These countries are likely the most relevant in terms of research output, based on the number of documents published by corresponding authors from these regions.

Figure 4

Co-authorship by countries



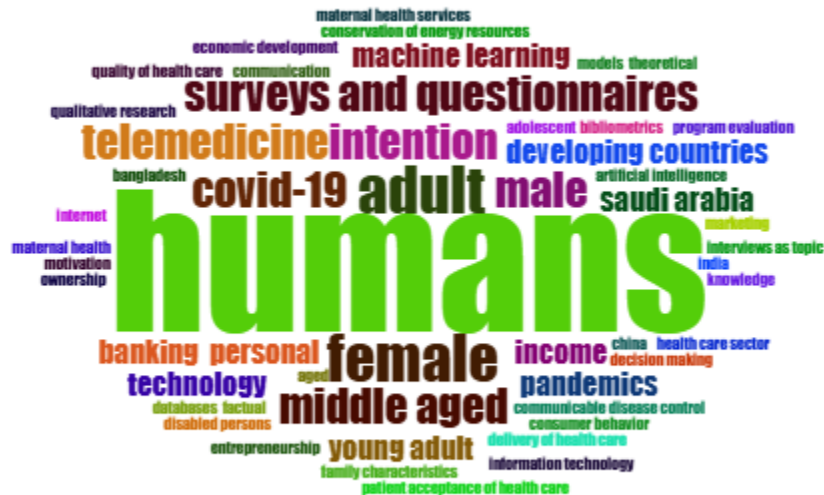
The mention of SCP (Single Country Publications) and MCP (Multiple Country Publications) suggests that the chart differentiates between research produced solely within one country and research resulting from international collaborations. This distinction is important for understanding the level of international cooperation in the field. The absence of specific numbers for documents or collaboration types indicates that the focus is on identifying the key countries contributing to the research, rather than providing detailed metrics. Overall, this chart highlights the geographic distribution of research contributions, emphasizing the global nature of the field and the involvement of both developed and developing countries.

Word cloud

The content is a collection of keywords or topics that likely represent the main themes of a research dataset or visualization, such as a word cloud or thematic map. These keywords span a wide range of disciplines, reflecting the interdisciplinary nature of the research. Prominent themes include health and healthcare, with terms like "national health services," "quality of health care," and "international health" indicating a strong focus on healthcare delivery, quality, and global health issues. Additionally, topics such as "economic development," "income," and "subsistence" highlight research on economic growth, poverty alleviation, and societal progress. The inclusion of technology-related terms like "information technology," "intelligent," and "humanitarian technology" underscores the role of innovation and technology in addressing various challenges.

Figure 5

Word Cloud



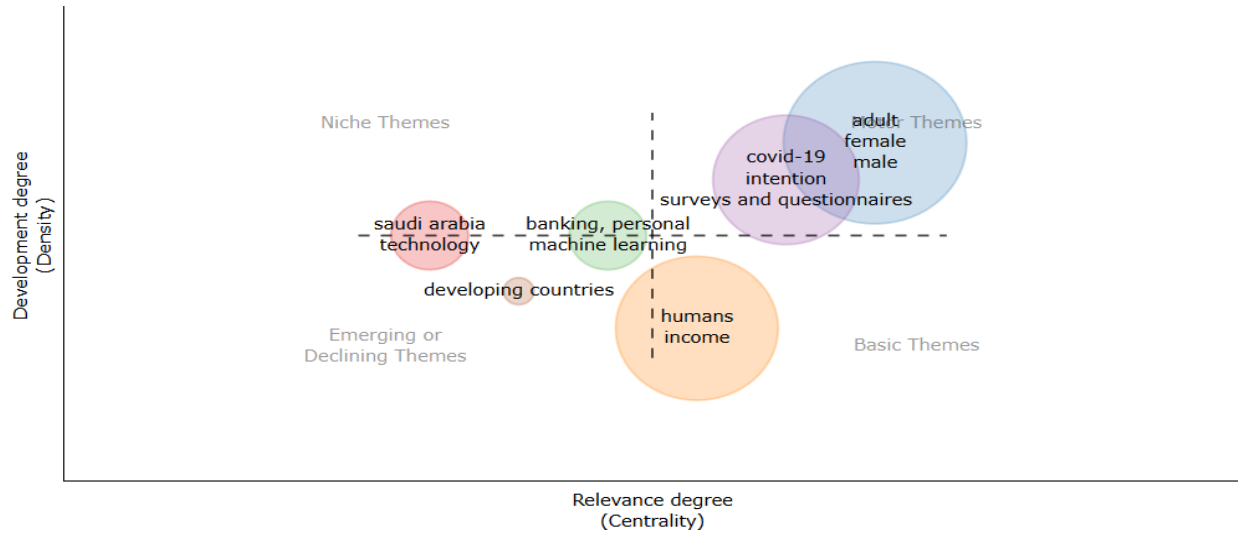
Cultural and social aspects are also well-represented, with keywords like "cultural intelligence," "social media," and "community behavior" pointing to studies on cultural dynamics, social interactions, and community engagement. Research methodologies are another key focus, as seen in terms such as "qualitative research" and "interviews as topic," which suggest an emphasis on qualitative approaches and data collection methods. Specific topics like "methotrexate," "violence," and "China" indicate more specialized areas of study, including medical research, gender studies, and regional case studies. Overall, this list provides a comprehensive overview of the diverse and interdisciplinary research interests within the dataset, highlighting its focus on health, technology, economic development, and societal issues.

Thematic Map

The provided content outlines a thematic map or visualization from a bibliometric analysis, categorizing research themes based on their development degree (density) and relevance degree (centrality). Niche themes, such as "saudi arabia technology" and "developing countries," highlight specialized or region-specific research areas. Emerging or declining themes, including "backing, personal machine learning," "covid-19 surveys and questionnaires," "humans income," and "adult: Themes female male," reflect current trends and shifts in research focus, likely influenced by global events like the COVID-19 pandemic and advancements in technology. Basic themes, though not explicitly listed, represent the core and widely relevant topics in the field. This structured overview helps identify both established and emerging areas of interest, providing valuable insights into the research landscape and guiding future studies.

Figure 6

Thematic Map

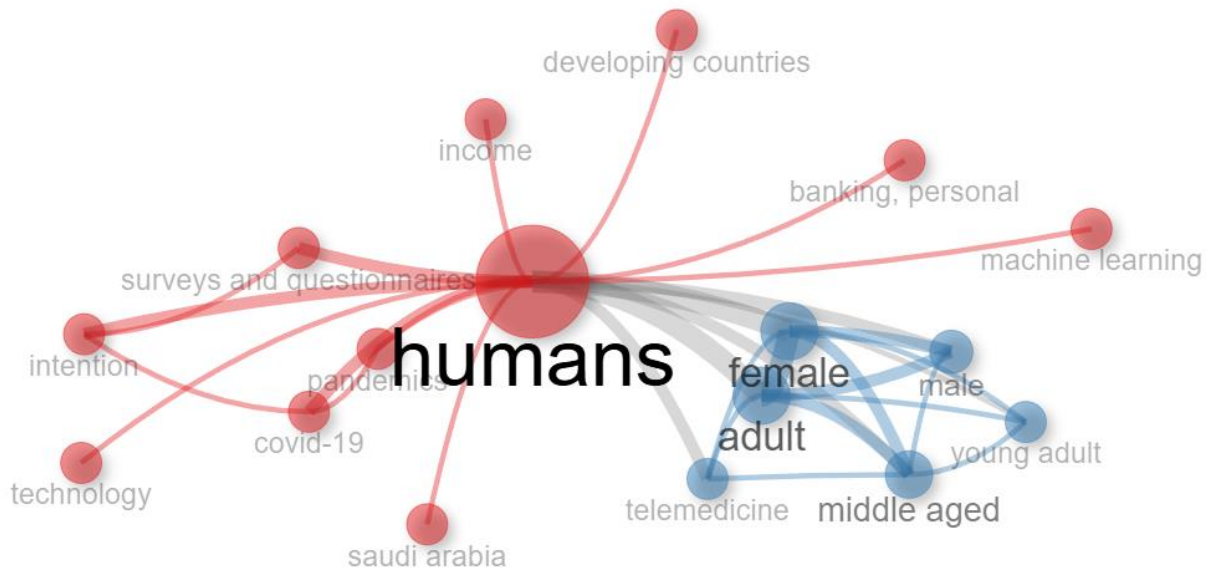


Cooccurrence Network

The content lists key themes and keywords likely extracted from a research dataset or visualization, such as a word cloud or thematic map. These keywords reflect a diverse range of research interests, including "developing countries," "income," and "banking, personal," which suggest a focus on economic and financial issues, particularly in developing regions. Health-related topics are prominent, with terms like "COVID-19," "telemedicine," and "surveys and questionnaires" indicating research on the pandemic, healthcare delivery, and data collection methods. Technological advancements are also a key focus, as seen in "machine learning" and "technology," while demographic-specific terms like "female," "male," "adult," and "young adult" highlight studies on gender and age-related issues. The inclusion of "Saudi Arabia" points to a regional focus, possibly on technology or healthcare. Overall, this list underscores the interdisciplinary nature of the research, spanning economics, healthcare, technology, and social sciences, with a strong emphasis on current and relevant global challenges.

Figure 7

Cooccurrence Network



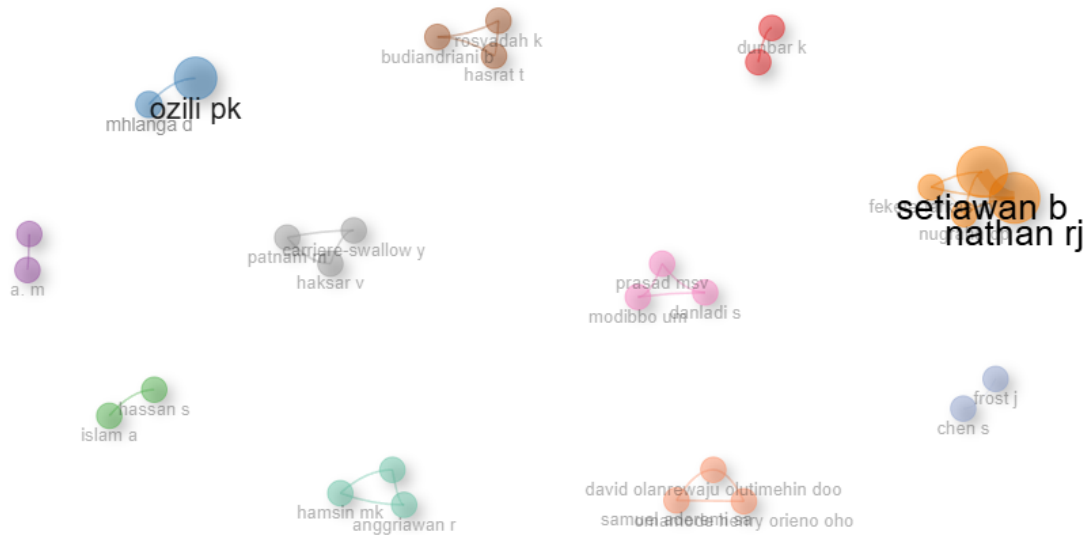
Collaboration Network

The content contains a list of names, representing authors or contributors in a collaboration network. This network visualization would typically illustrate how these individuals are connected through joint research projects, co-authorships, or other collaborative efforts. The names, such as Hassan S. Islam, Anggriawan R, Prasad MST, Modibbo Uġanladi S, and Rosti Chēn S, reflect a variety of cultural and linguistic origins, indicating a diverse and global collaboration. This diversity suggests that the research involves contributions from multiple countries and regions, highlighting the international nature of the work.

In a typical collaboration network, these names would be represented as nodes, with connections (edges) between them indicating collaborative relationships, such as co-authored papers or joint projects. The strength of these connections might be visualized through the thickness of the lines or the proximity of the nodes. Some names, like 02Jli minangā d and painām jārē swallow y haksar v, appear incomplete or contain errors, possibly due to formatting issues or extraction errors from the original dataset. Addressing these inconsistencies would be important for accurately representing the network.

Figure 8

Collaboration Network



The presence of names from diverse cultural backgrounds, such as Rosti Chēn S (suggesting East Asian origin), Hassan S. Islam (suggesting Middle Eastern or South Asian origin), and Anggriawan R (suggesting Southeast Asian origin), underscores the global nature of the collaboration. This international network can enhance the research by incorporating diverse perspectives and expertise, fostering innovation and comprehensive solutions to complex problems. Overall, this content highlights the importance of global collaboration in advancing research and the value of diverse contributions in building a robust and dynamic research community.

Discussion

The bibliometric analysis offers an in-depth look at the research trajectories in e-payment systems and financial inclusion. The dataset includes 494 documents from 348 different sources, illustrating the increasing academic focus on this area. With an annual growth rate of 29.15%, the research output is expanding rapidly, especially post-2016 when digital payment technologies gained worldwide momentum. This increase corresponds with the widespread adoption of mobile banking and FinTech innovations in both advanced and emerging markets. The average of 11.86 citations per document indicates that, while the field is relatively nascent, it has already made a moderate impact in scholarly discussions. Regionally, the research output displays intriguing patterns. India, Indonesia, China, and Nigeria stand out as the most active contributors, reflecting these countries' proactive engagement with digital financial solutions and their commitment to tackling financial exclusion. Nevertheless, the low international co-authorship rate of merely 7.49% highlights a considerable gap in international collaboration. This is

unexpected given the global nature of digital finance and indicates potential for enhanced international research partnerships addressing shared challenges in financial inclusion.

The keyword analysis identifies several prevailing themes within the literature. Digital payments rank as the most frequently examined topic, with 1,200 occurrences, emphasizing its pivotal role in modern financial systems. Financial inclusion closely follows with 900 occurrences, signifying its relevance as both a policy goal and a research focal point. Trust and security arise as crucial issues, noted in 500 occurrences, reflecting ongoing difficulties in establishing consumer trust in digital transactions. Newer themes like blockchain applications and AI-based fraud detection are increasingly gaining attention, indicating a shift toward more advanced security strategies within digital payments. Examining the contributions of prominent authors reveals OZILI PK as the leading researcher with six significant publications, mainly centered on regulatory aspects of digital finance. NATHAN RJ has made important contributions towards understanding the patterns of adoption across countries, particularly in Southeast Asia. The collaboration networks reveal distinct clusters that form around behavioral economics and FinTech innovations; however, these clusters remain relatively isolated from one another. This division suggests a potential for further interdisciplinary work that integrates psychological, economic, and technological viewpoints on digital payments.

The results present a nuanced view of e-payment systems, highlighting their role as both effective means for financial inclusion and sources of new challenges. On the positive side, these systems have significantly decreased dependence on physical banking infrastructure, especially aiding rural areas and populations that were previously unbanked. Successful examples like Kenya's M-Pesa and Nepal's eSewa illustrate how mobile money platforms can substantially cut transaction costs, enhance financial transparency, and empower economically disadvantaged groups. These instances demonstrate that, when implemented correctly, digital payment solutions can act as valuable links to formal financial systems.

Nevertheless, notable obstacles to broader adoption persist. Concerns about trust and security continue to dissuade many potential users, particularly among older individuals and those less familiar with technology. High-profile incidents of digital fraud and data breaches have left consumers cautious, although technological advancements such as biometric authentication and blockchain-based systems show potential in alleviating these worries. The uneven patterns of geographic adoption highlight another layer of complexity, with urban regions rapidly embracing digital payments compared to rural areas where poor internet access, low financial literacy, and cultural preferences for cash still prevail. The psychological factors associated with digital payments also introduce an important aspect. Research indicates that the intangible nature of digital transactions diminishes what behavioral economists refer to as the "pain of paying," potentially leading to heightened spending. While this might boost economic activity, it raises concerns regarding users' financial discipline. Interestingly, studies indicate that well-crafted financial literacy initiatives and user-friendly budgeting apps can effectively mitigate these tendencies, assisting users in maintaining better control over their digital expenditures.

Conclusion and Implications

This detailed examination confirms that electronic payment systems have become essential instruments in the global endeavor for enhanced financial inclusion. Their capability to offer affordable and accessible financial services to populations that have previously been excluded signifies a significant progress in economic development. Nevertheless, the study also underscores ongoing challenges that need to be tackled to fully unlock this potential. Constraints related to infrastructure, concerns about security, and behavioral factors significantly influence adoption trends and usage behaviors. Looking ahead, various promising avenues for research arise. The use of artificial intelligence in fraud prevention and the potential of blockchain technology to develop safer and more transparent payment systems merit further exploration. Comparative analyses across different regions could provide valuable insights into how cultural, economic, and regulatory factors impact adoption rates and usage behaviors. A perspective from behavioral economics presents fruitful opportunities to investigate how digital interfaces and system designs can promote more responsible financial behaviors.

For policymakers, the results indicate several practical strategies. Prioritizing the development of interoperable payment systems is essential to facilitate seamless transactions across various platforms and providers. Targeted campaigns aimed at enhancing digital literacy could assist in closing the knowledge gap that currently hinders many prospective users from embracing these technologies. Financial institutions and FinTech companies should aim to design more intuitive, user-friendly interfaces that accommodate a wide range of user groups, including those with limited technical skills.

In the end, moving forward requires coordinated efforts across various sectors. By merging technological advancement with careful policy planning and user education, electronic payment systems can transform into genuinely inclusive financial instruments that cater to all parts of society. Future research should seek to forge stronger links between the currently separate areas of technology development, economic policy, and behavioral science to devise more comprehensive solutions to the challenges of financial inclusion.

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Conflict of Interest

The Authors declare that there is no conflict of interest.

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