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Research Article

Assessment of Mathematical Models in Islamic Economics and Finance: A Scientometric Analysis

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Abstract

This research aims to chart the evolution of mathematical models in Islamic economics and finance research indexed by Dimensions using the keyword 'Mathematical in Islamic economics finance.' The analysis was conducted on 76 carefully chosen publications. Bibliometric mapping of the development of mathematical models in Islamic economics and finance research was carried out using the Biblioshiny-R and VO Sviewer software to reveal the bibliometric landscape. The findings indicate a significant surge in publications on the development of mathematical models in Islamic economics and finance research from 1980 to 2020, with the highest impact observed in the International Journal of Islamic and Middle Eastern Finance and Management. Network visualization unveils three distinct clusters representing the development of mathematical models in this field. A predominant focus of the research revolves around modeling Profit Loss Sharing (PLS) schemes. Islamic bank financing remains a prominent and continually evolving subject in recent studies. However, despite the utilization of mathematical models in these investigations, the approach often mirrors an adaptation from existing conventional models. There is a pressing need to critically reassess the prevailing models within this domain to foster innovative perspectives and advancements.

Keywords: *Islamic Economics & Finance; Mathematical Model; Scientometric; Bibliometric.*

1. Introduction

The expansion of the Islamic finance sector necessitates a synergy between economic development and theoretical underpinnings in Islamic finance. The convergence of theory and practice in Islamic economics and finance is pivotal, fostering a pragmatic application of theoretical scientific foundations. Consequently, research efforts directed towards advancing Islamic economic knowledge are of paramount importance. In the realm of academic-theoretical Islamic economic and financial development, Islam adopts a paradigm that draws from historical Islamic economic experiences to scrutinize contemporary issues within the field.

This approach entails analyzing current challenges through the lens of past Islamic economic behaviors while employing modern analytical tools. This amalgamation yields postulates, axioms, and an Islamic economic theory arising from empirical experience. Subsequent theory testing identifies shortcomings, enabling critical evaluation and refinement of the Islamic economic theory model for broader applicability across diverse contexts and timeframes. Within this progression, mathematical modeling assumes a pivotal role, facilitating computations and delineating economic assumptions. Mathematical modeling in Islamic economics and finance encompasses the application of mathematical constructs, encompassing real or complex numbers, vectors, matrices, symbols, and mathematical operations, to delineate Islamic economic and financial scenarios (Mirakhor & Krinchene, 2014). In the context of Islamic economics and finance, proficiency in mathematics and statistics is imperative for students and professionals, enabling them to navigate tasks in both financial and non-financial institutions. Proficiency in calculations is indispensable for manipulating economic and financial data.

Financial institutions, including pension funds, securities firms, insurance companies, and asset management entities, necessitate adeptness in actuarial knowledge, investment modeling, and risk

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management. While professionals might rely on company standards and software for data processing, a comprehensive understanding of the theoretical underpinnings of mathematical calculations is indispensable. Despite advances in mathematics and modeling, the application of mathematical models in areas pertinent to Islamic economics and finance remains limited. Hence, this study aims to address this lacuna by investigating the application of mathematical models in Islamic economic and financial research indexed by Dimensions from 1980 to 2020, encompassing 76 selected publications.

This research endeavors to chart the trajectory of research related to the application of mathematical models in Islamic economic and financial studies indexed by Dimensions. Employing VOSviewer and Biblioshiny-R software, this analysis conducts a bibliometric evaluation. Preceding the bibliometric analysis, a Meta Analysis leveraging text mining techniques scrutinizes publications indexed by Dimensions. It delves into publication trends, publication years, geographical case studies, authorship, research themes, citations, and methodological approaches adopted in papers concerning the application of mathematical models in Islamic economic and financial research.

2. Literature review

Models serve as attempts to replicate social phenomena or natural events. They come in three main types: physical models, analogical models, and mathematical models. Physical models simulate the spatial or domain aspects of the phenomenon, whereas analogical modeling involves drawing comparisons between different phenomena to construct a physical model. Mathematical models, on the other hand, describe phenomena using equations. The accuracy of a mathematical model in imitating a phenomenon relies on the precision of its equations (Luknanto, 2003).

Mikrakhor and Krinchene (2014) define a model as a theoretical representation that simplifies real-world situations into equations, offering a concise alternative to verbose descriptions. Economics heavily relies on mathematical functions and models. Common examples include demand and supply functions, budget functions, production possibilities curve functions, production functions, and other economic functions.

A key objective of mathematical approaches is to deduce conclusions or theorems from a set of assumptions or postulates (Chiang, 2005). However, it's crucial to critically evaluate worldviews based on these assumptions. Economics, as shaped by values derived from specific worldviews, introduces variations in theoretical constructs, including mathematical models. Models derived from a Western worldview tend to advocate for a value-neutral, positive economic science.

Regrettably, numerous research endeavors in Islamic economics and finance continue to rely on conventional mathematical models rooted in Western frameworks. This trend perpetuates a secular scientification of economics, potentially sidelining the Islamic worldview and its ethical dimensions (Al-Attas, 1995). The process of Islamization aims to harmonize scientific knowledge with the moral tenets of the Qur'an, eliminating dichotomies between substantive and normative descriptions in social sciences (Abusaud, 1993).

Al-Attas (2014) delineates a two-step Islamization method involving the removal of foreign elements from existing knowledge and the infusion of Islamic values. However, Islamic economics, including the use of mathematical models, should not begin from scratch but rather integrate advancements from conventional economics into the Islamic framework (Hasan, 2016; Haneef & Furqani, 2012). The incorporation of mathematical models into Islamic economics should not merely adopt mainstream models but ensure alignment with the ultimate aim of Islamic economics, which is Falah (Abdullahi, 2018).

Bibliometric mapping holds significance in literature studies, distinguishing between the development of bibliometric maps and their graphical representation. It's a methodology employed across various scientific disciplines, aiding in understanding publication patterns and supporting decision-making in management science. Bibliometrics offers quantitative and statistical analyses of publication patterns, facilitating assessments of author influence and relationships between authors.

Van Eck & Waltman (2007b) define bibliometrics as the study of information production and dissemination, operationalized through media that records and disseminates information. Previous studies in Islamic economics and finance using bibliometrics include Rahman et al. (2020) on SRI sukuk, Ahmid & Ondes (2019) on PhD research in Islamic banking and finance in the UK, and Rehman & Othman (1994) on Islamic economic literature in general.

3. Methodology

This study utilizes international publication data sourced from the Dimensions database, focusing on the utilization of mathematical models in Islamic economic and financial research. The dataset includes article titles, abstracts, and keywords spanning the period from 1980 to 2020. After conducting the search, 76 articles were selected for analysis based on specific criteria. These publications were examined for various parameters such as publication details, publication years, countries of case studies, author counts, research themes, citations, and methodological approaches. Microsoft Excel 2010 was employed for data analysis.

The analysis also involved studying the developmental trends of publications centered around

mathematical models in Islamic economic and financial research. This exploration was conducted using VOSviewer and Biblioshiny-R software tools. VO Sviewer, leveraging VOS mapping techniques as introduced by Van Eck and Waltman (2007a), facilitates the creation of maps by visualizing similarities. The program constructs maps using appropriate mapping techniques, not limited to VOS mapping but also extending to methods like multidimensional scaling. Additionally, VOSviewer operates across various hardware and operating system platforms, offering direct access via the internet through databases such as Web of Science or Scopus.

The core objective of VOS mapping is to position items in lower dimensions, ensuring that the distances between items accurately represent their consistency or interconnectedness. For each pair of items i and j, VOS employs an input similarity, sij (sij ≥ 0), treating it as a ratio-scale measurement. These similarities (sij) are typically computed utilizing association measures like Equation 1, commonly found in works such as Van Eck and Waltman (2007b). VOSviewer determines the item positions on the map by minimizing the distances between them.

$$V(x_i, \ldots, x_n) = \sum_{i<j} s_{ij}\|x_i - x_j\|^2 \quad (1)$$

To be:

$$\frac{2}{n(n-1)} \sum i<j \|xi - xj\| = 1 \quad (2)$$

Two computer programs have been developed, incorporating VOS mapping techniques. Both programs utilize various SMACOF algorithm variants mentioned earlier to optimize Equation 1 towards Equation 2. Beyond merely mapping Islamic economic and financial research utilizing mathematical models, this study aims to assess the quality of these studies using the framework proposed by Al-Attas for Islamization. Two classifications are employed for this assessment:

Originative: Studies categorized as 'originative' have undergone the process or stages of Islamization. These research endeavors, in line with Al-Attas' framework, involve isolating or eliminating foreign elements from existing knowledge while infusing Islamic values and concepts into the research. Choudhury (2012) emphasizes that the originative process should deductively stem from the core principles of Islamic economy, advocating for a rejection of conventional neoclassicism in favor of an epistemological system rooted in the Tawhidi worldview of unity of knowledge.

Adaptive: This category encompasses two variations:

Incorporated-Adaptive: Studies falling under this classification employ existing conventional mathematical models, occasionally critiquing the underlying concepts behind these models.

Purely-Adaptive: Papers in this category solely replicate existing mathematical models without critical evaluation, using them as frameworks for analyzing Islamic economic and financial practices.

The distinction between 'originative' and 'adaptive' stems from the foundational divergence between Islamic economics and conventional economic theories, which operate from differing worldviews. This dissimilarity in theoretical foundations might yield distinct conceptual outcomes. Islamic economics, rooted in specific ethical foundations, recognizes a distinct scientific knowledge body, inclusive of realistic model construction (Hasan, 2016).

4. Results and Analysis

This study conducted a review of 76 publications spanning from 1980 to 2020, focusing on mathematical models in Islamic economic and finance (IEF) research as indexed by Dimensions. Among these publications, the majority of research on mathematical models within Islamic economic and financial studies, as cataloged by Dimensions, emanated from Malaysia with 23 papers, followed closely by Indonesia with 15 papers. Additionally, investigations utilizing mathematical models in Islamic economic and financial research were also documented in Pakistan, Saudi Arabia, the United States, Oman, Iran, and the UK, with 11, 9, 6, 4, 2, and 2 papers, respectively (Table 1).

This distribution of studies aligns with findings from the Islamic Finance Development Report (2019), where Malaysia, Indonesia, and Pakistan were identified as leading countries in Islamic finance knowledge indicators. These indicators, notably encompassing the number of peer-reviewed articles and research papers, position these countries prominently within the Islamic finance research landscape.

The categorization of articles based on citation numbers is delineated in Table 2. Among these articles, the top 10 most cited are highlighted. The citation count for each article was retrieved from Google Scholar as of January 22, 2021. The article titled "Islamic interest-free banking, A theoretical analysis" boasts the highest number of citations, standing at 490. This article delves into mathematical models within the realm of Islamic banking. Notably, a majority of highly cited articles revolve around mathematical models within Islamic economics, followed by Islamic banking and Islamic capital markets. Notably, the top 10 articles with the highest citations were predominantly published before 2000.

Table 1: Classification of Publications by Case Study

No.	Country	Number of Article
1.	Malaysia	23
2.	Indonesia	15
3.	Pakistan	11
4.	Kingdom of Saudi Arabia	9
5.	United States	6
6.	Oman	4
7.	Iran	2
8.	United Kingdom	2
9.	Italy	1
10.	Kuwait	1
11.	Morocoo	1
12.	Nigeria	1

Khan's seminal work (1986) stands out as the most cited due to its pioneering use of mathematical models in the context of Islamic banking during a period when such research was scarce. Khan critically assesses the absence of robust theories fortifying the foundation of the Islamic economics system, especially in the realm of Islamic banking and monetary systems when compared to conventional banking.

In contrast, Choudhury & Hoque's work (2006) focuses on corporate governance within Islamic socio-scientific epistemology. Their study reveals significant disparities between the concepts of Islamic corporate governance and mainstream literature, pioneering discussions on mathematical modeling within Islamic corporate governance theory proposals.

Another influential piece frequently referenced is Khan's article (1989), which diverges slightly from his earlier work (1986). This research endeavors to utilize mathematical modeling to juxtapose Islamic financial systems based on a variable return scheme (VRS) against conventional systems based on a fixed return scheme (FRS). The study highlights that debt-based transactions (fixed) prevail due to asymmetric information and high monitoring costs in financial transactions.

Map of Development Mathematical Model in Islamic Economics and Finance Research

Following the database search yielding 76 documents, the data was exported to .txt format and subsequently inputted into VOSViewer for analysis, leading to the subsequent findings.

Table 2: Classification of Publications by Citation

No	Year of Publication	Title	Citation
1	1986	Islamic interest-free banking, A theoretical analysis	490
2	2006	Corporate governance in Islamic perspective	192
3	1989	Towards an Interest-Free Islamic Economic System	179
4	1984	Macro Consumption Function in Islamic Framework	113
5	1983	Portfolio management of Islamic banks, Certainty model	73
6	1994	Comparative economics of some Islamic financing techniques	70
7	1993	Equilibrium in a Non-Interest Open Economy	70
8	1996	Cost of capital and investment in a non-interest economy	58
9	1984	The Role of Sock Exchange in Islamic Economy	47
10	1993	Equity capital, profit sharing contracts and investment, Theory and evidence	43

Visualization of Network Co-Word Maps

The co-word map analysis of these keywords serves as the foundation for mapping the co-occurrence of significant or distinctive terms found in specific articles. Mapping, in this context, facilitates the recognition of knowledge elements, their configurations, dynamics, interdependencies, and interactions. Knowledge mapping plays a pivotal role in technology management, aiding in defining research programs, making decisions related to technological activities, structuring knowledge bases, and developing education and training programs.

In the realm of bibliometrics, science mapping serves as a technique to visually represent scientific landscapes. This visualization involves creating a map that showcases various scientific topics (Royani et al., 2013). The outcomes of visualizing the co-word network map pertaining to research on mathematical models in Islamic economic and financial studies are illustrated in Figure 1.

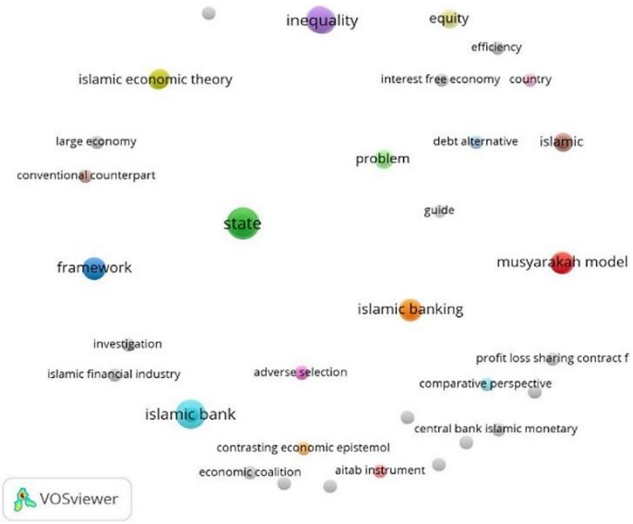

Figure 1: Network visualization of co-word maps

In Figure 1, it's evident that the evolution of research on mathematical models in Islamic economic and financial studies is delineated into three distinct clusters as outlined below.

- Cluster 1 comprises 14 terms, namely Islamic banking, musyarakah model, profit-loss sharing (PLS) contract, comparative perspective, central bank, Islamic monetary, aitab (al-ijarah tsumma al-bai') instrument, contrasting economic epistemology, economic coalition, adverse selection, Islamic bank, Islamic financial industry, and investigation.
- Cluster 2 encompasses 9 terms: inequality, equity, efficiency, interest-free economy, country, debt alternative, problem, Islamic, and guide.
- Cluster 3 is composed of 5 terms: Islamic economic theory, large economy, conventional counterpart, state, and framework.

Cluster 1 prominently revolves around contracts and practices within Islamic banking, specifically focusing on profit-loss sharing schemes, notably mudharabah and musyarakah. Several studies have undertaken

modeling related to profit-loss sharing (PLS) schemes. For instance, Bakhtiar et al. (2014), Halim (2013), Halim et al. (2016), Hasan (2010), Khaled & Khandker (2015), Sugema et al. (2010), Sumarti & Marendri (2017), Sumarti et al. (2015), Wahyudi & Sakti (2016), and Wolf et al. (2018) have delved into various aspects of the PLS scheme, particularly in banking. Some specifically focus on mudharabah profit-sharing modeling, conducted by Cahyandani et al. (2017), Jaffar & Isa (2011), and Omar & Jaffar (2016). Mathematical modeling research concerning the musharakah scheme has been explored by Jaffar (2010), Jaffar et al. (2017), Mostafa et al. (2016), and Samson et al. (2008). While predominantly applied in the banking sector, some studies extend their focus to the takaful industry and the capital market.

Recent research by Wolf et al. (2018) proposes a straightforward mathematical model demonstrating the potential use of the PLS contract between mudharib and shahibul maal as an alternative for institutional debt financing. The research underscores that the PLS financing scheme is notably effective for medium and long-term loans rather than short-term ones.

Cluster 2 in the co-word map visualization centers around fairness and injustice concerns in financial transactions. Researchers emphasize that Islamic-based transaction agreements, especially those involving profit sharing, could address these issues. Various studies, such as those by Bashir et al. (1993), Hasan & Siddiqui (1994), Hasan (2010), Khan (2015), and Tag el-Din (1992), have demonstrated mathematically that PLS-based financing presents an alternative to ribawi-based debt financing. Additionally, Wolf et al. (2018) showcases the viability of the PLS scheme as an alternative to long-term interest-based loans in developing nations.

Cluster 3 primarily focuses on theories underlying Islamic financial and business transactions, often modeled mathematically at both macro and micro levels. These models compare Islamic economic and financial contracts against conventional contracts in commercial banking across various countries. Research by Abdullahi (2018), Kiaee et al. (2013), and Wahid (1985) exemplifies the practical applications of Islamic banking schemes in countries like Malaysia, Indonesia, Pakistan, and several GCC countries.

While some terms and topics overlap between these clusters, the bibliometric calculations and VOSviewer mappings suggest these three clusters to be the most extensive and structured. Interconnections between clusters reflect the interdependent nature of elements within Islam, Islamic finance, and economics, where variables tend to relate to each other. Notably, God (Allah) remains the sole absolute independent variable (Choudhury, 1990, 2009, 2011).

Based on the author's categorization, Islamic economic and financial modeling research divides into three groups: (1) Originative, (2) Incorporated-Adaptive, and (3) Purely-Adaptive. Research examples in the Originative category include works by Choudhury (2014, 2012, 2011), Putri et al. (2018), Ahmad et al. (2011), and Hossain (2006), where deductive approaches are employed. Choudhury's research, for instance, introduces the Tawhidic String Relationship (TSR) concept.

Studies falling under the Incorporated-Adaptive group comprise works by Ghazali et al. (2019), Khaldi & Hamdouni (2018), Saputra et al. (2017), Sumarti et al. (2015), Bakhtiar et al. (2014), Ismal (2014), Halim et al. (2012), and Ismail & Tohirin (2008). Meanwhile, examples of the Purely-Adaptive group include research by Derbali et al. (2017), Martan et al. (1984), Keen (2017), and Sapuan et al. (2015). In terms of numbers, Originative research is relatively fewer compared to the latter groups.

However, a foundational understanding necessitates robust basic research aiming to formulate comprehensive concepts in Islamic economics and finance. As advocated by Choudhury (2012), the originative process should deductively originate from the fundamental teachings of Islamic economy. This approach advocates for rejecting conventional neoclassicism in favor of an epistemological system rooted in the Tawhidi worldview of unity of knowledge, known as Tauhidic String Relations.

Based on the journal sources, this study delves into the impact of each journal publishing papers related to mathematical models in IEF by computing the journal's h-index, displayed in the form of a blue bar chart. Alongside showcasing the attained h-index value, the chart also visually represents the journal's impact via varying shades of blue. A darker shade of blue signifies a more significant impact of the journal.

Analysis of the data reveals that the International Journal of Islamic and Middle Eastern Finance and Management secures the top position with an h-index of 3, depicted in a dark blue hue. Following closely are JIABR, Journal of Islamic Marketing, SSRN e-Journal, and Procedia-Social and Behavioral Science, all possessing h-index values of 2. In contrast, journals with an h-index of 1, indicated by a brighter blue color on the chart, encompass 14 journals, denoting a comparatively lower impact. Notably, a majority of these journals originate from Emerald publications.

The analysis also delves into the evolution of journals serving as sources for research on mathematical modeling in Islamic economic and finance. The depicted curve illustrates the yearly occurrences of each journal from 1980 to 2020. This visualization reveals that research focusing on mathematical modeling in Islamic economic and finance experiences fluctuations in its publication trends over time.

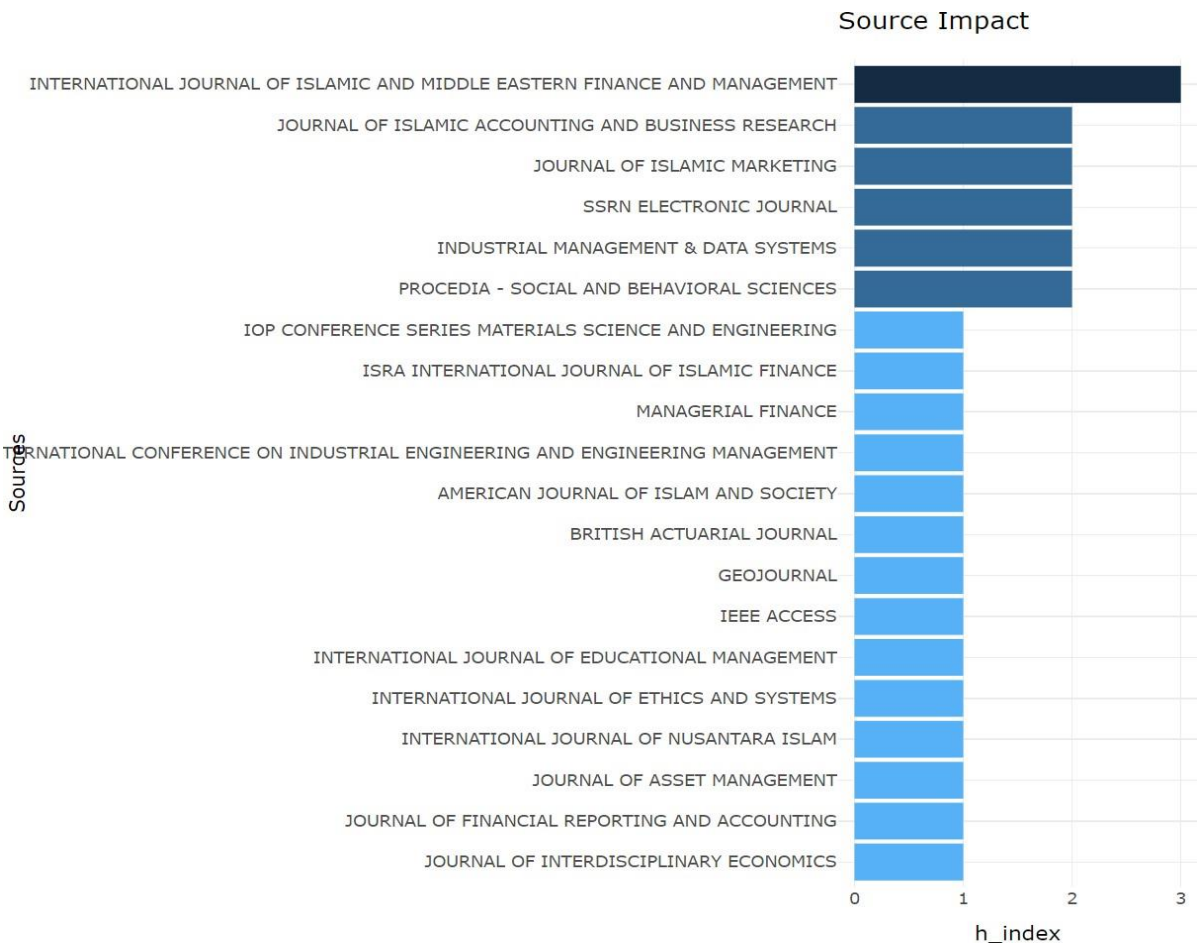

Figure 2: Source Impact

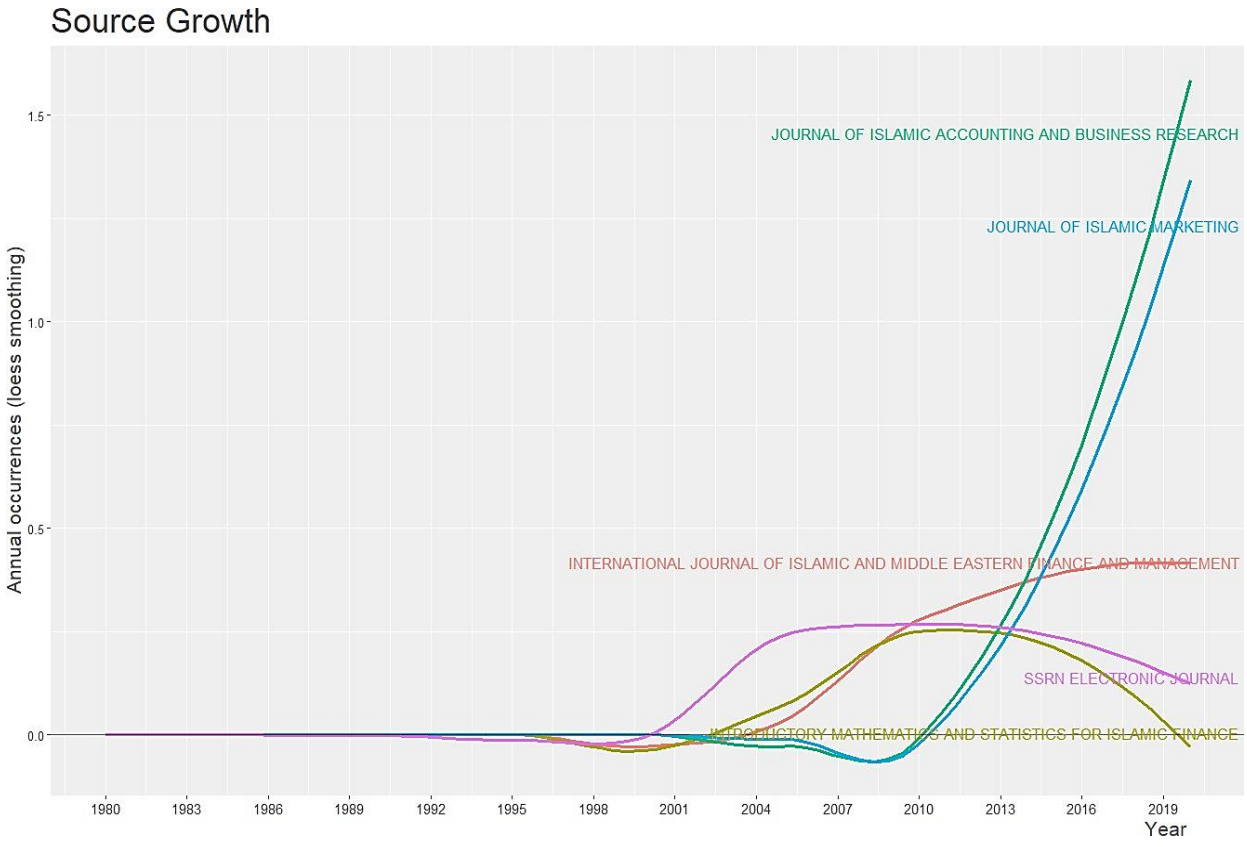

Figure 3: Source Growth

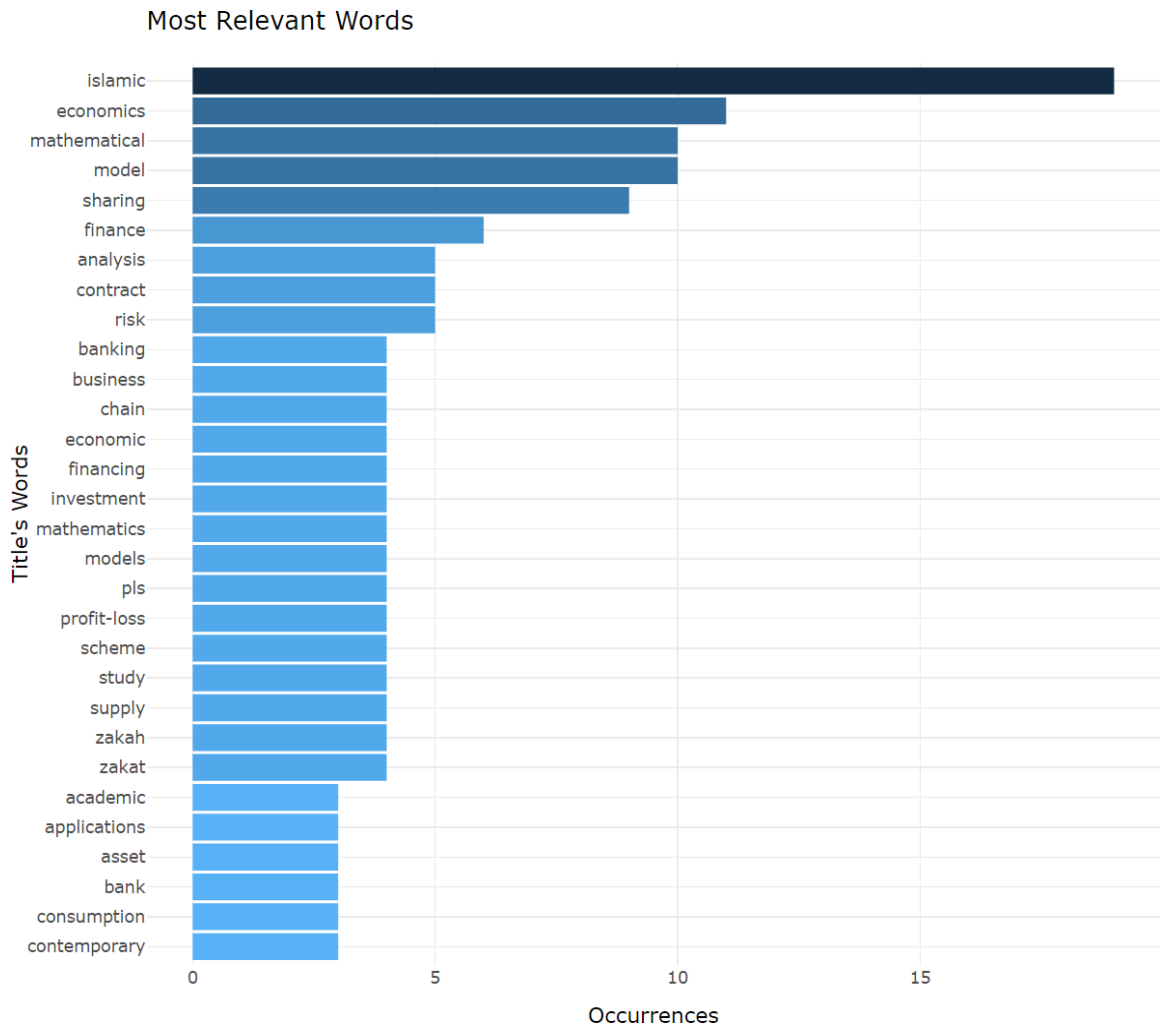

Figure 4: Most Relevant Word

From the figure 3, it also shows that several journals began to experience development since 2001 and continued to increase even though in several years they had decreased, such as Journal of Islamic Accounting and Business Research, Journal of Islamic Marketing and International Journal of Islamic and Middle Eastern Finance and Management. Meanwhile, other papers that experienced a drastic decline, namely SSRN e-Journal and Introductory Mathematics and Statistics for Islamic Finance.

This study also tallies the pertinent words utilized in the collection of documents under investigation, revealing several recurring words ranging from 3 to more than 15 instances. The top 30 words, illustrated in a blue diagram, showcase a comparative analysis of each word's frequency of occurrence and its relevance to mathematical modeling in Islamic economic and finance research.

At the forefront, the word 'Islamic' emerges as the most prevalent, appearing more than 15 times and demonstrating high relevance, depicted in the darkest shade of blue. This underscores the close association of the research theme on mathematical models in IEF with 'Islamic finance', frequently featured in studies within this domain. Following closely is the term 'economic', with a frequency exceeding 10 instances. Subsequently, in the third and fourth positions, word occurrences hover around 10 or slightly below.

This research also delves into topic trends, presenting an overview of topic development over time, segmented by each year. This visual representation reveals the duration of topic usage and the recent emergence of specific subjects. The emergence of each topic aligns with the frequency of its appearance in research focused on mathematical modeling in Islamic economic and finance.

The graph portrays a significant surge in topic development since 2008. Notably, starting from 2008, topics related to mathematical modeling in Islamic economic and finance gained prominence. Additionally, from 2012, the discussion on models and mathematics gained traction. Although these topics have been in circulation for some time, their occurrence remained relatively limited in 2015. Specifically, themes associated with the PLS scheme in Islamic banking garnered attention around 2014-2015. Furthermore, discussions concerning investment, business, and Islamic bank financing surged notably between 2017 and 2019.

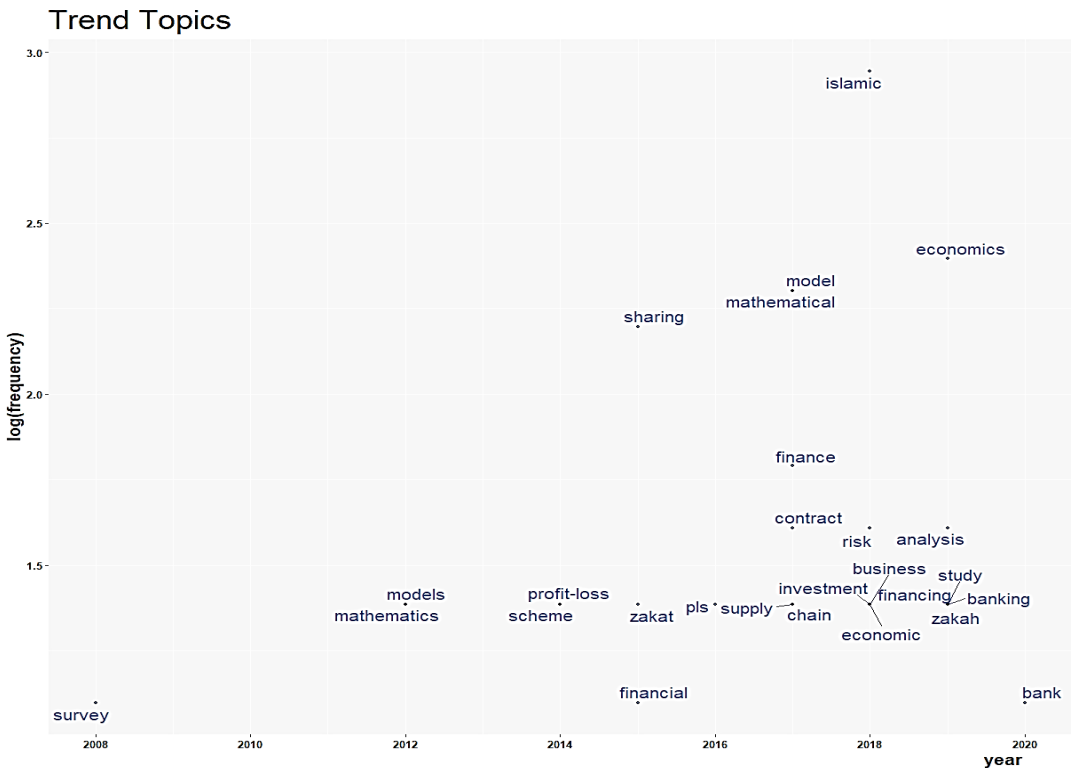

Figure 5: Trend Topics

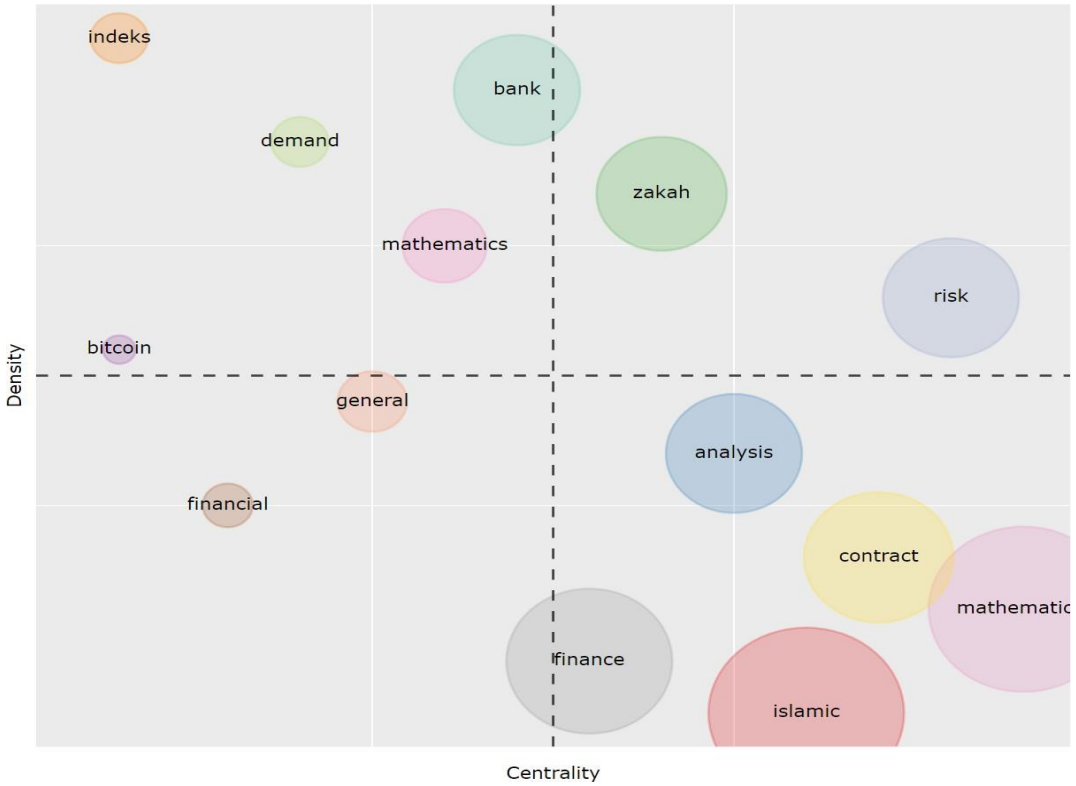

Figure 6: Thematic Map

In this study, thematic maps were analyzed based on density and centrality, divided into four theme quadrants, as depicted above. These outcomes were derived using a semi-automatic algorithm, reviewing all reference titles related to the research subject along with pertinent keywords beyond the authors' keywords. This comprehensive approach aimed to capture nuanced variations in the results.

The upper right quadrant represents a driving theme distinguished by high density and centrality, signaling the need for further development and imperative exploration in future research. This quadrant encompasses themes such as zakah and risk. On the other hand, the upper left quadrant highlights specific but less common themes demonstrating high development, evidenced by high density but low centrality. Themes here encompass bank, mathematics, demand, index, and bitcoin.

Moving to the lower-left quadrant, themes observed here have been utilized over an extended period but display a declining trend, characterized by low centrality. Themes in this quadrant encompass financial and general topics. Lastly, the lower right quadrant encompasses fundamental themes with high centrality but low density. These themes, crucial for research inclusion due to their widespread usage, comprise finance, Islamic, math, contract, and analysis topics.

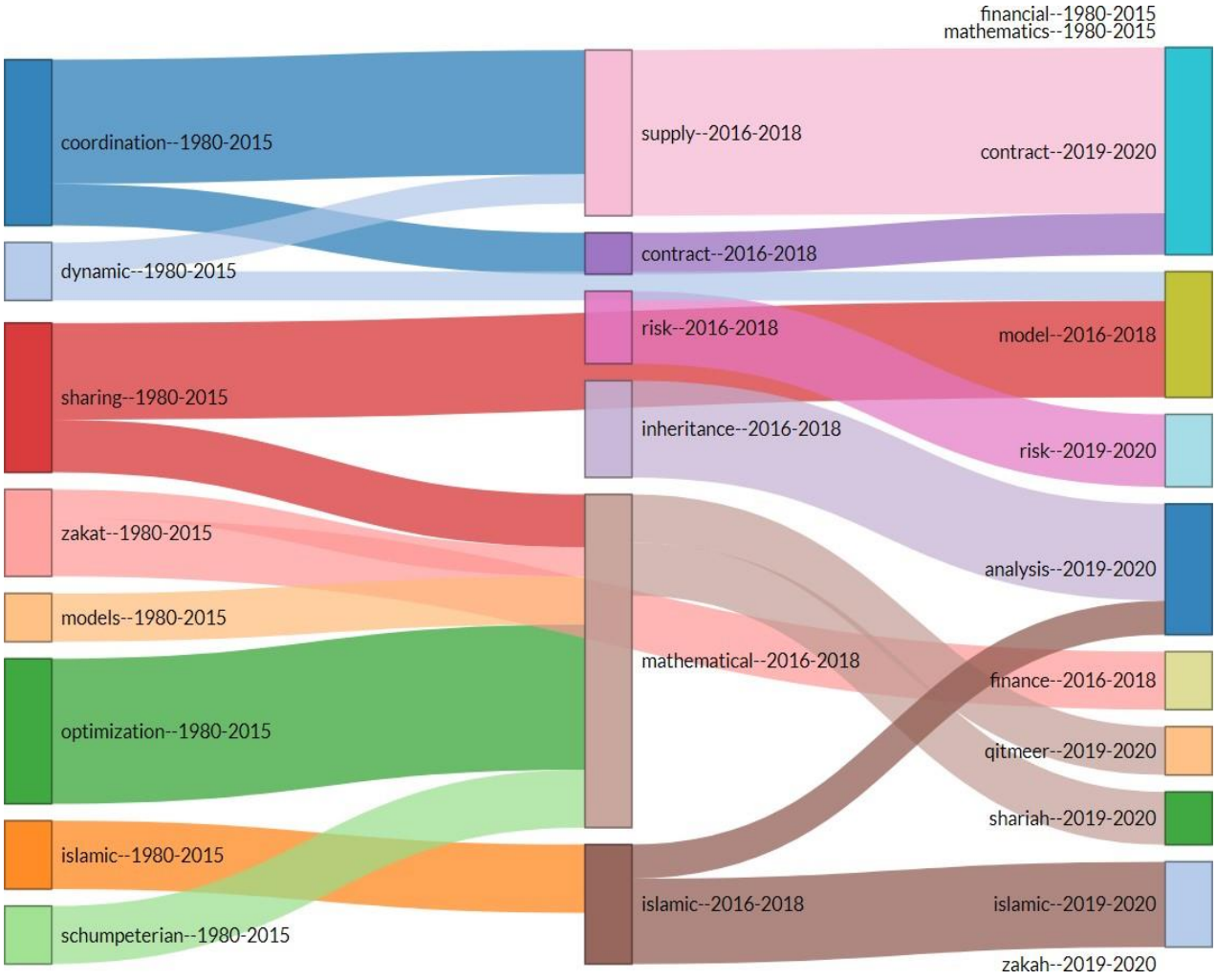

Figure 7: Thematic Evolution

Themes within the papers under scrutiny have showcased a continual evolution, particularly evident between recently published papers and those published long ago. The progression of these themes is depicted in the image above. While the research's primary focus is the math model in IEF, the data highlights various prevalent sub-themes.

The left segment illustrates themes widely used from 1980 to 2015, showcasing eight themes of varying sizes based on their frequency of use. "Sharing" emerges as the most prominent theme, followed by "optimization" and "coordination."

Moving to the middle section, it portrays themes extensively used from 2016 to 2018. Several themes from this period are an extension of previously used themes and exhibit interconnected content. For instance, "mathematical" emerged as an evolution from the theme "sharing," alongside themes like "zakat," "models," "optimization," and "schumpeterian." The most prevalent themes in this period include mathematical, supply, and Islamic.

Finally, the right section displays the most recently utilized themes between 2019 and 2020. Among the nine listed themes, three themes—'contract,' 'risk,' and 'Islamic'—evolved from themes in the previous period, as indicated by the colorful connections or continuations.

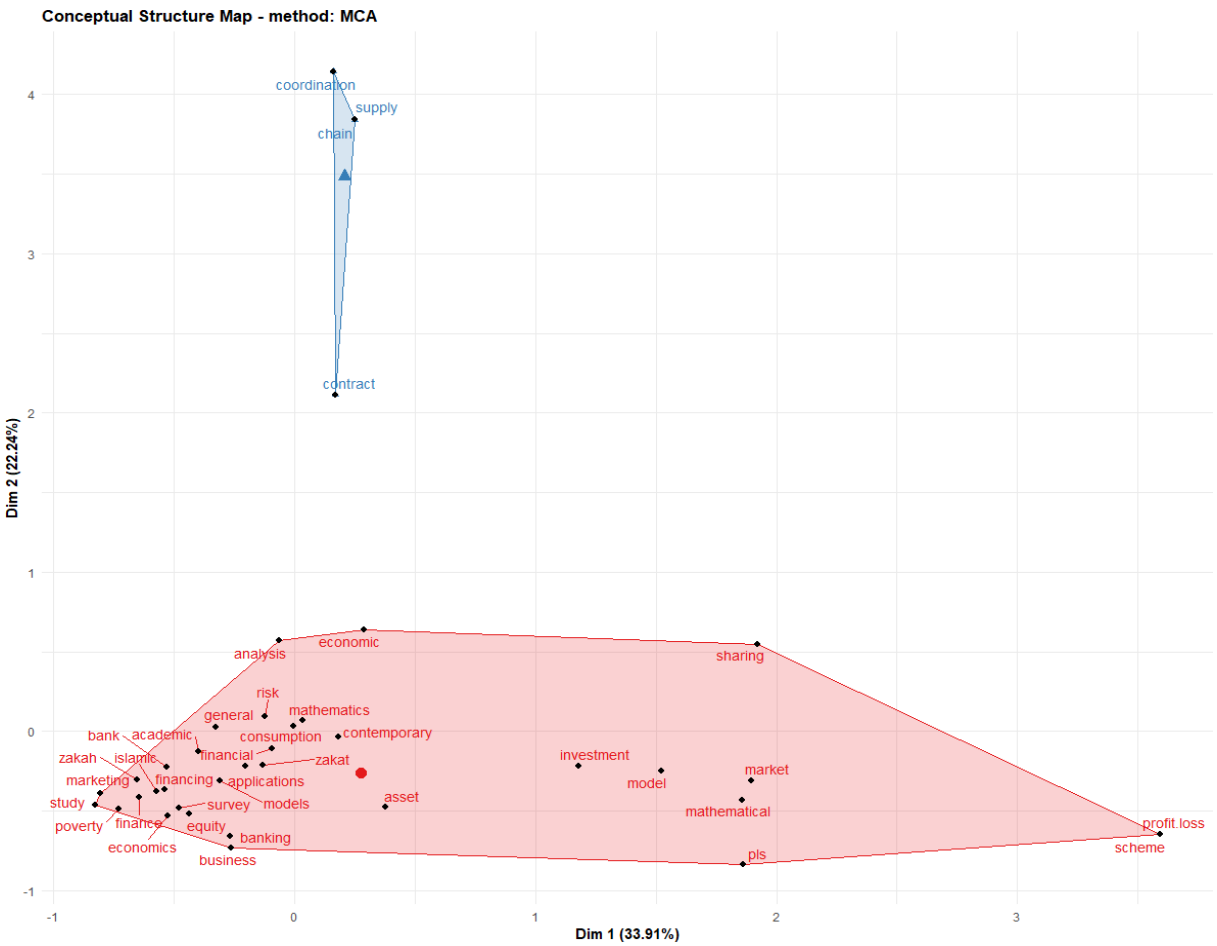

Figure 8: Conceptual Structure Map

This research also presents a conceptual structure map, contextualizing the frequent appearance of words in research papers on the math model in IEF theme by mapping their relationships through area-based visualization. The map categorizes words based on their relationship strength, positioning them according to Dim 1 and Dim 2 values to illustrate connections between words with similar values.

The data reveals two distinct areas: the red area and the blue area, each housing words interrelated to one another. The image above displays the red area, which encompasses a wider array of interconnected words, indicating numerous research papers linking the words listed within this region.

From the findings and discussions, several conclusions can be drawn. The volume of publications exploring the development of mathematical models in Islamic economic and finance research, indexed by Dimensions and other reputable publications from 1980 to 2020, has shown an upward trend since 2010, albeit still relatively limited in number.

The network visualization of mathematical model research in this field reveals three distinct clusters. Cluster 1 predominantly focuses on contracts and practices within Islamic banking, specifically delving into profit-loss sharing schemes like mudharabah and musyarakah. Cluster 2 is notably associated with issues of fairness and justice in financial transactions, while cluster 3 delves into the theoretical foundations of Islamic finance and business transactions. Notably, the International Journal of Islamic and Middle Eastern Finance and Management has a significant impact on this area of study.

This research categorizes Islamic economic and financial modeling into three groups: Originative, Incorporated-Adaptive, and Purely-Adaptive. Although the first group has fewer studies compared to the second and third, the approach in most research tends to be adaptive, leaning towards conventional existing models. A critical examination of mainstream models is necessary, urging researchers to develop deductive mathematical models rooted in Islamic norms and ethics derived from the Alquran and Sunnah. This approach can provide a more robust and aligned framework for the advancement of this field.

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