

## The Future of Cash Waqf Sustainability in the Digital Era: A Bibliometric Review and Network Analysis of Contemporary Literature

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### Abstract:

This study aims to map the intellectual structure and conceptual boundaries of global research on Cash Waqf, tracking its dynamic temporal evolution and identifying emerging research gaps through May 2026. The study adopts an integrated network-driven bibliometric approach analyzing a final sample of 217 peer-reviewed documents indexed in the Scopus database up to May 2026. VOSviewer software were utilized to generate and analyze keyword co-occurrence networks, overlay thematic growth, and density visualizations. Following the application of a minimum co-occurrence threshold of 3 occurrences, the analysis yielded a final network of 46 keywords, algorithmically distributed across 9 clusters, which were subsequently consolidated into 5 principal thematic clusters based on conceptual coherence. The empirical findings reveal that the domain has shifted toward technological and behavioral paradigms, driven by the intense rise of the Technology Acceptance Model (TAM),

waqf literacy, and Millennials as a target demographic.

The chronological analysis revealed a paradigmatic shift in research interests, as jurisprudential discussions and traditional governance frameworks that dominated the period (2019-2020) declined in favor of emerging research trends during the period (2024-2026) that integrate Islamic financial technology (Islamic FinTech), behavioral economics, and digital marketing. This shift was manifested in the intense rise of variables such as: the Technology Acceptance Model (TAM), and targeting of millennials, while density analysis revealed future research gaps related to digital financial engineering and user behavior.

This study provides a comprehensive visual and analytical roadmap that supports researchers in orienting their future investigations, and assists decision-makers in Islamic banks and endowment institutions in

developing sustainable digital financing and marketing mechanisms.

**Keywords:** Cash Waqf; Bibliometric analysis; Islamic FinTech; Technology Acceptance Model (TAM); Millennials; VOSviewer.

### **Introduction:**

Today, the Islamic social finance system constitutes an effective strategic pillar in achieving the Sustainable Development Goals (SDGs), transcending its traditional role as a social safety net to become a core tool for real economic empowerment. At the heart of this system, Cash Waqf has emerged as a flexible financial instrument capable of overcoming the structural obstacles facing in-kind endowments, especially with its ability to accumulate small capital and transform it into major investment projects, starting from financing micro-projects all the way to issuing endowment-related sukuk (Cash Waqf Linked Sukuk - CWLS) to finance green and social infrastructure. (Suhairi, 2025, p. 823) However, for years this model has faced critical challenges regarding institutional trust and marketing efficiency, as its collection mechanisms lacked sufficient transparency, and its participant base was limited to a specific age group, leading to lower engagement among the younger digital-native generation (the Millennials), who consider digitization not just a means but a way of life.

The rapid advancement of Islamic Financial Technology (Islamic FinTech) and the subsequent accelerated digital transformation in the wake of the COVID-19 pandemic have radically transformed the structure of cash endowments, moving from being a "finance product" marketed through traditional financial institutions to an interactive ecosystem mobilized through crowd funding platforms .

(Taqiyyah R. A., 2025, p. 156) This qualitative shift was not only technical, but represented a profound paradigm shift, as the research question shifted from "Is cash waqf permissible according to Islamic law?" to "How do we build Behavioral Intention in a digital donor?" and "What is the role of Cash Waqf knowledge and institutional trust (Trust) in enhancing donor retention?" Recent studies, such as that conducted by (Asyari et al., 2024), have demonstrated that trust and knowledge play a crucial partial mediating role in the relationship between variables of the extended theory of planned behavior and actual intention to adopt, confirming that trust engineering has become far more critical than product design in this contemporary era. (Luthfi, 2026, p. 47)

Despite this growing intellectual and applied momentum, the indicators of which point to tremendous growth in research production since 2015, reaching its peak in 2025-2026 (Hasbulah, 2025), the systematic review literature still suffers from two major gaps: the first is a chronological gap, as previous reference studies such as that conducted by (Aldeen, 2021) suffer from data obsolescence due to their conclusion prior to recent technological and behavioral boom; the second is a methodological and cognitive gap, represented by the focus of previous reviews on superficial descriptive bibliometric indicators (such as monitoring annual publication rates and the distribution of countries and authors) without delving deeply into the latent network analysis of Keyword Co-occurrence Analysis and tracking the dynamic temporal evolution of terms from jurisprudential to administrative/behavioral and ultimately to platform-based applications. (Taqiyyah, 2025)

Accordingly, this study fills this knowledge gap by presenting an integrated network-driven and dynamic bibliometric analysis of global scientific production in the field of Cash Waqf, extending through May 2026. This analysis is based on a robust sample of 217 peer-reviewed scientific documents extracted from the international database Scopus. The added value of this paper is summarized in three central objectives: first, to map the intellectual structure of the Cash Waqf literature and identify the deep thematic clusters that currently guide the field; Second, track the temporal and dynamic curve of keyword emergence to monitor how the focus of attention has shifted from traditional structural models to modern technological and behavioral paradigms; Third, to employ density analysis to statistically differentiate compare saturated research foci from cold regions, representing promising opportunities for future research. The outcomes of this study contribute to providing researchers, endowment institutions, and Islamic banks with a scientific roadmap for designing innovative marketing and financing strategies compatible with the requirements of digital transformation and the behavior of the contemporary endower.

### **Methodology & Research Design:**

To achieve the objectives of the study and ensure its reproducibility and scientific verifiability (Replicability), this study relied on an integrated quantitative and qualitative bibliometric survey methodology in line with the latest methodological updates for the year 2026, executed through the following structured stages:

1. **Data Source & Search Strategy:** The international database Scopus was chosen as the exclusive platform for capturing scientific data. This methodologically justified choice is due to

Scopus's superiority in its comprehensive coverage of peer-reviewed journals in the fields of Islamic economics, social finance, and marketing, compared to other databases, as well as its stringent standards in journal indexing standards. The search strategy was implemented in May 2026 using targeted Boolean operators across titles, abstracts, and keywords, according to the following search formula:

TITLE-ABS-KEY "cash waqf" OR "cash waqfs" OR "waqf shares"

2. **Stages of data collection and filtering and methodological standards:** The search strategy resulted in the retrieval of 217 scientific documents as a final and targeted sample for conducting the bibliometric study. The retrieved documents were subjected to filtering and exclusion criteria to ensure the quality and reliability of the knowledge inputs and exclude any statistical distortions. The study time frame included all available documents up to May 2026, with the aim of monitoring the full historical development of the knowledge field and identifying the latest research fronts and in terms of document type; it was restricted to peer-reviewed scientific articles only, excluding book chapters and conference papers, to ensure reliance on research that had been subjected to rigorous double peer review (Double-blind peer review). The publication stage was also limited to the final published research (Final Stage), thus excluding research that was accepted for publication and was not issued finally, to ensure the completeness and validity of the accompanying bibliometric data. Finally, English was adopted as the sole publishing language for documents; to ensure the universality of network analysis and the compatibility and homogeneity of key terms during the software processing process.

3. **Data Cleaning Protocol:** To achieve the highest cognitive accuracy and avoid the usual statistical distortions in network maps, keywords for retrieved articles underwent extensive manual cleaning before final map generation. The cleaning process consisted of two strategic steps:
  - Excluding methodological and general words: Words that do not carry an objective meaning for the concept of cash waqf for digital marketing, but rather express the methodology or vessel, such as: bibliometric analysis, systematic literature review, and scopus, were withheld. The persistence of these words would have misled clustering algorithms and stuffed clusters with subjective data.
  - Combining synonyms and plural forms: The plural and singular forms of synonymous terms (such as standardizing cash waqfs as a plural form under the dominant and stable variable cash waqf, as well as standardizing synonymous digital marketing terms if necessary) were combined to prevent the program from creating separate nodes for the same concept, ensuring accurate calculation of the total link strength (Total Link Strength).
4. **Analytical Tools & Software:** The pure data file was exported in (.ris) format and fed into the standard VOSviewer software for generating and analyzing cognitive network maps. Following the application of a minimum co-occurrence threshold of 3 occurrences, the analysis yielded a final network of 46 keywords distributed across 9 algorithmically generated clusters, which were subsequently consolidated into 5 principal thematic clusters based on conceptual coherence. Three scientific levels of visual analysis were relied upon:
  - Network Visualization: To identify the underlying structural and thematic clusters that

divide the intellectual field and illustrate the intersection of cash waqf with digital marketing tools.

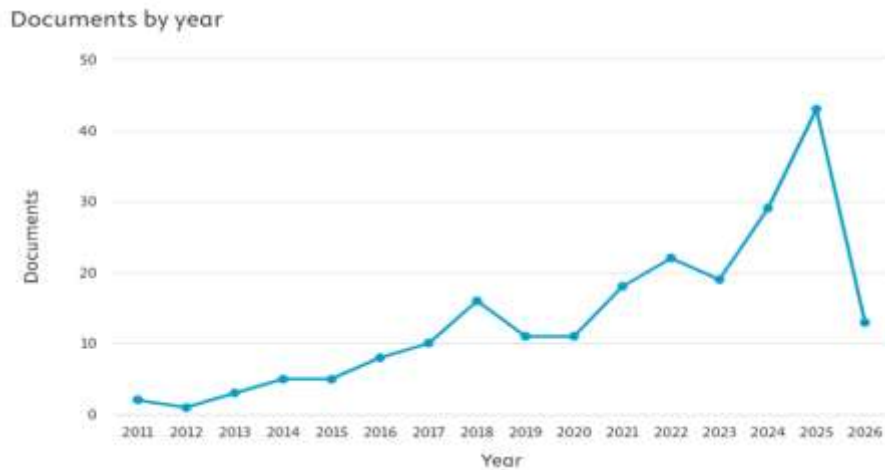
- Overlay Visualization: To track the movement of concepts over time, discover their maturity history and average years of publication, and monitor the transition towards a digital environment.
- Density Visualization: To identify research saturation hotspots (hot spots) versus future opportunities and gaps (cold spots available for innovation) in this important interdisciplinary field.

### **Results and discussion:**

1. **Descriptive Profile and Evolution of Publication Trends:** The results of the bibliometric survey of the study sample extracted from the international Scopus database showed a dynamic and rapid growth in the volume of academic production allocated to monetary endowments, with the final sample settling at 217 peer-reviewed scientific documents spanning the period up to May 2026. This upward curve reflects the size of the bet made on monetary endowments as a financing and development alternative in the contemporary Islamic economics, especially with the transition from static theoretical jurisprudential treatments to mathematical, technical and behavioral modeling.

To track the temporal speed and historical path of this academic production, the publishing path can be systematically classified into three distinct development stages illustrated by Figure No. (01), which shows that the actual curve of scientific production quantitatively began starting in 2011, which is the first year in which the emergence of systematic academic publishing in this specialization was recorded within the international Scopus database:

**Figure (01):** Evolution of International Publications in Cash Waqf Literature (2011–2026)



**Source:** Elaborated by the authors based on the SCOPUS database.

The graph extracted from the Scopus database shows that international academic interest in the subject of monetary endowments has gone through three basic stages as detailed below.

These three stages can be detailed as follows: The first phase (1979–2010): was characterized by a state of stagnation and weak scientific publishing, reflecting the treatment of monetary endowments as a traditional local jurisprudential tool far removed from international economic and financial interest. The second phase (2011–2017): This is a phase of empowerment and gradual emergence, as the number of studies began to rise moderately as a result of the increasing interest of Islamic financial institutions and the establishment of some regulatory frameworks, especially in Southeast Asian countries. Phase Three (2018–

2025): This period witnessed a clear knowledge explosion, as publications increased rapidly, peaking at 43 scientific documents in 2025, indicating that this field has entered a phase of dynamic growth and research maturity. As for the decline recorded in 2026, it does not reflect a negative indicator or an actual decline in interest, but rather is objectively explained by the incompleteness of this year's data until the date of its extraction in May 2026.

- 2. Interdisciplinary Domain & Subject Area Distribution:** Having established the chronological expansion of the literature, it is methodologically essential to dissect the structural composition of these 217 documents. Table (01) outlines the interdisciplinary distribution of the captured research across the primary subject areas indexed within the Scopus database.

**Table (01):** Interdisciplinary Distribution of Cash Waqf Literature across Subject Areas

<b>Subject Area</b>	<b>Document Count</b>	<b>Percentage (%)</b>
Social Sciences	62	28.8%
Economics, Econometrics and Finance	53	24.5%
Arts and Humanities	40	18.4%
Business, Management and Accounting	39	18.1%
Environmental Science	4	1.8%
Computer Science	3	1.5%
Agricultural and Biological Sciences	2	1.0%
Energy	2	1.0%
Engineering	2	1.0%
Mathematics	2	1.0%
Other Miscellaneous	6	2.8%
<b>Total</b>	<b>217</b>	<b>100%</b>

**Source:**Prepared by the authors based on the Scopus database.

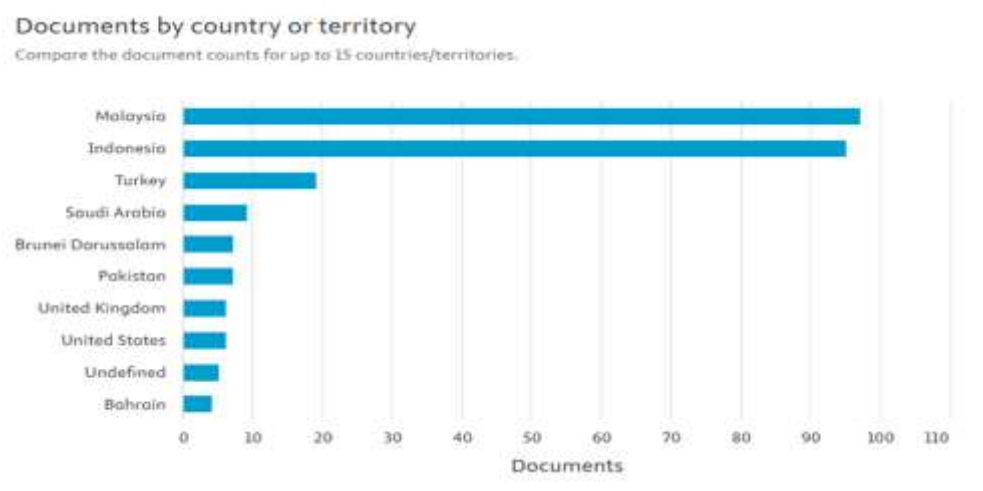
As shown in Table (01), the literature shows a largely interdisciplinary nature. Social sciences lead this field with 28.8%, with a strong focus on traditional developmental frameworks, institutional settings, and poverty alleviation, closely followed by economics and finance at 24.5%, reflecting the shift towards rigorous financial engineering. Crucially, the business and management sector represented 18.1%, reflecting the growing interest in consumer behavior and marketing models. Conversely, strictly technical fields such as computer science (1.5%) and engineering (1.0%) remain clearly marginalized. This sharp statistical disparity

empirically confirms the research gap in our study, demonstrating that the digital transformation and behavioral adoption (e.g., TAM) of platform-based cash endowments are still in their infancy, giving our proposed digital marketing framework a high competitive advantage.

### **3. Geographical Mapping & Spatial Domain**

**Domination:** To dissect the spatial boundaries and global distribution of the captured research, Figure (02) illustrates the geographical mapping of scientific production by country or territory within the cash waqf domain.

**Figure (02):** Geographical Distribution of International Publications in Cash Waqf Literature



**Source:** Elaborated by the authors based on the SCOPUS database.

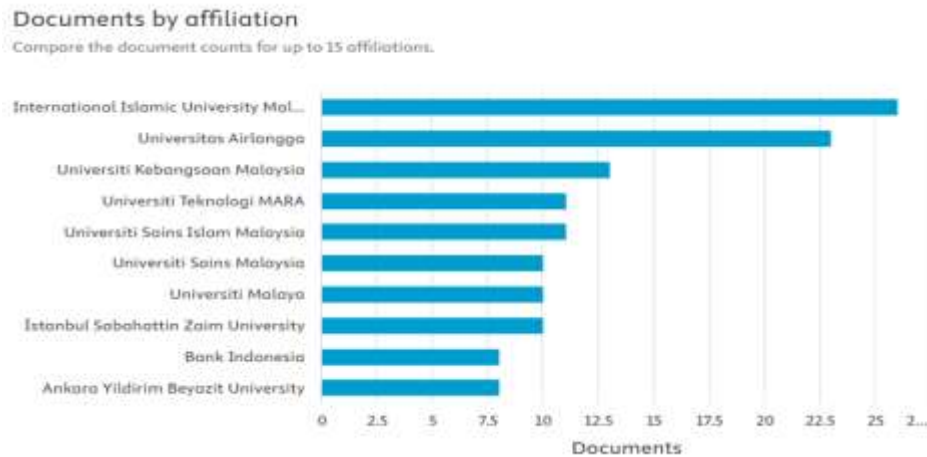
Statistical indicators extracted from the Scopus database reveal a highly concentrated geographical distribution of scientific production on monetary endowments, led by Malaysia with 97 scientific documents, followed by Indonesia with 95 documents. This reflects a strong academic and institutional competition that has made Southeast Asia the main incubator for contemporary literature on monetary endowments. Turkey also emerged with 19 documents as an intellectual bridge linking discussions related to monetary moratoriums to the Middle East and Eastern Europe region, benefiting from its institutional Ottoman legacy. In the Arab world, Saudi Arabia (9 documents) and Bahrain (4 documents) emerged as indicators of the Gulf states' growing interest in integrating monetary endowments into modern investment tools and regulatory frameworks.

The research map also showed an expansion of interest to non-Muslim Western countries such as the United Kingdom and the United States (6 documents each), along with Brunei and Pakistan (7 documents per country), confirming that the cash waqf has gone beyond its traditional boundaries to gain international recognition as an innovative mechanism for sustainable social finance and financial engineering. This geographical concentration reinforces the need to develop digital marketing models capable of adapting to diverse international and behavioral environments until 2026.

**4. Institutional Affiliation Analysis :** Examining the institutional map driving global research in the field of cash waqf leads to an accurate inventory of centers of research excellence; Figure No. (03) shows the ranking of the most active and publishing bodies and universities in

this field of knowledge extracted from the Scopus database.

**Figure (03):** Institutional Affiliations of International Publications in Cash Waqf Literature



**Source:** Elaborated by the authors based on the SCOPUS database.

A strategic reading of the statistical indicators reveals a clear dominance of the Malaysian school in cash waqfresearch. International Islamic University Malaysia leads the global scene with 26 scientific documents, supported by a strong presence of other Malaysian universities such as Universiti Kebangsaan Malaysia, Universiti Teknologi MARA, and Universiti Sains Islam Malaysia, confirming Malaysia's position as a global academic authority in developing regulatory and legislative frameworks for monetary endowment. In contrast, Indonesia stood out for its depth of application, with Universitas Airlangga ranking second globally with 23 documents, along with Bank Indonesia's notable presence among the most productive institutions.

This reflects the shift in cash waqfresearch from a theoretical framework to integration with official monetary and banking policies. The Turkish pole also appears as an emerging research actor through universities such as Istanbul Sabahatin Zaim University and Ankara Yıldırım Beyazıt University, reflecting the extension of interest in cash waqf outside Southeast Asia and its investment in the Ottoman endowment legacy, which gives the field an increasingly international and competitive dimension.

**5. Keyword Co-occurrence Analysis:** This methodological step aims to deconstruct map the intellectual architecture inherent in the cash waqf literature and explore dominant schools of thought (Clusters). The filtering and analysis



**Cluster 3:** Islamic Social Finance and Poverty Alleviation (red): This cluster represents the functional and developmental dimension of the endowment, as it is framed as a cornerstone instrument within the comprehensive Islamic Social Finance system for zakat and microfinance. Research in this cluster aims to formulate waqf models that contribute directly to combating poverty alleviation and achieving the Sustainable Development Goals (SDGs)..

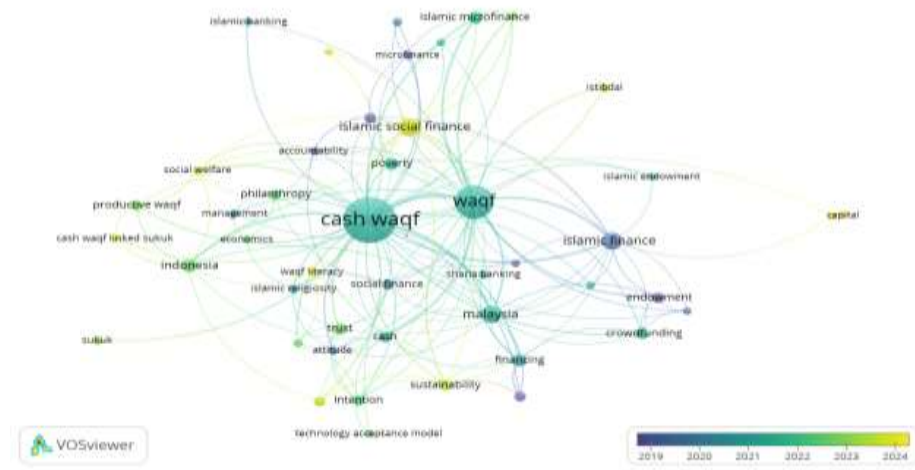
**Cluster 4:** Financial Engineering and Investment Innovation (Turquoise): This cluster reflects the investment aspect of the cash waqf through its integration into the Islamic banking system. Research here focuses on financial innovation and the development of waqf-based Sukuk instruments to ensure that cash assets are mobilized from a dormant state into productive investment projects with developmental returns.

**Cluster 5:** Institutional frameworks and modeling of international experiences (Blue,

Violet, and Orange Clusters — conceptually consolidated): This cluster embodies the geographical and applied dimension of the field, with the Malaysian and Indonesian experiences dominating as leading laboratory environments. The focus here is on productive waqf models, crowdfunding mechanisms, cash Waqf Linked Sukuk (CWLS) as instruments that have demonstrated their practical viability in real-world.

- Overlay Visualization Analysis:** As illustrated in Figure (05), the bibliometric analysis extends beyond mapping the static structure of terms to tracking the temporal flow and cognitive dynamics of the field through the Overlay Visualization map. The color distribution spanning the period (2019–2024) reveals a radical transition in the focal point of academic interest, divisible into three chronological phases:

**Figure (05):** Overlay Visualization Map of Keyword Temporal Evolution in Cash Waqf Literature



**Source:** Generated by the authors using VOSviewer software.

Phase One — Structural Foundation (Dark Blue/Purple ~ 2019–2020): Early research concentrated on classical waqf frameworks, dominated by terms such as islamic finance, accountability, and islamic bank. Academic

discourse during this phase revolved around institutional governance, jurisprudential legitimacy, and the conceptual grounding of waqf.

Phase Two — Applied Maturity and Real-World Modeling (Green ~ 2021–2023): The field transitioned toward applied empirical studies, driven by the sovereign experiences of Southeast Asia, with terms such as indonesia, malaysia, poverty, and sharia banking becoming prominent. This phase marks the shift from jurisprudential theory toward economic efficiency and institutional modeling.

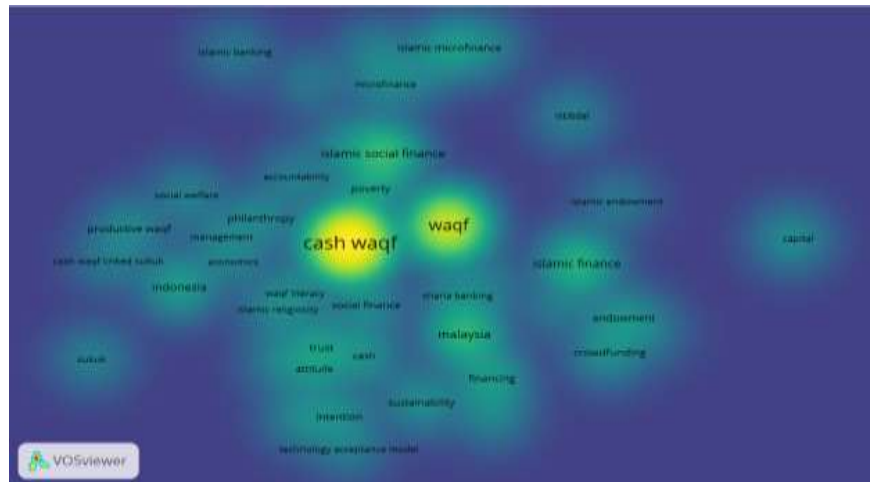
Phase Three — Emerging Research Frontier (Yellow ~ 2023–2024): This phase represents the scientific rationale for the present study. Terms appearing in yellow at the outer margins of the network signal the emergence of a new paradigm integrating Islamic FinTech with behavioral economics, manifested in the rise of capital, istibdal, sustainability, and intention, alongside financial innovation. Meanwhile, technology acceptance model and millennials, though thematically central to this paradigm, occupy peripheral positions in the network, confirming their status as an underexplored research frontier.

Research Gap Statement: Based on this temporal mapping, the knowledge gap addressed by this study becomes clear. While previous

literature focused on the organizational structure of Cash Waqf, there remains a critical shortage in understanding the determinants of digital adoption among individuals and the new digital generation (Millennials) on waqf digital platforms. The present study, extending through May 2026, provides an integrated framework for this technological and behavioral shift, granting it a pioneering advantage over previous reference studies that stopped at traditional structural boundaries.

7. **Keyword Density Visualization Analysis:** As illustrated in Figure (06), the density analysis provides a depth dimension to the degree of concentration and distribution of research efforts across the knowledge map of Cash Waqf. The reading mechanism here relies on the intensity of logistic illumination; areas of intense yellow represent the saturated research core (Hot Spots), while areas of faint and peripheral density indicate emerging fields and current gaps (Cold Spots).

**Figure (06):** Density Visualization Map of Keyword Co-occurrence in Cash Waqf Literature



**Source:** Generated by the authors using VOSviewer software.

**High-Density Core:** The central terms cash waqf and waqf appear at the peak of luminosity, surrounded by a medium-density zone encompassing islamic social finance and the Malaysian and Indonesian geographical environments. This concentration statistically demonstrates that current literature has focused excessively on macro-theoretical framing and traditional geographical environments, bringing this research square close to a state of academic saturation.

**Peripheral Low-Density Zones:** Moving toward the margins, density drops sharply, revealing vast near-cold spaces. These peripheral zones represent the added value of the present study, where terms such as technology acceptance model, intention, cash waqf linked sukuk, financial innovation, capital, and islamic endowment are scattered, confirming their status as virgin research territories with high potential for future international publication.

**Strategic Insight:** The density map confirms that the future of scientific research in Cash Waqf can no longer sustain further descriptive studies of traditional governance. The most promising frontier for international publication lies in integrating waqf instruments with digital financial engineering and the behavioral patterns of digital users.

### **Conclusion & Future Agenda:**

This study presented a comprehensive network-driven and dynamic bibliometric analysis of global scientific production in the field of Cash Waqf, extending through May 2026, based on a robust sample of 217 peer-reviewed scientific documents extracted from the international Scopus database. The analytical outputs revealed a decisive structural shift in the research philosophy of the field; traditional jurisprudential discussions and static regulatory frameworks have receded in favor of a contemporary paradigm integrating Islamic

Financial Technology (Islamic FinTech) with behavioral and marketing economics. The network maps demonstrated that the future sustainability of Cash Waqf is now intrinsically linked to the digitization of instruments and a deeper understanding of the psychological and behavioral determinants of the new digital generation (Millennials).

### **Practical & Managerial Implications:**

The findings of this study offer strategic directives for decision-makers in the Islamic social finance and Islamic banking environment:

**Developing the Marketing Architecture of Waqf Institutions:** The strong associative weight of Trust and Waqf Literacy within the knowledge network indicates that the successful mobilization of cash waqf capital requires institutions to build digital platforms characterized by the highest degrees of transparency and smart governance, accompanied by marketing campaigns that enhance financial and jurisprudential awareness among individuals.

**Targeting the Digital Generation (Millennials):** Waqf management bodies and Islamic banks must transition fully away from traditional channels toward mobile applications and crowdfunding platforms, with a focus on optimizing user experience to align with the behavioral patterns of Millennials — whom the temporal analysis has confirmed as the primary

targeted financing force in contemporary research.

**Innovation in Investment Products:** The study calls upon Islamic financial engineers to expand the integration of Cash Waqf with sovereign and commercial sukuk (Cash Waqf Linked Sukuk), directing returns toward microfinance and sustainable development projects, thereby ensuring the mobilization of funds rather than their dormancy.

### **Future Research Agenda:**

Based on the cold zones of low density revealed by the Keyword Density Visualization map, this study proposes the following research agenda as priorities for international publication in the coming phase:

1. **Artificial Intelligence in Waqf Management:** Investigating the impact of integrating Artificial Intelligence (AI) and Blockchain technology in enhancing the efficiency, traceability, and transparency of Cash Waqf funds — an area that remains virtually absent from the current literature despite its transformative potential.

2. **Behavioral Economics Empirical Applications:** Expanding the use of advanced mathematical modeling — particularly Structural Equation Modeling (SEM) — to examine the psychological and social determinants governing individuals' intentions toward digital waqf donation across diverse

cultural environments, with particular attention to cross-cultural comparative designs.

3. Impact Assessment of Cash Waqf Linked Sukuk: Conducting in-depth case studies to evaluate the economic and social efficiency of Cash Waqf Linked Sukuk (CWLS) experiences in Southeast Asia, and examining the mechanisms for transferring these models to other international environments, particularly North Africa and the Arab world.

#### **Limitations:**

Despite the methodological rigor adopted throughout this study, its outputs are governed by certain natural limitations:

**Bibliometric Database Limitation:** The study was confined to the Scopus database exclusively. While Scopus represents the leading international indexing platform, future research could integrate it with complementary databases such as Web of Science or Google Scholar to achieve broader and more comprehensive coverage.

**Linguistic Limitation:** The study focused exclusively on articles published in English to

ensure the universality of the network analysis and the compatibility of key terms during software processing. This necessarily entailed the exclusion of some rich regional literature published in Arabic and Indonesian, a gap that opens a promising avenue for future comparative studies.

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