



Shariah-Compliant Digital Gold Saving: A Bibliometric Analysis

Muhammad Shahrim Sehak^{*1}, Mohd Zulkifli Muhammad¹, Muhammad Zulfaris Mohd Salleh¹, Nurul Faizah Halim¹

¹Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, 16100 Kota Bharu, Kelantan, Malaysia.

ABSTRACT - This bibliometric analysis of Shariah-compliant digital gold saving aims to identify the most highly cited sources and their corresponding Google Scholar (GS) rankings, based on data indexed in Scopus. This study analyses previous research as a basis for future investigations. The methodological strategy adopted in this study is primarily quantitative, as it is well suited for the analysis of numerical data. The Harzing Publish or Perish (PoP) software is utilised to calculate various bibliometric indicators, such as the h-index and g-index, which serve as measures of research impact. However, a limitation of this bibliometric analysis is its reliance on citation metrics—specifically, the highest number of citations, GS rankings and number of publications counts—within the restricted timeframe of 2020 to 2024. The analysis of the Scopus index is similarly confined to a five-year period. Key tools employed for the analysis include Harzing PoP and VOSviewer, both of which facilitate the generation of bibliometric maps and the presentation of numerical data. The results are presented in terms of the year with the highest number of publications, the most prolific author, the leading country and the highest average citation rate over a five-year period. The main findings indicate that the study by Aloui et al. (2021) published in 2021, received 49 citations in journal publications. The United Kingdom (UK) emerged as the most dominant country in terms of article publications, with 221 citations, while Automation in Construction was identified as the most frequently cited journal, with 163 citations. These findings contribute to promoting a more transparent and trustworthy environment for Shariah-compliant digital gold investments. Based on the results, the researcher recommends that future studies conduct bibliometric analysis focused on the topic of Shariah-compliant digital gold saving.

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INTRODUCTION

Gold is a chemical element with the atomic number 79 and is described as a dense, soft and malleable metallic substance, having a bright yellow colour (Richter & Rossello-Mora, 2009). As elucidated by Al-Lehaibi (2023), it is the metal that keeps intact without much deterioration through time and oxidation. Digital gold is virtual gold owned by investors in electronic form (Pasaribu & Ramalisa, 2022). Therefore, this research will also explain the diversity of gold investments for future use. For instance, physical gold includes gold bars and gold coins, whereas digital gold encompasses instruments such as Gold Exchange-Traded Funds (ETFs), Gold Investment Accounts (GIA) and Digital Gold Wallets. A key point of comparison between digital and physical gold storage is accessibility. Specifically, digital gold is more readily accessible through online trading platforms, whereas physical gold requires in-person transactions, such as visiting a bank or

^{*} **CORRESPONDING AUTHOR** | Muhammad Shahrim Sehak | a24e2831f@siswa.umk.edu.my

selling to traders through Ar-Rahnu contracts (Tamara et al., 2023). According to Gurbaxani (2023), digital gold offers enhanced security, portability, and ease of management compared to physical gold. Nevertheless, some investors find physical gold more satisfying, primarily because it can be physically held, unlike digital gold (Sathya & Iyswarya., 2022). According to Asri and Nordin (2024), three examples of digital investment and savings platforms in Malaysia are Public Gold, Quantum Metal and Kijang Emas by Bank Negara Malaysia (BNM).

Digital gold offers numerous advantages as a storage mechanism and a future-oriented investment option. Additionally, the fineness of gold can be measured by its carat value—for example, 24k, 22k and 18k—or by numerical purity indicators such as 999, 950, 916 and 835 (Affan, 2024). According to the DeLorenzo, (2021), transaction of buying and selling gold by instalment and concluded in one transaction is invalid and falls under *riba al-nasiah*. Furthermore, BNM has strategically retained a substantial amount of the gold reserves to maintain economic stability, particularly in safeguarding consumer purchasing power in gold transactions (Angelo, 2021). In this context, research on digital gold suggests that it holds potential to contribute to economic development. The global financial crisis has also prompted a growing trend among investors to purchase gold as a means of asset protection (Jeni Syaefudin, 2014).

The valuation of a national bank's gold reserves is influenced by the fluctuations in the international gold market, particularly due to the activities of major gold-trading countries such as China, India and the United States (US) (Rambeli et al., 2018; Nanda P et al., 2024). The study by Mahat et al. (2021) indicates that variation in gold prices are influenced by four main factors: currency exchange rates, demand, inflationary pressures and mining activity. Inevitably, investors seek assets that serve as a hedge against inflation, and gold remains one of the most attractive options in this regard (Mainal et al., 2023). Consequently, the potential for digital gold investments can be viewed positively, given their alignment with rising gold prices.

Digital gold holdings may also be classified under both cryptocurrency and physical gold categories. The exchange mechanism for digital gold typically allows conversion into physical gold, valued at a purity equivalent to 999 or 24k. It is important to note that a decline in gold reserves can have significant implications for major economies, particularly in shaping investment strategies and influencing gold valuation in trading practices. Juisin (2021) found that Shariah-compliant digital gold holding is less prevalent in Malaysia compared to their conventional counterpart.

Numerous researchers have previously conducted bibliometrics analyses on physical gold investments (Mainal et al., 2023). However, there is a scarcity of bibliometric research focused on Shariah-compliant digital gold savings. Therefore, this study will undertake a bibliometric analysis of Shariah-compliant digital gold savings for the period 2020 to 2024, as it represents the most recent and relevant timeframe. This period is expected to influence future research trends in the field.

LITERATURE REVIEW

Bibliometric analysis is a quantitative method used in scientific research to analyse publication data, authorship patterns and citation metrics over defined time periods. For instance, a five-year bibliometric analysis may be conducted on specific research topic (Kurniawan et al., 2023). VOSviewer software is commonly used in conjunction with Publish or Parish (PoP) to visualise research trends related to the topic under investigation (Moreira et al., 2019; Yan & Zhiping, 2023). Specifically, bibliometric reviews offer valuable insights that help researchers identify gaps in the literature, thereby guiding future research efforts (Hallinger & Kovačević, 2022). PoP, in particular, facilitates citation analysis by extracting data from academic databases such as Scopus, Web of Science, Emerald and Google Scholar (GS) and generates key bibliometric indicators, including the h-index and g-index, amongst others (Singh, 2022).

The findings of a study by Aloui et al. (2020) indicate that Islamic digital gold is assessed differently from conventional digital gold, particularly with respect to its alignment with Shariah

rulings. As a result, Shariah-compliant digital gold is considered more favourable in terms of value compared to its conventional counterpart. In a related study, Zakir et al. (2023) emphasised the importance of adherence to Shariah principles, as outlined by the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI) and the National Fatwa Committee (MFK), in the application of fintech technologies within digital gold investment.

The differences between Islamic and conventional banking practices were examined in a study by Musa et al. (2020). The primary objective was to compare the economic efficiency of Islamic and conventional banking systems within the European context. Additionally, the study employed Data Envelopment Analysis (DEA) to estimate financial indicators across a representative sample of 1,460 financial institutions. The findings indicate that the performance indicators of Islamic banking are more effective than those of conventional banking in Europe. This superior performance is attributed to several key factors, including Shariah compliance, management quality and customer satisfaction (Novita, 2023).

Building on the work by Hossain (2021), this study was undertaken to examine cryptocurrencies in the context of Shariah law. Moreover, it aimed to evaluate the global market value of cryptocurrencies. The authors employed a quantitative approach, analysing journal articles published over a five-year period. The study's findings address key aspects such as market price modelling, the protection of cryptocurrency and related phenomena. These results are further supported by the studies of Stepanova et al. (2024) and Sukumaran et al. (2022), thereby reinforcing the relevance of market research on cryptocurrencies.

Bitcoin is perceived as a form of digital gold and a viable investment for the future. A critical review of the study by Uddin et al. (2020) highlights the role of Bitcoin in value preservation, positioning it as an alternative investment vehicle to both conventional and Islamic financial instruments. The study employed a quantitative methodology to analyse Bitcoin's value, utilising correlation studies based on various data sets spanning a five-year period. The findings suggest that Bitcoin has the potential to contribute to portfolio diversification and may be suitable for both short-term and long-term investment strategies.

Islamic finance in the context of digital gold storage has emerged as a significant factor influencing prior literature. A review of existing studies reveals that issues of Shariah non-compliance in Islamic finance are often linked to firm performance, investment practices and risk management related to digital gold storage (Ab Aziz, 2024). An incomplete framework poses a risk to the integrity of Islamic finance and may contribute to customer distrust in Shariah-compliant financial products (Kammer et al., 2015). For instance, regulatory control over the use of digital gold in business transactions will result in the structure of Islamic finance for customers becoming increasingly complex.

According to a study by Saiman and Hussain (2023), Shariah compliance in digital gold transactions is essential to prevent delays in sales of digital gold to physical gold. Consequently, religious principles must be integrated into digital platforms that facilitate such transactions (Hantoro et al., 2023). Furthermore, digital gold can be utilised in digital *Ar-Rahn* processes through online applications, such as Public Gold and Maybank Gold-I account. This demonstrates that Islamic pawnshop services offer lower fees and accessible loan processes (Osman et al., 2020).

METHODOLOGY

This bibliometric approach is employed to quantify and present research outputs produced by scholars. The use of Harzing PoP software supports this process by enabling the calculation of various bibliometric indicators such as the h-index, g-index and other citation-based metrics that reflect research impact. A key advantage of using Harzing PoP software in bibliometric analysis is its ability to extract and analyse data from multiple academic databases, including GS, Scopus and Web of Science, thereby enhancing the effectiveness of research evaluation (Singh, 2022). Furthermore, the bibliometric approach, when applied in academic assessment through Harzing

PoP software, facilitates the identification of research trends by tracking the development of a given field over time (Saputra et al., 2023). However, a limitation of this bibliometric study is its narrow focus on metrics such as the highest number of citations, GS rank and publication counts restricted to the period from 2020 to 2024.

This bibliometric approach supports the research by facilitating the identification of academic articles, scholarly journals, book chapters and conference papers. The methodological design of the bibliometric study is grounded on the criteria of Shariah-compliant digital gold saving. The analysis covers a five-year period, from 2020 to 2024. The databases examined include Web of Science, Scopus, Semantic Scholar and GS. Additionally, the Scopus database was specifically utilised to identify relevant sources that contribute to a comprehensive bibliometric review (Muhammad Fuad, 2022). The bibliometric analysis involves five distinct processes, which are illustrated through the use of diagrams for clarity and visual representation (Ruiz-Real et al., 2019). The selection of this five-year is justified by its relevance in capturing recent developments and current issues related to Shariah-compliant digital gold.



Figure 1: Process of bibliometric analysis

RESULT

In the results and discussion section, the analysis employs the bibliometric review method to interpret secondary data retrieved from the Scopus database. The findings from this bibliometric analysis are presented through tables, data visualisations and graphical representations. The analysis specifically focuses on the keyword “Shariah-Compliant Digital Gold Saving.” Accordingly, the following table summarises the results generated using Harzing PoP software.

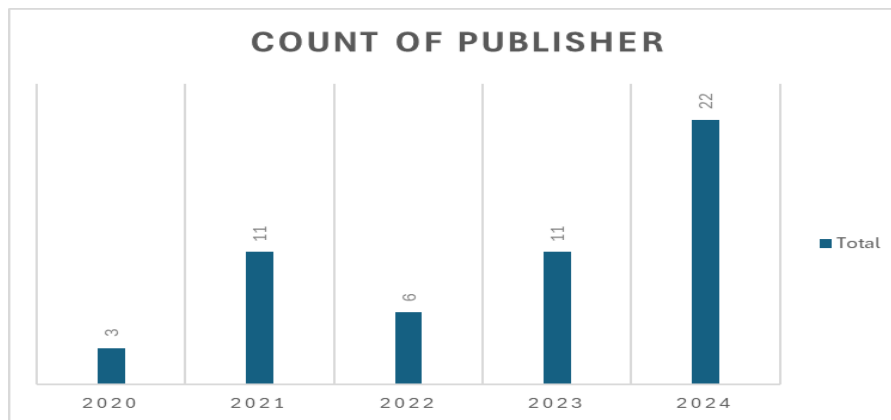
Table 1: Total number research sources in Scopus

Summary	
Criterion	Sum
Book Chapter	5
Book	2
Citation	442
Review	3
Article	31
Conference Paper	43
Source	Scopus
Number of References in the Last 5 Years (2020-2024)	53

Based on the information presented in the preceding table, the analysis of research sources in Scopus using the search term “Shariah-Compliant Digital Gold Saving” identified a total of 53 publications from 2020 to 2024. Accordingly, the following table and accompanying diagram illustrate the distribution and frequency of these publications over the five-year period.

Table 2: Publication for 5 years

Row Labels	Count of Publisher
2020	3
2021	11
2022	6
2023	11
2024	22
Grand Total	53

**Figure 2:** Graph bar of publication for 5 years

According to the results of the publication analysis, the year 2024 recorded the highest number of publications, with a total of 22, while the year 2020 had the lowest. The highest citation counts, along with the corresponding source titles, authors and publication years are presented in the following table.

Table 3: The highest number of citations for 5 years

Citation	Author	Title
49	Aloui et al. (2021)	Are Islamic gold-backed cryptocurrencies different?
36	Kawamoto et al. (2021)	Establishing a multidisciplinary initiative for interoperable electronic health record innovations at an academic medical centre.
33	Hossain (2021)	What do we know about cryptocurrency? Past, present, future.
27	Musa et al. (2020)	Comparison of the efficiency measurement of the conventional and Islamic banks.
23	Kalina et al. (2022)	Introduction of a Corporate Security Risk Management System: The Experience of Poland.
20	Uddin et al. (2020)	Bitcoin—A hype or digital gold? Global evidence.
15	Ali et al. (2024)	Green cryptocurrencies and portfolio diversification in the era of greener paths
14	Shovkhalov and Idrisov (2021)	Economic and Legal Analysis of Cryptocurrency: Scientific Views from Russia and the Muslim World
12	Angelo and Salzer (2021)	Identification of token contracts on Ethereum: standard compliance and beyond

A related search on the topic of “Shariah-Compliant Digital Gold Saving” was also conducted using the PoP application to retrieve results from the past five years. The authors, average citation counts, and the highest citation records are summarised in the table below.

Table 4: Average citation per year

Author	Citation	Citation Per Year
Aloui et al. (2021)	49	12.25
Kawamoto et al. (2021)	36	12
Hossain (2021)	33	11
Musa et al. (2020)	27	6.75
Kalina et al. (2022)	23	11.5
Uddin et al. (2020)	20	5
Ali et al. (2024)	15	15
Shovkhalov and Idrisov (2021)	14	4.67
Angelo and Salzer (2021)	12	12

Based on the data analysed using Harzing PoP software, the highest average citation count recorded was 12.25. Accordingly, the number of citations aligns with the required average citation rate. The researchers further examined the rankings based on the highest citation counts, derived from 53 sources identified in Scopus using the keyword “Shariah-Compliant Digital Gold Saving.” The following table presents the corresponding authors, the journals in which the works were published and their respective rankings.

Table 5: Google Scholar (GS) rank and corresponding journals

Author	Journal	Google Scholar (GS) Rank
Aloui et al. (2021)	Finance Research Letters	51
Kawamoto et al. (2021)	JAMIA Open	36
Hossain (2021)	China Finance Review International	48
Musa et al. (2020)	Oeconomia Copernicana	23
Kalina et al. (2022)	Journal of Risk and Financial Management	12
Uddin et al. (2020)	Australian Economic Papers	2
Ali et al. (2024)	Renewable and Sustainable Energy Reviews	8
Shovkhalov and Idrisov (2021)	Laws	29
Angelo and Salzer (2021)	International Journal of Data Science and Analytics	10

The preceding table indicates that Australian Economic Papers holds the highest GS rank over the past five years, based on the number of citations received, with a GS rank of 2. The following table presents the highest number of citations by an author as reviewed by the researchers.

Table 6: Author with highest citation

Author	Citation	Citation Per Year
Aloui et al. (2020)	49	12.25

In the following table, researchers identified the journal with the highest GS rank and the corresponding author.

Table 7: Highest GS rank by journal

Author	Journal	Google Scholar (GS) Rank
Uddin et al. (2020)	Australian Economic Papers	2

Bibliometric data extracted from Scopus, analysed using VOSviewer software, comprises of 53 source documents within the framework of the bibliometric analysis. The following diagram illustrates the clustering relationships among the evaluated sources based on citation analysis.

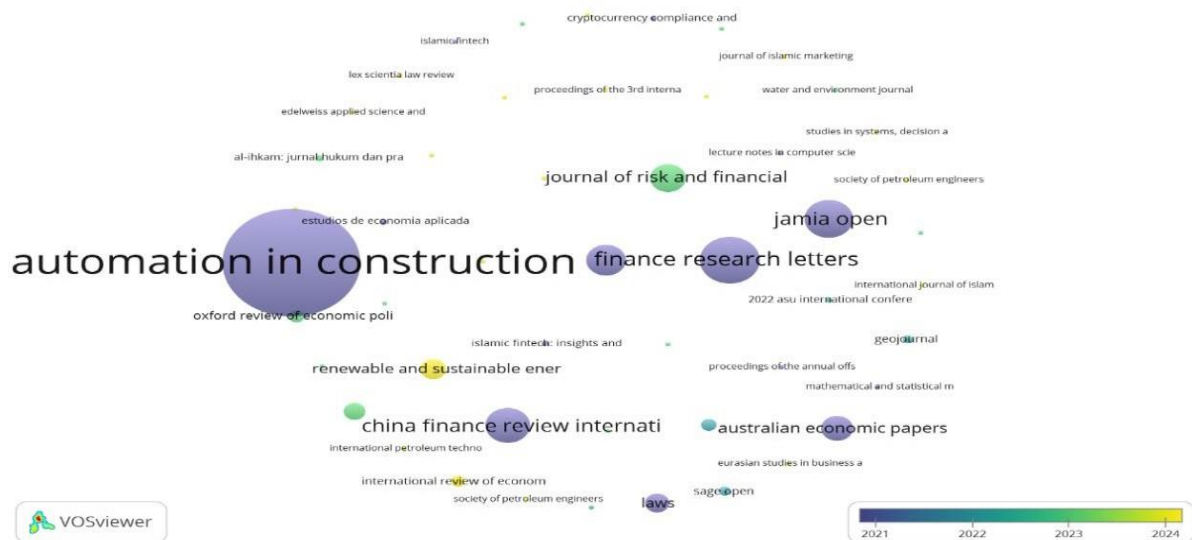


Figure 3: The most citation sources between 2020-2024

Based on the above mapping, three primary sources emerged from the citation analysis using VOSviewer software for the keyword “Shariah-Compliant Digital Gold Saving”. The following table presents the number of citations received by the analysed source titles during the period from 2020 to 2024.

Table 8: Number and average of the highest citation norm according to source title

Source	Citation	Average Norm Citation
Automation in Construction	163	5.94
Finance Research Letters	49	1.78
JAMIA Open	36	1.31

In addition, the second analysis focuses on identifying the number of citations and the average citation norm by country. The diagram below displays the results of this citation analysis.

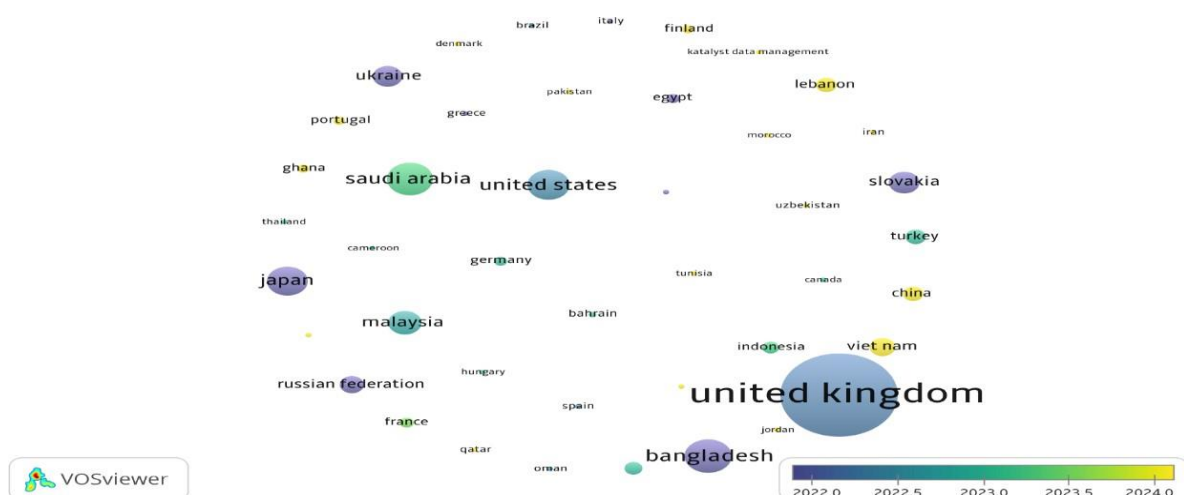


Figure 4: Countries with highest citation for 2020-2024

The findings indicate that, based on the above map, three leading countries emerged in the citation analysis conducted using VOSviewer software with reference to the keyword “Shariah-

Compliant Digital Gold Saving.” As indicated in the table below, these countries contributed a substantial number of citations during the period from 2020 to 2024.

Table 9: Highest number and average citation norms by country

Country	Citation	Average Norm Citation
United Kingdom	221	1.70
Bangladesh	53	1.23
Arab Saudi	50	0.64

Based on the results of the analysis of source titles and countries, the journal *Automation in Construction* recorded the highest average number of citations at 5.94, while the UK recorded an average citation rate of 1.70. All analysis data were compiled using bibliometrics methods using the Harzing PoP and VOSviewer software.

From the 53 journals analysed, researchers concluded that the UK recorded the highest citation value among all countries up to 2024. This reflects the growing need for relevant research to assess trends of digital gold storage from 2020 to 2024. The impact of the COVID-19 pandemic is a significant factor influencing this trend, as there is a shift towards digital transactions helped reduce the risk of infection. Consequently, the pandemic contributed to increased interest in digital gold buying and selling. Furthermore, the growth in journal publications from year 2020 to 2024 reflects a societal shift toward the adoption of digital gold. In parallel, the transition to Shariah-compliant digital gold transactions has encouraged researchers to explore this topic more extensively, potentially leading to significant developments in the field.

CONCLUSION

This study is structured to identify the highest number of citations and the highest GS rank, as analysed using the Harzing PoP and VOSviewer applications. A total of 53 sources were retrieved from the Scopus database using the keyword “Shariah-Compliant Digital Gold Saving.” The findings highlight the highest citation counts by country, author and journal. Among the countries analysed, the UK recorded the highest number of citations.

According to the journal findings, *Australian Economic Papers* recorded the highest GS rank. In contrast, the VOSview analysis identified *Automation in Construction* as the journal with the highest number of citations. However, this study is limited to the analysis of citation counts and GS rankings based on sources retrieved from the Scopus database. It is also constrained by the specific timeframe selected for analysis—five years, from 2020 to 2024—focused on the topic of “Shariah-Compliant Digital Gold Saving”. For future research, the researcher recommends expanding bibliometric analysis to include related topics such as *gharar* in digital gold savings, among others.

The sustainability of digital gold practices must align with Shariah compliance, particularly in relation to digital gold storage and speculation. Prompt transfer of digital gold is essential to ensure secure ownership and to mitigate speculative elements. The regulatory framework governing gold storage emerges as a critical focus for future research, as achieving Shariah compliance requires alignment with both Islamic principles and national legal provisions to promote speculation-free financial environment. Furthermore, enhancing customer awareness of digital gold platforms can contribute to the advancement of national digital policies. It is important to note that the use of transparent and verifiable sources in digital gold transactions supports the classification of such practices as *halal*. Therefore, further research is necessary to strengthen the bibliometric analysis of digital gold storage, thereby enriching both academic discourse and societal understanding.

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