JSSEW
Journal of Sustainability, Society, and Eco-Welfare
JSSEW 4(1): 120–140
ISSN 3025-1524

Mapping the global development of pawnshop research: A bibliometric analysis of scopus-indexed publications

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Received Date: February 12, 2026 Revised Date: April 7, 2026 Accepted Date: April 20, 2026

ABSTRACT

Background: Pawnshop is a key non-bank financial service providing short-term liquidity for communities with limited access to formal banking. Along with economic uncertainty and social vulnerability, academic studies on pawnshops have developed rapidly across various disciplines. This study aims to map and analyze the global development of pawnshop research, identify major thematic structures, and examine the multidisciplinary nature of the literature. **Methods:** This study employs a bibliometric approach using secondary data obtained from the Scopus database covering publications from 2016 to 2025. A total of 59 relevant articles were analyzed using bibliometric techniques, including publication trend analysis, country and institutional contributions, funding sources, subject areas, and keyword co-occurrence analysis supported by network, overlay, and density visualizations. **Findings:** The results show that pawnshop research has grown steadily and is highly multidisciplinary, involving social sciences, economics, business, health, and policy studies. Keyword co-occurrence analysis reveals five main thematic clusters: alternative financial services and microfinance, social behavior, risk and criminality, sensitive regulation related to public safety, and sharia-based pawnshops. Furthermore, pawnshop research focuses on risk-oriented and regulatory issues toward financial inclusion, ethical finance, eco-social welfare, and socially responsive pawnshop models. These findings demonstrate a strong relationship between theoretical perspectives on financial inclusion and social vulnerability with the empirical development of pawnshop research. **Conclusion:** This study concludes that pawnshop is a complex socio-economic phenomenon vital for fostering community resilience, sustainability, and eco-social welfare, which must be understood through an integrated and multidisciplinary perspective. The bibliometric mapping provides a comprehensive overview of the state of the art and highlights future research directions in non-bank financial services. **Novelty/Originality of this article:** This article offers a comprehensive bibliometric synthesis of global pawnshop research by integrating thematic structures, research dynamics, and multidisciplinary perspectives, providing a holistic understanding that has not been systematically explored in previous studies.

KEYWORDS: alternative financial services; bibliometric analysis; pawnshop; financial literacy; sharia pawnshop.

1. Introduction

Pawnshops are a long-established form of non-bank financial services that play an important role in providing access to financing for communities, particularly low-income households and micro-entrepreneurs with limited access to formal banking systems. Across various national contexts, pawnshops function as collateral-based financing mechanisms that are relatively fast, flexible, and easily accessible, making them a common

Cite This Article:
Mabel, S. N. (2026). Mapping the global development of pawnshop research: A bibliometric analysis of scopus-indexed publications. *Journal of Sustainability, Society, and Eco-Welfare, 4*(1), 120-140. https://doi.org/10.61511/jssew.v4i1.2026.3519

strategy for meeting short-term liquidity needs. Previous studies indicate that pawnshops constitute a significant component of alternative financial services widely utilized by unbanked and underbanked populations when access to bank credit is constrained (Amorim & Schneider, 2022; Nicolini & Cude, 2019; Kim et al., 2019). Therefore, pawnshops should be understood not only as economic institutions but also as social phenomena closely associated with community welfare dynamics and financial inclusion.

Along with global economic developments and increasing economic uncertainty, academic research on pawnshops has grown significantly and expanded across multiple disciplines. Prior studies have examined pawnshops not only from the perspective of credit and financing but also in relation to consumer behavior, household financial resilience, public health, and social risks, including criminality (d'Este, 2020; Eisenberg-Guyot et al., 2018; Mburu & Helbich, 2016). In this context, pawnshops are often positioned as risk-coping mechanisms used by vulnerable populations to respond to economic shocks such as income loss, health-related expenses, or macroeconomic crises (Inoue, 2021)

Beyond social and risk-related dimensions, the literature also reflects the growing examination of pawnshops from institutional and regulatory perspectives. Several studies highlight the relationship between the presence of pawnshops, spatial planning, and potential criminal activity, particularly in urban areas (Bonilla-Alguera & Gutiérrez-Meave, 2022; Mburu & Helbich, 2016). In addition, research on sensitive regulatory issues such as pawnshop involvement in firearm transactions demonstrates serious implications for public safety and underscores the need for strict regulatory oversight (Chao et al., 2019). These findings indicate that pawnshop practices generate implications that extend beyond purely economic considerations.

In recent years, scholarly attention has also been directed toward the development of pawnshops operating under Islamic principles. Research on sharia pawnshops emphasizes compliance with Islamic financial principles, transactional fairness, and ethical considerations in collateral-based financing (Arifin & Hatoli, 2021; Zulkifli, 2016, 2017). These studies suggest that sharia pawnshops have emerged as an alternative model that prioritizes not only financial inclusion but also moral values and public trust, particularly in countries with predominantly Muslim populations.

Despite the increasing volume of pawnshop-related studies and the diversity of perspectives they encompass, the existing literature remains fragmented and dispersed across various academic disciplines. Some studies focus primarily on the role of pawnshops as alternative financial services, while others emphasize social impacts, criminal risks, health-related issues, or ethical and Islamic finance dimensions. As a result, a comprehensive understanding of the knowledge structure, dominant research themes, and global development trajectories of pawnshop studies has yet to be fully established.

In this context, a bibliometric analysis approach becomes both relevant and necessary. Bibliometric analysis enables the systematic and quantitative mapping of scientific literature to identify publication trends, contributions of countries and institutions, patterns of scholarly collaboration, and thematic structures based on keyword relationships (Donthu et al., 2021; van Eck & Waltman, 2010). Through this approach, researchers can obtain an overview of the state of the art within a particular field, while also identifying shifts in research focus and potential gaps for future investigation.

Based on this background, the present study aims to map and analyze the global development of pawnshop research using a bibliometric approach based on Scopus indexed publications from 2016 to 2025. Specifically, this study focuses on identifying major thematic structures, examining the dynamics of research topic development, and highlighting the multidisciplinary nature of pawnshop studies as reflected in keyword cooccurrence analysis, network visualization, overlay visualization, and density visualization. Accordingly, this study is expected to provide a conceptual contribution to understanding the position of pawnshop research within the scientific literature and to serve as a foundation for the development of more integrated and context-sensitive future research agendas. Based on the research focus and background, the objectives of this article are as follows to identify publication trends in pawnshop research during the 2016–2025 period based on annual publication output, publication sources, and involved subject areas; to map the contributions of key scientific actors in pawnshop research, including countries of origin, institutional affiliations, authors, and funding organizations; to reveal the thematic structure and research clusters of pawnshop studies through keyword co-occurrence analysis, identifying dominant themes such as alternative financial services, social dimensions, risk and criminality, regulation, and sharia-based pawnshops; to analyze the dynamics and shifts in pawnshop research focus over time using overlay visualization in order to trace the evolution of research topics from earlier issues to more contemporary themes; and to identify the density and intensity of pawnshop research topics using density visualization, thereby determining well-explored areas and uncovering potential research gaps for future studies.

Through density visualization, this study goes beyond identifying dominant research themes by examining the relative concentration and maturity of topics within pawnshop research. Areas with high density reflect well-established and frequently examined themes, while low-density areas indicate topics that remain underexplored or emerging. This approach enables a clearer identification of research gaps and provides direction for future studies to address overlooked issues, develop novel perspectives, and respond to evolving social, economic, and regulatory challenges related to pawnshop practices.

2. Methods

2.1 Data sources

This study employs a bibliometric analysis approach to explore the development and direction of scholarly research on pawnshops across various social, economic, legal, and service innovation contexts. Bibliometric analysis was selected because it enables a systematic and quantitative mapping of scientific literature, allowing for the objective identification of research trends, dominant keywords, and collaboration patterns among authors and institutions (Donthu et al., 2021). The primary strength of this method lies in its ability to provide a comprehensive overview of the knowledge structure and research dynamics within a particular field over a defined period.

Data collection was conducted systematically using the Scopus database in 2025. The initial stage involved accessing the official Scopus website and applying the main keyword “pawnshop” in the search field TITLE-ABS-KEY with the following query: TITLE-ABS-KEY ("Pawnshop") AND PUBYEAR > 2015 AND PUBYEAR < 2026 AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")). This strategy ensured that the retrieved documents substantively addressed pawnshop-related issues in their titles, abstracts, or keywords. The initial search yielded 157 documents.

Subsequently, a stepwise screening process was applied to obtain the most relevant and high-quality publications. First, the document type was restricted to peer-reviewed journal articles, reducing the dataset to 105 documents. Second, publications were limited to those written in English to maintain analytical consistency and ensure international comparability, resulting in 90 articles. Third, the publication period was restricted to the most recent ten years (2016–2025) to capture current research developments and thematic novelty, producing a final dataset of 61 articles.

The selection of the 2016–2025 period was deliberate and strategic. This decade reflects significant transformations within the pawnshop industry, including digitalization, the expansion of sharia-based pawnshops, and increasing attention to financial inclusion, consumer protection, and the governance of non-bank financial institutions. Moreover, this period encompasses major global disruptions, particularly the COVID-19 pandemic, which intensified public reliance on alternative financial services such as pawnshops and stimulated new academic inquiries into their social and economic functions.

In this study, no restrictions were imposed based on country or subject area. This methodological decision was intentionally made to obtain a comprehensive and global mapping of pawnshop research. By avoiding geographical and disciplinary limitations, the study captures diverse cross-disciplinary perspectives, including social sciences, economics, business, law, technology, and public health. This inclusive approach facilitates the identification of emerging themes, shifts in research focus, and interconnections among topics that might remain obscured under more restrictive analytical boundaries.

All selected articles were exported in a compatible format and analyzed using VOSviewer software. The analysis was conducted based on article metadata, including titles, abstracts, and keywords, to generate keyword co-occurrence networks, overlay visualizations, and density visualizations. These visual outputs were employed to identify thematic clusters, assess topic intensity, and examine the evolution of pawnshop research focus over time.

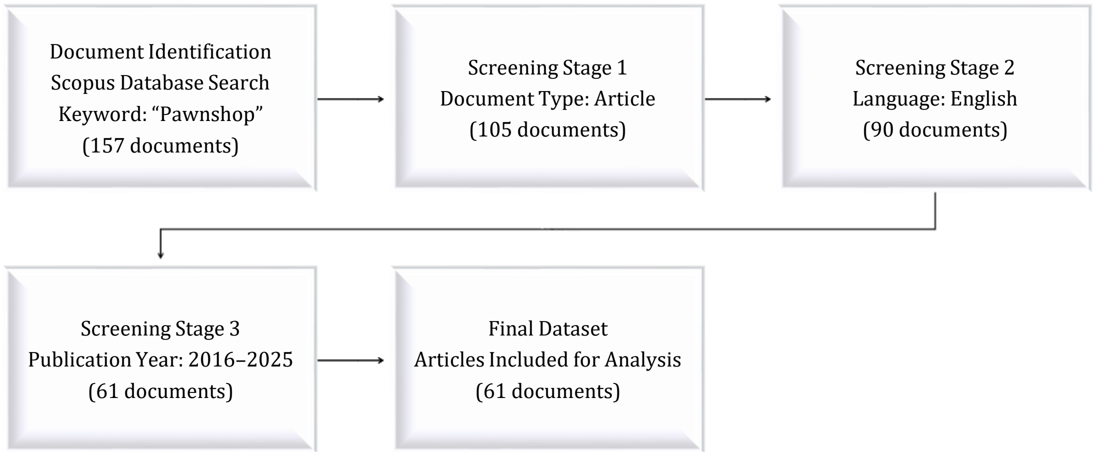

Fig. 1. Article search process

2.2 Data and tools analysis procedures

The data obtained from the Scopus database were analyzed using a bibliometric approach to examine the development of the literature, identify major research themes, and reveal patterns of scholarly collaboration in pawnshop studies. This approach was chosen because it allows for a systematic and quantitative mapping of scientific publications based on bibliographic metadata. The data analysis process was conducted through three main stages, as outlined below. Descriptive analysis, the first stage aimed to provide an overall overview of the characteristics of the analyzed publications. Descriptive analysis was conducted using the “Analyze Results” feature in Scopus and organized into several key indicators, including publication trends by year. Publication trends by year, this analysis was used to observe the dynamics and growth of pawnshop-related publications during the 2016–2025 period, enabling the identification of research intensity and development patterns over the past decade. Funding sponsors, this indicator aimed to identify funding institutions or sponsors that have been most actively supporting research in the field of pawnshops and collateral-based financing.

Subject area, this analysis categorized articles according to their primary disciplinary fields, such as economics, finance, business, and social sciences, in order to identify the dominant academic disciplines contributing to pawnshop research. Country of publication, country-level analysis was conducted to examine the geographical distribution of scholarly contributions and to identify countries that are most actively producing pawnshop-related research. Institutional affiliation, this indicator highlights academic institutions or organizations that most frequently contribute to publications on pawnshop studies. Authors, author analysis was conducted to identify the most productive and influential researchers in the development of pawnshop-related literature. Source title, this analysis identifies journals or publication outlets that most frequently disseminate research on pawnshops and collateral-based financial practices. Overall, descriptive analysis provides a quantitative understanding of the scientific distribution and evolution of pawnshop research over the last ten years

Citation and keyword co-occurrence analysis, the second stage aimed to identify influential publications and the main topics that have attracted scholarly attention within the pawnshop literature. Citation data were extracted from the 61 Scopus-indexed articles included in the final dataset and subsequently analyzed using VOSviewer software. The primary focus at this stage was to: identify the most frequently used keywords, and map relationships among keywords to uncover dominant research themes in pawnshop studies, such as microfinance, financial inclusion, consumer protection, credit risk, and the role of pawnshops within the broader financial system. Although citation analysis generally emphasizes citation counts, this study placed greater emphasis on keyword occurrence and interlinkages in order to reveal the knowledge structure and research directions of contemporary pawnshop studies.

Keyword co-occurrence analysis, the third stage focused on keyword co-occurrence analysis to identify the conceptual structure and developmental directions of pawnshop research. This analysis was conducted using three types of visualizations available in VOSviewer: Network visualization, this visualization displays interconnected keyword clusters that represent major thematic areas within the pawnshop literature. Overlay visualization, overlay visualization illustrates the temporal evolution of keywords based on their year of appearance, enabling the identification of emerging topics and recent research trends in pawnshop studies.Density visualization, density visualization depicts the intensity of keyword occurrences, where brighter and denser nodes indicate research areas that have received the greatest scholarly attention within the pawnshop literature. Through this analysis, the study identifies both emerging keywords and research themes that remain relatively underexplored and thus hold potential for future research agendas.

To support all stages of the analysis, this study employed VOSviewer, a widely recognized and extensively used software in bibliometric research for mapping structures and relationships within scientific literature (van Eck & Waltman, 2010). VOSviewer was utilized to conduct keyword co-occurrence analysis, author collaboration analysis, and citation network mapping. The data-driven visualizations generated through this software enable a comprehensive, systematic, and interpretable mapping of pawnshop research literature.

3.1 Results and Discussion

3.1 Document distribution by year

As illustrated in Figure 2, research on pawnshops shows a fluctuating yet overall increasing trend throughout the 2016–2025 period. This pattern suggests that pawnshop research is not a temporary or incidental topic, but rather a continuously evolving field within the broader discourse on alternative financial services and socio-economic phenomena. During the early phase (2016–2019), publication activity remained relatively stable with a gradual upward trend. This period reflects an initial consolidation stage in pawnshop research, where studies predominantly focused on the traditional role of pawnshops as collateral-based financing mechanisms and their relevance for low-income populations with limited access to formal banking services.

More pronounced increases in publication output were observed in 2020 and 2022, marking phases of intensified academic attention toward pawnshops. These surges can be associated with heightened global economic uncertainty, particularly during and after the COVID-19 pandemic, when alternative financial services gained increased relevance as financial survival strategies for households and micro-enterprises. In this context, pawnshops began to be examined not only as financial institutions but also as risk-coping mechanisms in response to economic and social shocks.

Following these peak periods, publication levels from 2023 to 2025 remained relatively consistent. Although not reaching previous highs, the sustained scholarly output during this phase indicates a transition toward research deepening. Studies increasingly address more specific and nuanced issues, such as the social dimensions of pawnshop usage, regulatory frameworks, financial ethics, and the development of sharia-based pawnshop models.

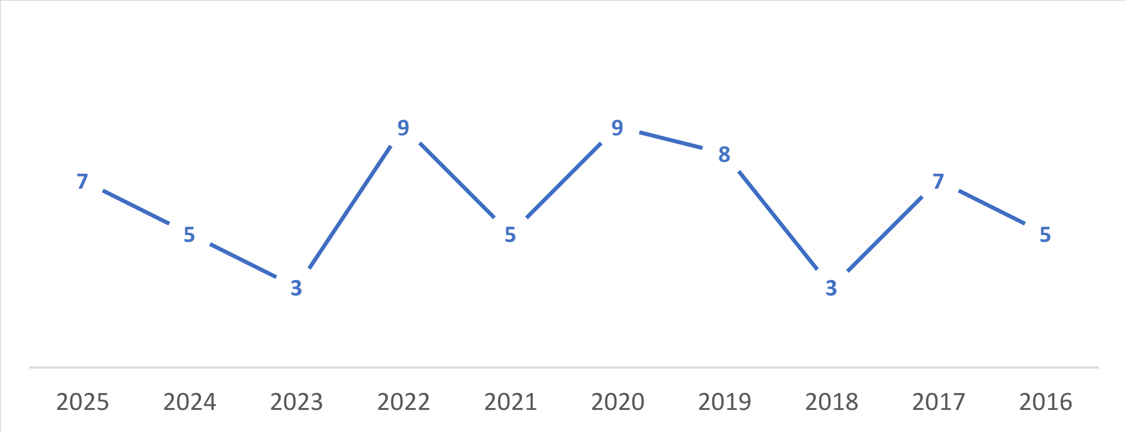

Fig. 2. Document distribution by year

3.2 Funding sources

As presented in Table 1, pawnshop-related research has received support from a diverse range of international and national funding institutions with varying backgrounds and strategic interests. This pattern reflects that pawnshop studies are considered relevant not only within academic discourse but also in broader agendas related to social development, public policy, and financial inclusion. The involvement of global philanthropic organizations, such as the Bill and Melinda Gates Foundation, indicates that pawnshop research is closely associated with strategic issues, particularly poverty alleviation, economic empowerment of low-income communities, and the expansion of access to financial services. Support from such institutions reinforces the positioning of pawnshops within the global discourse on financial inclusion and sustainable development.

Table 1. Funding sources

Funding Sources	Articles
Bill and Melinda Gates Foundation	2
Japan Society for the Promotion of Science	2
Economic and Social Research Council	1
European Commission	1
Health Research	1
International Association for Applied Econometrics	1
Jan Wallanders och Tom Hedelius Stiftelse samt Tore Browaldhs Stiftelse	1
Lembaga Penelitian dan Pengabdian Kepada Masyarakat	1
Ministry of Education and Science of Ukraine	1
Ministry of Education of the People's Republic of China	1

Meanwhile, funding from national research bodies, such as the Japan Society for the Promotion of Science and education ministries in several countries, demonstrates that pawnshop studies are also regarded as important within the framework of scientific advancement and evidence-based policymaking. This suggests that pawnshops are not merely examined as localized practices, but as phenomena with broader structural implications for financial and social systems across different national contexts. The presence of European funding institutions, including the European Commission and the

Economic and Social Research Council, reflects policy-oriented approaches that situate pawnshops within discussions on social welfare, financial market regulation, and the socio-economic impacts of alternative financial services. Such funding indicates that pawnshops are frequently studied as part of public policy evaluation and governance of non-bank financial institutions.

In addition, support from discipline-specific organizations, such as Health Research bodies and the International Association for Applied Econometrics, highlights the multidisciplinary nature of pawnshop research. Funding from these institutions suggests that pawnshops are also examined through public health perspectives, risk analysis, and quantitative approaches to understanding economic behavior. The participation of national funding agencies, including institutions dedicated to research and community service, further emphasizes the applied and contextual dimensions of pawnshop studies, particularly in addressing socio-economic challenges at local and national levels. Overall, the diversity of funding sources underscores that pawnshop research has evolved into a strategic, cross-sectoral field with substantial practical relevance for a wide range of stakeholders.

3.3 Subject areas

As shown in Table 2, pawnshop research has developed in a multidisciplinary manner and is not confined to a single academic domain. The dominance of social sciences and arts and humanities indicates that pawnshops are frequently examined as social and institutional phenomena, closely linked to human behavior, economic relationships, and the dynamics of welfare and social inequality. This perspective positions pawnshops not merely as financial entities, but as social practices that interact directly with household economic conditions and broader social structures.

The strong contribution from economics, econometrics, and finance, as well as business, management, and accounting, highlights the importance of pawnshops within analyses of alternative financial markets, risk management, and the efficiency and sustainability of non-bank financial institutions. Within this strand of literature, research commonly focuses on collateral-based financing mechanisms, borrower behavior, and the economic implications of pawnshops for both formal and informal financial sectors. The presence of medical and health sciences reflects an expansion of pawnshop research toward issues of well-being and public health. This indicates that pawnshops are often associated with conditions of social vulnerability, such as economic pressure, financial stress, and their consequences for individual and household health. Such approaches underscore that pawnshop practices may have indirect but significant implications for quality of life.

Table 2. Subject areas

Subject Areas	Articles
Social Sciences	28
Arts and Humanities	19
Economics, Econometrics and Finance	18
Business, Management and Accounting	17
Medicine	6
Computer Science	4
Decision Sciences	3
Energy	3
Engineering	3
Environmental Science	3

Meanwhile, contributions from computer science, decision sciences, engineering, energy, and environmental sciences suggest the emergence of more specialized analytical and contextual approaches. The involvement of these fields points to efforts to examine pawnshops through modeling techniques, decision-making analysis, and their linkages with other sectors, such as energy and the environment, although these perspectives remain relatively limited in scale. Overall, the distribution of subject areas presented in Table 2 confirms that pawnshop research is inherently interdisciplinary and continues to expand in scope. This pattern reflects the complexity of pawnshops as a research object, which cannot be adequately explained through a single disciplinary lens but instead requires integrative approaches to capture their economic, social, health-related, and institutional dimensions simultaneously.

3.4 Country of publication

The distribution of countries of publication indicates that pawnshop research has a global reach, with notable contributions from both developing and developed countries, as illustrated in Figure 3. The strong contributions from Indonesia and the United States suggest that pawnshop studies have evolved within different economic contexts and financial systems, yet both position pawnshops as socially and economically relevant phenomena. Indonesia's contribution reflects substantial academic attention to the role of pawnshops in supporting financial inclusion and meeting community liquidity needs, particularly through formal pawn institutions and sharia-based pawnshops. This pattern indicates that pawnshops in Indonesia are not merely perceived as traditional financial practices, but also as socio-economic policy instruments associated with community empowerment and the strengthening of the non-bank financial sector.

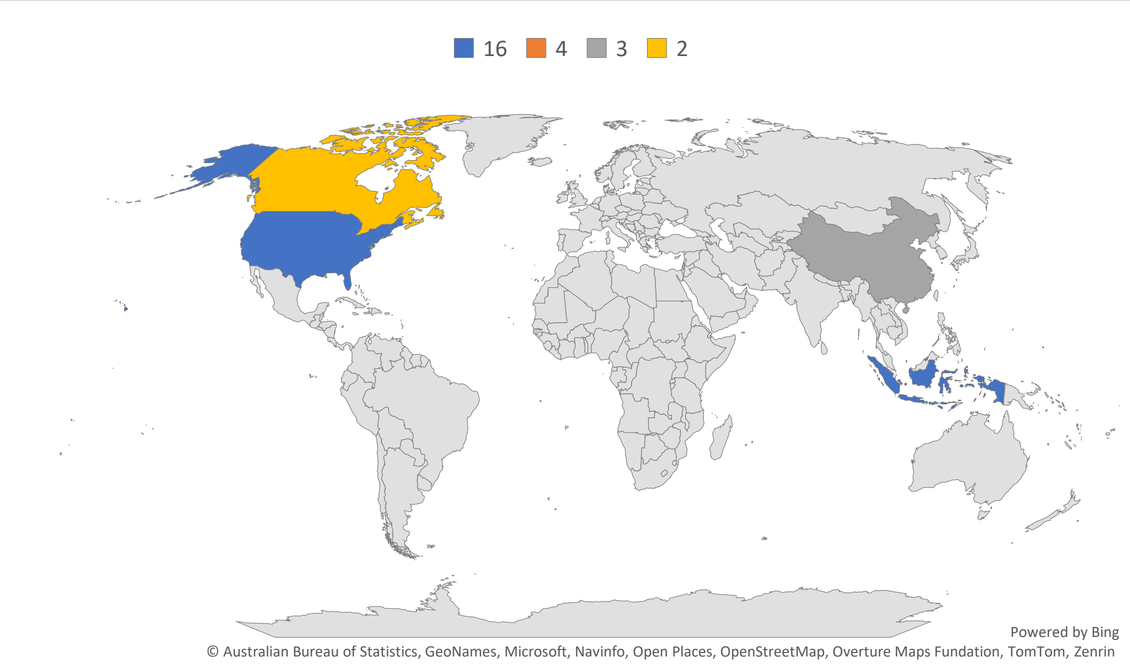

Fig. 3. Country/territory: Indonesia (16); United States (16); Undefined (4); China (3); Canada (2)

Meanwhile, the prominence of the United States underscores that pawnshops are also an important research object within advanced economies, particularly in relation to alternative financial services, consumer protection, and the social implications of pawnshop usage among low-income populations. In this context, studies tend to emphasize regulatory frameworks, social risks, and the links between pawnshops and issues such as public health and urban crime. Contributions from other countries, such as China and Canada, although relatively limited, indicate that pawnshop research is also developing within diverse policy environments and financial systems. This suggests the presence of differing research approaches shaped by national regulatory frameworks, economic structures, and financial cultures. In addition, the presence of publications with undefined country affiliations highlights limitations in publication metadata, while simultaneously suggesting the existence of cross-national collaborations or studies that do not explicitly report geographical affiliations. Overall, the country distribution confirms that pawnshop research constitutes a cross-border field influenced by diverse national contexts, thereby offering opportunities for comparative studies and expanded international collaboration in future research.

3.5 Institutional affiliations

As shown in Table 3, the institutional affiliations involved in pawnshop research reflect the participation of various universities and research institutions across different geographical regions. This pattern indicates that pawnshop studies are not concentrated within a single institution or country, but instead develop in a dispersed and context-specific manner, shaped by the characteristics of local financial and social systems. Institutions from Indonesia occupy a relatively prominent position, reflecting strong academic attention to pawnshop practices in the context of financial inclusion, the role of state-owned pawn institutions, and the development of sharia-based pawnshops. The involvement of multiple universities suggests that pawnshop research in Indonesia has evolved as a cross-disciplinary issue, intersecting with public policy, economics, and Islamic studies.

Table 3. Affiliation

Affiliation	Articles
Universitas Airlangga	3
Minnesota State University Mankato	2
Peking University	2
University of Washington	2
The University of Alabama	2
Universiti Putra Malaysia	2
Universitas Diponegoro	2
Universitas Islam Negeri Sunan Kalijaga, Yogyakarta	2
Universitas Islam Riau	2
Sichuan Academy of Social Sciences	1

In contrast, contributions from institutions in the United States and China indicate that pawnshops are also an important research subject within countries with different economic systems. Studies originating from these institutions commonly link pawnshops to alternative financial services, regulatory frameworks, and broader social implications, including welfare concerns and social risks in urban settings. The presence of universities from Southeast Asia and social science research institutions further reinforces the multidisciplinary nature of pawnshop research. This involvement demonstrates that pawnshops are not examined solely within economics or business faculties, but are also studied by institutions focusing on social sciences and public policy. Overall, this pattern confirms that pawnshops are understood as complex phenomena requiring cross-disciplinary and cross-institutional research approaches.

3.6 Authors and source titles

From an authorship perspective, most contributors have published only a single article, while a limited number of authors such as Badriyah, Kim, Lee, Rusby, Soemarmi, and Suharto have contributed two publications. This pattern suggests that pawnshop research is still largely characterized by individual contributions rather than being dominated by highly prolific research groups. Nevertheless, the presence of authors with multiple publications indicates the emergence of scholars who consistently engage with pawnshop-related issues, particularly in areas such as financial inclusion, consumer behavior, and regulatory frameworks. This pattern points to the early formation of specialized research trajectories and highlights the potential for stronger research networks and more sustained scholarly collaboration in future pawnshop studies.

Table 4. Author name

Author Name	Articles
Badriyah, S. M.	2
Kim, K. T.	2
Lee, J.	2
Lee, J. M.	2
Rusby, Z.	2
Soemarmi, A.	2
Suharto, R.	2
Ali, A.	1
Allam, M. H. F.	1
Amorim, M.	1

The source title analysis indicates that pawnshop research is distributed across a wide range of interdisciplinary journals. The International Journal of Innovation Creativity and Change emerges as the most frequent publication outlet, suggesting that pawnshop studies are not confined to traditional financial perspectives but are increasingly associated with innovation, business model transformation, and the dynamics of financial service delivery. The presence of articles in journals such as the International Journal of Business, the Journal of Islamic Marketing, and the Journal of Law and Economics further highlights the strong influence of business, economics, legal studies, and Islamic finance perspectives in examining pawnshop practices.

Table 5. Source titles

Source Title	Articles
International Journal of Innovation Creativity and Change	3
International Journal of Business	2
Journal of Islamic Marketing	2
Journal of Law and Economics	2
Al Istinbath Jurnal Hukum Islam	1

In addition, the inclusion of journals such as Al Istinbath: Jurnal Hukum Islam, Banks and Bank Systems, and the Canadian Journal of Criminology and Criminal Justice demonstrates that pawnshops are also analyzed from legal, financial system, and social issue perspectives. This diversity of publication outlets underscores the multidisciplinary nature of pawnshop research and reflects the complex role of pawnshops within economic systems, regulatory frameworks, and mechanisms for social protection.

3.7 Network visualization

3.7.1 Red cluster: Pawnshops as alternative financial services and microfinance

Keyword co-occurrence analysis was employed to identify the most frequently co-occurring keywords in pawnshop research and to examine how relationships among research topics are structured. Through network visualization generated using VOSviewer, it is possible to understand the main research directions, dominant thematic focuses, and the positioning of pawnshops within the broader scientific literature. Based on the network visualization (Figure X), the keywords “pawnshop” and “pawnshops” occupy a central position and are strongly connected to a wide range of related topics. This pattern indicates that pawnshops are not examined solely as financial institutions, but are also closely associated with human behavior, alternative financial services, social risk, and the development of sharia-based financial systems.

The red cluster positions pawnshop, alternative financial services, and microfinance as its core keywords. This cluster illustrates the role of pawnshops as non-bank financial institutions commonly used when access to formal financial services is limited. Amorim & Schneider (2022) demonstrate that pawnshops, alongside payday loans and auto-title loans, are frequently utilized by workers with unstable incomes as short-term financial survival strategies. However, reliance on these services may also generate long-term financial strain. This finding aligns with Inoue (2021), who emphasizes that pawnshops function as risk-coping mechanisms for vulnerable populations, particularly during periods of economic or health-related shocks. From a microfinance perspective, pawnshops are also viewed as alternative financing sources supporting small businesses and low-income communities. Zhou et al. (2017) show that in China, pawnshops serve as accessible financing channels for micro and small enterprises that face difficulties obtaining bank credit. Similar conclusions are drawn by Zainuddin & Md Yasin (2020) who highlight that pawnshop-based lending has long been embedded in the global history of microfinance. Overall, the red cluster underscores the dual nature of pawnshops as instruments of financial inclusion and, simultaneously, as potential sources of financial vulnerability if insufficiently regulated.

3.7.2 Blue cluster: Pawnshops, humans, and social dimensions

The blue cluster links the keywords pawnshops, human, and humans, indicating that a substantial body of research examines pawnshops from the perspective of human behavior and social well-being. Nicolini & Cude (2019) that low levels of financial well-being significantly increase the likelihood of pawnshop usage, suggesting that pawnshops are disproportionately relied upon by financially fragile individuals. Similarly, Kim et al. (2019) reveal disparities in pawnshop usage based on race and financial literacy, with minority groups showing greater dependence on alternative financial services.

In addition, Eisenberg-Guyot et al. (2018) highlight the health implications of fringe financial service use, including pawnshops. Their findings indicate that users of such services face poorer health outcomes, reinforcing the argument that pawnshops are intertwined not only with economic issues but also with broader dimensions of social welfare. This cluster demonstrates that pawnshop usage cannot be separated from social context and human vulnerability, particularly among economically disadvantaged populations.

3.7.3 Green cluster: Risk assessment, land use, and crime

The green cluster connects pawnshops with risk assessment, land use, and crime-related issues, and is predominantly addressed in spatial and criminological studies. d'Este (2020) finds that increases in the number of pawnshops are correlated with higher rates of acquisitive crimes, such as theft and robbery, as pawnshops may function as outlets for stolen goods. This result is supported by Mburu & Helbich (2016) who show that pawnshop presence is associated with an increased risk of bicycle theft in urban areas.

However, these relationships are not uniform across contexts. Bonilla-Alguera & Gutiérrez-Meave (2022) report that pawnshop density does not always have a statistically significant effect on certain crime rates, suggesting that spatial planning and local contextual factors play a critical role. The green cluster therefore highlights that the relationship between pawnshops and crime is highly contextual and requires place-based policy approaches.

3.7.4 Purple cluster and yellow cluster: Firearms-sensitive regulation, sharia pawnshops, and financial ethics

The purple cluster reveals a link between pawnshops and firearms. Chao et al. (2019) show that pawnshops licensed to sell firearms exhibit a strong correlation with firearm-related suicide mortality rates. This finding extends the understanding of pawnshop impacts beyond economic and criminological domains to issues of public safety. This cluster emphasizes the necessity of strict regulatory oversight regarding the types of services and goods offered by pawnshops.

The yellow cluster highlights sharia pawnshops, reflecting the growing body of research on pawnshops operating under Islamic financial principles. Arifin & Hatoli (2021) and Fedro et al. (2019) emphasize the importance of compliance with DSN-MUI fatwas to ensure that rahn practices remain aligned with sharia principles. Furthermore, Zulkifli (2016, 2017) demonstrates that sharia pawnshops in Indonesia have experienced rapid growth and exhibit strong service quality, particularly in terms of assurance and ethical conduct.

This cluster positions sharia pawnshops as ethical alternatives to conventional pawnshop models. Taken together, the network visualization and cluster analysis reveal that pawnshop research is multidimensional and interdisciplinary, encompassing economic, social, legal, health, and ethical perspectives. These findings confirm that pawnshops constitute a complex research object whose implications extend far beyond financial transactions, thereby reinforcing the importance of integrative and context-sensitive approaches in future pawnshop research.

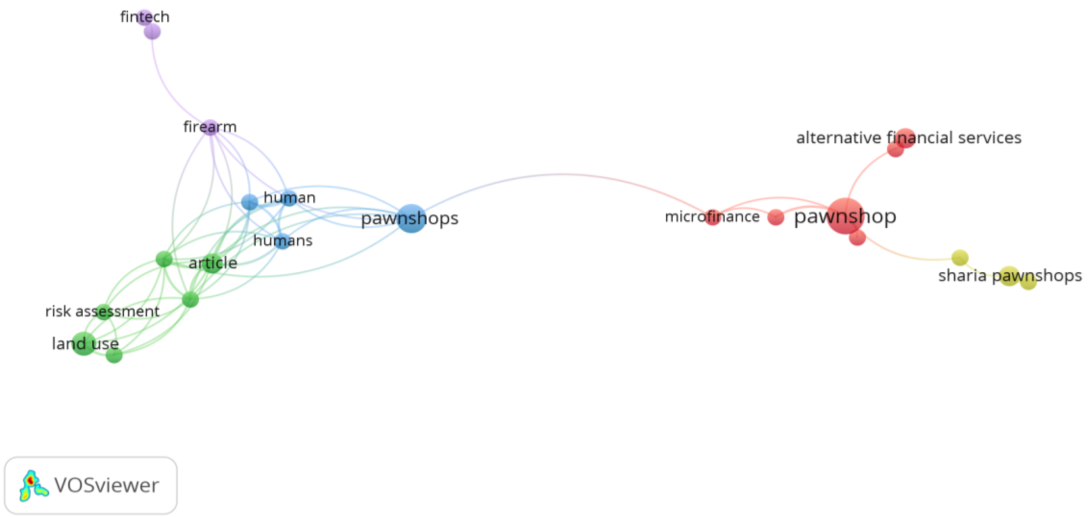

Fig. 4. Network visualization

Based on Table 6, it is evident that pawnshop research has developed in a multidimensional manner and is not limited solely to financing aspects. Each cluster represents a distinct research focus, yet collectively they complement one another in explaining the roles and implications of pawnshops across various contexts. The red cluster indicates that pawnshops are predominantly examined as part of alternative financial services and microfinance, particularly in providing access to financing for low-income populations when access to formal banking institutions is limited. These findings are consistent with previous studies that position pawnshops as important instruments for supporting financial inclusion and enhancing the economic resilience of vulnerable communities (Amorim & Schneider, 2022; Inoue, 2021). Meanwhile, the blue cluster emphasizes that pawnshop usage cannot be separated from social conditions and individual characteristics of users. Research within this cluster demonstrates that decisions to utilize pawnshops are influenced by levels of financial well-being, economic pressure, and broader social life conditions. Accordingly, pawnshop-related issues extend beyond economic considerations and are closely linked to human dimensions and social welfare (Nicolini & Cude, 2019; Kim et al., 2019).

Table 6. Keyword co-occurrence clusters in pawnshop research

Cluster Color	Thematic Focus	Main Keywords	Sources
Red	Financial inclusion and microfinance	pawnshop, alternative financial services, microfinance	Amorim & Schneider (2022);Inoue (2021); Zhou et al. (2017); Zainuddin & Md Yasin (2020); Maskara et al. (2021); Russell et al. (2025); Lee et al. (2024); Waliszewski et al. (2024); Gulimbetova et al. (2023); Badriyah et al. (2020); Borres (2020); Azizakhon et al. (2020); Andryushchenko et al. (2017); Bhutta et al. (2016); Lamb (2016).
Blue	Social dimensions and human behavior	pawnshops, human, humans	Nicolini & Cude (2019); Kim et al. (2019); Eisenberg-Guyot et al. (2018); Sukardi et al. (2025); Campiranon (2022); Lee et al. (2024); Murhem & Ulväng (2023); Degenshein (2017); Ouellette (2017); Lamb (2016); Borres (2020).
Green	Risk and crime	risk assessment, land use	d'Este (2020); Mburu & Helbich (2016); Bonilla-Alguera & Gutiérrez-Meave (2022); O'Toole et al. (2025); Krupa et al. (2021); Demeau & Parent (2018); ubrin & Hipp (2016); Yuspin et al. (2020).
Purple	Sensitive regulation	firearm	Chao et al. (2019); O'Toole et al. (2025); Yuspin et al. (2020).
Yellow	Sharia-based pawnshops	sharia pawnshops	Arifin & Hatoli (2021); Fedro et al. (2019); Zulkifli (2016, 2017); Sukardi et al. (2025); Sari & Haryono 2025); Khairat (2024); Khalil (2022); Wijaya (2022); Shabbir (2020); Ali et al. (2018); Ulyah & Ula (2019).

Furthermore, the green cluster indicates a relationship between pawnshop presence and environmental risk as well as criminal activity, although this relationship is highly contextual and strongly dependent on regional characteristics and spatial planning. Studies in this cluster generally situate pawnshops within public policy and urban planning frameworks, particularly in metropolitan contexts (d'Este, 2020; Mburu & Helbich, 2016; Bonilla-Alguera & Gutiérrez-Meave, 2022). The purple cluster extends pawnshop research into the domain of public safety, particularly through issues related to firearm transactions. Although the number of studies within this cluster is relatively limited, existing findings underscore the importance of strict regulation and oversight concerning the types of services offered by pawnshops (Chao et al., 2019).

Conversely, the yellow cluster reflects the growing body of research on sharia-based pawnshops, which emphasizes ethical considerations, compliance with Islamic financial principles, and service quality as key differentiating factors from conventional pawnshops. Studies within this cluster affirm that pawnshop practices also evolve in accordance with the cultural and religious values of society (Arifin & Hatoli, 2021; (Zulkifli, 2016, 2017). Overall, the cluster mapping presented in Table 6 demonstrates that pawnshops constitute a complex and interdisciplinary research object, encompassing economic, social, legal, health, and financial ethics dimensions. These findings reinforce the view that pawnshop research should be examined comprehensively by incorporating the diverse perspectives that have emerged within the existing literature.

3.8 Overlay visualization

3.8.1 Early development: social and risk-oriented focus (2018–2019)

Overlay visualization is employed to examine the temporal development (based on publication year) of keywords appearing in pawnshop-related research. The color gradient on the map represents time periods, where dark blue indicates earlier topics (around 2018–2019), while green to yellow reflects more recent and evolving topics up to 2023–2024. In the early period, pawnshop research was dominated by blue-colored keywords such as humans, human, risk assessment, land use, and article.

This pattern suggests that initial studies largely positioned pawnshops as a social phenomenon, with a strong emphasis on their impacts on communities and surrounding e nvironments. Several studies during this period highlighted the association between pawnshops and social as well as spatial risks, including potential criminal activity, land-use dynamics, and implications for public safety (d'Este, 2020; Mburu & Helbich, 2016). In addition, the early emergence of the keyword firearm indicates academic attention to the role of pawnshops in the circulation of high-risk goods, making regulation and supervision central issues in the early literature (Chao et al., 2019). Accordingly, during this phase, pawnshops were more frequently viewed as objects of monitoring and risk control rather than as instruments of financial inclusion.

3.8.2 Transitional phase (2020–2021) and recent trends of pawnshops (2022–2024)

Entering the middle period (approximately 2020–2021), green-colored keywords such as pawnshop, microfinance, and alternative financial services became more prominent. This color shift reflects a change in research focus, moving from risk-oriented perspectives toward an understanding of pawnshops as part of the alternative financial services ecosystem. Studies in this phase increasingly emphasized the role of pawnshops in providing access to financing for populations underserved by formal banking institutions, particularly low-income households and micro-entrepreneurs (Amorim & Schneider, 2022; Inoue, 2021). At this stage, pawnshops were more frequently associated with the concept of financial inclusion, although discussions of digitalization had not yet become explicit. Pawnshops were positioned as a bridge between community liquidity needs and the limitations of access to formal financial systems.

In the most recent period, yellow-colored keywords such as fintech, alternative financial services, and sharia pawnshops are clearly visible. This pattern indicates that contemporary research has increasingly focused on innovation in pawnshop services within the digital era, as well as the development of sharia-based pawnshop models. The appearance of the keyword fintech signals the integration of digital technologies into pawnshop services, including online platforms, mobile applications, and technology-based collateral valuation systems (Kim et al., 2019; Zulkifli, 2017). Meanwhile, the growing attention to sharia pawnshops reflects a research trend emphasizing ethical considerations, sharia compliance, and public trust. Sharia-based pawnshop models are perceived as alternatives that are not only financially inclusive but also socially and religiously acceptable, particularly in countries with predominantly Muslim populations (Arifin & Hatoli, 2021).

3.8.3 Implications for research focus

Based on the overlay visualization, it can be concluded that the trajectory of pawnshop research has undergone a clear shift: from issues of risk and regulation, toward the role of pawnshops as instruments of financial inclusion, and ultimately toward digital innovation and sharia-based models. These findings are highly relevant to the focus of this study, which positions innovation in pawnshop services in the digital era as a strategic issue. Consequently, this research is situated within the most recent phase of the literature and has the potential to make a significant contribution to understanding how pawnshop digitalization can strengthen financial inclusion. Overall, the overlay visualization demonstrates that pawnshop research is dynamic and responsive to societal needs and technological advancements. As a result, studies on innovation in pawnshop services are becoming increasingly relevant and contextual in efforts to promote sustainable financial inclusion.

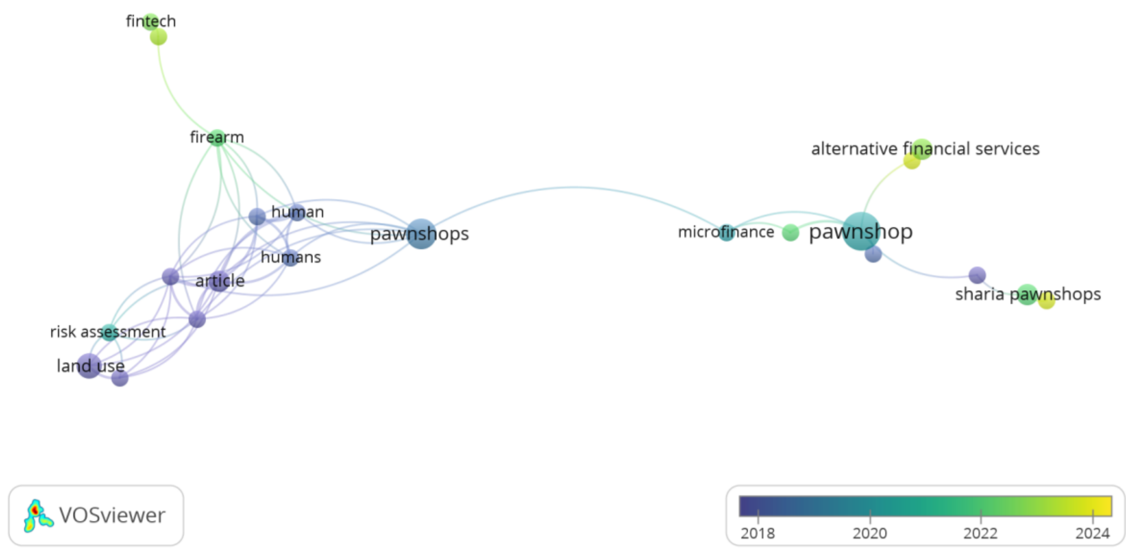

Fig. 5. Overlay visualization

3.9 Desnsity visualization

3.9.1 Core research theme: Pawnshop as the central focus

Density visualization is used to identify the level of density and intensity of keyword occurrences in pawnshop-related research. Brighter colors (yellow to light green) on the map indicate keywords that appear more frequently and occupy a more central position in the literature. In contrast, darker green to blue colors represent topics that are less frequently discussed or function as supporting themes.

Based on the density visualization, the keywords pawnshop and pawnshops appear in areas with the highest density. This finding confirms that pawnshop constitutes the core theme within the analyzed literature. The high density indicates that most studies position pawnshops as the primary object of analysis, whether from economic, social, or financial perspectives. The central position of these keywords further suggests that pawnshops are not merely understood as alternative financial institutions, but also as social phenomena with broad implications for community welfare and financial inclusion.

3.9.2 Medium density and specific-contextual topics

Keywords such as alternative financial services, microfinance, and brand image are located in areas with medium density. The presence of these keywords indicates that research has increasingly linked pawnshops to non-bank financial access and public perceptions of pawnshop services. Studies within this cluster commonly discuss the role of pawnshops in reaching unbanked and underbanked populations, as well as how institutional image influences trust and service utilization (Kim et al., 2019; Nicolini & Cude, 2019). In addition, the appearance of microfinance history reflects scholarly efforts to situate pawnshops within the historical development of microfinance, although this topic has not yet emerged as a dominant research focus.

Keywords such as risk assessment, risk factors, land use, and firearm appear in lower-density areas, yet remain analytically significant. This pattern indicates that issues of risk and environmental impact function as complementary themes in pawnshop research. Studies within this group tend to highlight the potential negative externalities of pawnshops on social environments and public safety, including their associations with crime and spatial dynamics (Chao et al., 2019; d'Este, 2020; (Mburu & Helbich, 2016) Although these topics are less prominent than financial themes, their presence enriches the literature by emphasizing the importance of governance and regulation in pawnshop operations.

3.9.3 Emerging trends: Fintech and sharia-based pawnshops

The keywords fintech and sharia pawnshops appear with relatively lower density compared to the core themes, yet are displayed in relatively bright colors. This suggests that these topics represent emerging trends within the literature. Recent studies have begun to explore the integration of digital technologies into pawnshop services, as well as the development of sharia-based pawnshop models that emphasize ethics, transparency, and public trust (Arifin & Hatoli, 2021; Zulkifli, 2016, 2017).

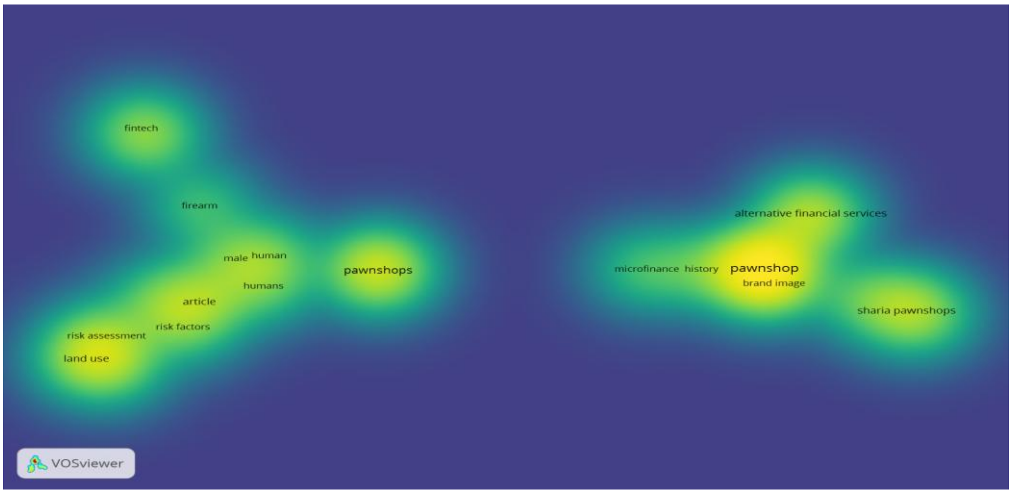

Fig. 6. Density visualization

The relatively modest density of these keywords indicates the existence of research gaps, particularly regarding the effectiveness of pawnshop digitalization in promoting broader financial inclusion. Overall, the density visualization reveals that pawnshop research remains largely dominated by general discussions of its functions and roles as an alternative financial service. Meanwhile, topics related to digital innovation and sharia-based pawnshops, although showing substantial potential, remain relatively underexplored in the literature. These findings underscore the importance of this study in examining innovation in pawnshop services within the digital era as a strategy to expand financial inclusion, while simultaneously strengthening governance and public trust in the pawnshop industry.

4. Conclusion

This study provides a comprehensive mapping of the global development of pawnshop research through a bibliometric analysis based on Scopus-indexed publications covering the period 2016–2025. The synthesized findings indicate that pawnshop research has grown significantly and evolved into a multidisciplinary field. It is no longer confined to collateral-based financing, but has expanded to encompass social dimensions, community welfare, regulation, criminal risk, public health, and financial ethics. These results confirm that pawnshops represent a complex socio-economic phenomenon with broad implications for non-bank financial systems and public policy.

The thematic structure identified through keyword co-occurrence analysis reveals five interrelated clusters: pawnshops as alternative financial services and microfinance institutions; social and human behavioral dimensions; spatially based risks and criminality; sensitive regulatory issues related to public safety; and the development of sharia-based pawnshops. The presence of these clusters demonstrates that pawnshop research evolves in response to diverse social, cultural, and institutional contexts, while also being shaped by global economic dynamics. Accordingly, pawnshops cannot be understood in isolation, but require interdisciplinary and context-sensitive analytical approaches.

Furthermore, overlay and density visualizations reveal a clear shift in research focus from issues of risk and supervision toward the role of pawnshops in financial inclusion, service innovation, and the strengthening of ethical dimensions through sharia-based models. These findings suggest that pawnshop research progresses in parallel with changing societal needs and technological advancement, while also opening avenues for future studies on pawnshop digitalization, consumer protection, and governance of non-bank financial institutions. Overall, this study contributes conceptually by presenting a comprehensive state-of-the-art overview of pawnshop research and serves as a foundation for the development of more integrated, sustainable, and responsive research agendas and policy frameworks addressing contemporary socio-economic challenges.

From a policy perspective, the findings highlight the importance of strengthening governance, regulatory frameworks, and digital innovation in pawnshop services to enhance financial inclusion and protect vulnerable communities. Policymakers are encouraged to integrate pawnshops into broader financial inclusion strategies while ensuring ethical practices and consumer protection. Furthermore, future research should explore the role of digital pawnshop services and fintech integration, which remain underexplored but hold significant potential in expanding access to sustainable financial services.

Acknowledgments

The author would like to express sincere gratitude to the Master of Accounting Study Program, Universitas Sebelas Maret, Indonesia, for providing academic guidance and institutional support throughout the completion of this study.

Author Contribution

S. N. M., contributed substantially to the conceptualization, methodology, data collection, analysis, and interpretation of the study, as well as drafting the original manuscript. Furthermore, the author contributed through supervision, guidance in the research process, and critical review.

Funding

This research received no external funding.

Data Availability Statement

The data used in this study were obtained from the Scopus database and are subject to licensing restrictions. Therefore, the datasets analyzed during the current study are not publicly available but can be accessed through Scopus with appropriate institutional permissions.

Conflicts of Interest

The author declares no conflict of interest. The funders had no role in the study design; in the collection, analysis, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

Declaration of Generative AI Use

During the preparation of this manuscript, the author used ChatGPT (OpenAI) to assist with language refinement, academic writing clarity, and preliminary text structuring. After using this tool, the author reviewed, edited, and validated the entire content and takes full responsibility for the final version of the manuscript.

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