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Bibliometric analysis of the impact of digital payment instrument use on increasing consumptive behavior based on scopus data (2010-2025)

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Abstract. This study aims to map and analyze research trends regarding the impact of digital payment methods on consumer behavior using a bibliometric approach. The research data was obtained from the Scopus database, covering publications from 2010 to 2025, and analyzed using bibliometric indicators and keyword network visualization with the aid of VOSviewer. The analysis results indicate that the number of publications has increased significantly since 2019. The keyword "consumption behavior" emerges as a central theme closely related to digital payments, electronic money, technology adoption, and consumer decision-making. Current research trends point toward studies on digital finance and empirical analysis, particularly in countries with high rates of digital payment adoption. This study provides a comprehensive overview of the development and direction of research related to digital payments and consumer behavior and opens opportunities for further study in the context of developing countries.

Keywords: Digital payments; consumer behavior; bibliometric analysis; digital finance

INTRODUCTION

Advances in digital technology have brought about significant changes in the way people conduct financial transactions in various countries (Faraz & Anjum, 2025). Digital technology has produced digital payment tools used for transactions via digital means without the need to physically exchange cash (Khando et al., 2022); these tools offer convenience, speed, and transaction efficiency, thereby influencing consumer behavior (Gupta et al., 2025). Globally, digital payment tools have become a phenomenon driving economic growth while simultaneously transforming consumer behavior (M M Bagali, 2025). Digital payments have been validated as a new construct in online shopping that influences consumer behavior (Gupta et al., 2025). According to Cummins et al. (2014), consumer behavior in a digital context is understood as the result of cognitive, affective, and motivational processes that can trigger excessive purchasing without mature rational consideration, leading to impulsive, spontaneous purchases made without planning. In addition to impulsivity, consumer behavior also manifests as compulsive buying repeated purchases that are difficult to control and are often used as an emotional escape.

Several studies have been conducted on the impact of digital payments on consumer behavior; for example, Jiang (2022) successfully conducted an assessment and concluded that mobile payments lead consumers to spend more money than they would with cash (Jiang, 2022). Globally, a similar trend was also found in a study by (Yue et al., 2022), which showed that easy access to digital finance can drive increased consumption, even after income or cash availability has stabilized. These findings suggest that the use of digital payments not only simplifies transactions but also structurally alters societal consumption patterns. In other words, technological changes in payment systems have significant psychological and social consequences for consumer behavior.

Therefore, there is an urgent need for quantitative research that examines the impact of digital payment methods on consumer behavior in a broader and more in-depth manner. Thus, the primary objective of this study is to analyze the influence of digital payment methods on increased consumer behavior, as well as to map research trends through a bibliometric approach. This study is expected to provide theoretical contributions to the development of consumer behavior and financial technology, as well as practical benefits for the government, financial institutions, fintech players, and the public in formulating strategies for the healthy, safe, and sustainable use of digital payments.

METHOD

This study employs a bibliometric analysis approach to examine and map the development of research on digital payments and consumer behavior. Bibliometric analysis is used as an analytical tool to explore publications through a concise research procedure to identify research gaps, research trends, and so on (Fatur Rohman & Widianingsih, 2024). The data analyzed using bibliometric analysis is sourced from the Scopus database (Duque-Acevedo et al., 2020; Febriana et al., 2026; Meiliyadi et al., 2025). Common indicators in research using bibliometric analysis methods include the number of citations (Bautista-Puig et al., 2022), the number of publications (Filippi et al., 2023; Rizki et al., 2026), and the h-index (Duque-Acevedo et al., 2020). Bibliometric analysis also includes visualizing collaboration networks among authors and institutions, as well as identifying the most influential journals or topics within a discipline (Donthu et al., 2021). Tools such as VOSviewer or Bibliometrix are used to facilitate the analysis. Through bibliometric analysis, researchers can avoid topics that are already oversaturated and gain insight into the direction and trends of future research (Pandey et al., 2024; Meiliyadi et al., 2026). The steps of bibliometric analysis in this study are shown in Figure 1.

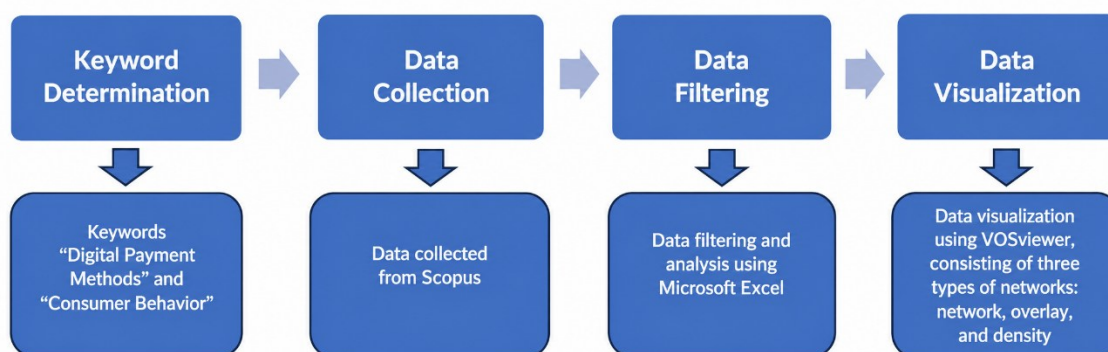


Figure 1. Bibliometric Research Flowchart

RESULT AND DISCUSSION

Bibliometric analysis is used to analyze the topic of digital archives, explore trends, and identify emerging topics and future research trends. Figure 2 shows research trends using the keywords “digital payments” and “consumer behavior.” These trends are based on publication

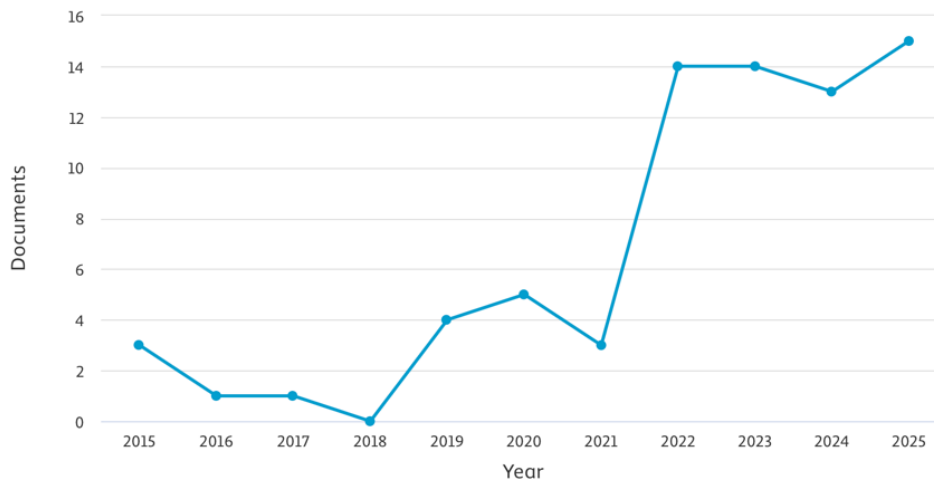


Figure 2. Research trends related to the keywords “digital payments” and “consumer behavior”

Figure 2 shows the trend in the number of publications using the keywords “Digital Payments” and “Consumer Behavior” from 2015 to 2025. In general, research trends have fluctuated from year to year. Based on an analysis of research publication trends using the keywords “digital payments” and “consumer behavior,” the development of studies can be classified into three main stages: the initial stage, the acceleration stage, and the development stage. In the initial stage (2015–2018), the number of studies was still relatively low and showed a fluctuating pattern, indicating that the issue of digital payments had not yet become a primary focus of academic research. This situation can be attributed to the still limited adoption of digital payment technologies and the lack of attention to their implications for consumer behavior. Entering the acceleration phase (2019–2021), there was a gradual increase in the number of publications, though it remained unstable, in tandem with the growth of fintech services and the rising use of cashless payments. This spurred increased interest among researchers in examining the impact of digital payments on consumer behavior. Furthermore, during the development phase (2022–2025), the number of publications experienced a significant surge and tended to stabilize at a higher level. This phase indicates that digital payments have become an established socio-economic phenomenon, so research focuses not only on adoption aspects but also on a more in-depth analysis of the impact on consumer behavior, financial decision-making, and policy implications in the field of digital finance.

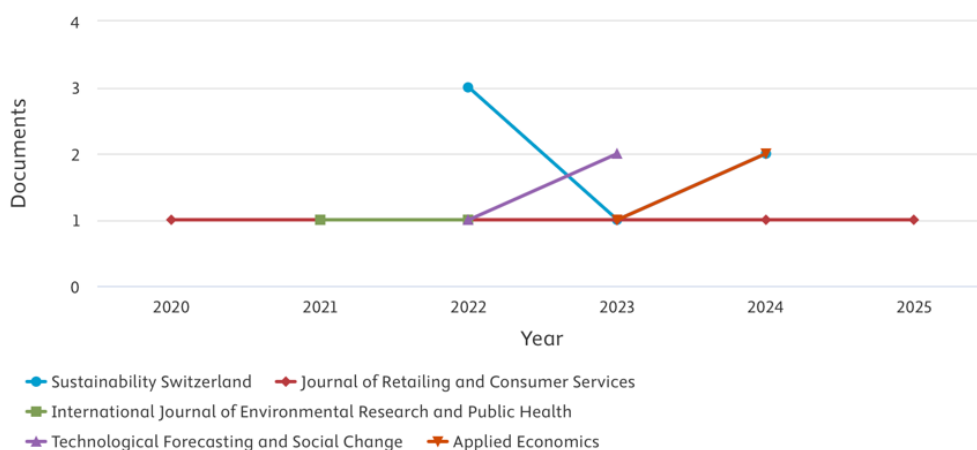


Figure 3. Journal of publication objectives for research on digital payments and consumer behavior

As shown in Figure 3, research on the keywords “digital payments” and “consumer

behavior" is distributed across several reputable international journals, indicating the multidisciplinary nature of this field of study. The journal *Sustainability* (Switzerland) is the most frequent publication source, suggesting that the issue of digital payments is not only viewed from an economic perspective but is also linked to the sustainability of consumer behavior and its impact on sustainable development. Additionally, the *Journal of Retailing and Consumer Services* and *Applied Economics* are also dominant publication destinations, reflecting the strong emphasis on economic and consumer behavior approaches in analyzing the influence of digital payments on societal consumption patterns. Meanwhile, the journals *Technological Forecasting and Social Change*, *International Journal of Environmental Research and Public Health*, *PLOS One*, and *Technology in Society* demonstrate that this research is also evolving from the perspectives of technology, social change, and implications for public health and well-being. The relatively even distribution of publications across these various journals underscores that research on digital payments and consumer behavior has interdisciplinary relevance and broad opportunities for development and publication in reputable international journals.

Table 1. Studies with the most citations among research on digital payments and consumer behavior

No	Author	Title	Year	Citations	References
1	Pham, T.T.T.; Ho, J.C.	<i>The effects of product-related, personal-related factors and attractiveness of alternatives on consumer adoption of NFC-based mobile payments</i>	2015	249	Technology in Society, 43, 159–172
2	Gupta, A.; Yousaf, A.; Mishra, A.	<i>How pre-adoption expectancies shape post-adoption continuance intentions: An extended expectation-confirmation model</i>	2020	244	International Journal of Information Management, 52, 102094
3	Vij, A.; Ryan, S.; Sampson, S.; Harris, S.	<i>Consumer preferences for Mobility-as-a-Service (MaaS) in Australia</i>	2020	122	Transportation Research Part C: Emerging Technologies, 117, 102699
4	Grover, P.; Kar, A.K.	<i>User engagement for mobile payment service providers – introducing the social media engagement model</i>	2020	119	Journal of Retailing and Consumer Services, 53, 101718
5	Akram, U.; Fülöp, M.T.; Tiron-Tudor, A.; Topor, D.I.; Căpușeanu, S.	<i>Impact of digitalization on customers' well-being in the pandemic period: Challenges and opportunities for the retail industry</i>	2021	117	International Journal of Environmental Research and Public Health, 18(14), 7533
6	Wang, Y.; Su, Z.; Xu, Q.; Lu, T.H.; Wang, P.	<i>A Secure and Intelligent Data Sharing Scheme for UAV-Assisted Disaster Rescue</i>	2023	104	IEEE/ACM Transactions on Networking, 31(6), 2422–2438
7	Garratt, R.; van Oordt, M.R.C.	<i>Privacy as a public good: A case for electronic cash</i>	2021	59	Journal of Political Economy, 129(7), 2157–

8	Hamzah, M.I.; Ramli, F.A.A.; Shaw, N.	<i>The moderating influence of brand image on consumers' adoption of QR-code e-wallets</i>	2023	55	Journal of Retailing and Consumer Services, 73, 103326
9	Zhong, Y.; Moon, H.-C.	<i>Investigating Customer Behavior of Using Contactless Payment in China: A Comparative Study of Facial Recognition Payment and Mobile QR-Code Payment</i>	2022	52	Sustainability (Switzerland), 14(12), 7150
10	Mihaylov, M.; Jurado, S.; Avellana, N.; Cañadas, A.; Nowé, A.	<i>SCANERGY: A scalable and modular system for energy trading between prosumers (demonstration)</i>	2015	36	Proceedings of the International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS), 3, 1917–1918

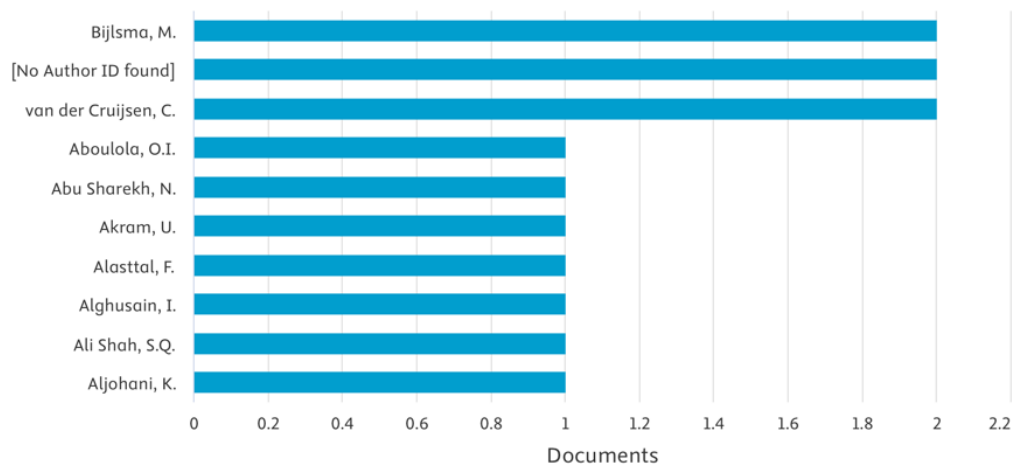


Figure 4. The author with the highest number of documents in the study on the keywords “digital payments” and “consumer behavior”

Figure 4 shows that research contributions using the keywords “digital payments” and “consumer behavior” are still dominated by a few authors with a relatively limited number of publications. Bijlsma, M. and van der Cruijisen, C. are listed as the authors with the highest number of documents, each producing two publications. This indicates that research on digital payments and their implications for consumer behavior has not yet been concentrated among one or two leading researchers but is instead distributed across various authors with relatively even contributions. Additionally, several other authors, such as Akram, U., Abu Sharekh, N., Alasttal, F., Alghusain, I., and Ali Shah, S.Q., each have one publication. This pattern indicates that the field of research on digital payments and consumer behavior is still evolving, with diverse collaborations and individual contributions, and opens up significant opportunities for new researchers to contribute and enrich studies in this field.

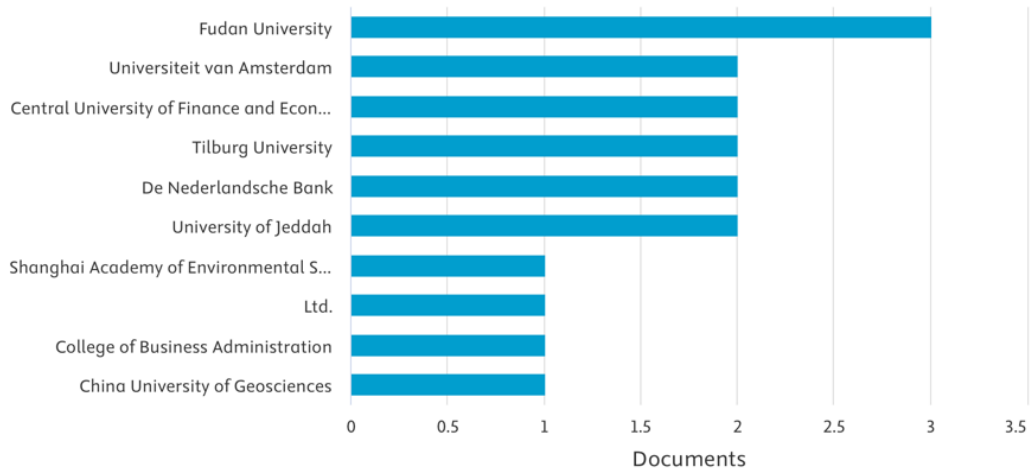


Figure 5. Affiliations of authors with the highest number of documents in studies using the keywords “digital payments” and “consumer behavior”

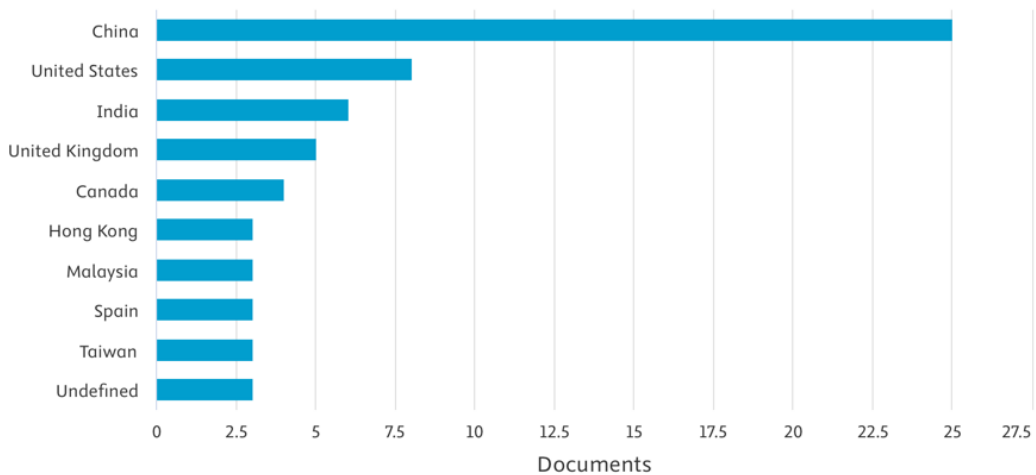


Figure 6. Authors’ countries of origin with the highest number of documents in studies using the keywords “digital payments” and “consumer behavior”

Figure 6 shows the distribution of authors’ countries of origin. Research on the keywords “digital payments” and “consumer behavior” reveals a dominance of contributions from certain countries. China ranks first as the country with the highest number of documents, indicating significant academic interest in the phenomenon of digital payments in that country, in line with the rapid development of cashless payment technologies and financial innovations. The next position is held by the United States, reflecting the strength of interdisciplinary research spanning economics, technology, and consumer behavior. Furthermore, India and the United Kingdom also demonstrate significant contributions, followed by other countries such as Canada, Hong Kong, Malaysia, Spain, and Taiwan, although with a more limited number of publications. This distribution pattern indicates that research on digital payments and consumer behavior is global in nature but remains concentrated in countries with high levels of financial technology adoption. These findings suggest opportunities for further research from other developing countries, including those in Southeast Asia, to enrich the perspectives and local contexts within digital payment studies.

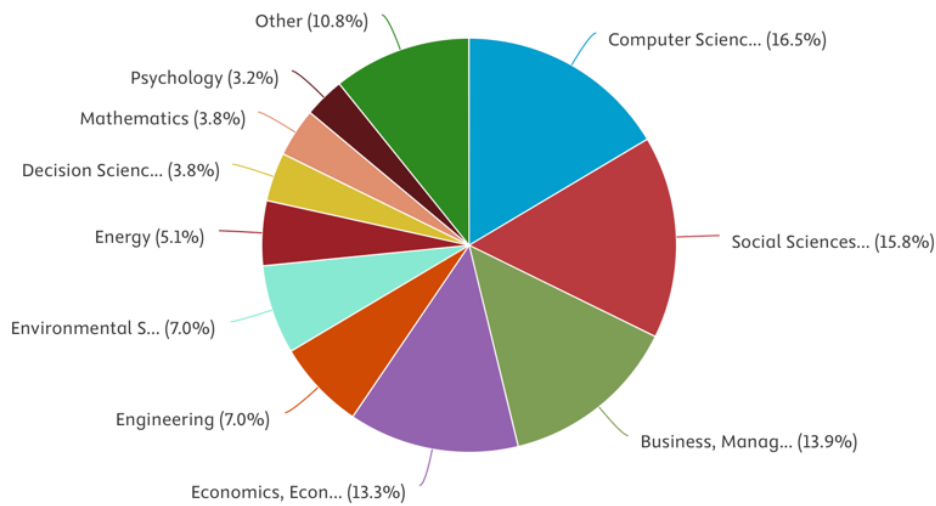


Figure 7. Subject areas in studies using the keywords “digital payments” and “consumer behavior”

Based on the subject area classification in Figure 7, studies using the keywords “digital payments” and “consumer behavior” demonstrate a multidisciplinary distribution of research. Computer Science is the subject area with the highest number of documents, indicating that digital payment issues are frequently examined from the perspectives of technology, information systems, and payment application development. Furthermore, Social Sciences and Business, Management, and Accounting also make significant contributions, reflecting attention to aspects of consumer behavior, decision-making, and the managerial implications of digital payment usage. Additionally, the fields of Economics, Econometrics, and Finance play a crucial role in analyzing the impact of digital payments on consumption patterns and the financial system. Other subject areas such as Engineering, Environmental Science, Energy, Decision Sciences, and Mathematics also contribute to this research, albeit to a lesser extent. This distribution pattern underscores that research on digital payments and consumer behavior is not limited to purely technological or economic aspects but has evolved into a multidisciplinary field that comprehensively integrates technical, social, and economic approaches.

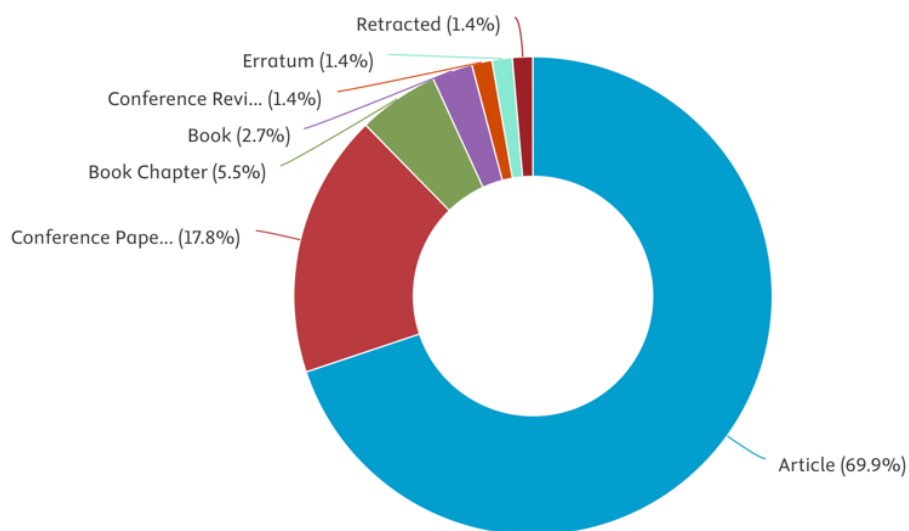


Figure 8. Types of publication documents in research using the keywords “digital payments” and “consumer behavior”

Figure 8 shows the classification of publication document types and research using the keywords “digital payments” and “consumer behavior,” which is dominated by scientific journal articles. Journal articles constitute the largest proportion with 51 documents, or approximately 69.9% of all publications, indicating that research findings in this field are generally published in scientific journals as the primary medium for knowledge dissemination. Next, conference papers rank second with 13 documents (17.8%), reflecting the role of scientific forums in introducing preliminary findings and the latest developments regarding digital payments and consumer behavior. Other publication types, such as book chapters, books, conference reviews, errata, and retracted documents, are relatively limited in number and contribute only a small portion of the total documents. This pattern indicates that research on digital payments and consumer behavior has developed academically and is more frequently communicated through empirical and theoretical journal articles, while publications in other forms serve as a complement to the development of scientific discourse.

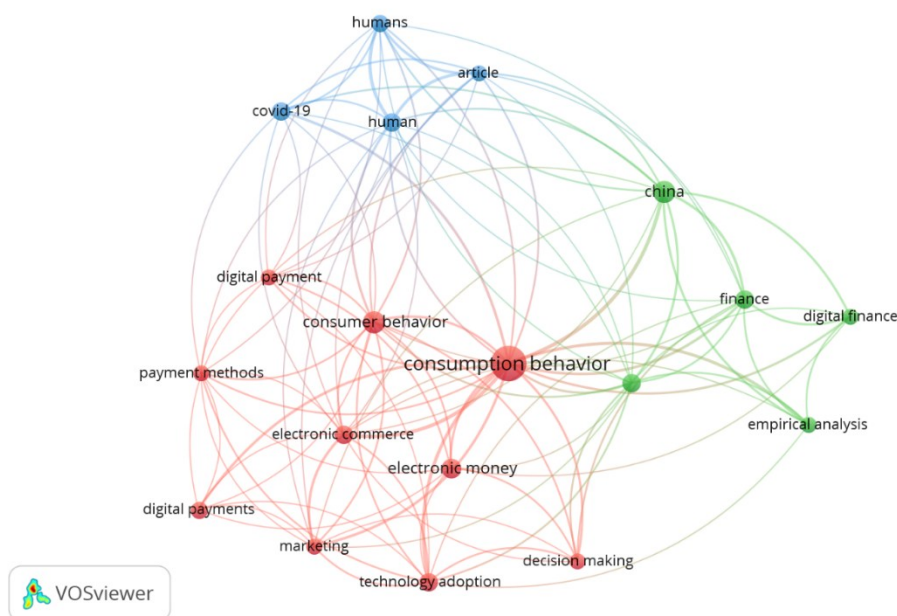


Figure 9. A network visualization generated based on keyword frequency.

Figure 9. displays a keyword network visualization generated using VOSviewer software based on the frequency and interrelationships of keywords in the analyzed scientific publications. This visualization represents the conceptual structure and interconnection patterns of research themes in the field of consumer behavior and digital payments.

Generally, the keyword network is divided into several clusters marked by different colors, indicating the grouping of themes based on the strength of relationships between keywords. The size of the nodes reflects the frequency of keyword occurrence, while the thickness and number of connecting lines indicate the strength of the relationship (co-occurrence) between terms. The red cluster is dominated by the keyword “consumption behavior,” which serves as the network’s central node (core node). This keyword has the largest node size, indicating that consumption behavior is a central theme in the analyzed studies. This cluster is also closely connected to other keywords such as consumer behavior, electronic commerce, electronic money, digital payments, payment methods, technology adoption, marketing, and decision making. This indicates that research on consumption behavior is frequently linked to technology adoption, digital payment systems, as well as marketing contexts and consumer decision-making.

The green cluster represents themes related to financial aspects and empirical

approaches, characterized by keywords such as finance, digital finance, empirical analysis, and China. The connection between this cluster and consumption behavior indicates that studies of consumption behavior are often analyzed within the framework of digital finance and employ empirical approaches, particularly in the context of specific countries such as China. Meanwhile, the blue cluster includes keywords such as humans, human, article, and COVID-19. This cluster highlights the social and health dimensions that influence consumption behavior, particularly during a pandemic. The connection between the blue and red clusters underscores that human factors and the COVID-19 pandemic conditions are critical contextual variables in studies of consumption behavior and the use of digital payments.

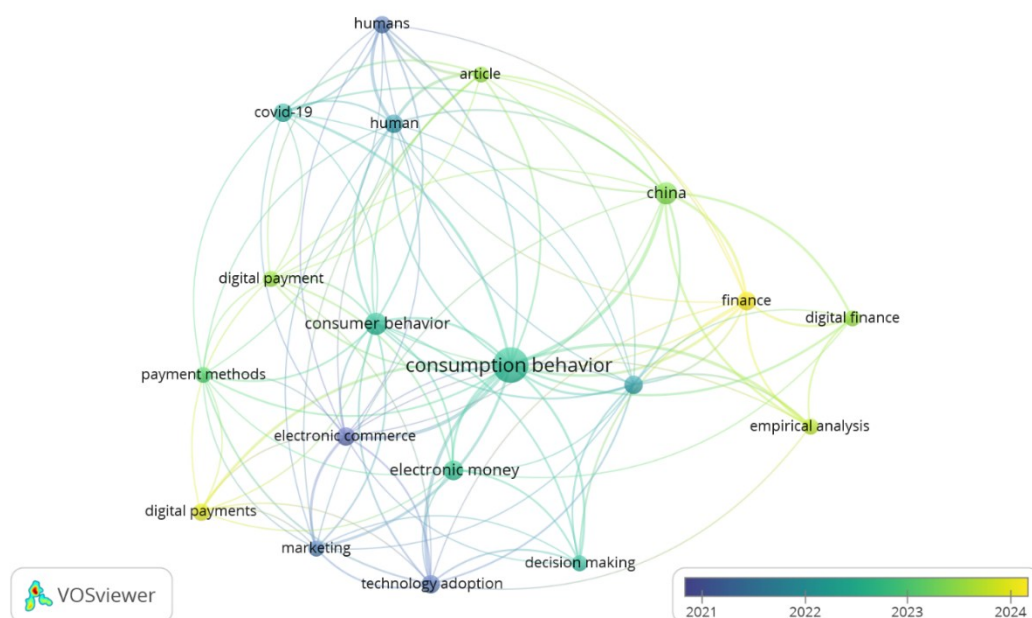


Figure 10. Overlay visualization generated based on keyword occurrences.

Figure 10. displays a keyword overlay visualization generated using VOSviewer software based on keyword occurrences according to the publication time dimension. This overlay visualization aims to show the dynamics and evolution of research themes over time, represented by color gradients on each node. In this visualization, color differences indicate the average year of keyword occurrence, as shown on the color scale at the bottom of the figure. Dark blue to light blue represent keywords that were dominant in the early period (around 2021), green indicates the transition period (around 2022–2023), while yellow represents relatively newer keywords that appear frequently in the most recent period (around 2024). The size of the nodes represents the frequency of keyword occurrence, while the connecting lines indicate the strength of the relationships between keywords. The keyword “consumption behavior” appears as the main node with the largest size and a bluish-green color, indicating that this topic has consistently been a focus of research in recent years and serves as a core theme connecting various other topics. Its association with keywords such as consumer behavior, electronic money, electronic commerce, decision making, and technology adoption underscores that the study of consumer behavior evolves alongside the adoption of technology and digital payment systems.

Keywords that tend to be blue, such as technology adoption, marketing, and electronic commerce, indicate themes that were more dominant in the early stages of the study. These themes serve as a conceptual foundation for understanding changes in consumer behavior in the digital age. Furthermore, keywords ranging from green to yellowish-green, such as electronic money, consumer behavior, and payment methods, reflect a phase of research development linking consumption behavior to non-cash payment instruments. Meanwhile, keywords colored

yellow, such as digital payments, digital finance, finance, empirical analysis, and China, highlight relatively new topics that have become current research trends. This indicates a shift in research focus toward more in-depth empirical analysis within the context of digital finance, as well as increasing attention to region- or country-specific studies. Additionally, the presence of the keyword "COVID-19" in blue-green indicates that the pandemic was a significant issue during a specific period and influenced the direction of consumer behavior research, particularly regarding the accelerated adoption of digital payments and changes in public consumption patterns.

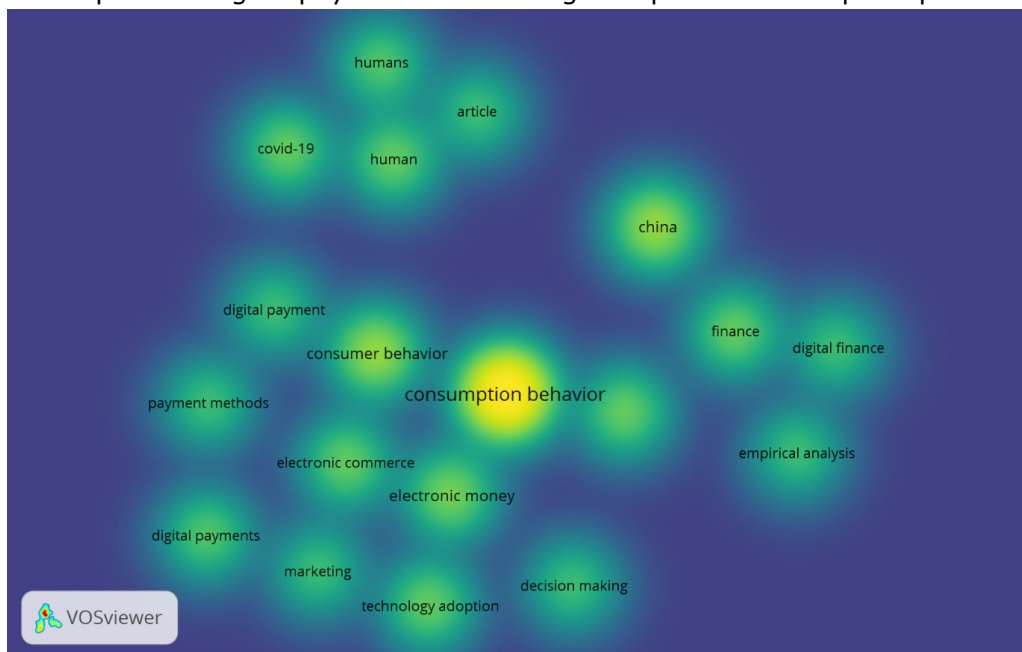


Figure 11. Density visualization generated based on keyword frequency.

Figure 11 displays a keyword density visualization generated using VOSviewer software based on the frequency and density of keywords in the analyzed collection of publications. This visualization aims to identify the main focus of the research as well as the intensity of scientific attention toward specific themes. In the density visualization, color gradients indicate the density of keyword occurrence. Bright yellow represents areas with the highest density, indicating keywords with the most dominant frequency of occurrence and strong associations with other keywords. Green indicates medium density, while blue to purple indicate relatively low density.

Based on Figure 11, the keyword "consumption behavior" appears as the area with the highest density, indicated by the bright yellow color in the center of the visualization. This finding suggests that consumption behavior is the most intensively studied theme and the primary focus of the analyzed literature. The high density around this keyword also indicates a strong connection with various other themes within the research network. Surrounding this central density cluster are keywords with moderate density, such as consumer behavior, electronic money, electronic commerce, digital payment(s), payment methods, technology adoption, marketing, and decision making. This suggests that these themes frequently appear and serve as supporting topics directly related to the study of consumption behavior, particularly within the context of the utilization of technology and digital payment systems. Meanwhile, keywords such as finance, digital finance, empirical analysis, and China form a relatively separate area of medium to low density from the center. This indicates that these themes represent more specific and contextual research focuses, yet they remain connected to the main topic of consumer behavior. Similarly, the keywords COVID-19, humans, human, and article show a relatively lower frequency, reflecting their role as contextual or supporting variables in the study.

CONCLUSION

Based on the results of a bibliometric analysis of Scopus publications from 2010 to 2025,

it can be concluded that research on digital payment methods and consumer behavior has shown a significant upward trend, particularly since 2019. The keyword “consumer behavior” has emerged as a central theme with strong links to digital payments, electronic money, technology adoption, and consumer decision-making. Furthermore, current research trends point toward studies on digital finance and empirical analysis, with contributions predominantly coming from countries with high rates of digital payment adoption. These findings indicate that research on digital payments and consumer behavior is multidisciplinary and still offers opportunities for further research, particularly in the context of developing countries.

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