

**SYSTEMATIC LITERATURE REVIEW AND BIBLIOMETRIC ANALYSIS ON
ADOPTION OF DIGITAL PAYMENTS**Parul Gaur^{1,*} , Ankit Saxena¹ ¹ Institute of Business Management, GLA University, Mathura, Uttar Pradesh, India
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Abstract

Digital payments have become very popular nowadays just to the fact that they are able to process the business transactions without cash. While there are no comprehensive researches that integrate bibliometric analysis with a systematic literature review (SLR) around the area of digital payments, there are many studies underway. This study is intended to review and analyze existing literature on electronic payments both through peer-reviewed publications and open-access data. The research is based on 835 publications from the Scopus database that cover the period of 2000 to 2023. The dataset includes 494 journal articles, 303 conference papers, 26 review papers, and 12 conference reviews. The study utilizes bibliometric techniques, systematic literature review methods, and visualization tools such as VOSviewer to ensure a comprehensive analysis. The current state of digital payments is quite unclear in the research literature. By providing the structure of the ongoing research on digital payments, this study is of great value that will help the future researchers in the conduction of qualitative literature reviews more efficiently.

Keywords: Bibliometric Analysis, Digital Payment, Mobile Payment, Systematic Literature Review, VOSviewer.



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INTRODUCTION

Introduction of digitalization is led by the rapid infiltration of mobile and digital technologies in different fields, including education, business, and strategic management (Hudha et al., 2020; Lei et al., 2024). It is not only about the simple use of digital equipment but also the acquisition of skills in their proper use. The influence of digital transformation is not only visible in single enterprises but a whole system for socio-technical is created through them by affecting the total performance (Ilankumaran & Darling, 2019; Avelar et al., 2024). Still, inspite of the clear virtues, the adaptation of the digital technology is an uneven process dependent on conditions such as the long-term realization of benefits and whether or not a cause-effect was established between the use of technology and customer loyalty. In contrast, people find digital innovations very promising and, therefore, interested in enhancing banking transactions through the applications of such technologies. (Khoa, 2020; Sharif & Pal, 2020).

Recently, online-based technology and new technological methodologies influence have caused the appearance of a wide variety of digital financial services that work on the basis of a digital payment. With digital payments being one of the core constituents of the evolution of the cutting-edge financial industry, the payment sector has always been a target (Dostov & Shust, 2014; Kumar et al., 2020). Where financial inclusion was a success story to date, there was a steep uphill sway in the quest for complete financial inclusion to make an economy totally cashless (Thirupathi et al., 2019; Alora et al., 2024). The digitalization of the entire economy worldwide has fundamentally changed the way products and services are manufactured, distributed and consumed. Investments in digital infrastructure happened rapidly in the financial sector, which led to a great adoption of digital payment methods, changing customers' habits when it comes to financial transactions. (Kresnha Reza & Susanti, 2022).

Many researchers in this particular area have written about digital payments. However, the research is not impeccable, and there are certain limitations. First of all, previous research gives preference to the technological problems of the digital payments system and completely omits the questions of user adoption and regulatory challenges, and cybersecurity issues (Nundy et al., 2021; Datta et al., 2020). Furthermore, there is not a single study that has broadly covered the whole digital payments topic, which contains a bibliometric analysis that is combined with a SLR to give out a structured evaluation of the trends and impacts of digital payments. Furthermore, most reports are based on anecdotal evidence or survey studies, which can prevent a glimpse of the ever-changing consumer spending behaviors in virtual transactions (Bapat and Khandelwal, 2023). The highliner for the current research is the scant evaluation of the digital technologies' effectiveness in facilitating social and financial inclusion and reducing economic disparity. Without taking into account the digital currencies' potential to replace cash in the world market, in a similar way, it is an issue ignored by many scholars – according to Purba et al. (2021), Marginalized individuals might suffer the most. On the other hand, the psychological research on spending behavior points out the fact that the divergence between cash and digital payments has an impact on the variation of customers' behavior towards the utilization of the technology (Yeung et al., 2021; Rachmanto & Akande, 2024; Zakiyah et al., 2024; Anugradia et al., 2025).

To overcome these deficiencies, this research integrates bibliometrics and systematic literature review (SLR) for a comprehensive evaluation of digital payment research. Unlike previous studies that mainly focused on different aspects of digital payments, this study takes a holistic view by spotting the main trends, showing the most influential studies and clusters of research in the field. For this analysis, we have drawn on 835 publications from the Scopus database, issued from 2000 to 2023, including articles, conference papers, review papers, and conference reviews. This research, using VOSviewer software, generates a visual representation of the intellectual structure of digital payment research, thus pinpointing emerging themes and research areas. Additionally, this study extends the conversation on the progress of financial digitalization, thus revealing the relationship between digital payments, consumer behavior, and financial inclusion. This research seeks to contribute by explaining technology adoption and economic impact, which will offer more insights for policymakers, financial institutions, and businesses that are interested in enhancing digital financial access. The results will be used as a theoretical basis for future researchers, so they can perform qualitative literature reviews and join scholarly discussions on the digital transformation of financial transactions.

Digital payments, the usage of digital media and technology, can increase the usage of financial transactions by getting much attention and application. It has become common in the present era that digital payment systems are widely used today. The long-term and systemic changes of traditional financial practices are new to businesses, commissioners, and scholars, who are setting out to discover the driving factors of this tendency, as Alkhowaiter (2020) posited. The advancement of technology has not only made transactions smooth but also it has come with new challenges. These issues are to be studied in the context of specifics like the determinants, barriers, and emerging trends in digital payment adoption (Patil et al., 2017). This systematic literature review (SLR), in its very nature, aims to distill existing knowledge about digital payment adoption, bring out the factors that users are influenced by and presenting the most recent and persistent problems. The review utilizes bibliometric and systematic methodologies which entail a very complete and up-to-date analysis of academic work in this field (Levy & Ellis, 2006; Moher et al., 2010; Halimah et al., 2024; Habibi et al., 2024).

The acceptance of payments made digitally by many people was influenced by several factors such as usability, perceived utility, security concerns, and technological trust which have been identified in numerous studies (Raharja et al., 2020). The age, income, and education levels of consumer

demographics play a key role (Darma & Noviana, 2020). The youth who are familiar with technology are used to digital payment faster while old people generally do not want to use them as they have fewer technology skills (Sumathy & Vipin, 2017; Lin et al., 2020; Mardiaty et al., 2024; Miharja et al., 2024). Perceived ease of use and convenience have typically been considered indispensable factors that determine digital payment adoption (Venkatesh et al., 2003). Research conducted by Chawla and Joshi (2019) explains that consumers pay more attention to speed and efficiency than to security, which means the convenience is sacrificed for potential threats. The Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) put emphasis on theoretical frameworks that users may take advantage of for adopting these technologies (Davis, 1989; Venkatesh et al., 2012). Moreover, financial literacy and trust in service providers are essential for the acceptance of digital payment and are the key factors in affecting digital payment adoption. Customers with superior financial knowledge are more likely to go into virtual transactions (Lai, 2017; Kaur et al., 2020; Sari et al., 2023; Yohanie et al., 2023). The power of peer effect has been done in the same breath and determined that peer recommendations and societal norms are the cause of consumer decisions (Slade et al., 2015; Firmansyah et al., 2024; Laksono et al., 2025; Qiu et al., 2025).

Despite the rapid development of digital payments, several hurdles hamper their wide adoption. The security, which includes data breaches, stealing identity, and unauthorized access to personal details, is still a major deterrent (Camenisch et al., 1999; Shankar & Datta, 2018). Inadequate infrastructure, particularly in developing regions, is the main reason for the low adoption of the technology. Along with the unreliable internet connection and the lack of financial education, which are the significant obstacles, infrastructure problems also become the reason of adoption (Ravikumar et al., 2019; Ozili, 2018). A challenge that continues to hamper the digital payment systems is the Interoperability of the systems. The fact that the digital payment platforms are broken up into different pieces makes it quite inefficient because of the fact that several service providers do not interoperate because they operate from the standpoint of their own systems (Baabdullah et al., 2019). Furthermore, regulatory challenges and the necessity to be in accordance with such requirements as an anti-money laundering (AML) and Know Your Customer (KYC) become the add-ons to the complexity of the digital payment landscape (Arango-Arango et al. 2020). Researches show that such a phenomenon is linked to the psychological and behavioral aspects, which ultimately are the major reasons behind consumers entrenched attitude in avoiding transition from cash to digital payment (Sahi et al., 2021; Em et al., 2025; Mabeza, 2025; Tep et al., 2025). The concept of “pain of paying” asserts that the main reason for individuals being highly aware of their spending when they are paying with money in the form of cash, rather than with cashless transaction, is because cash stimulates the action of overspending, while the credit card, on the other hand, does not (Prelec & Loewenstein, 1998; Yeung et al., 2021; Castro, 2025; Galdonez, 2025).

The digital ecosystem of payments is undergoing radical change and renewal because of new inventions and their capabilities. In relation to the developments in artificial intelligence (AI), blockchain, and biometric authentication, immense improvement in the security and efficiency of various sectors has been facilitated by the discoveries, e.g., (Chen et al., 2020; Geebren et al., 2021). Blockchain, which is fundamentally an open-source ledger that encourages return to decentralized and tamper-proof transaction records, has the benefit of solving trust and fraud-related problems (Nakamoto, 2008; Casino et al., 2019). NFC (Near Field Communication) technology has made contactless payment solutions more successful, and people can now easily pay for their purchases on their smartphones. This is done without even touching a device, and through wearable devices as well (Martin & Daim, 2008). Also, the fingerprint and facial recognition biometric method which is included in the application of this technology has made it possible to provide stronger security for digital transactions, thus minimizing the loss due to fraudulent activities (Dahlberg et al., 2008; Singh et al., 2016). Introducing AI-powered chatbots and voice assistants in e-banking have given a big boost to customer service and user experience (Karjaluo et al., 2019). Thanks to business intelligence tools such as real-time transaction monitoring and predictive analytics, banks are more successful in the identification and prevention of detection of fraudulent activities (Oo, 2019).

The use of state-of-the-art technology and the implementation of service and customer targeting facilitate the boost in usage of digital payments. The advancement of user experience is the core and essential part to the innovation of digital payments (Khairun & Yasmin, 2010). The recent report reveals that interfaces that are easy to use, personalized recommendations, and rewards have the maximum influence on consumer satisfaction (Rana et al., 2018; Najib & Fahma, 2020). The adoption of digital

payment systems in daily life, such as public transportation, retail shopping, and online services is one of the ways that leads to accessibility and efficiency (Kaleeth & Chellammal, 2021). The digital banking applications with financial management features that personalized them in accordance with individual records are loaded into the personalized financial tools, which automates spending tracking and advises budgeting successfully to the consumer, thus helping them to stay on top of their finances (Ramli & Hamzah, 2021).

Digital cashless economy is no longer a dream. Today, more and more businesses go digital and diverse payment options are becoming more available. Internet banking and mobile payment gateways allow electronic transactions to take place, thus distorting our dependency on hard currencies (Casino et al., 2019; Arango-Arango & Suárez-Ariza, 2020). Payment gateways are the links between bank and online merchants, which stand as intermediaries providing both parties with safety assurance from robbery as well as the least merchant intervention. Dahlberg et al. (2008) point out that the regulation of the financial system through the framework set up by the government along with tax exemptions for using digital payments will contribute largely to the financial inclusion process. Furthermore, the stimulation of mobile payment systems by government initiatives in various countries has greatly contributed to the cause of financial inclusion besides perils which include privacy and security issues (Purba et al., 2021). Although digital payments are a comfortable and effective way of doing business, the issues of security, the observance of regulations, and the financial education of individuals must be resolved so as to enshrine the digital economy inclusivity. This article is an alarm call for more investigations on the mental part of digital payments, safety updates, and the impacts of non-cash transactions on the socio-economic status of people.

An alternative term for digital payment is “mobile payment,” which refers to the use of electronic devices such as smart-phones and tablets to facilitate the exchange of monetary funds. App users and mobile payments represent a rapidly growing global market (Santosa et al., 2021). In 2020, the global mobile payment market was estimated to be worth USD 31.5 billion. Balan and Pal, (2020) state that Digital payment it is expected to grow at a compound annual rate of 31.8% between 2021 and 2028. Indian citizens are presented with a variety of mobile payment systems from which to choose. As cashless transactions become more prevalent, the mobile payment system moves closer to a cashless economy. Mobile payment has been enabled by the advancement of mobile technologies (Sivathanu, 2019). Although the transactions processed through these gateways do not involve tangible currency, they are secure due to the system developers' use of a resilient security algorithm. However, the long-term viability of this innovative technology is still unknown. The COVID-19 pandemic forced a significant proportion of people who previously relied on physical currency to switch to digital payment systems. COVID-19 change customer attitudes toward cash and card payments at the point of sale (POS) (Chakrabarty et al., 2021).

In 2020, a preliminary patent application for a mobile electronic wallet was submitted. This ushered in a fundamental shift in the field of electronic transactions. This research paper was compiled from fifty studies. The time span is divided into four distinct periods: 2002-2004, 2005-2009, 2010-2015, and 2016-2019, the latter encompassing the current era. During the specified period, both established factors and innovative advancements serve as incentives for individuals to use digital payment methods (Jain and Chowdhary, 2021). In the early 2000s, digital payment methods were still in their infancy. The primary objectives were to establish the technological infrastructure and address fundamental security concerns. Significant changes included the deployment of secure servers, the establishment of encrypted connections, and the innovative introduction of digital payment systems. Although its application was limited, these years laid the groundwork for the following phases (Jakobsson et al., 1999, Asokan, 2000). Electronic wallets and other mobile banking options were introduced in the mid-2000s. During this time, smart phones were widely used, and payment capabilities were increasingly integrated into them. Organizations began testing various business models in an effort to optimize operations and improve the user experience. Nonetheless, persistent challenges such as security flaws and barriers to interoperability remained (Gao et al., 2009; Bélanger and Carter, 2009). The prevalence of digital payments increased between 2010 and 2015. As governments and regulatory bodies became more aware of the benefits of digital transactions, they began to develop regulatory frameworks to oversee this rapidly evolving field. The introduction of digital wallets by major technology companies, as well as the development of near field communication (NFC) technology, boosted consumer confidence. Mobile banking applications have undergone significant improvements, now offering a wide range of features that go beyond basic transactions

(Dodgson, 2015; Bezovski, 2016). The emergence of FinTech (Financial Technology) during the fourth phase caused a significant transformation in the payroll industry. Prominent organizations and established financial institutions have begun to integrate cutting-edge technologies such as block chain and artificial intelligence. The implementation of the Unified Payments Interface (UPI) in certain regions has improved digital transaction efficiency. The widespread adoption was fueled by user-centric features, strengthened security measures, and the incorporation of digital payment systems into various aspects of daily life (Anshari; 2019; Pratika, 2020).

From 2019 to 2024, the global COVID-19 pandemic drove an unprecedented increase in the adoption of digital payment systems. As a result of the implementation of lockdown protocols and other preventative measures aimed at enforcing social distancing, there was an increase in online transactions; as a result, people opted for secure and convenient digital payment options. During this time, Central Bank Digital Currencies (CBDCs) evolved alongside the study of decentralized finance (DeFi) concepts. To foster trust in electronic transactions, the incorporation of biometrics and the enhancement of security protocols became critical (Niankara, 2023; Bhatia et al., 2023). Throughout each of these phases, specific elements served as motivators for people to use digital payment methods. The aforementioned factors include the growing popularity of smart phones, advancements in connectivity options, the desire for increased convenience, and the ongoing refinement of user interfaces (Lakshmi and Alamelumangai, 2020). The digital payment adoption has been significantly influenced by collaborative efforts between technology providers and financial institutions, regulatory frameworks, and consumer education (Datta et al., 2020).

Several researchers have conducted bibliometric analyses on digital payments and related topics, including “m-payment,” “electronic wallet,” “e-wallet,” “mobile wallet,” and “m-payment.” Following a thorough review of the existing literature, it is clear that only a small number of studies, including the current investigation, have used bibliometric analysis to examine the adoption of digital payments.

The purpose of this paper is to achieve the following goals:

- Q1. Which sources have published the most articles about digital payment?
- Q2. Which year saw the highest number of published papers?
- Q3. Which is the most cited papers?
- Q4. Who are the authors with the highest output?
- Q5. Which institutions have the maximum publication on digital payment?
- Q7. Which is the most Prolific Countries?
- Q8. Which is the most Prolific Subject Area?

RESEARCH METHOD

To achieve this goal, a bibliometric analysis of digital payment-related literature from 2000 to 2023 will be conducted. Bibliometric analysis is commonly used to determine the prevalence of publications in a given field, the frequency of publications on a specific topic, and the temporal evolution of publication counts in a specific research domain (Hew et al., 2023). The study’s findings provide relevant, current, and valuable information for professionals and experts interested in evaluating this specific type of scientific research (Duque Oliva et al., 2006). Another advantage of bibliometric analysis is that it can provide a numerical and objective assessment of a specific field (Merig et al., 2015). A literature search was conducted in the Scopus database to identify articles published between 2000 and 2023 that were relevant to individuals interested in starting their own business. The database was chosen because of its large collection of scholarly journals. For paper-based search procedures, the term "digital payments" was used. The search filter was used to identify papers that only mentioned "digital payments" in their abstracts, titles, keywords, or any combination thereof. Additionally, the search yielded a large collection of 835 papers. To determine the relevance of the papers returned by the search to the intended subject matter, the author examined each paper's title, abstract, and keywords manually. For this study, 835 papers were reviewed. VOS Viewer 1.6.9 software was used to analyse word co-occurrence networks, co-authorship networks, and word co-authorship networks across countries. VOSviewer is a free software application that uses network data to generate maps. Furthermore, by making these maps easier to visualize, it improves comprehension.

The Scopus database provided the information needed to conduct a bibliometric analysis. Scopus provides clear and understandable bibliometric indicators, which is a significant advantage (Sweileh *et al.*, 2018). Currently, the Scopus database, which contains approximately 835 titles, is

regarded as one of the premier academic databases. The Scopus database served as the primary source of data for the current investigation. The review was limited to digital payment and e-payment. The document search followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines used by the authors (Moher *et al.*, 2010), as shown in figure 2. The assignment was completed on January 10, 2024. The 835 documents were thoroughly examined using bibliometrics tools such as Harzing Publish or Perish and Microsoft Excel.

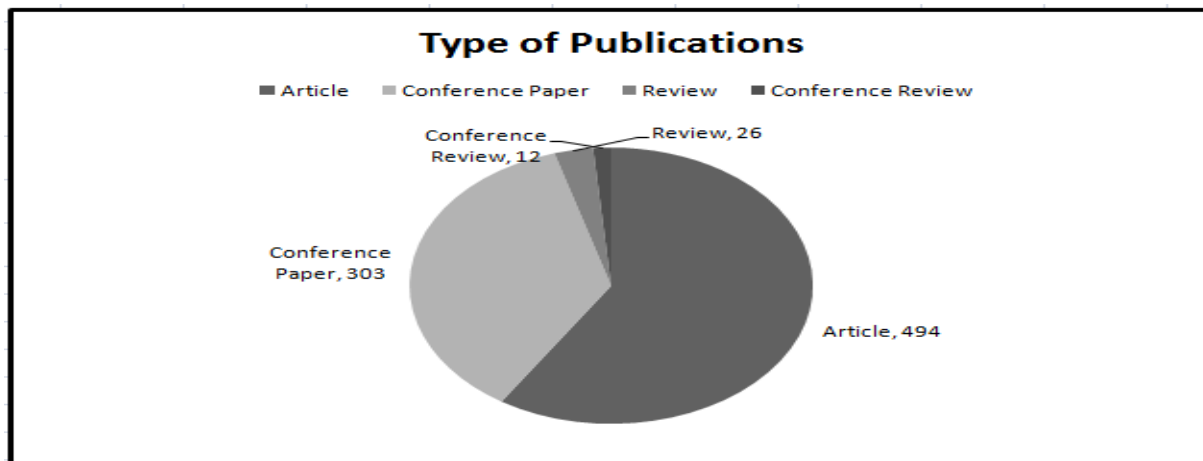


Figure 1. Types of Publications.

Bibliometric analysis is frequently used to identify publication trends, topic-specific publication patterns, and numerical fluctuations within a given field of study. The findings of this type of analysis provide professionals and authorities attempting to evaluate this scientific endeavor with relevant, practical, and current information. Another advantage of bibliometric analysis is that it can quantify and provide an objective assessment of a particular field. A literature search was conducted in the Scopus database to find articles published between 2000 and 2023 that were relevant to digital payment. The primary factor influencing the selection of this database was its extensive collection of prestigious scholarly journals. To find scholarly articles, a search query with the term “digital payment” was used. We only included papers that had the term “digital payment” in the title, abstract, or keywords.

Additionally, the search yielded an extensive collection of 835 publications. The publications fall into the following categories: There were a total of 393 articles, including 26 additional review papers and 303 conference papers. The author could verify the relevance of the papers found through the search by manually inspecting each one's title, abstract, and keywords. Additionally, the papers are categorized as follows: The authors, journals, countries, and institutions with the highest productivity were investigated, as well as the authors and journals with the highest productivity. We also ran network analyses on co-authorship, inter-country, and keyword co-occurrences, and we looked at the articles with the most citations. Using the VOS Viewer 1.6.20 software, we investigated co-author networks, cross-country co-authorship, and co-occurring keywords. VOSviewer, an open-source application, can convert network data into graphical representations. Furthermore, it can be used to examine and study these maps. The bibliometric map was also produced using VOSviewer (van Eck *et al.*, 2013). VOSviewer is an alternative software solution for completing this task. By analyzing networks based on keyword co-occurrence, it is possible to identify papers with the most citations, authors with the highest productivity, countries and institutions with the highest productivity, and co-authorship networks.

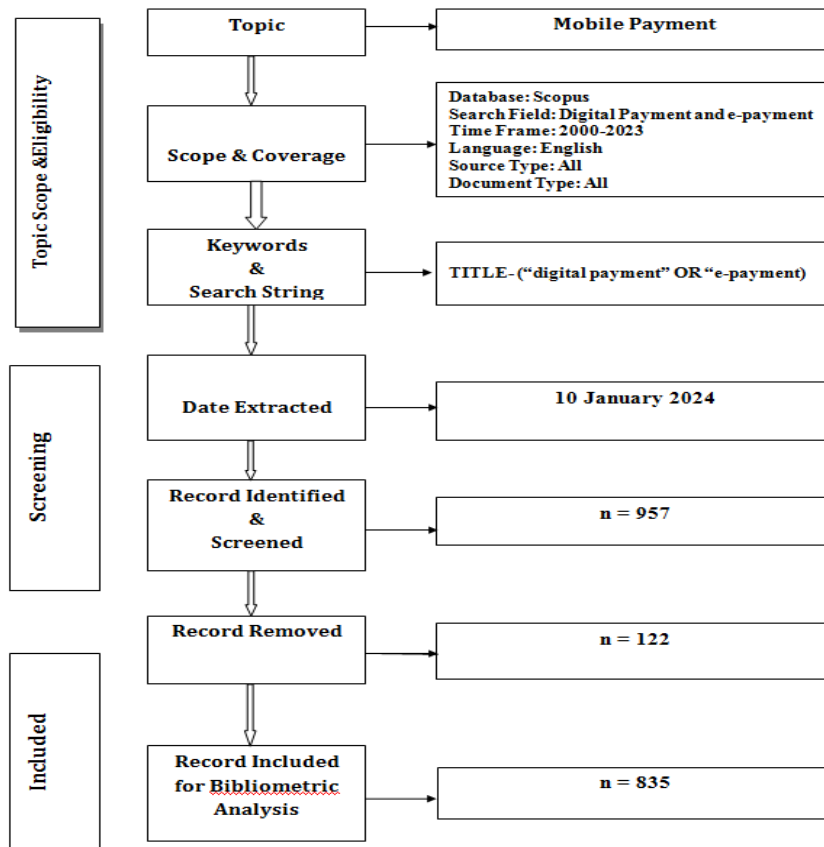


Figure 2. PRISMA Flow Diagram

RESULTS AND DISCUSSION

Source With Maximum Publication

The dataset provides a comprehensive overview of the distribution of publications in the field of digital payments across various sources. AIP Conference Proceedings stands out with its impressive 19 publications, solidifying its position as the most prolific source for sharing research in this field. The ACM International Conference Proceeding Series and the Journal of Payments Strategy and Systems closely follow. Each source possesses a total of 18 research publications, indicating their significant contribution to academic discourse on the subject of digital payments. Computer Science course notes with subseries and the Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics series, which is widely recognized, has made a significant impact with 18 publications that demonstrate the interconnection between computer science, artificial intelligence, and digital payment research. Additionally, Lecture Notes in Networks and Systems is noteworthy due to its 16 publications, which demonstrate the significance of network systems in the realm of digital payments. Figure 3, further show the Examination of this dataset reveals that research on digital payments comes from a variety of sources, including prestigious academic conferences and publications. Furthermore, this emphasizes the field's interdisciplinary nature.

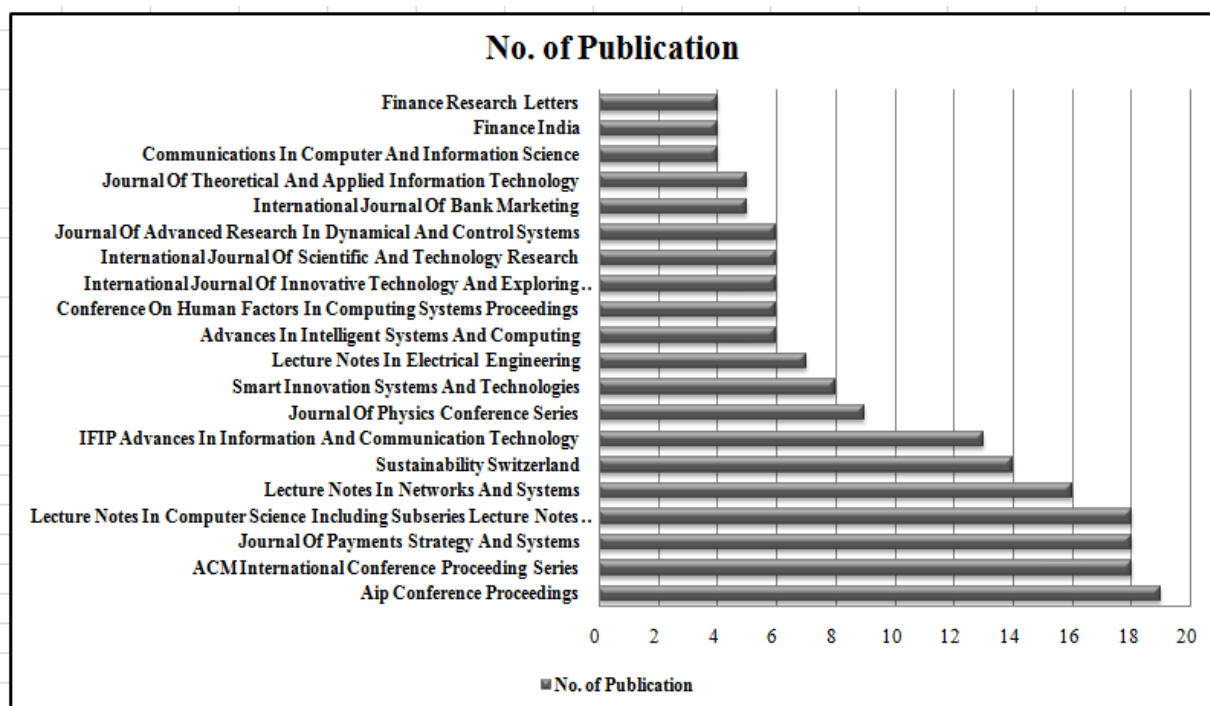


Figure 3. Top Twenty Journals with Maximum Publication on Digital Payments

Year Wise Publication of Papers

The analysis of data over five-year intervals shows that the number of publications is gradually increasing. From 2000 to 2009, publication output was limited to two per year, with the last publication in 2006. The current epoch marks the beginning of academic interest in digital payments. The number of publications increased significantly between 2010 and 2014. Between 2016 and 2020, there will be a significant increase in publications per year. In 2017, there were 26 scholarly publications on the subject of digital payments, indicating a significant increase in scholarly attention to this development. As of 2018, there were 54 publications, a more than twofold increase from 2017. Following this, there is a significant increase in the number of publications in 2019 and 2020, with 82 and 106 respectively. The observed increase reflects a greater emphasis among academics on digital payment systems. This phenomenon may be attributed to changes in consumer behavior and technological advancements. The number of publications has increased exponentially in recent years, as evidenced by figures 4 of 125 in 2021, 164 in 2022, and 239 in 2023. The aforementioned surge demonstrates the relevance and importance of digital payment systems in modern dialogue. The proliferation of scholarly articles in 2023 indicates a persistent and growing level of interest in the subject.

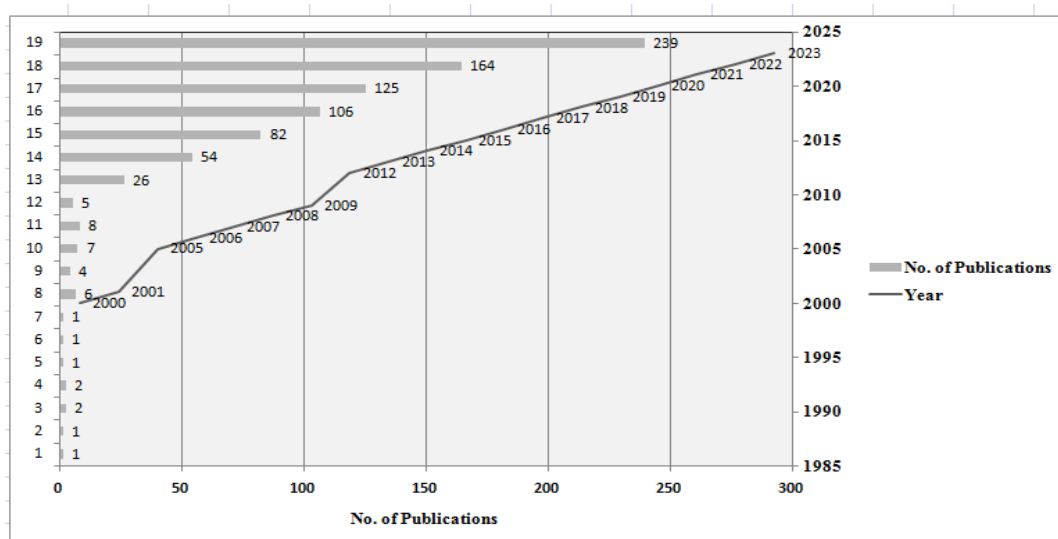


Figure 4. Number of Papers Published Over the Years

Most Cited Papers

Table 1 dataset consists of research papers that contain a large amount of useful information about digital payments. Pandey and Pal, (2020) article “Impact of digital surge during Covid-19 pandemic: A viewpoint on research and practice” examines the effects of the COVID-19 pandemic's surge in digital activity. The high total citation count of 511 for this paper during a critical period demonstrates the research's importance and influence. Androulaki et al., 2013 published “Evaluating user privacy in Bitcoin”, which investigates Bitcoin's privacy implications. With 398 citations since its publication in 2013, this article has maintained its relevance in discussions about the privacy implications of cryptocurrencies. In their 2016 article “The blockchain and kudos: A distributed system for educational record, reputation, and reward,” Sharples M. and Domingue J. look into the potential use of blockchain technology in academic institutions. This article's 371 citations demonstrate the growing use of blockchain technology in education. In 2020, Patil et al., published a paper titled “Understanding consumer adoption of mobile payments in India: Extending the Meta-UTAUT model with personal innovativeness, anxiety, trust, and grievance redressal.” This study looks at the various factors influencing Indian consumers' adoption of mobile payment services. The paper provides evidence for the growing importance of mobile payments in developing countries, supported by 318 citations.

Li J., Wu Y., and Xiao J.J. (2020) conducted a research study titled “The influence of digital finance on household consumption: Empirical findings from China” to investigate the effects of digital finance on Chinese households' spending behaviors. A total of 310 citations supported this study. This demonstrates how individuals' financial behaviors have changed during the digital age. As we shift our focus to the five-year analysis, the research papers in this series will cover a wide range of digital payment-related topics. Each scholarly article demonstrates the profound and far-reaching implications of digital transactions, emphasizing their growing importance in scholarly discourse. In 2019, the articles “Consumer Attitude and Intention to Adopt Mobile Wallets in India – An Empirical Study” by Chawla D. and Joshi H. (184 citations) and “Adoption of digital payment systems in the era of demonetization in India: An Empirical Study” by Sivathanu B. (158 citations) offer valuable perspectives on the Indian context. The study focused on the behavioral dimensions and patterns of adoption that emerged during the demonetization period.

2018 saw the publication of “Deep learning detecting fraud in credit card transactions” by Roy A., Sun J., Mahoney R., Alonzi L., Adams S., and Beling P. (with 150 citations). This paper describes an implementation of deep learning techniques for detecting fraudulent activities, which is a significant issue in the field of digital transactions. An investigation was conducted by Al-Okaily M., Lutfi A., Alsaad A., Taamneh A., and Alsyof A. (82 citations) entitled “The Determinants of Digital Payment Systems' Acceptance under Cultural Orientation Differences: The Case of Uncertainty Avoidance.” The study examined the various factors that impact the acceptance of digital payment systems by individuals, taking into account cultural orientation differences. The study was conducted in 2017. Taylor E. published the scholarly article “Mobile payment technologies in retail: a review of potential benefits and risks” in 2016. The article discusses the benefits and drawbacks of implementing mobile payment systems in the retail sector. There are 98 citations for it. These research articles investigate diverse facets of digital payments, including the dynamic characteristics of technology, patterns of user adoption, cultural impacts, and techniques for fraud detection. The fluctuating counts of citations function as metrics to assess the importance and influence of digital payment systems in molding dialogue.

Table 1. Most Cited Research Papers on Digital Payments

No.	Authors	Title	Year	TC*
1	R.; Pandey N.; Pal A.	Impact of digital surge during Covid-19 pandemic: A viewpoint on research and practice	2020	511
2	Androulaki E.; Karame G.O.; Roeschlin M.; Scherer T.; Capkun S.	Evaluating user privacy in Bitcoin	2013	398
3	Sharples M.; Domingue J.	The blockchain and kudos: A distributed system for educational record, reputation and reward	2016	371
4	Patil P.; Tamilmani K.; Rana N.P.; Raghavan V.	Understanding consumer adoption of mobile payment in India: Extending Meta-UTAUT model with personal innovativeness, anxiety, trust, and grievance redressal	2020	318
5	Li J.; Wu Y.; Xiao J.J.	The impact of digital finance on household consumption: Evidence from China	2020	310
6	Chawla D.; Joshi H.	Consumer attitude and intention to adopt mobile wallet in India – An empirical study	2019	184
7	Sivathanu B.	Adoption of digital payment systems in the era of demonetization in India: An empirical study	2019	158
8	Roy A.; Sun J.; Mahoney R.; Alonzi L.; Adams S.; Beling P.	Deep learning detecting fraud in credit card transactions	2018	150
9	Alkhowaiter W.A.	Digital payment and banking adoption research in Gulf countries: A systematic literature review	2020	139
10	Bodkhe U.; Bhattacharya P.; Tanwar S.; Tyagi S.; Kumar N.; Obaidat M.S.	BloHosT: Blockchain enabled smart tourism and hospitality management	2019	98
11	Anshari M.; Almunawar M.N.; Masri M.; Hamdan M.	Digital marketplace and FinTech to support agriculture sustainability	2019	98
12	Taylor E.	Mobile payment technologies in retail: a review of potential benefits and risks	2016	98
13	Demirgüç-Kunt A.; Klapper L.; Singer D.; Ansar S.; Hess J.	The Global Findex Database 2017: Measuring Financial Inclusion and Opportunities to Expand Access to and Use of Financial Services	2020	91
14	Tsai W.-T.; Yu L.; Wang R.; Liu N.; Deng E.-Y.	Blockchain Application Development Techniques	2017	90
15	Chen C.-L.; Lin Y.-C.; Chen W.-H.; Chao C.-F.; Pandia H.	Role of government to enhance digital transformation in small service business	2021	82
16	Al-Okaily M.; Lutfi A.; Alsaad A.; Taamneh A.; Alsyouf A.	The Determinants of Digital Payment Systems’ Acceptance under Cultural Orientation Differences: The Case of Uncertainty Avoidance	2020	82
17	He H.; Yan A.; Chen Z.	Survey of Smart Contract Technology and Application Based on Blockchain.	2018	81
18	Grover P.; Kar A.K.	User engagement for mobile payment service providers “introducing the social media engagement model”	2020	78
19	Ducas E.; Wilner A.	The security and financial implications of blockchain technologies: Regulating emerging technologies in Canada	2017	78
20	Lundqvist T.; De Blanche A.; Andersson H.R.H.	Thing-to-thing electricity micro payments using blockchain technology	2017	77

Most Prolific Authors

The study's authors, J. Damsgaard, N.P. Rana, and P.P. Patil, have undertaken considerable research and published substantially on the issue of digital payments. In total, they have eight, eight, and six publications respectively. Damsgaard and Rana's extensive body of work exemplifies the depth of digital payment research conversation in the topic. It is likely that their portfolio covers a wide range of topics, providing valuable viewpoints on the paradigm-shifting effects of digital payment. Patil, who has six publications, is a well-known scientist who has made significant contributions to study in the field of digital payments. Numerous authors, including Al-Okaily, Dwivedi, Budiono, Hedman, Kar, Kazan, Olivier, Purba, Vines, Agarwal, Akanfe, and Balakrishnan, have made substantial contributions to the field of digital payments, as evidenced by their respective works. The findings, which consist of three to four papers, provide a diverse range of perspectives on many aspects of digital payments. The authors may discuss topics such as individual adoption of developing technologies, their societal and economic implications, and usage trends. Figure 5 dataset unambiguously reveal that a large number of writers collaborated to make an effect on the field of digital payment research. Damsgaard, Rana, and Patil are the authors with the most publications. However, the inclusion of the additional authors' contributions enriches the area by providing a diversity of thoughts and opinions. The combined efforts of these experts have considerably enhanced our understanding of digital payments, including their economic, technological, and social dimensions.

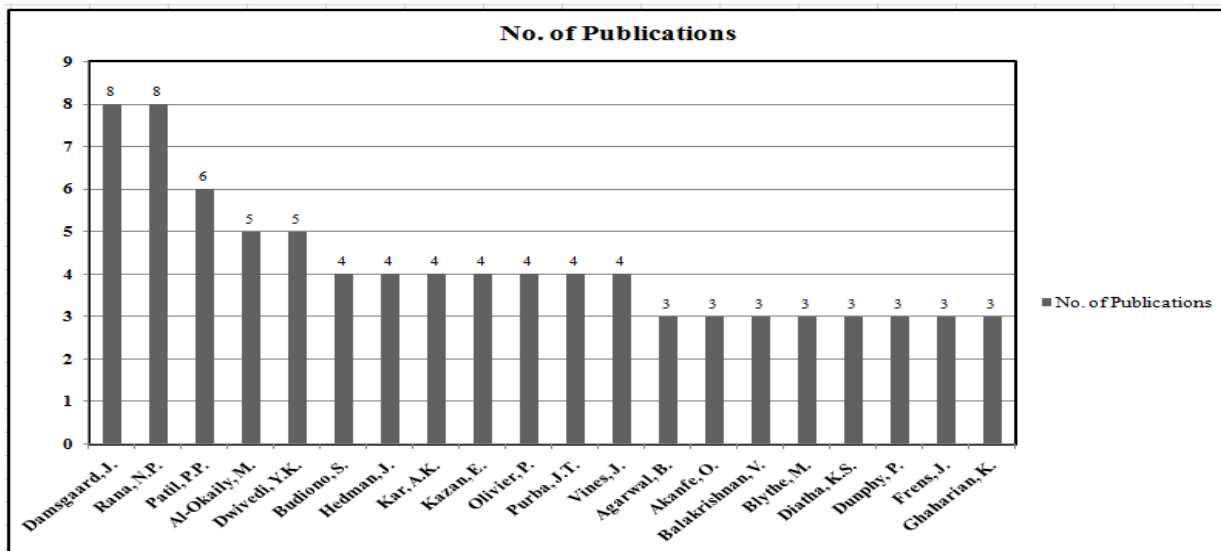


Figure 5. Most Prolific Authors

Most Prolific Institution

As shown in the figure 6, Bina Nusantara University has published the most research articles on digital payment, totaling 29. The considerable volume of material displayed demonstrates the institution's unwavering commitment to supporting intellectual discourse on digital payments. Amity University ranks second with 19 publications, proving its great contribution to the subject. The continued existence of these institutions indicates a strong research culture and a genuine desire among researchers to examine various elements of digital payments. Copenhagen Business School, Symbiosis International Deemed University, Universiti Teknologi MARA, and Universiti Teknologi MARA have all made significant contributions to their respective disciplines, with 17, 13, and 10 publications published, respectively. The user's affiliations serve as proof of their ongoing efforts to contribute to the existing corpus of research on digital payments. The participation of academic institutions from Denmark, Indonesia, India, and Malaysia, among others, indicates the worldwide reach of the digital payments research ecosystem.

The publication of five to nine volumes by Universitas Indonesia, School of Management, SRM Institute of Science and Technology, Alagappa University, Indian Institute of Management Kozhikode, and other affiliated universities resulted in significant contributions. These groups work together to increase our understanding of digital payments by conducting a multidimensional analysis that takes into account both technology progress and the social and economic implications. The dataset

demonstrates the collaborative efforts of numerous academic institutions to enhance the subject of digital payment research. The diverse body of literature produced by these groups demonstrates a worldwide and interdisciplinary effort to understand the intricate aspects of digital payments.

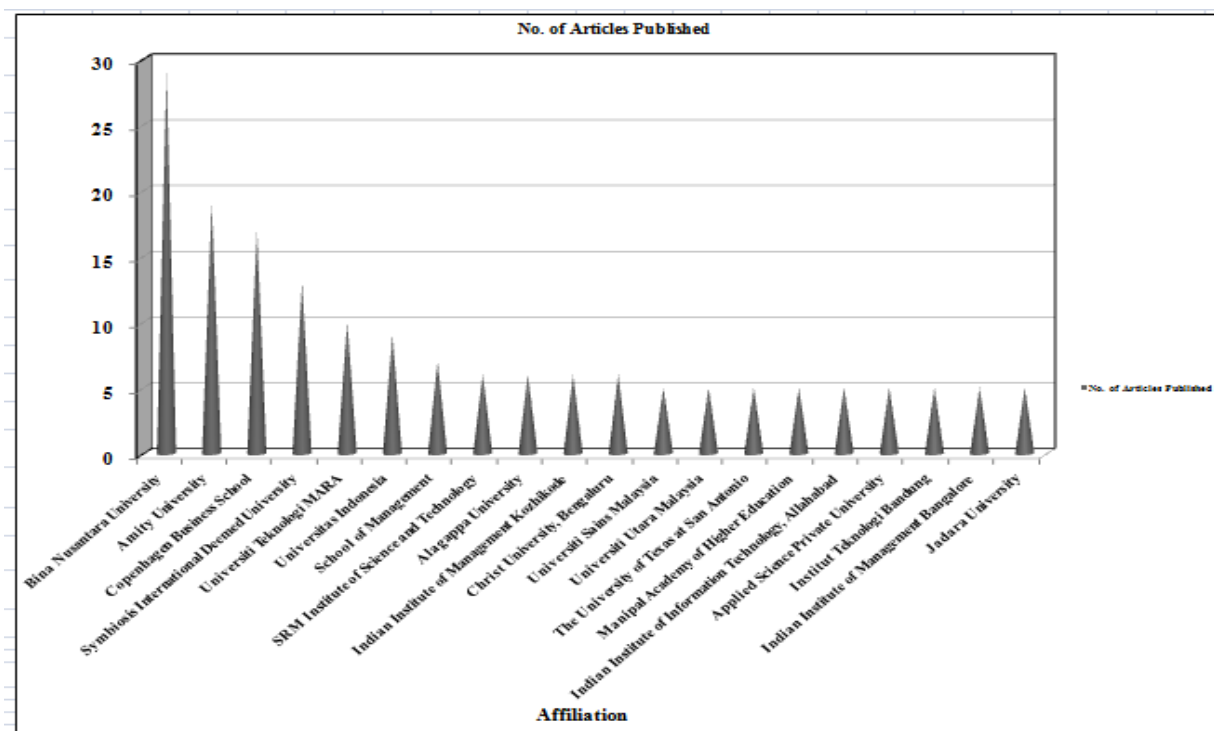


Figure 6. Most Prolific Institution

Most Prolific Countries

Indian academics have produced the most research papers on digital payments, with 281 articles accounting for around 33.65% of all papers published. The overwhelming presence of India in the research debate on digital payments demonstrates the country's active participation and serious commitment to this concept. The considerable contribution from India demonstrates the country's prominent role in developing the landscape of digital payments. With 105 publications, Indonesia accounts for around 12.57 percent of the total. Indonesia has a significant level of involvement in digital payment research, indicating the country's deep interest and growing influence in this area. Indonesian academics' cumulative knowledge and diverse experiences contribute to a better understanding of digital payment methods around the world. The United States has a strong research preference for digital payments, as indicated by its 89 publications, which account for 10.66% of the total. The nation's contribution stems from a combination of intellectual research, technical advancement, and innovative business ideas. The plethora of research breakthroughs coming from the United States greatly enriches the international discussion on digital payments. Digital payment research is an active topic of study in both China and Malaysia, as indicated by 55 articles (6.59%) and 42 publications (5.03%) dedicated to the issue, respectively. As shown in figure 7 China's contributions are consistent with its status as a technology giant, but Malaysia's participation demonstrates its growing relevance in shaping the conversation surrounding digital payments in Southeast Asia. Denmark, Poland, Sweden, Saudi Arabia, the Netherlands, the United Arab Emirates, Australia, Germany, Jordan, Thailand, Canada, the Philippines, France, and Pakistan are all major contributors to the worldwide effort to improve awareness of digital payments. Because of their distinct technological, economic, and cultural settings, these countries improve our understanding of digital transactions on a global scale

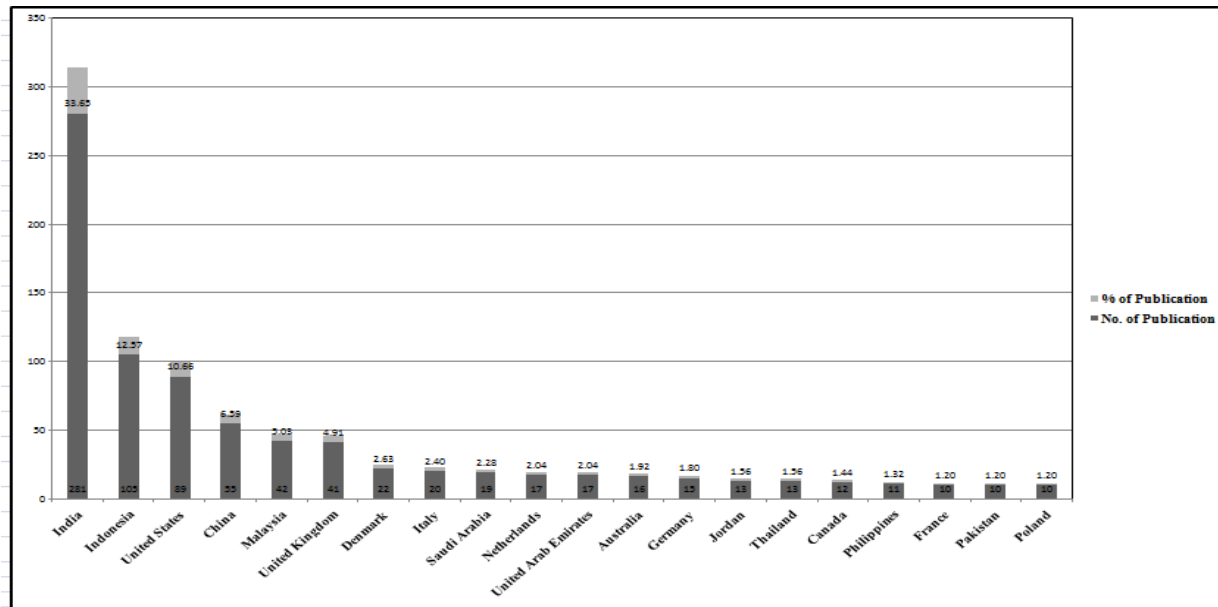


Figure 7. Most Prolific Countries

Most Prolific Subject Area

Figure 8 show’s that with the publication of 202 papers, computer science has established itself as the leading field of study in digital payment research. This emphasizes the significance of computer science in the advancement of the technological foundation that supports digital payment. A large number of research articles have been published in this topic, demonstrating earnest efforts to improve understanding of algorithms, system design, and security, as well as developing novel concepts. This demonstrates the extent to which research on digital payments incorporates components from numerous academic subjects. The Business, Management, and Accounting category has 126 publications, ranking second in terms of quantity. This highlights the importance of integrating digital payment systems into business operations. There is a significant amount of literature in this topic, indicating that people are interested in learning about the financial and commercial ramifications of deploying digital payment methods across a wide range of industries. Engineering comes in second, with 104 articles showcasing the technological principles and inventive concepts that underpin digital payment systems. This classification encompasses a wide range of technical specializations and emphasizes the importance of engineers and computer scientists collaborating to develop secure and robust digital payment solutions. The distribution of 101 papers from the social sciences and 76 papers from the decision sciences indicates that digital payment research is interdisciplinary. The following themes examine the adoption and use of digital payment systems from a variety of perspectives, including their impact on society as a whole, individual behaviors, and decision-making processes. 73 works in economics, econometrics, and finance examine the financial dynamics and economic impacts of digital payment systems. This academic subject demonstrates the value of financial considerations and economic analysis in the ever-changing world of internet transactions. Each of the following fields of study contributes uniquely to the overall understanding of digital payment systems: energy, physics and astronomy, medical, arts and humanities, psychology, agricultural and biological sciences, materials science, and trans-disciplinary studies. Overall, these subjects demonstrate the importance of interdisciplinary collaboration and varied perspectives in order to foster understanding and generate new ideas about digital payments.

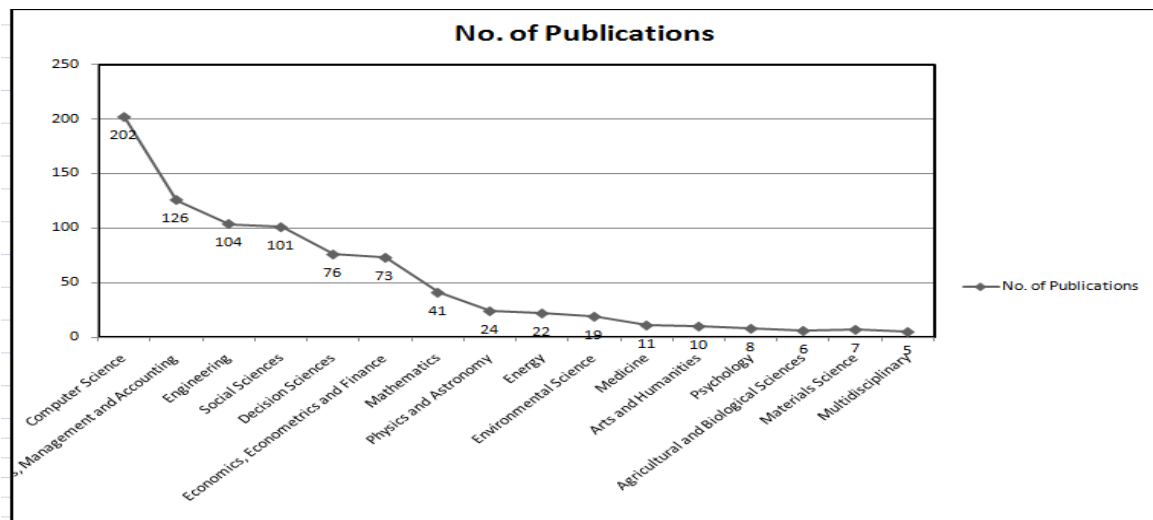


Figure 8. Most Prolific Subject Area

Co-Authorship Network Analysis

To study the co-authorship network for this project, the VOSviewer 1.6.20 application is used. VOSviewer is a software tool that allows you to create and examine bibliometric maps. Visual representations of the links between journals or authors can be created using co-citation data. Keyword maps can be created using co-occurrence data (VanEcke et al., 2010). The term VOS refers to the technique of seeing similarities. The map is generated by software using the VOS mapping process (Van Eck and Waltman, 2007). Van Eck and Waltman (2007, 2009) and Van Eck et al. (2010) provide in-depth mathematical explanations of the VOS approach and VOSviewer software, respectively. Co-authorship network analysis can identify which writers have collaborated with the most other authors in the dataset by evaluating their interrelationships in figure 9.

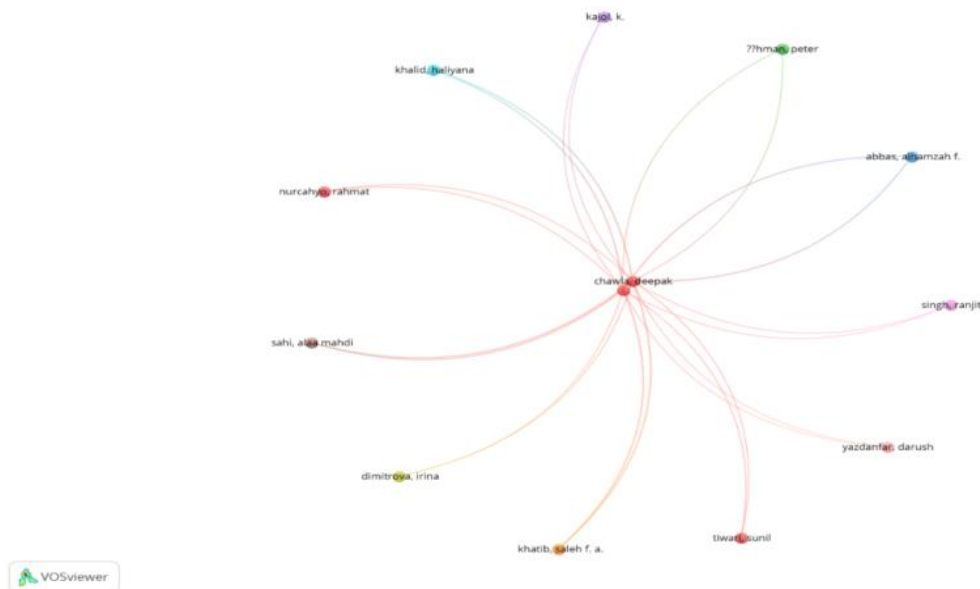


Figure 9. Co-authorship network map of various authors, who conducted research on Digital Payment

The dataset used in this study had 2321 authors in total. To create a network map, the software only chose writers who have collaborated with at least two other authors in the dataset. To study the co-authorship network for this project, the VOSviewer 1.6.20 application is used. VOSviewer is a software tool that allows you to create and examine bibliometric maps. Co-occurrence data can be used to produce keyword maps, whereas co-citation data can be utilized to create author or journal maps (Van Eck et al., 2010). The term VOS refers to the technique of seeing similarities. The map is built by software using the VOS mapping process (Van Eck and Waltman, 2007). For a comprehensive

mathematical explanation of the VOS technique and VOSviewer tools, see Van Eck and Waltman (2007, 2009) and Van Eck et al. (2010). The authors who have cooperated with the other writers in the dataset are identified by co-authorship network analysis is few in number, which visually represents the links between them. The dataset used in this study had 2321 authors in total. To create a network map, the software only chose writers who have collaborated with at least two other authors in the dataset.

Country Co-Authorship

This section goes into detail on cross-national co-authorship networks. The goal of this analysis is to determine which authors from each nation have collaborated with the most writers from other countries. Figure 10 shows a network map of intercountry coauthorship. According to the VOSviewer software, co-authorship connected 78 countries in total. Based on an investigation of the international network of co-authorship, scientists discovered that partnerships involving authors from India, the United States, Indonesia, the United Kingdom, Canada, Hungary, Bangladesh, Malaysia and Jordan, occurred the most frequently. As shown in Figure 10, a significant fraction of lines are related to the circle labeled "India, United States, Indonesia." The lines indicating countries that have engaged in more extensive collaborations were made more apparent.

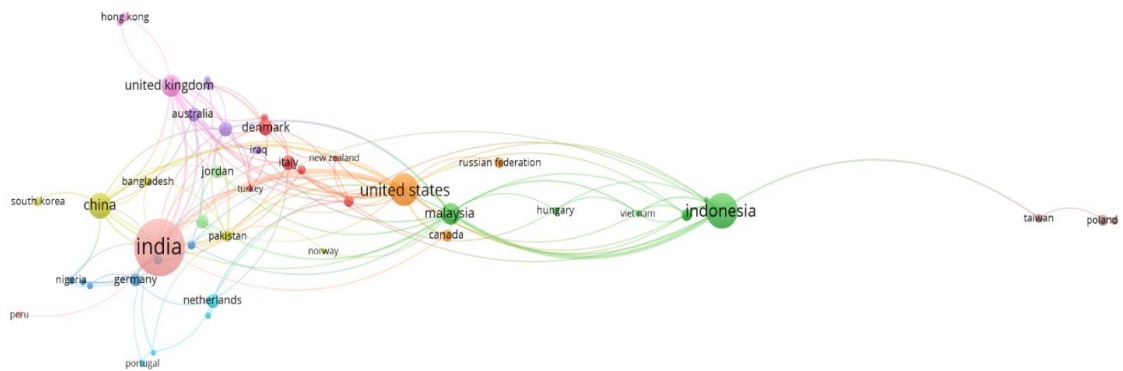


Figure 10. International Connectivity Patterns

Keywords Cooccurrence Network Analysis

The co-occurrence network analysis is used in this study to identify commonly occurring keywords across many publications. This type of research allows scholars to pinpoint certain issues and repeating themes that have piqued their interest. According to Laudano et al. (2018), VOS viewer's text-mining technique generates a geographical representation of the interdependence of unique keywords, as measured by their distance from one another. A greater closeness of two or more terms indicates a stronger association between them. The degree of interconnectedness among the terms was determined by an assessment of co-occurrences in the papers (Van Eck et al., 2010). The dataset contains a total of 230 instances of the phrases "digital payment " which was used interchangeably with a wide range of other terms in the dataset. 4041 keywords related to digital payment were extracted from the dataset through the process of aggregating these terms. A total of 835 documents were analyzed, with 4041 including the term "digital payments". (Martin and Daim, 2008) depicts a network map of co-occurrence and, the compilation included 231 keywords. A network map was created using only the 230 terms in the data set, which were repeated at least five times. Using separate lines, the map depicts the interdependence of many keywords. The lines indicate that these terms appear in several works within the dataset. After analyzing the network map with the VOSviewer tool (Figure 11), it was clear that practically all alternate keywords, which appeared were also correlated with "digital payment" and

To summarize, the study was based on a digital payment method that was investigated by using the bibliometric analysis and the SLR. It provides an organized outline of the research trends, author collaborations, and the technologies that are up and coming. Besides supporting the given results, the research also covers novel ideas making it a relevant study for future information consumption in the digital finance industry. The information obtained will be of great help to the policy makers, companies, and financial institutions so that they'll be able to take the digital payment adoption much faster and make the transaction security much better. As a result, this will make the entire economy more efficient and inclusive which means that the money will be circulated problem-free by doing away with cash. The outcomes of this research are very relevant to many groups, like researchers, policymakers, banks, and corporations that use digital payments. The approach of the study is novel, as it applies bibliometric analysis and a systematic literature review (SLR), which gives a clear and structured understanding of the cumulative research that has been done in the digital payments field. Scholars are known for their relevant findings in this area. They can put together the most important themes and problems in their studies, thus this list becomes a valuable research instrument. Moreover, the use of VOSviewer maps that help in reading the intellectual structure of a research area through browsing or searching helps the user to be targeted to an investigation of a particular area of knowledge.

The study provides researchers with some valuable insights into the issue by listing the existing literature gaps and displaying the newest trends in digital payments. This research fairly integrates the bibliometric analysis and systematic literature review and as a result, displays a well-structured understanding of the field. This, in turn, allows the successive scientists to base the research on the existing findings. Adopting the VOSviewer visualization process boosts the overall understanding of the intellectual set-up in the field of payment research, therefore, enabling the scholars to observe and recognize the fundamental areas that need further exploration and innovation. This analysis will greatly benefit policy-makers and enable them to make better decisions regarding the regulation and governance of digital payment systems, etc. The community should better understand the relationship between security problems, interoperability challenges and financial inclusion problems to its digital payment regulation, and this knowledge will help the authorities to create the legal framework which will be both safer and more accessible. Also, it is knowledge acquired by, primarily the research of systematic review that can serve as a background for policies that would help in spreading financial literacy and in the process of finding consumer trust in the digital transaction. Therefore, the providers and the receivers of digital payment are both secured and included.

Financial institutions and fintech companies are able to leverage the insights from the research undertaken in order to optimize the digital payment solutions, improve user experience and solve the technological limitations. Businesses can perfect their strategies and thereby acquire broader consumer acceptance and engagement when they know the critical factors of digital payment adoption. Still, the survey's results indicate improvements in numerous areas like artificial intelligence, blockchain, and biometric authentication that could be utilized to improve the security, accuracy, and reliability of digital payment systems. These advances have the capability of making a huge digital paradigm shift and they can be the ones to provide platforms to the users that are very easy to use and they are the best in secure digital transaction experiences. Businesses can make use of the study's results, which they can align with consumer choices and the market's priorities in order to provide more advanced solutions to the digital payment process. The study has been able to identify the major concerns that consumers face when they are using digital payment methods, thus, these companies can implement the best solutions like establishing trust, including stronger security measures, offering promotions, and developing a user-friendly interface. Businesses dealing with e-commerce, retail, and service can incorporate the input into their digital payment mode and which will positively impact customer satisfaction levels. They are able to do that by mobilizing a user-friendly platform and addressing the barriers of adoption of digital payments. The conclusions of the investigation are all-inclusive by enabling the companies to gain entrance to diverse consumer segments and their respective needs.

This study is one of the prime takeaways the identification of challenges for the acceptance of digital payment, which is particularly evident in regions with less financial infrastructure where growth is yet to take off. The inquiry was started with the hypothesis that the gained insights would be useful for all party stakeholders in their attempt at helping in the achievement of a financial inclusion process that would guarantee that digital payment solutions are inclusive to all the demographic groups. Policymakers and financial institutions can make the digital economy more inclusive by working on

accessibility and financial literacy while the benefits on the other side are improved for the underserved groups and the financial system.

The growing popularity of digital payments, new cybersecurity threats and methods of fraud is the basis for considerable probabilities. This research enlightens us on these problems, which can help banks to build up their risk management frameworks. The data summarized make the case for upgrading security to make sure that digital payments remain serious, stable, and widely used. Making the consumer protection mechanisms more solid will contribute to the trust of digital transactions and thereby bring in more customers and companies that want to use them. This paper which is a valuable reference of digital payment ecosystem consider a number of players and can be applied to several sectors. The integration the paper consists of bibliometric and systematic literature review and ensures the most well-founded and up to date understanding of the current digital payment landscape. The Thus, the ultimate-way, it contributes to the building of a more-secure, efficient, and inclusive virtual economy that will ensure the innovation and use of digital financial tools within the society for a very long time.

The current study has some intrinsic limitations that may serve as avenues for further investigation. This research begins by looking just at papers that were published between January 2000 and January 2024. Furthermore, research publications were gathered solely from the Scopus database for the purposes of this study. As a result, journal articles not included in the Scopus index were excluded from the analysis. In the future, additional research may be conducted using an alternative database, such as Web of Science. Furthermore, our analysis focused primarily on works created in English. Articles written in languages other than the target language were excluded from the analysis. The compilation excluded master's and doctoral theses, private publications, and doctorate theses that were solely concerned with digital payment. Specific findings may become out of date as a result of rapid technological advancement and the ever-changing environment of digital payments. The review's scope was limited to peer-reviewed articles, which may have excluded important insights found in gray literature and industry reports. To effectively address these concerns, future inquiries should use a broader range of data sources and longitudinal research designs that show the progression of digital payment adoption over time. Furthermore, it is critical to investigate the environmental and long-term viability consequences of widespread adoption of digital payment systems. Improving the user experience (UX) is critical to promoting widespread adoption of digital payment systems. The design of digital payment interfaces should consider functionality, usability, and user satisfaction. Developers can design more intuitive and user-friendly applications by analyzing user feedback, concerns, and preferences, resulting in greater acceptance and usage.

The primary impediment to many people adopting digital payments remains a significant security concern. To improve the integrity of digital transactions, further research into cutting-edge encryption methods, biometric authentication systems, and blockchain technologies is required. It is critical to gain a thorough understanding of the factors that influence people's trust and confidence in digital payment systems in order to develop resilient security protocols. The study of the social and economic consequences of digital payment system adoption is a relatively new field. Scholars can investigate the effects of increasing digital transactions on income distribution, labor market dynamics, and socioeconomic disparities. Furthermore, understanding the consequences for small and medium-sized businesses (SMEs) and the informal sector will help you better understand the implications for the economy as a whole. As global interdependence grows, so does the importance of enabling frictionless digital money transfers across borders. Further inquiries should focus on the benefits and drawbacks of participating in global commerce, including the complexities of currency exchange regulations, the ease of using various digital payment platforms, and the integration of these systems. Gaining insights into the facilitation of global integration will help the development of a unified digital economy. Given the large volume and manipulation of personal information handled by digital payment systems, maintaining privacy and adhering to ethical principles is critical. Moving forward, researchers must prioritize the development of ethical principles that govern digital payment providers, ensuring the protection of users' privacy and promoting data transparency. The ethical implications of incorporating emerging technologies, such as artificial intelligence, into payment systems must also be carefully considered.

CONCLUSION

This extensive literature review clarifies the factors that motivate people to use digital payment methods, the challenges they face, the most recent technological advancements, and the future direction of this domain. This review highlights the complex characteristics of adoption factors and provides valuable insights for policymakers, researchers, and industry experts. Additional research is required to stay current on the most recent technological developments and societal transformations as digital payment systems advance. All parties involved can make significant contributions to the long-term growth of digital payment ecosystems, benefiting not only individuals, businesses, and economies, but also encouraging innovation and inclusivity. This extensive review of the literature provides a thorough examination of the current state of digital payment systems. The adoption of digital payment systems is influenced by a variety of factors, including security concerns and perceived ease of use. In contrast, new technologies and changing trends are hastening the evolution of digital payment systems. Concerns such as infrastructure deficiencies and security vulnerabilities must be identified and addressed before the platform can become widely adopted. To promote the long-term expansion of digital payment ecosystems on a global scale, it is critical to conduct ongoing research and proactively address any obstacles that may arise within the dynamic digital payment environment. The primary goal of this comprehensive analysis is to lay the groundwork for future empirical investigations and policy discussions aimed at improving our understanding of the diverse implementations of digital payments across various environments. A systematic literature review looks at the current challenges, obstacles, and potential avenues for advancement in the field of digital payments. Researchers have the potential to accelerate the growth of digital payment ecosystems by addressing identified deficiencies and implementing a multidisciplinary approach. Working together, policymakers, businesses, and technology developers can use these insights to create an environment that encourages innovation, addresses challenges, and ensures widespread adoption of digital payment systems.

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AUTHOR CONTRIBUTIONS

Author 1 and Author 2 creates articles and Analyzes research data and is responsible for research.

CONFLICTS OF INTEREST

The author(s) declare no conflict of interest.

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