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A Bibliometric Analysis of Digital Payments in India: Exploring the Research Landscape

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ABSTRACT

Every aspect of our daily lives is digitalized, from payments to purchasing to manufacturing. In recent years, e-payments have gained popularity in academic research. A sample of 474 articles retrieved from the Scopus database was visualized using the Biblioshiny and VOS viewer tools. This study focuses on exploring significant players, current trends in e-payments, and identifying potential future research avenues. A systematic literature review is coupled with bibliometric, network, and content analyses. Authors and papers with the most citations are ranked according to PageRank. A co-citation network is developed to determine the intellectual structure of the research area. Content analysis was performed on papers in two clusters discovered via bibliometric tools. As a result of this study, we can summarize the scientific literature on e-payments development. Besides identifying research gaps, the study proposes research directions for the future.

***Keywords**: Mobile Banking, Bibliographical Research, Literature Review, Viewing Online Sources Viewer, R Studio.*

Introduction

The spread of breakthrough technologies has brought about unprecedented opportunity throughout society with Information and Communication Technology (ICT) as an essential driver for societal progress and economic digitalisation. A sweeping digital revolution is penetrating all areas of modern existence, transforming such conventional paradigms in payments systems, buyer purchasing habits, and production systems. The emergence of advanced internet infrastructure has allowed consumers to make monetary transactions with unprecedented convenience using digital banking facilities and mobile apps, making digital payments the most economically efficient and technologically advanced option in today's financial ecosystem. The COVID-19 pandemic has acted as a key driver in speeding up the use of digital payment options, radically transforming consumer buying habits and preferences worldwide. In the Indian scenario, the e-payment environment is undergoing a very significant change, marked by government efforts to drive digital financial inclusion, payments infrastructure technology, and shifting consumer behavior. This revolution in digital payments, driven by technologies like blockchain, artificial intelligence, and machine learning, has far-reaching implications for financial inclusion, economic transparency, and the overall efficiency of monetary transactions, leading to a more sustainable and inclusive financial system. The government of India is encouraging digital literacy, access, and adoption by launching the "Digital India" initiative. Indian governments, industries, and citizens are contemplating the idea of shifting to a cashless economy. (Acharya et al., 2019). The shift in

paradigms towards cashless economies has been a revolutionary development in contemporary financial systems, with countries actively engaging in this advanced economic model by adopting state-of-the-art financial technology. This shift essentially reconfigures monetary exchange, with electronic payment systems and plastic currency becoming the main tools of financial exchange. The deployment of sophisticated platforms such as the Unified Payments Interface (UPI) and Aadhaar payments illustrates the possibility of safe, real-time transactions across a range of financial institutions.

Government policies in the Indian context focus on financial inclusion via strategic deployment of the Jan Dhan scheme for integrating unbanked groups in the formal system. This shift to digital involves better economic governance through more efficient transaction tracking and less tax evasion, and its implementation necessitates strong infrastructure build-out and far-reaching digital literacy programs to guarantee inclusive adoption among all segments of society. The success of this shift depends on balancing technological progress with accessibility, providing a sustainable platform for future economic growth. A cashless transaction is advantageous to every sector, such as business, government, agriculture, and private associations, since it lowers operating costs such as printing money and procurement costs (Gupta et al., 2020). The use of electronic means makes payments more convenient. Since the Internet has become widely used and e-commerce operations are growing more popular, consumers must use new payment mechanisms to conduct their business transactions effectively, reliably, and securely. (Kulathunga et al., 2019). A user's preferred payment method will influence a country's economy and financial structure over the long term (Shane et al., 2022). E-payment systems are increasingly influential, making their study highly valuable. Pursued by technological progress and hastened by incidents such as the COVID-19 pandemic, e-payments have been widely embraced by the public. Systematic literature search and bibliometric analysis through databases such as Scopus is crucial in building a research framework. It assists in determining key themes, theoretical models, and gaps in research, thus building bridges to uncharted domains in e-payment research. Particularly, such analyses can also make known determinants of e-payment adoption, namely perceived security, ease of use, and perceived benefits, and their effect on customer intention to use e-payment systems. An understanding of the challenges and opportunities of e-payment systems is necessary for sustainable development in online commerce and the wider digital economy.

Objective of the Study

The increasing prevalence of financial technology (FinTech) and digital payment systems has spurred significant scholarly interest, resulting in a proliferation of research across various disciplines. The interdisciplinary nature of this field, coupled with rapid technological advancements, poses challenges in comprehending the depth, patterns, and major conclusions of existing studies. To address this complexity, bibliometric analysis offers a robust methodological approach for systematically examining the landscape of FinTech and digital payment research. By employing quantitative techniques, bibliometric analysis can reveal underlying patterns in publication trends, citation behavior, co-authorship networks, and the thematic evolution of subject-related topics. This analytical approach enables researchers to identify key publications, influential authors, and emerging research areas, thereby providing a structured overview of the field and facilitating the identification of potential research gaps. The study aims to:

- Trace the main research clusters which appear in investigations about digital payments in India.
- Study the historical development of both research output production and citation impacts in the field of Indian digital payments research.
- Network centrality analysis will help establish which research authors and sources have the most influence on Indian digital payments research field.
- This research analyzes the intellectual structure of Indian digital payment research by using co-citation and keyword analysis methods.
- New directions for future research on digital payments in India should be identified together with concrete study paths.

Research Methodology

We used bibliometric analysis, co-citation data, keywords, and collaborating authors to analyze the literature on Digital Payments in India (Xu et al., 2018; Cisneros et al., 2018). A simultaneous citation occurs when two papers are mentioned concurrently in other works (Small, 1973). The more mutual

citations, and the stronger the co-citation significance, the more likely the two texts are profoundly associated. Key areas of a subject can be identified in keyword analysis by tracking the frequency of terms used (Huai and Chai, 2016). Multiple-author articles were selected because they are common in the field(Reyes-Gonzalez et al., 2016). According to Newman (2001) and Glänzel and Schubert (2004), co-authorship is a popular and reliable form of scientific collaboration, and the results of these collaborations form a "co-authorship network. This paper utilizes the Biblioshiny program, which is developed using R and VOSviewer. The program provides a secure interface for the input, processing, retrieval, and evaluation of data from database sources such as Scopus. A structured literature review aims to clarify and examine publications to conduct a comprehensive analysis of the literature and identify potential open questions.(Tranfield et al., 2003). The results of a systematic literature survey were synthesized and analyzed using bibliometrics and qualitative analysis. Analyses of documents, citations, co-citation networks, and bibliometrics were carried out.

- **Set up Search Keywords**

The search string was constructed in several feedback cycles, where the first literature review helped the researchers to define the best keywords. The search strategy was confirmed by field specialists to be comprehensive and authoritative. To ensure a broad coverage of the keywords, the TITLE-ABS-KEY field contained such keywords as E-Payment, Electronic Payment, Digital Payment, Online Payment, Cashless Payment, E-banking, Internet Banking, Banking Cards, and Mobile Banking. This combination helped to obtain all the phrases and variations regarding the key idea. The search used interchangeable terms commonly used and also added Cashless Payment to ensure it got the scholarly work on cashless economy. Four elements of payment systems were covered, namely E-banking, Internet Banking, Banking Cards, and Mobile Banking, as well as particular digital payment channels and tools. Such extensive search strategies retrieved a large number of pertinent publications, which made it possible to perform strong analysis of e-payment systems and comprehend the motivators of user acceptance.

- **Determine Search Criteria**

On November 20, 2024, the search in the Scopus database returned 474 initial documents. We narrowed this down, through stringent selection criteria, to 254 final publications that we analyzed in detail. The time span of the research (2008-2024) encompasses the major period of the electronic payment systems development. We reviewed articles and review articles only to explore substantive content and academic knowledge synthesis. Articles mainly dwelt on e-payment system effects on the fields of business management, accounting, and economics. Non-English publications were also omitted through abstract reviews to ascertain relevance of the research and make analysis clear. The last 254 thoughtfully chosen articles present an ideal corpus of data to carry out bibliometric analysis and content assessment of the e-payment literature.

Biblioshiny Analysis

Biblioshiny operates as a sophisticated user-friendly web-based tool which enhances bibliometric procedures by providing innovative capabilities. The technology provides an organized system to simplify data collection and organization and visualization which enables researchers to conduct detailed analyses of academic literature. Through Biblioshiny we investigated the digital payment system's effect on economic development during our research investigation. The GUI module of Biblioshiny creates accessibility for researchers using the tool while they lack experience in R programming or other programming languages. Researchers can use bibliometrix main features through the application which assists them with importing data and data frame conversion as well as API-based retrieval from Dimensions PubMed and Scopus services. Biblioshiny enables researchers to conduct systematic transparent review procedures that are also reproducible.

Main information About Data

The authors collected data from Scopus database publications that specialize in digital payment research. The collection of Biblioshiny contains vital details about digital payments in India. Research covers digital payment publications between 2008 to 2024. The research analyzes 254 documents obtained from 180 different sources that demonstrate annual growth at 23.94%. The dataset demonstrates that documents average 2.66 years in age while each receives 11.2 citations on average and the bibliography contains 10,686 references. The research contains content by 660 authors who wrote 20 documents independently while the typical document features three co-wrote authors. Research

output contains a significant component of overseas partnerships that make up 15.75%. Digital payment research can be found in predominantly two document types: articles with 182 items and conference papers with 72 items. This analysis shows the growing academic interest in collaboration across various fields which strengthens both existing research and predicts its future development potential.

Table 1: Main Data Overview

An overview of data	
Category	**Outcome**
Period	2008:2024
Sources (Publication, Books, etc)	180
Data	254
Yearly Growth Rate %	23.94
Document Average Age	2.66
Per-doc citation avg	11.2
Bibliography	10686
Data Spegification	
Search criteria as well (ID)	877
Author's Keywords (DE)	941
AUTHORS	
Authors	660
Docs with only one creator	20
Writer association	
Single-author docs	20
Co-Authors per Doc	3
Overseas collaboration %	15.75
Data Category	
Article	182
Presented work	72

Prepared by a researcher with the help of R software

- **Trends in Annual Publication**

Figure 1, depicting "Annual Scientific Production," reveals a distinct shift in research activity, with a relatively low and stable number of publications from 2008 until approximately 2016. Subsequently, the field experienced notable growth, with a surge in publications between 2017 and 2019, followed by a decline from 2019 to 2022. This pattern might be correlated with the COVID-19 pandemic that began in 2020. Finally, exponential growth from 2022 to 2024. This surge likely reflects the increasing relevance, adoption, and availability of digital payment systems.

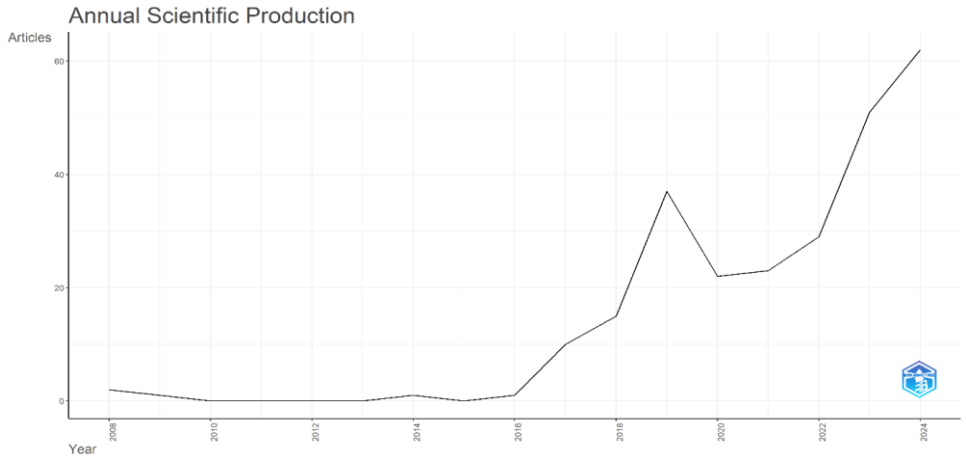

Figure 1: Figure 1 Yearly scientific publications

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- **Annual Citation Rate**

Figure 2, "Average Citations per Year," displays the temporal evolution of citation impact. From 2009 to 2017 average citation per year remained almost constant. This is followed by an exponential growth in the number of citations from 2018 to 2020. From 2020, there is a decline in citations. It's essential to acknowledge that the most recent publications may not yet have accumulated their full citation potential. A further study on these data can be done to further investigate digital payments in the near future.

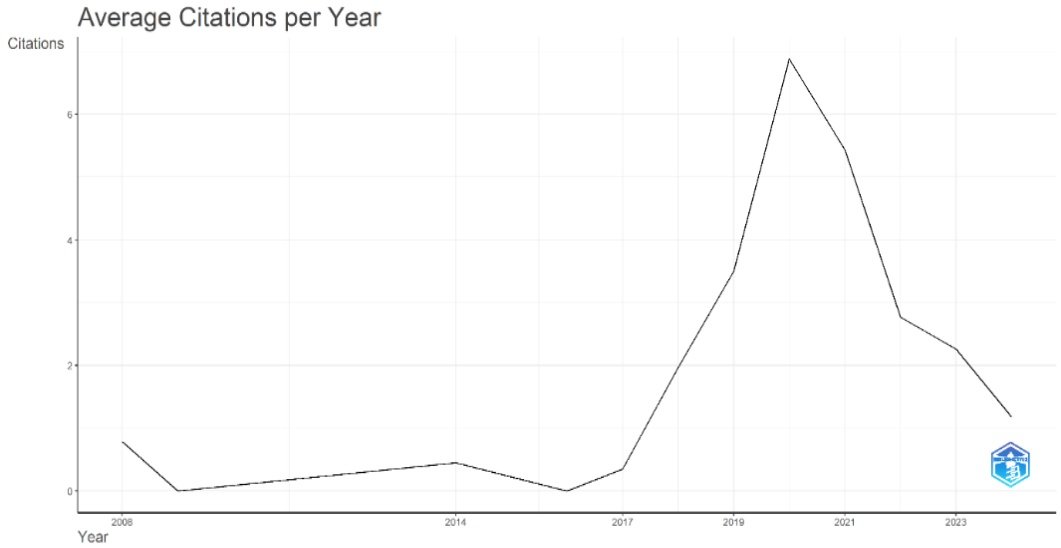

Figure 2: Annual Citation Rate

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- **List of Reliable Publications**

As per Table 2 analysis found the following publications to be the most relevant. The top sources include The International Journal of Innovative Technology and Exploring Engineering, The International Journal of Recent Technology and Engineering, and The International Journal of Scientific and Technology Research, each with a significant number of published articles compared to the other listed sources.

This information can help researchers and professionals in the discipline to identify the core journals and publication outlets that actively contribute to the research literature.

Table 2: Most Relevant Source

Most Relevant Source		
S.No.	**Sources**	**Articles**
1	INTERNATIONAL JOURNAL OF INNOVATIVE TECHNOLOGY AND EXPLORING ENGINEERING	8
2	INTERNATIONAL JOURNAL OF RECENT TECHNOLOGY AND ENGINEERING	6
3	INTERNATIONAL JOURNAL OF SCIENTIFIC AND TECHNOLOGY RESEARCH	6
4	FINANCE INDIA	5
5	INTERNATIONAL JOURNAL OF ELECTRONIC FINANCE	5
6	2022 INTERNATIONAL CONFERENCE ON INTERDISCIPLINARY RESEARCH IN TECHNOLOGY AND MANAGEMENT, IRTM 2022 - PROCEEDINGS	4
7	INTERNATIONAL JOURNAL OF BANK MARKETING	4
8	INTERNATIONAL JOURNAL OF E-BUSINESS RESEARCH	4
9	JOURNAL OF PAYMENTS STRATEGY AND SYSTEMS	4
10	JOURNAL OF SCIENCE AND TECHNOLOGY POLICY MANAGEMENT	4

Prepared by a researcher

- **Bradford's Law**

Table 4 depicts Bradford's Law, originally described by Samuel C. Bradford in 1934, is a model for describing the spread of scientific literature within academic journals within a given subject area. This law suggests that if journals are listed in descending order according to the number of articles they carry on a specific topic, they can be divided into three distinct zones. The core or nuclear zone is the first zone that includes a limited number of very productive journals that provide most of the relevant articles. The second zone includes more journals that are moderately productive, and the third zone includes an even larger number of journals that provide relatively few articles to the discipline (Cheng, 2024).

The empirical results of our study mirror this theoretical setup in the sense that our findings are indicated through the ranks and number of publications across different journals covering digital payments. For example, the International Journal of Innovative Technology and Exploring Engineering takes the lead with eight publications, followed by other central journals like the International Journal of Recent Technology and Engineering and the International Journal of Scientific and Technology Research, each of which contributes six articles. This is in line with Bradford's postulation that a few central journals account for most scholarly output in a particular field of study.

Additionally, our data show that the core zone includes 10 journals in total, all belonging to Zone 1, which collectively generate a significant amount of literature on digital payments. This clustering implies that scholars interested in exhaustive knowledge of this field should first consider these core publications, since they are more likely to carry the most impactful and highly cited articles.

Table 3: Bradford's Law

Bradford's Law				
SO	**Rank**	**Freq**	**cumFreq**	**Zone**
INTERNATIONAL JOURNAL OF INNOVATIVE TECHNOLOGY AND EXPLORING ENGINEERING	1	8	8	Zone 1
INTERNATIONAL JOURNAL OF RECENT TECHNOLOGY AND ENGINEERING	2	6	14	Zone 1
INTERNATIONAL JOURNAL OF SCIENTIFIC AND TECHNOLOGY RESEARCH	3	6	20	Zone 1
FINANCE INDIA	4	5	25	Zone 1
INTERNATIONAL JOURNAL OF ELECTRONIC FINANCE	5	5	30	Zone 1
INTERNATIONAL CONFERENCE ON INTERDISCIPLINARY RESEARCH IN TECHNOLOGY AND MANAGEMENT, IRTM 2022 - PROCEEDINGS	6	4	34	Zone 1
INTERNATIONAL JOURNAL OF BANK MARKETING	7	4	38	Zone 1
INTERNATIONAL JOURNAL OF E-BUSINESS RESEARCH	8	4	42	Zone 1
JOURNAL OF PAYMENTS STRATEGY AND SYSTEMS	9	4	46	Zone 1
JOURNAL OF SCIENCE AND TECHNOLOGY POLICY MANAGEMENT	10	4	50	Zone 1

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- **H Index of author's local impact**

Table 4 lists the ten most influential authors in the field of digital payments during the time under consideration and lists their publications. The table summarizes the local impact of ten authors based on various metrics, including the h-index, g-index, m-index, total citations (TC), number of publications (NP), and the year their publication career began (PY_start). Among these authors, Gupta S stands out with the highest h-index of 4 and a total of 7 publications, indicating a strong impact and productivity in their research contributions. Rana NP follows closely with a significant total citation count of 605, highlighting broad recognition in their field despite having an h-index of 3. Chendragiri M and Nandru P exhibit the highest m-index of 1.5, reflecting substantial productivity relative to their recent start year in 2023. The g-index values suggest that Gupta S, Rana NP, and Ravikumar T have performed well in terms of citation performance for their top papers. Overall, this table illustrates the varying levels of research impact among the authors while emphasizing the importance of considering multiple metrics for a comprehensive evaluation.

Table 4: **H Index of Author's Local Impact**

Author's local impact by H Index							
S.No.	**Element**	**h_index**	**g_index**	**m_index**	**TC**	**NP**	**PY_start**
1	GUPTA S	4	7	0.667	189	7	2019
2	CHENDRAGIRI M	3	3	1.5	16	3	2023
3	HERATH T	3	3	0.429	178	3	2018
4	KUMAR V	3	3	0.75	55	3	2021
5	MATHIRAJ SP	3	3	0.5	20	3	2019
6	NANDRU P	3	3	1.5	16	3	2023
7	PAL A	3	3	0.429	178	3	2018
8	RAGHAV RAO H	3	3	0.429	88	3	2018
9	RANA NP	3	4	0.429	605	4	2018
10	RAVIKUMAR T	3	4	0.5	27	4	2019

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- **Affiliation Analysis**

Table 5 shows the top ten institutions that generated the most digital payment research outcomes throughout the investigation. These organizations produced 91 publications together. Fifteen articles were supplied by SYMBIOSIS INTERNATIONAL (DEEMED UNIVERSITY), followed by fourteen by AMITY UNIVERSITY, and ten each by ALIGARH MUSLIM UNIVERSITY and the Reserve Bank of India. However, three affiliations—BHU, LPU, and DU—all submitted the same number of publications, seven.

Table 5: Most Relevant Affilation

Most Relevant Affilation		
S.No.	**Affiliation**	**Articles**
1	SYMBIOSIS INTERNATIONAL (DEEMED UNIVERSITY)	15
2	AMITY UNIVERSITY	14
3	ALIGARH MUSLIM UNIVERSITY	10
4	RESERVE BANK OF INDIA	10
5	CHRIST (DEEMED TO BE UNIVERSITY)	9
6	BANARAS HINDU UNIVERSITY	7
7	LOVELY PROFESSIONAL UNIVERSITY	7
8	UNIVERSITY OF DELHI	7
9	IFET COLLEGE OF ENGINEERING	6
10	MANAGEMENT DEVELOPMENT INSTITUTE GURGAON	6

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Citation Analysis

Citation analysis involves analyzing how writers refer to relevant literature. This section examines the citation analysis of publications published annually, including the most cited articles, authors, and journals.

- **Leading Papers Cited Globally**

The study uses a citation and Btw centrality analysis to demonstrate the relationship between citations and citing documents. It involves analyzing the frequency, patterns, and graphs of citations in documents to reveal properties, such as the relative importance or impact of a publication or author (Ding & Cronin, 2011). A typical aim is to identify the most important documents in a collection. The following analysis identifies leading papers based on their total citations and citations per year: Patil's 2020 paper in the International Journal of Information Management leads with 471 total citations and 94.20 citations per year, indicating a strong, sustained impact. Chawla's 2019 publication in the International Journal of Bank Marketing and Sivathanu's 2019 paper in the Journal of Science Technology Policy Management also show considerable influence with 263 and 216 total citations, respectively. Kar's 2021 paper in Information Systems Frontiers and Modgil's 2022 work in Technological Forecasting and Social Change demonstrate a more recent impact, with 41.00 and 41.67 citations per year, respectively. These metrics are valuable in assessing scholarly contributions, although it's important to consider field-dependent factors and use a combination of methods for a comprehensive view.

Table 6: Leading Papers Cited Globally

Leading Papers Cited Globally			
S.No.	**Paper**	**Total Citations**	**TC per Year**
1	PATIL P, 2020, INT J INF MANAGE	471	94.20
2	CHAWLA D, 2019, INT J BANK MARK	263	43.83
3	SIVATHANU B, 2019, J SCI TECHNOL POLICY MANAGE	216	36.00
4	KAR AK, 2021, INF SYST FRONT	164	41.00
5	MODGIL S, 2022, TECHNOL FORECAST SOC CHANGE	125	41.67
6	PAL A, 2020, INF TECHNOL DEV	99	19.80
7	GROVER P, 2020, J RETAIL CONSUM SERV	97	19.40
8	PAL A, 2021, RES POLICY	72	18.00
9	BAGLA RK, 2018, J MANAGE DEV	69	9.86
10	RAMAN P, 2021, INT J BANK MARK	67	16.75

Prepared by a researcher

- **Most Local Cited Papers**

According to an analysis of 254 published papers, the three most often cited local papers, as shown in Table 7, were SIVATHANU B (2019), CHAWLA D, (2019), and BAGLA RK, (2018). As indicated by these top-cited papers, an extensive series of papers has been published in this field. The study found that mobile banking, e-payment adoption, and factors influencing online banking usage were all acknowledged in the results. This indicates that electronic payments are an emerging research area.

Table 7: Leading Paper Cited Locally

Leading Paper Cited Locally				
S.No.	**Document**	**Year**	**Local Citations**	**Global Citations**
1	SIVATHANU B, 2019, J SCI TECHNOL POLICY MANAGE	2019	16	216
2	CHAWLA D, 2019, INT J BANK MARK	2019	11	263
3	BAGLA RK, 2018, J MANAGE DEV	2018	7	69
4	MUKHOPADHYAY S, 2022, DIGIT POLI REGUL GOVERN	2022	5	18
5	RAMAN P, 2021, INT J BANK MARK	2021	5	67
6	KAR AK, 2021, INF SYST FRONT	2021	5	164
7	GUPTA S, 2023, RES INT BUS FINANC	2023	4	20
8	GUPTA S, 2023, SUSTAINABILITY	2023	4	5
9	GUPTA S, 2023, FIIB BUS REV	2023	4	4
10	PAL A, 2020, INF TECHNOL DEV	2020	4	99

Prepared by a researcher

Reference Pair Analysis

The practice of referencing writers or sources side-by-side in publication references is known as co-referencing according to Tunger and Eulerich (2018). Co-citation analysis serves as a tool to measure the relevant connection among multiple documents which stem from a common field of research (Gmür, 2003). The visualization demonstrates the co-authorship network which connects relevant researchers to their joint research projects in the analyzed field. The prominent roles of Dwivedi Y.K. and Venkatesh V. in promoting knowledge sharing become evident through their high level of interconnectiveness. The network structure displays separate groups which expose different scholarly communities and thought patterns associated with leading authors. Further evaluation should address the main conceptual elements within network clusters in addition to tracing knowledge sharing patterns throughout the network structure.

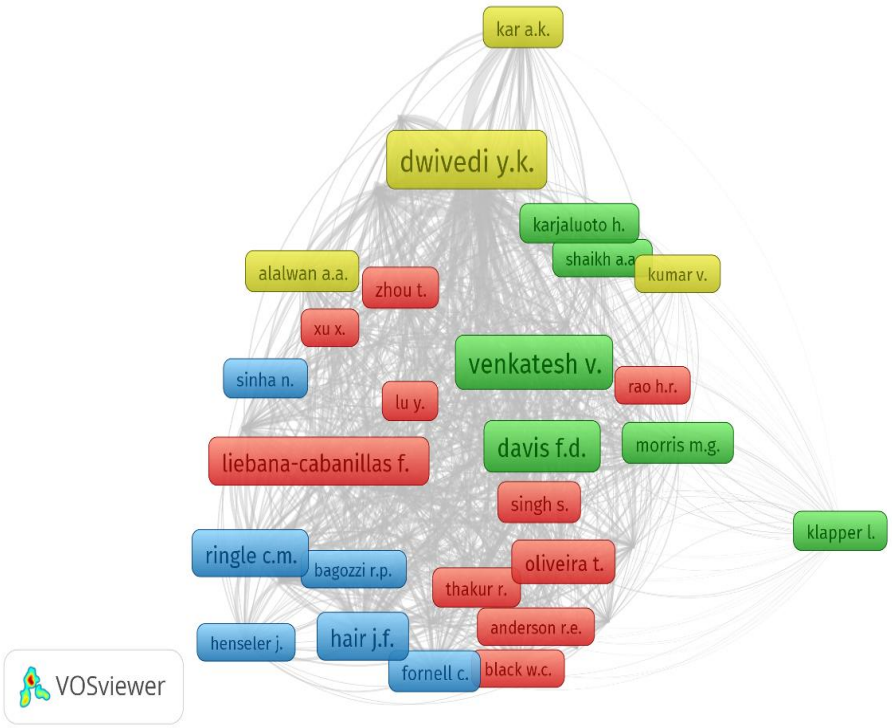
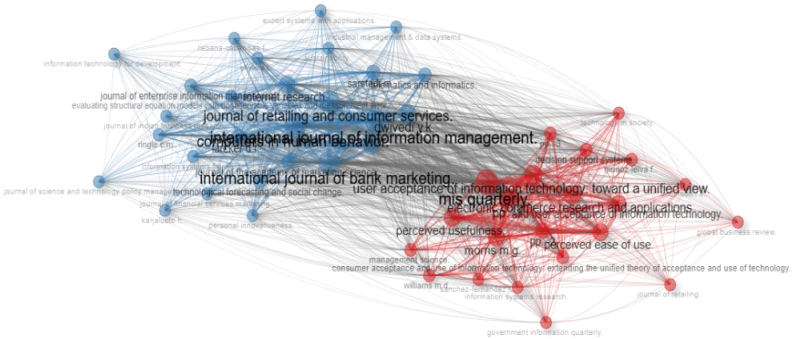


Figure 3: Reference Pair analysis

Prepared by researcher

- **An analysis of co-citation networks and data clusters**

A co-citation network system forms the base for the research intellectual structure. The research team designed a co-citation network-based conceptual framework to analyze "Digital Payments in India" subject through group-forming methods. A co-citation network develops through selecting cited papers followed by an evaluation of pair co-citations (Small, 2009). The co-citation map features nodes that signify different journals with separated colors and nodes that indicate the connecting relationships between them. Bibliography frequency determines the dimensions of each node while the line weight demonstrates the intensity of their relationship. The red cluster specialized in research about Perceived ease of use, Perceived usefulness and Consumer acceptance and use of information technology and Extending the unified theory of acceptance and use of technology as well as various aspects of Consumer behavior for accepting digital payments in India. The research identified the journals Mis Quarterly Electronic Commerce Research & Applications and Journal of Retailing among part of this cluster. The blue cluster dedicated its research to Technological Forecasting of Sustainable Innovation by evaluating structural equation models with unobservable variables and measurement error as well as Technological forecasting and social change. The cluster contained International Journal Of Bank Marketing together with International Journal Of Information Management and Journal Of Retailing And Consumer Services while Journal Of Retailing And Consumer Services appeared with Journal Of Indian Business Research along with other Technology advancement & Research journals.



- **Analysis of Content Utilizing Clusters**

The network analysis of co-citation data provides refined understandings about which articles are both influential and structurally significant in the defined study clusters. The Betweenness Centrality score of Morris M.G. reaches 24.30 points marking him as the most influential researcher in Cluster 1. Betweenness Centrality shows that Morris M.G.'s research functions as a fundamental connection point that merges individual nodes in the cluster to let information pass freely between untethered research areas. Research conducted by this group demonstrates ability to unite multiple research views or consolidate separate subtopics which strengthens the coherence of their research cluster.

PageRank analysis reveals that Cluster 2 exhibits Dwivedi Y.K. as its most influential author with 0.02575 score who rivals Larcker D.F. (0.0239). The PageRank algorithm evaluates the significance of external citations from prestigious articles to measure how decisive network connections make a node in the network scheme. Dwivedi Y.K. and Larcker D.F. maintain significant central roles because their articles receive vital citations from important papers in their respective cluster which points to their foundational theoretical or methodological contributions.

The Closeness Centrality scores show comparable levels of information spread inside each network cluster but the distinct values of Betweenness Centrality and PageRank demonstrate different pathways for influence circulation across the networks. The network structure of Cluster 1 achieves combination between unlinked concepts whereas Cluster 2 emphasizes its position and influence by accumulating references inside scholarly networks of influential research works. Research findings develop a finer breakdown of knowledge transmission patterns and core force drivers between networks in these specific scholarly areas.

Table 8: Analysis of Content Utilizing Clusters

Best Articles in Clusters, Considering Page Rank, Btw Centrality, and the Closeness Criterion				
Author	**Cluster**	**Betweenness**	**Closeness**	**PageRank**
williamsm.d..	1	14.10510941	0.014285714	0.017534967
munoz-leiva f..	1	13.92620252	0.014285714	0.017539253
morrism.g..	1	24.30464647	0.014285714	0.023972978
andersonr.e..	1	8.059424141	0.014285714	0.014560362
dwivediy.k..	2	15.8945027	0.013157895	0.025755062
sarstedt m..	2	7.566831475	0.013157895	0.022215455
oliveira t..	2	5.611915624	0.013157895	0.018608778
larckerd.f..	2	9.831756491	0.013157895	0.023919739
liebana-cabanillas f..	2	4.622760606	0.013157895	0.016830939
karjaluoto h..	2	2.238272351	0.013157895	0.013022684

Prepared by a researcher

Table 9: Main Topic in 2 Cluster

Cluster 1	Cluster-2
Perceived ease of use	Sustainability
Perceived usefulness	Information systems frontiers
Consumer acceptance and use of information technology	Evaluating structural equation models with unobservable variables and measurement error
Extending the unified theory of acceptance and use of technology	Technological forecasting and social change
	Industrial management & data systems
	Innovativeness

Prepared by a researcher

Keyword Analysis

The evaluation and perception of subjects was examined in (Cobo et al., 2011). This section required an examination of information flow through an analysis of author keywords in the text. Authors choose keywords that predict research content and study relevance according to (Strozzi et al.,2017). The author keyword co-occurrence indicates a comparable study issue while directing future investigation paths as described by Ding et al. (2001). The electronic payment investigation status got determined through author keyword analysis. The network of author keywords was generated through the VOS viewer application. Five keyword co-occurrences served as the baseline criterion for conducting systematic research analysis. The keyword extraction produced 33 items from a total collection of 942 keywords. The co-occurrence structure of author keywords presents in Figure 7. Figure 7 demonstrates that Digital Payments occupy a position of highest prominence because of their nodes. Different keywords sharing the same color arrangement are presented in one group. The analysis includes multiple connected concepts consisting of mobile payments and digital wallets and blockchain and fintech and digital financial services and banking as some of the main ideas.

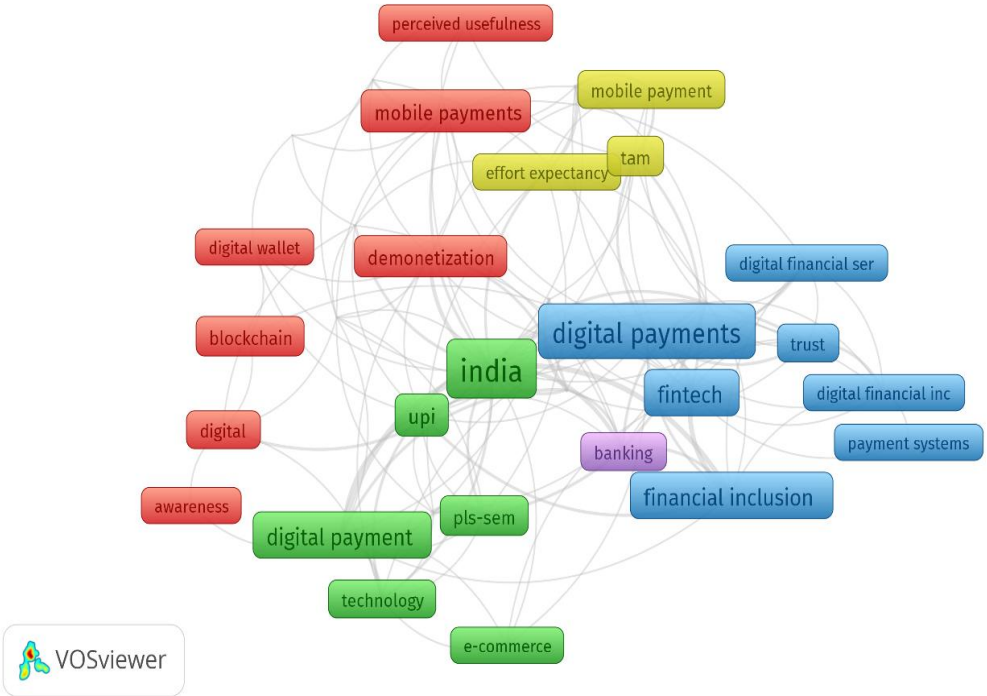


Figure 4: Keyword Analysis

Prepared by a researcher

Thematic Map Analysis

A thematic map comprises four quadrants, which affords an impressive graphical presentation. There are two axes on the thematic map termed X and Y with two references, Centrality and Density. The measure of the development of the theme selected is density, while the measure of significance is centrality (Sharma et al., 2021). The map contains four divisions. The figure indicates a thematic map with Niche Themes, Motor Themes, Basic Themes on the Y and Relevance Degree (Centrality) on the x-axis. The strategic diagram portrays the digital economy research themes landscape in terms of developed (density) and developed (centrality). Three motor themes: “Mobile payments,” “TAM,” and “mobile wallets,” suggest a mature area of investigation with high development and relevance. Also very relevant, but still “trending” are themes like “blockchain,” “digital,” and “e-governance.” The lower left quadrant depicts “online shopping” as an emerging or declining theme with low development and relevance which tends towards the lower quarters. Basic Themes” indicate that some baseline work has been done and evolution into relevance is underway. The thematic positioning gives the strategic direction of focus and theme areas that are within reach for deeper intellectual pursuit.

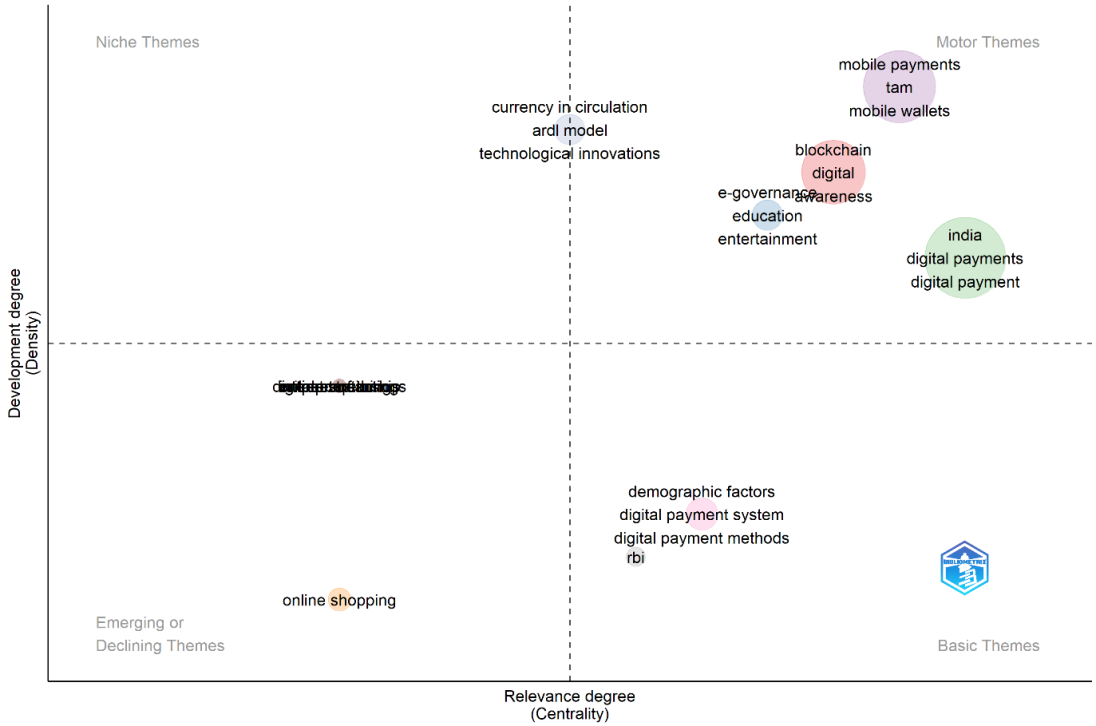


Figure 5: Thematic Map Analysis

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Word Cloud

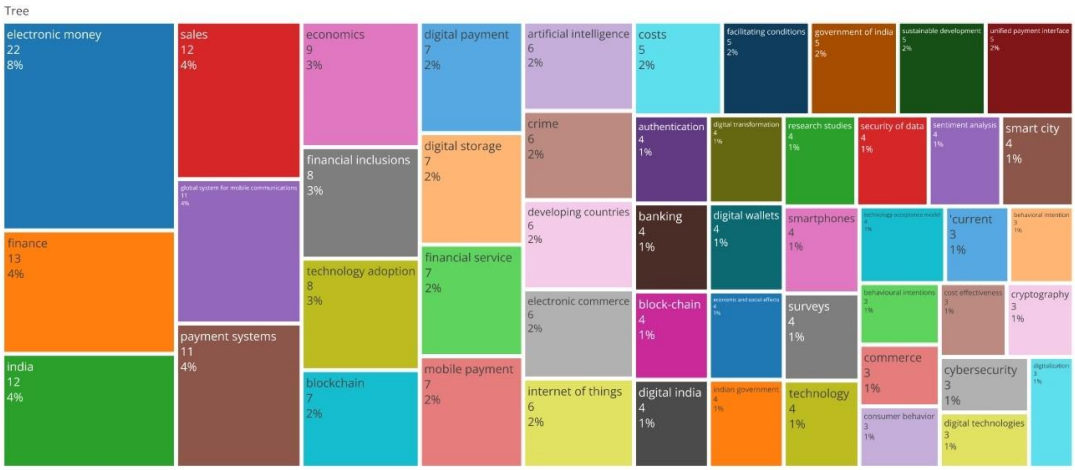
Figure 6 depicts a word cloud representing the primary themes in the digital economy research. The word cloud corroborates center of attention between the associated terms represents “electronic money,” “finance,” “payment systems,” economy and technology adoption is quite obtrusive suggesting concentration on the technological and the digital ecosystem. Additionally, the world “financial inclusion” along with “developing countries” indicates the scope and the focus of the technologies in question goes beyond their economic and social effect. Contemporary and specific terms such as “blockchain,” “digital payment,” and “mobile payment” provided an indication of where the field is heading. Overall, the word cloud represents multitude of themes with respect to innovation in technology, finance, and case economy within the framework of the digital economy

Figure 6: Word Cloud Analysis

Prepared by researcher

Tree Map Analysis

This figure illustrates a tree map that shows the importance of different topics related to digital payment in India. The size of each rectangle indicates the most frequently used themes in this body of work. The theme of “Electronic money” is the highest together with “Sales,” “Finance,” “India,” and “Payment systems,” which means that the major areas of concern are around digital Financial Technologies and economic activities, especially in India. “Blockchain,” “Technology adoption,” and “Financial service” are other emerging topics, which suggest that research in the adoption, impact and the enabling factors surrounding these technologies is still in progress. All of these considerations highlight the multi-dimensional character of the phenomena as technological, economical, and social. This screenshot shows the legal considerations in the area of digital finance.



Prepared by researcher

Discussion

The entire digital payments system of India receives thorough research to demonstrate how technology transforms traditional financial processes into contemporary digital frameworks. The digital payment sector continues to display strong momentum because it maintains a compound annual growth rate of 23.94% thereby demonstrating rising significance of digital financial technologies throughout India's sociological structure.

Academic collaboration becomes apparent in published research because authors typically work on three papers each. Actual findings show international partnerships contribute to 15.75% of scholarly research in this area together with various academic fields working on digital payment technology analysis. Because of the collaborative nature of the research structure this sector requires complex interdisciplinary approaches according to financial technology research.

The analysis created two main research domains by using co-citation network modeling as its foundation. The initial network evaluation examined theoretical constructs that relate to technology adoption frameworks as well as consumer behavior variables with adoption predictors. The second research cluster focuses on sustainable metrics as well as technology forecasting approaches while studying innovation diffusion methods of digital payment networks.

The Reserve Bank of India regulatory authority collaborates with Symbiosis International University and Amity University to perform research on digital payments. The academic entities conduct institutional research to demonstrate their extensive commitment toward analyzing various technological aspects across this evolution. The institutions maintain organized procedures for understanding these complex relationships between technological progress and regulatory systems and population development trends.

The research illustrates how India transitions to an advanced financial structure through the merger of technological development and modern distribution methods for financial services. This detailed literature review gathers present knowledge on digital payments while establishing directions for new scholarly research on this technology.

Conclusion

The review uses empirical data to validate digital payments in India as an active field of scientific study that causes immediate macroeconomic effects. Technological expansion and Digital India initiatives have revolutionized shopping methods for every financial group within India.

Several academic fields unite to generate theoretical explanations about this transformation. Financial systems and technology bases work together to create operational processes as social scientific behavioral studies and institutional analysis study human actions in depth. Multiple academic fields merged together have generated broad academic perspectives on digital payment systems which leads to deeper comprehensiveness regarding these payment systems.

The adoption process for digital payment systems operates under a complete framework that combines multiple influencing variables. The key elements of adoption and diffusion arise through users' perception of system usability based on Technology Acceptance Model theories combined with technological evolution patterns together with consumer adaptation changes. Digital payment factors work within constantly transforming social environments shaped by cultural protocol rules and the technical capabilities and communication network readiness of various communities.

The COVID-19 pandemic became a force that rushed forward global digital payment acceptance because of the outbreak. The global health crisis from COVID-19 established permanent changes to digital payment development through proof of adaptable Digital Payment Systems during times of social emergency. The pandemic generated extreme transaction velocity growth which caused a major shift in financial technology replacement processes.

Digital payments transform every phase of policy development as well as network system construction and social participation initiatives. Digital payment systems serve as more than technological tools because they create essential economic transformations which affects both financial inclusion and the efficiency and equity of India's economy.

Limitation

The present research takes into account several limitations regarding methodology and epistemology that readers should understand. Only English-language papers from 2008 through 2024 within Scopus made up the data corpus because the database itself imposed such temporal and linguistic boundaries. Using Scopus as a research tool risks introducing biases due to the exclusion of essential studies within the numerous languages published in India.

Undertaking the bibliometric research approach provided vital information about digital payment adoption research patterns yet its usage involved several important restrictions. This quantitative analysis succeeds in identifying intellectual relationships across the field yet fails to comprehensive enough to fully

detect the sophisticated natural elements involved in technology acceptance processes. Bibliometric methods typically reduce complex cultural and social factors that shape digital payment adoption so these patterns become less visible.

The identified epistemological gaps make it essential for researchers to investigate using additional research methods that fill these knowledge gaps. Future scholarly investigations should consider using mixed-methodology by integrating qualitative case studies and ethnographic investigations to develop better insights regarding digital payment adoption phenomena. These combined research methods would improve the study's validity and reliability while delivering more comprehensive understanding of technology spread dynamics in emerging markets.

Future Research Directions

The systematic review highlights possible directions for further research related to digital payments. Such research can be performed by designing a better security structure and perhaps building trust as a component of modern systems. New scholars should do a more detailed analysis of the economic effects of digital payments on different market segments and social classes. The research groups should analyze the impact of different payment methods by social surveys which determine the influence of the social and administrative systems on the regional technological adoption and the response from the users.

The design of complete models of digital payment systems is expected to combine sociological knowledge with the knowledge of computer science and economics. The cross-examination makes it possible for the analysts to examine the relationship between the technology infrastructure and the financial activities together with the social science of economic incentives. The asks that these scientists pose is clear express that the scientists need to focus on the network effects of the ecosystem evolution from the stakeholder's behavior and the platform features of the system.

The new research conducted in these broad areas will provide insight on how the novel financial technologies interact with emerging economic phenomena. Such knowledge is important to contribute to the design of financial systems which address the needs of diverse societies without excluding them.

References

1. Acharya, V. V., Eisert, T., Eufinger, C., & Hirsch, C. (2019). Whatever it takes: The real effects of unconventional monetary policy. *The Review of Financial Studies*, *32*(9), 3366-3411.
2. Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011). An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field. *Journal of informetrics*, *5*(1), 146-166.
3. Cheng, X. (2024). Research on the Differences Between the Laws Designed to Protect Brands and Traditional Trademark Laws. *Lecture Notes in Education Psychology and Public Media*. https://doi.org/10.54254/2753-7048/53/20240008
4. Ding, Y., & Cronin, B. (2011). Popular and/or prestigious? Measures of scholarly esteem. *Information processing & management*, *47*(1), 80-96.
5. Ding, Y., Chowdhury, G. G., & Foo, S. (2001). Bibliometric cartography of information retrieval research by using co-word analysis. *Information processing & management*, *37*(6), 817-842.
6. Gaur, A., & Verma, S. E-Payment: A Bibliometric Analysis and Systematic Literature Review.
7. Gupta, S., &Prusty, S. (2024). Does consumer empowerment influence e-payment systems adoption? A digital consumer-centric perspective. *Journal of Financial Services Marketing*, *29*(3), 1-15.
8. Gmür, M. (2003). Co-citation analysis and the search for invisible colleges: A methodological evaluation. *Scientometrics*, *57*(1), 27-57.
9. Huai, C., & Chai, L. (2016). A bibliometric analysis on the performance and underlying dynamic patterns of water security research. *Scientometrics*, *108*, 1531-1551.
10. Reyes-Gonzalez, L., Gonzalez-Brambila, C. N., & Veloso, F. (2016). Using co-authorship and citation analysis to identify research groups: a new way to assess performance. *Scientometrics*, *108*, 1171-1191
11. Rameez, M., & Kulathunga, D. (2019). Customers' online purchase intention: applying extended theory of planned behaviour (TPB) model.

12. Shane, J. M. S. S., Chan, T. J., & Mohan, Y. M. (2022). Factors affecting the intention to adopt e-wallet services during Covid-19 pandemic. *Journal of Arts & Social Sciences*, *5*(2), 28-40.

13. Small, H. (1973). Co-citation in the scientific literature: A new measure of the relationship between two documents. *Journal of the American Society for information Science*, *24*(4), 265-269.

14. Small, H. (2009). Critical thresholds for co-citation clusters and emergence of the giant component. *Journal of Informetrics*, *3*(4), 332-340.

15. Strozzi, F., Colicchia, C., Creazza, A., &Noè, C. (2017). Literature review on the 'Smart Factory'concept using bibliometric tools. *International journal of production research*, *55*(22), 6572-6591.

16. Sharma, V., Anand, S., Kumar, M., &Pattnaik, M. (2023). Bibliometric-thematic analysis and a technology-enabler-barrier-based framework for digital supply chain. *International Journal of Value Chain Management*, *14*(1), 34-61.

17. Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British journal of management*, *14*(3), 207-222.

18. Tunger, D., &Eulerich, M. (2018). Bibliometric analysis of corporate governance research in German-speaking countries: applying bibliometrics to business research using a custom-made database. *Scientometrics*, *117*, 2041-2059.

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