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Article

# A Bibliometric Analysis of Digital Finance in Southeast Asian Countries

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## Abstract

Although the rapid development of digital technology has significantly transformed the financial sector in Southeast Asian countries, no comprehensive study has yet mapped the evolution of digital finance in the region. This bibliometric study aims to fill this gap by providing a systematic scientific overview of the field. Derived from the Web of Science database, 252 peer-reviewed articles were compiled and analyzed using Biblioshiny R-package and VOSViewer software. The results reveal a steady growth in digital finance research in ASEAN from 2013 to 2025. The majority of articles in the region were from Indonesia, Malaysia, Vietnam, and Thailand. Current research predominantly addresses the antecedents of technology adoption, user acceptance, and continuance behavioral intentions, often grounded in theoretical frameworks such as the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT). Future research should explore the broader implications of digital finance, particularly its role in enhancing financial inclusion and promoting financial well-being at both individual and national levels.

**Keywords:** bibliometric analysis; digital finance; ASEAN; technology adoption; user acceptance; financial inclusion

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## 1. Introduction

In recent years, digital finance has played an important role in transforming the financial systems of Southeast Asian countries. With the rapid development of mobile technology, internet access, and financial innovation, services such as mobile payments, peer-to-peer lending, e-wallets, and blockchain have improved access to finance for both individuals and businesses (Afjal, 2023; Hudaefi, 2020). The region has favorable conditions for the growth of FinTech, including a young population, widespread mobile usage, and a growing middle class. Countries such as Indonesia, Malaysia, Vietnam, and Thailand have seen a rise in the use of digital financial services to address gaps in traditional banking, expand financial access, and support economic growth (Tony & Desai, 2020; Yadav & Banerji, 2023). However, despite this progress, there is still limited understanding of how research on digital finance in the region has developed over time.

Although digital finance research is growing globally, most studies in Southeast Asia remain focused on specific topics or single-country cases. Few studies provide a comprehensive view of regional research trends. Prior reviews have addressed digital financial literacy (Yadav & Banerji, 2023), mobile banking adoption (Amin, 2016), and Islamic FinTech's role in supporting the Sustainable Development Goals (Hudaefi, 2020). A bibliometric analysis of digital financial literacy was conducted by Yadav & Banerji (2023), highlighting the evolving themes within digital finance over time, transitioning from socioeconomic factors to behavioral factors. This analysis also emphasizes the interdependence of key topics related to saving behavior and retirement planning. On the other hand, another scientometric study of Afjal (2023) reveals an increasing research interest in FinTech and financial inclusion, underscoring the importance of FinTech integration in fostering

economic growth and enhancing financial inclusion for vulnerable populations. However, very few have applied bibliometric methods to systematically analyze the development and structure of digital finance research in the ASEAN region. This lack of regional overview makes it difficult for researchers and policymakers to understand knowledge trends, key contributors, and emerging themes.

This study addresses that gap by conducting a bibliometric analysis of digital finance literature in Southeast Asia. Its main objectives are to: (1) examine publication trends, influential authors, and key journals; (2) map research themes using keyword co-occurrence analysis; and (3) identify commonly used theoretical models in the field. The following sections of this paper present the research methodology, main results, and discussion, followed by a conclusion that highlights key contributions and future research directions.

## 2. Materials and Methods

### 2.1. Data Source

We retrieved data on digital finance in ASEAN from the Clarivate Analytics Web of Science (WoS) database. Recognized as the oldest and most widely used database in research (Birkle et al., 2020), WoS serves as a valuable source for extracting raw data for bibliometric analysis, thereby ensuring the reliability and representativeness of the dataset used in this study. This database is frequently chosen over other sources such as Scopus or Pubmed, because it provides more comprehensive data dating back to 1900.

### 2.2. Identification of Relevant Research Through PRISMA

First, we extracted data from the WoS in .txt format, using the following search string: (“financial technology” OR “FinTech” OR “digital financial services” OR “mobile banking” OR “mobile money” OR “digital finance” OR “digital payments”) AND (“Vietnam” or “Singapore” or “Thailand” or “Malaysia” or “Indonesia” or “Myanmar” or “Laos” or “Cambodia” or “Brunei Darussalam” or “Philippines”). The selection of keywords related to digital finance was adopted from two previous studies on digital financial literacy and FinTech (Afjal, 2023; Yadav & Banerji, 2023). To focus specifically on the ASEAN region, we used Boolean logic with the operator AND to limit the results by country. Second, we refined the dataset by excluding research categories outside of Business, Economics, Business Finance, and Management, ensuring that the final selection was relevant to the field of Business and Economics. Finally, we filtered the publications by document type and language, including only research articles and review papers published in English. No duplicate records were found, and the final dataset comprised 252 documents.

This bibliometric study was conducted using two literature analysis tools: the Bibliometrix R-package and VOSViewer software. Bibliometrix, an open-source package developed in R, is designed to map scientific literature and provide comprehensive insights into research development (Aria & Cuccurullo, 2017). VOSViewer, on the other hand, is widely used to examine keyword co-occurrences and institutional collaborations within a research field – key elements for evaluating research trends and thematic evolution (Kirby, 2023). The combined use of these two tools offers a more robust and detailed analysis of the selected literature.

A summary of stages from data retrieval to data analysis is shown in Figure 1.

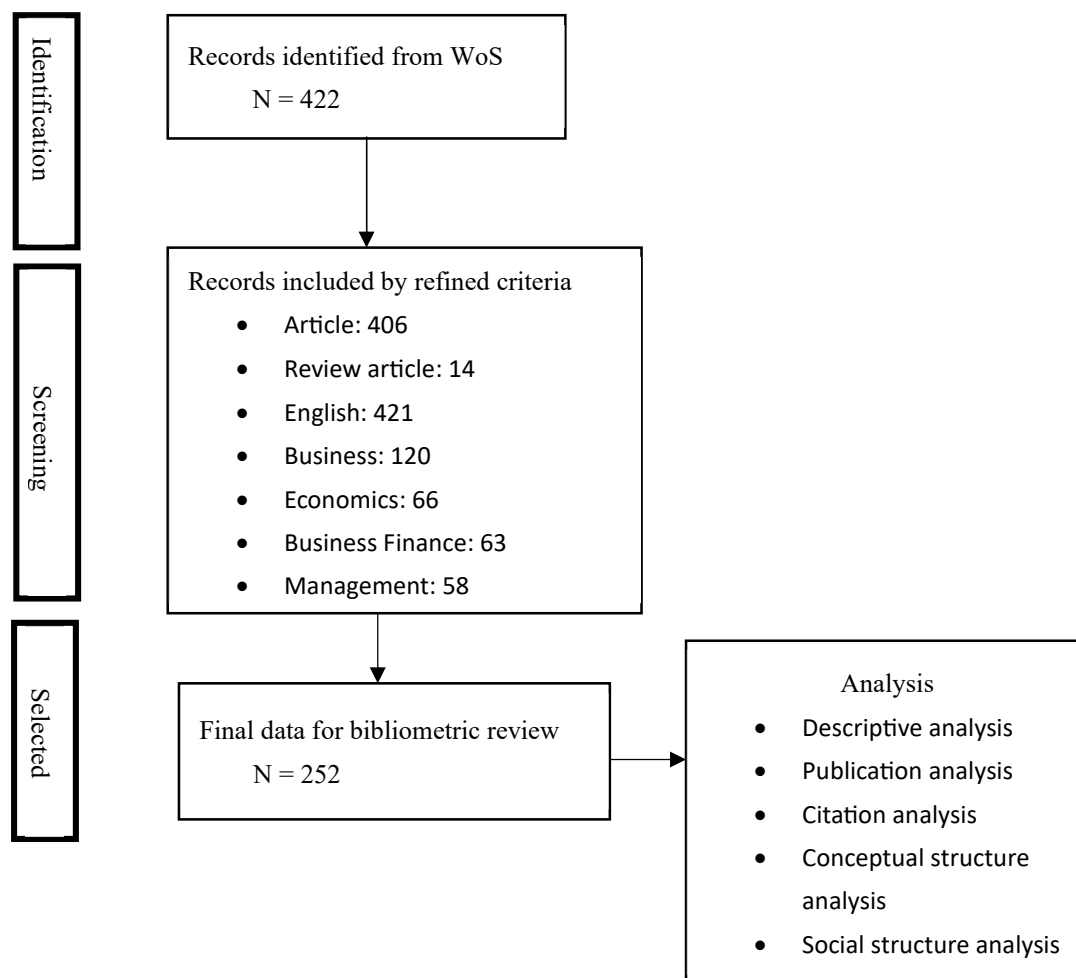


Figure 1. PRISMA flowchart for selection of included documents.

### 3. Results and Discussion

#### 3.1. Descriptive Analysis

##### 3.1.1. Overall Dataset

Table 1 provides an overview of the bibliometric literature included in the analysis. Although no specific time range was set during data extraction, the retrieved bibliographic records span from 2013 to the current year of data collection, 2025. On average, the documents received 11.78 citations, and research productivity exhibited a notable annual growth rate of 30.77%. Articles related to ASEAN's digital finance were published across 102 sources and authored by 737 individuals, with international co-authorship accounting for nearly one third of the total publications.

Table 1. Information about selected documents.

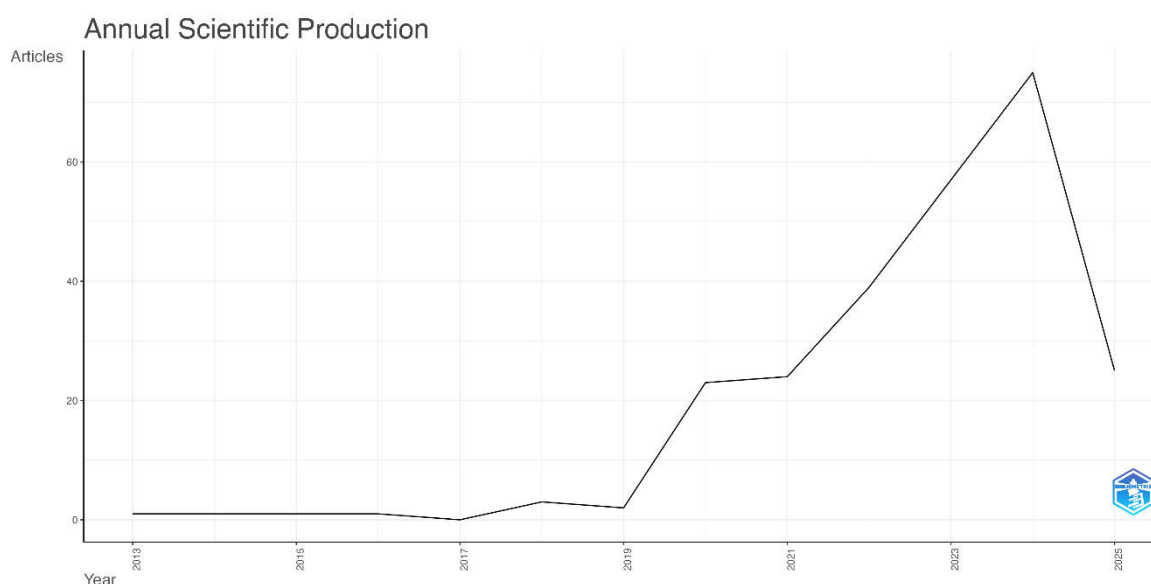
Main information about data	Results
Timespan	2013:2025
Sources (Journals, Books, etc)	102
Documents	252

Annual Growth Rate %	30.77
Average citations per doc	11.78
Authors	737
Authors of single-authored documents	30
Single-authored documents	35
Co-Authors per document	3.32
International co-authorships %	30.56

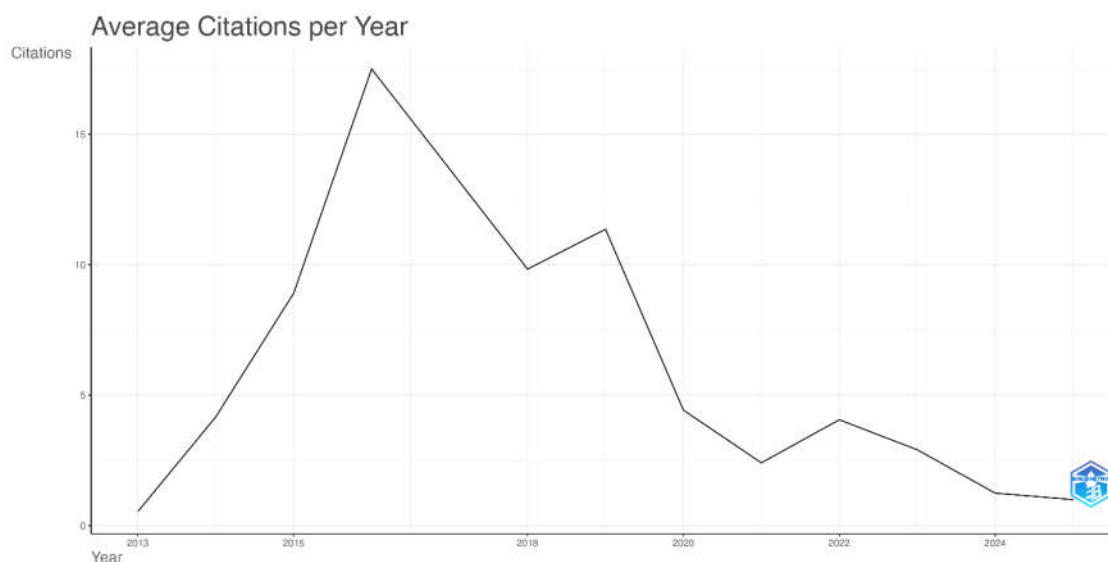
### 3.1.2. Publications and Citations

Between 2013 and 2025, scientific research in ASEAN's digital finance field showed a steady upward trend, growing from just 1 article in 2013 to 25 articles, and peaking at 75 publications in 2024 (Figure 2). A particularly sharp increase occurred from 2019 onward, with research productivity rising nearly tenfold, which can be attributed to heightened interest in financial technology applications during and after the COVID-19 pandemic. The year 2019, marking the onset of the pandemic, represented a pivotal period when fintech, digital payments, mobile money, financial inclusion, and technology adoption began to play a critical role in supporting people's lives amid disruption. From 2021 onward, research output expanded exponentially, reflecting the growing importance of integrating financial technology into various aspects of life in the post-pandemic era.

In terms of citation impact, articles published between 2013 and 2016 received the highest average citations per year, underscoring their foundational role in shaping the digital finance research landscape (Figure 3).



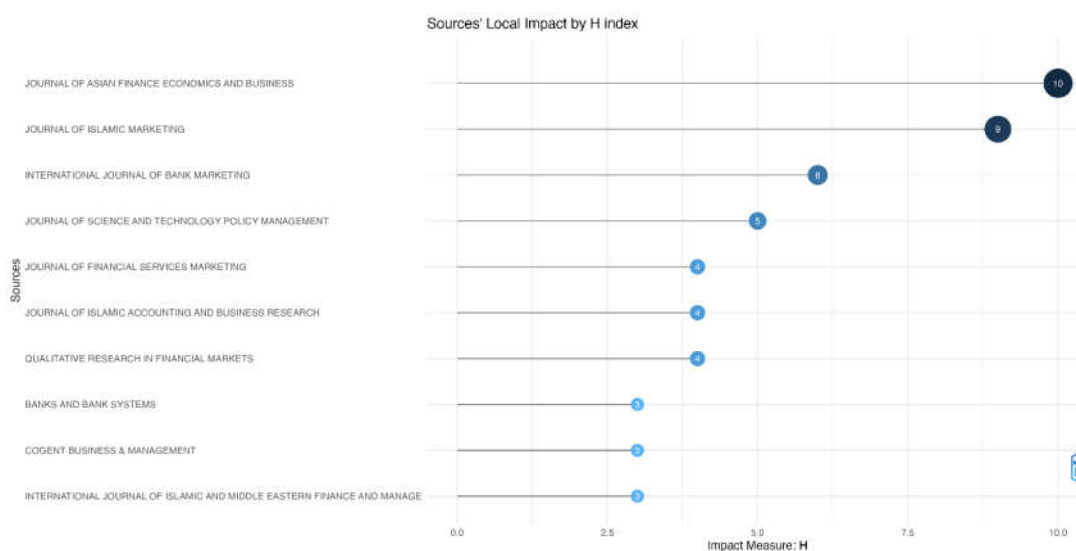
**Figure 2.** Annual scientific production.



**Figure 3.** Average Citations per year per article.

### 3.1.3. Sources

Figure 4 presents the top 10 most impactful journals in ASEAN's digital finance field, ranked using the h-index which measures the influence of all citations received in relation to the number of publications a journal has produced. The h-index is widely regarded as a reliable indicator of research quality (Tony & Desai, 2020). As shown in Figure 4, the Journal of Asian Finance Economics and Business, Journal of Islamic Marketing, and International Journal of Bank Marketing stand out as the leading academic sources in this area, each with an average h-index above 5. Notably, although the International Journal of Bank Marketing has published a relatively smaller number of articles (7), it has received the highest total citations (386), highlighting the significant impact and high quality of the research it features.



**Figure 4.** Source impact.

### 3.1.4. Authors

Fianto BA, Masrizal, Trianto B, Yudaruddin R, and Anshari M are the most prolific authors in the ASEAN's digital finance domain (Figure 5), each contributing an average of 4 publications. Fianto BA is the most influential author, with an h-index of 3 and a g-index of 4 (Figure 6). Notably, despite

Iman N and Rahman M each having published 3 papers, their work is highly cited, receiving 111 and 108 citations respectively, ranking them among the top five most impactful authors.

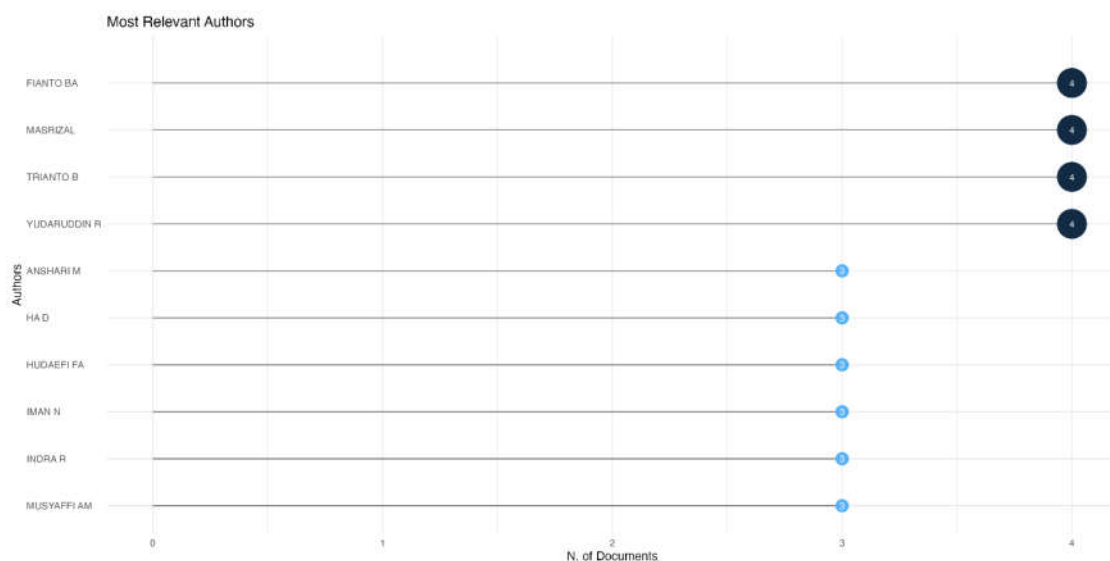


Figure 5. Most relevant authors.

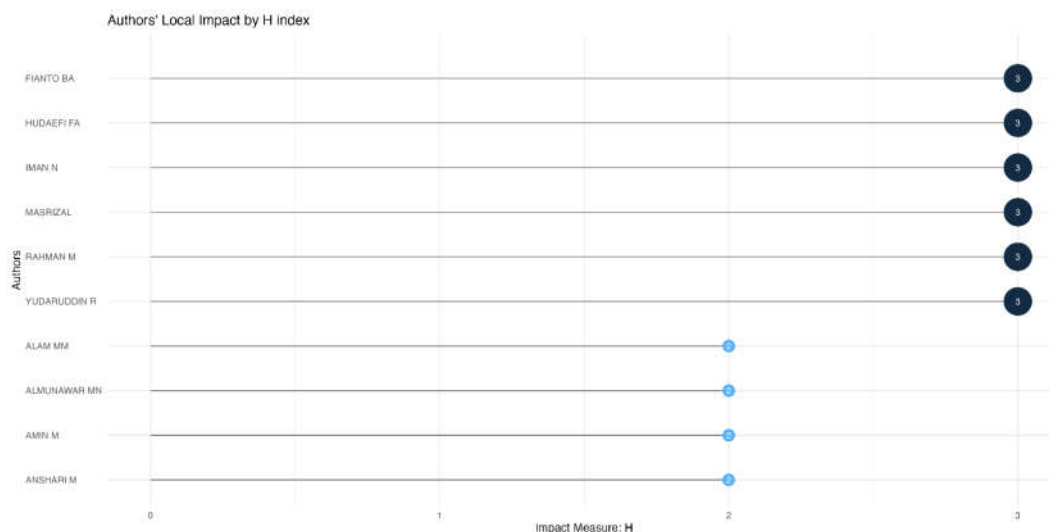


Figure 6. Author impact.

### 3.1.5. Country-Wise Contribution

Table 2 presents the number of publications and citations by country, based on the corresponding author’s affiliation. Indonesia, Vietnam, and Malaysia emerged as the leading contributors to ASEAN’s digital finance research, with Indonesia ranking first with 105 publications. Thailand and Cambodia follow with 9 and 1 articles, respectively. The highest citation count also comes from Indonesia-based studies, whereas Malaysia, Vietnam, and Thailand received fewer citations, ranging between 208 and 337. These figures suggest a strong correlation between publication volume and citation impact in this field.

Table 2. Top ASEAN countries based on productivity and citations.

Country	Frequency	Total citations
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Indonesia	105	899
Vietnam	40	273
Malaysia	34	337
Thailand	9	208
Cambodia	1	10

### 3.1.6. Geographical Distribution of Publications

Figure 7 illustrates the research productivity and international collaborations between ASEAN member states and other countries globally. The publication output is represented in blue, with a darker shade indicating a higher volume of research in digital finance. Research collaborations are depicted through red links connecting various countries. Within the ASEAN region, Indonesia, Malaysia, Vietnam, and Thailand emerge as the leading countries in terms of publication output, with the most robust research collaboration observed between Indonesia and Malaysia.

#### Country Collaboration Map



**Figure 7.** Countries' academic production and collaboration.

**Table 3.** Collaboration among countries.

From	To	Frequency of collaboration
Indonesia	Bangladesh, Czech Republic, France, New Zealand, Spain, United Arab Emirates, United Kingdom, USA, Uzbekistan, Yemen	1
	India, Ukraine, Vietnam	2
	Australia, Brunei, Hungary	3
	Malaysia	22

Malaysia	Brunei, Canada, Czech Republic, Germany, India, Korea, Nigeria, Oman, Poland, Saudi Arabia, Spain, Sweden, Thailand, USA, Uzbekistan, Yemen	1
	Bangladesh, China, Italy, New Zealand, Pakistan	2
	Hungary	3
	United Arab Emirates, United Kingdom, Vietnam	4
Vietnam	China, Cyprus, France, Germany, Japan, Korea, Pakistan, Switzerland, Thailand	1
	Finland, Hungary, Lebanon	2
	Czech Republic	3
	United Kingdom	6
Thailand	Japan	1

Table 3 presents detailed information regarding international collaborations among countries. In addition to within-ASEAN research partnerships, academic collaborations in the region have extended to other English-speaking countries, particularly in Europe, including the UK, Czech Republic, France, Germany, and Hungary. Additionally, there are expanded research networks in Asia, encompassing China, Korea, and Japan. These patterns underscore the increasing trend of international collaboration aimed at enhancing research productivity, improving quality, and diversifying research topics related to ASEAN's digital finance.

### 3.2. Conceptual Structure

Figure 8 presents thematic clusters using VOSviewer software. Five distinct clusters, each represented by a different color, were created based on the co-occurrence of all keywords extracted from the titles and abstracts of 252 reviewed documents. In the diagram, each keyword is shown as a node, where the size of the node reflects the frequency of the keyword. The proximity between nodes indicates the strength of the relationship between terms – the closer the nodes, the stronger the connection.

Cluster 1, in red, includes keywords such as bank performance, digital transformation, efficiency, financial inclusion, financial literacy, financial technology, fintech, peer to peer lending, and sustainability. This cluster highlights the growing impact of digital innovations on the financial sector, especially the implications of fintech expansion on traditional banking systems. In fact, fintech companies have been instrumental in diversifying financial services that were once the domain of tradition banks – such as peer-to-peer lending, payments, and investments – with the goal of enhancing service efficiency. Moreover, fintech innovation has played a significant role in improving financial inclusion in developing areas, by expanding access to mobile payments, Internet banking, and asset management services. Fintech further supports local sustainability efforts by providing financing to small and micro enterprises (SMEs) and reducing inequality in underserved regions through social funds and charitable initiatives (Hudaefi, 2020).

Cluster 2, in green, includes keywords such as digital banking, mobile banking, adoption, customer satisfaction, loyalty, perceptions, and service quality. Key issues associated with the adoption of Internet banking include the perceived quality of services and overall customer

satisfaction. For service quality, understanding how users evaluate the quality of Internet-based banking services is critical. Amin (2016) provides empirical evidence showing that four specific constructs – personal need, site organization, user friendliness, and website efficiency – significantly influence perceptions of web-based banking service quality. For customer satisfaction, this factor plays a pivotal role in fostering long-term relationships between banks and their clients, while also helping to reduce the perceived risks associated with using digital banking platforms.

Cluster 3, in blue, includes keywords such as behavioral intention, consumer acceptance, continuance intention, online banking, mobile banking adoption, and technology acceptance. Several factors influencing consumer acceptance of online banking have been identified in the literature, including user habits, intentions to adopt the technology, social influence, and security concerns (Amin, 2016). Cultural context – also shape consumers' decisions to adopt financial technologies (Mortimer et al., 2015). Regarding continuance intention in mobile banking, factors such as perceived usefulness, customer satisfaction, and user attitudes play crucial roles in explaining the ongoing use of mobile banking services (Foroughi et al., 2019).

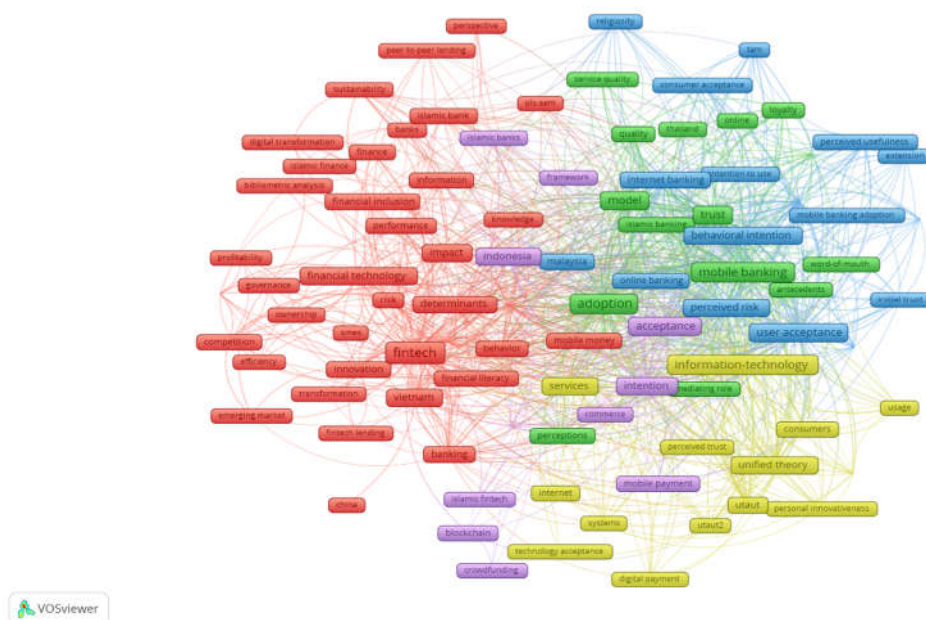


Figure 8. Keyword co-occurrences.

Cluster 4, in yellow, contains keywords such as digital payment, information technology, perceived trust, perceived innovativeness, technology adoption, and UTAUT (Unified Theory of Acceptance and Use of Technology). To explain users' pre-adoption behavior, previous studies have drawn upon two key theories: the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). TAM centers on two primary constructs: perceived usefulness (PU) – a user's subjective evaluation of the technology's effectiveness in task completion, and perceived ease of use (PEOU) – how effortless the technology is to operate (López-Nicolás et al., 2008). To enhance the model's explanatory power, subsequent studies introduced additional antecedents, which led to the development of the UTAUT framework (Venkatesh et al., 2003). UTAUT incorporates four core constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions. On the other hand, to explore post-adoption behavior, specifically users' continuance intention to use financial technology, the Technology Continuance Theory (TCT) has been widely applied, synthesizing three models: TAM, ECM (Expectation-Confirmation model) and COGM (the cognitive model) (Liao et al., 2009). TCT offers stronger explanatory power and includes six key variables: PEOU, PU, confirmation, attitude, satisfaction, and continuance intention.

Cluster 5, in purple, contains keywords such as blockchain, crowdfunding, extending UTAUT2, commerce, and acceptance. Blockchain in artificial intelligence (AI) plays a vital role in securing transparent transactions and data sharing across financial services platforms, thus acting as a safeguard against financial fraud and data misuse. Rahman et al. (2023) conducted an empirical analysis to explore consumers' intention to adopt AI in banking, using in-depth interviews with banking professionals to assess the benefits and challenges of AI implementation. While AI is recognized as a critical tool for enhancing risk assessment and fraud prevention, many banking officials pointed to several barriers to its widespread adoption, including the shortage of specialized skills, inadequate IT infrastructure, and complex regulatory requirements related to data collection and protection.

#### 4. Conclusion

This bibliometric analysis presents a comprehensive overview of research developments in digital finance in ASEAN countries between 2013 and 2025. It offers a detailed descriptive analysis of research productivity and scholarly impact within the region, while also elucidating key conceptual framework of the research subject. By employing two robust bibliometric tools of Bibliometrix R-package and VOSviewer software to analyze literature retrieved from the WoS database, our findings demonstrate a consistent upward trend in publication volume, indicating growing academic interest in ASEAN's digital finance. Indonesia, Malaysia, Vietnam, and Thailand emerged as the most prolific contributors in the region, with foundational studies in the earliest years having laid the groundwork for further research in the field. Our conceptual analysis reveals that most research focuses on factors influencing the adoption and continued use of financial technologies, with the TAM and UTAUT serving as dominant theoretical frameworks. Particularly in Indonesia and Malaysia, considerable attention has been given to the application of FinTech in Islamic banking, with an emphasis on its role in fostering economic development and financial stability in Muslim communities.

Our findings offer valuable insights for policymakers, practitioners, and decision-makers, providing practical recommendations to enhance the adoption of digital financial services within ASEAN. This initiative aims to promote inclusive finance and sustainable economic development. It is imperative to address the disparities in the availability and accessibility of digital financial solutions for socially disadvantaged people, including older adults, women, individuals with lower education attainment, and those with limited income. Collaboration between FinTech companies and traditional financial institutions is crucial to bridging the financial divide across populations, thereby laying the groundwork for poverty reduction and income equality. For researchers, it is essential to expand future research directions to assess the promising role of emerging technologies, such as AI, blockchain, and big data, in integrating financial services with digital technology. Furthermore, future research should explore the broader impacts of FinTech on financial inclusion and financial well-being of SMEs and underserved populations.

**Supplementary Materials:** The following supporting information can be downloaded at the website of this paper posted on Preprints.org.

**Author Contributions:** Conceptualization, T.X.T.N.; Methodology, T.X.T.N.; Formal Analysis, T.X.T.N.; Writing – original draft, T.X.T.N.; Writing – review and editing, T.X.T.N. and N.T.X.T.; Investigation, T.X.T.N. and N.T.X.T.; Data curation, T.X.T.N. and N.T.X.T.; Software, T.X.T.N.; Supervision, T.X.T.N.; Project administration, N.T.X.T. All authors have read and agreed to the published version of the manuscript.

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