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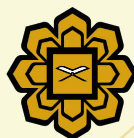

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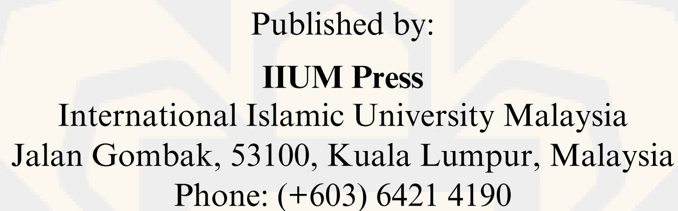

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Comparative Financial Performance of Islamic and Conventional Banks in a Non-Muslim Country

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Abstract

This study examines and compares the financial performance of Islamic banks and conventional banks in Tanzania. The study uses univariate analysis to compare performance ratios for seven (7) years from 2013 to 2020. The study applies t-test to examine whether profitability, liquidity, and credit management ratios are different between Islamic and conventional banks. It was found that conventional banks outperform Islamic banks in Tanzania. Islamic banking is a recent phenomenon in Tanzania and the environment does not support its development as Tanzania is not an Islamic country and does not fully support the nature of Islamic bank operations due to the fact that some of its policies and laws are not in alignment with Islamic banking activities. Hence, it can only transact a limited number of products.

Keywords: Islamic, Conventional, Banks, Financial Analysis, Ratio, Shariah

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1. Introduction

Although there has been a rapid growth in Islamic banking around the world (Alam & Boon Tang, 2012), Islamic banking in Tanzania has not shown similar developments. Since the launch of its first Islamic banking product or window in 2008 by Kenya Commercial Bank, several other banks have opened an Islamic window thereafter. It was not until 2011, Amana Bank was established as the sole fully operational Islamic bank in Tanzania. However, Amana Bank could not stay competitive because of various operational and regulatory challenges it faced. In recent years, Amana Bank has reported a net loss of TZS 1.1 billion compared to similar medium size (tier 2) conventional banks that on average reported a net profit of TZS 73.75 billion by September 2023 in total (Christopher, 2023).

The losses have been mostly associated with operational challenges faced by Islamic banks in Tanzania. There is a lack of alignment between the policies and laws in Tanzania and the operations of Islamic banks. Furthermore, the lack of proper regulatory and supervisory guidelines on Islamic finance hinders the development of Islamic banking (Dolgun et al., 2019). Additionally, Islamic banks' income sources are limited to fees and commissions due to the absence of Shariah compliant liquidity instruments and interbank deposits (Rassool, 2018). Lastly, there is lack of knowledge and understanding of Shariah compliant products.

Islamic banking promotes and develops the practice of Islamic principles and laws related to all financial transactions and business affair. In the course of their operation, they avoid excessive speculative or untruthful transactions which can have adverse economic and social effects on the nation (Zuḥaylī et al., 2011). This helps to promote a balance between social and economic justice dedicated to eradication of poverty (Beatus et al., 2013). Islamic banks share profits and losses with their customers. This profit-loss sharing builds customer confidence to start new projects that may generate more profit and reduce poverty.

This study was mainly motivated by the recent performance of the only fully-fledged Islamic bank, Amana

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Bank, facing operation challenges in a non-Muslim country setting. It is therefore important to examine performance differences between Islamic and conventional banking, which may be caused by these challenges so that policy makers can propose policies that are more conducive for fully fledged Islamic banking to operate and perform well.

Empirical literature on Islamic banking is fairly well documented. However, limited studies have been conducted in non-Muslim countries. Studies focused on banks in Tanzania compared performance of the largest listed bank (CRDB) with a medium tier, unlisted bank (Amana Bank), which operates in different environments. This is contrary to the principles of financial analysis, where a comparison of firms should not only be based on the same industry but also the firm size as well. Other conceptual studies, such as that of Al-Tamimi et al. (2009) have compared Islamic and conventional banking to identify similarities, differences, and awareness of the products offered. However, this study focusing on distinguished features of Islamic banking in Tanzania, as some people have perceived Islamic banking as not being Islamic (Chalu, 2014). In addition, the Tanzanian environment poses both legal and governance challenges. For instance, legal framework and accounting standards are not supportive. Therefore, conducting a comparative study between Islamic and conventional banks will benefit researchers, policy makers and investors who are thinking of opening Islamic banks in Tanzania. This study therefore contributes to the literature on Islamic banking performance in non-Muslim countries.

This paper compares the performance of Islamic and conventional banks in three aspects: profitability, liquidity, and credit management ratios. The study is important to the Islamic community, the Bank of Tanzania (BOT) and policymakers, as it provides insights on Islamic banks' performance in Tanzania. The study contributes the following to the extent literature. First, it contributes to the existing literature on the challenges faced by Islamic banking operating in non-Muslim countries. Second, it contributes to the finance literature on the performance differences between Islamic and conventional banking in three aspects: namely profitability, liquidity, and credit management.

This study limits its scope to three (3) financial performance measures. These are profitability, liquidity management, and credit risk management. In profitability, Return on Assets (ROA), Return on Equity (ROE), and Cost to Income Ratio (CIR) are used. In measuring liquidity management, Loan to Asset Ratio (LTA), Loan to Deposit Ratio (LTD), Liquid Asset to Deposit Ratio (LATD) are analysed. Credit risk management has commonly used measures such as Equity to Asset Ratio (EQTA), Equity to Loan Ratio (EQL), Impaired Loan to Gross Loan (IMLGL) consistent with various scholars (Uddin et al., 2017; Wasiuzzaman & Gunasegavan, 2013; Zuḥaylī et al., 2011). The next section provides the historical background of Islamic banking, then reviews prior literature on the comparative analysis between Islamic and conventional banking. Then, following it is a section on the methodology applied in this study, presentation of the results, and discussion. The paper concludes with a summary of the findings and recommendations regarding the enhancement of financial performance in Islamic banks.

2. Development of Islamic Banking

Islamic banking refers to Shariah banking, interest free banking, ethical and participative banking that follows, or complies with, Islamic principles, which alters its money lending into transactions based on palpable assets and actual services. It also refrains from immoral and illegal activities. It follows Shariah called *fiqh muamalat* (Islamic rules on transactions) which originates from the Quran and Sunna and other secondary sources of Shariah, for instance, personal reasoning, analogy and Islamic scholars' consensus.

Although Islamic banking is a phenomenon that has only appeared recently, it is as old as the Islamic religion itself. All its principles, rules and laws are derived from the Quran, which was divulged 1440 years ago. The first attempt to entrench an Islamic bank was in the 1950s which was established in the rural area of Pakistan (Obaidullah, 2005). At the early stages, Islamic banks were established for different purposes. For instance, some were established to fund the governments, for saving purpose to perform Hajj and encouraging social and economic development of its member countries (Fayed, 2013). In addition, the early Islamic banks were publicly owned until 1975, when the first Islamic private bank was established. In recent years, non-Islamic countries/banks have also resorted to Islamic banking by opening an Islamic banking windows which provides resistance to the financial crisis (Islamic Financial Services Board, 2017).

The surge of the Islamic banking prompted the need for regulating institutions. Therefore, in 1991, the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI) was established to enhance

the development of Islamic banking and to promote Shariah standards and principles. It is required to be followed by the financial institutions operating under the laws and rules of Islamic banking and all other participants under the Islamic banking industry. In 2003, the Islamic Financial Services Board (IFSB) was established to determine standards and guidance for institutions that regulate and supervise Islamic financial services. This was done to ensure that these supervisory agencies adhere to the principles of Shariah.

In Tanzania, Kenya Commercial Bank (T) was the first bank to be licensed by the Bank of Tanzania (BOT) to open an Islamic window to provide Shariah compliant products and services, followed by the National Bank of Commerce and Stanbic Bank which launched an Islamic window in 2010. In 2011, the Peoples' Bank of Zanzibar opened its first Islamic banking division in Zanzibar. During the same year, AB became the first fully fledged Islamic bank to operate in Tanzania.

3. Operations and financial performance of conventional and Islamic banking

3.1 Operational performance

Islamic banking follows Shariah principles. The Quran verses prescribe how Muslims should do their transactions, as in Surah Al Baqarah, Verse 275: "Allah has permitted trade and has forbidden usury (*riba*/interest)", and Surah Al Nisa, Verse 29 "*O you who believe, eat not up your property among yourselves in vanities; but let there be amongst you traffic and trade by mutual goodwill*". As prescribed by the Quran, it prohibits interest in any financial transaction. The main reasons are because it is unfair, it corrupts the society, creates unlawful appropriation of other people's property, results in a negative growth and it diminishes human personality.

Islamic principles, which originate from Shariah operates Islamic banking. Shariah *"it refers to the God's law, sacred and unchangeable principles and values revealed in the Quran and the example (Sunnah) of Mohammad*" (Esposito & Delong-Bas, 2018). There are two primary sources of Shariah. The primary sources; Quran and Sunnah and the secondary source; *ijma* and *qiyas*. *Ijma* means the common opinion of the learned Muslim scholars and *qiyas* means the legal reasoning where its main idea come from the Quran or Sunnah (Kunhibava & Rachagan, 2011).

Islamic banks operate differently from conventional banks, as their operations originate from Shariah, while conventional banks' operations originate from traditional ways of banking operations (Hanif, 2014). Islamic banks around the world operate in either of the following four structures. First, as a fully-fledged Islamic bank formed to provide only Islamic financial services. These banks operate under their own service delivery channels, and they have fully independent operating systems. They plan their own business strategies and policies under Shariah. Second, a conventional parent bank forms a subsidiary to provide Islamic financial services. The subsidiary may have its own dedicated service delivery channels or may use the delivery channels of the parent. Third, the Islamic bank operating as an Islamic window. In this model, a conventional bank provides Islamic financial services using their conventional banking service delivery channels. However, they segregate operation and accounting between conventional and Islamic financial services. Last, is the branch model, which is like the windows model. However, Islamic financial services are offered through dedicated service delivery channels. This is when a conventional bank sets up a branch or several branches that provide only Islamic financial services (Mzee & Othman, 2020).

There are various theories on the operation of both Islamic and conventional banks. This study adopts the agency theory to understand the differences between Islamic and conventional banking. Agency theory is defined as a problem that arises when there is a conflict of interest between a principal and an agent who acts in his or her own interests without considering the interests of a principal (Jensen & Meckling, 1976). In the banking context, a principal is a bank, and an agent is a client who has the know-how and operates the business but does not have a capital (Ghayad & Hamdan, 2021). The agency problem applies to both Islamic and conventional banks. Islamic banking, however, can minimize this problem as it operates in profit-and-loss sharing and has the advantage of optimal risk allocation (Ke et al., 2011). Despite this advantage, Islamic banks still face the principal-agent problem, which arises because of asymmetric information, cost monitoring (Sarker, 1999) different objectives, and level of risk appetite between the bank and the client (Ghayad & Hamdan, 2021).

Islamic banks face difficulties in getting the insider information on the efficiency of activities, since borrowers may disclose partial information concerning the quality of their projects. Every borrower will claim success that may lead to adversative selection problems (Mills & Presley, 1998). High-risk projects or

businesses may be selected since they are the ones that may provide their inside information and those borrowers who will inflate their profit expectations hoping to be quoted a lower profit-sharing ratio by the bank (Nouman et al., 2019). This ensures that the borrowers do not deflate their profits. Islamic banks also spend extra expenses to verify the accuracy of borrowers' project or business profit claims. Therefore, this information asymmetry leads Islamic banks to face moral hazard problems.

i. Financial performance

Financial performance is the measure of the financial condition of a firm for a specified period. The most common method of measuring financial performance is conducting a financial analysis of the company on various aspects of its financial statement, such as analysis of its liquidity, capital adequacy, profitability, solvency, or market performance (Fatihudin, 2018).

There is an ongoing debate on the performance between Islamic and conventional banking. Some evidence shows that Islamic banks are sometimes better than conventional banks (Khasanjon, 2018; Usman & Khan, 2012) while others have found evidence that support that conventional banks may be superior (Rashwan & Ehab, 2016). Previous researchers have examined the management, functions, structures, operations, and performance to analyse the differences between the two banking structures.

Previous studies have argued that the functions of Islamic banking are not different from those of conventional banking. Although Islamic banks are Shariah compliant, mark up administrates their investment module lending (*Murahaba*) (Suzuki et al., 2017) and interest rate benchmarking is used to set pricing for their loans (Nouman et al., 2022). However, Beck et al. (2013) and many others found that Islamic banks differ from conventional banks in various aspects that have been widely investigated.

Other studies have used several measures to examine the performance of Islamic and conventional banks. Among these, Uddin et al. (2017) used capital adequacy, asset quality, management quality, earning ability and liquidity position using a CAMEL framework to compare bank performances. They found that there were no differences except for the management quality. The study compared 5 Islamic banks and 5 conventional banks using t-test for the periods between 2010-2014 in Bangladesh, making an annual comparison. This study used only four years' data and selected its sample randomly from a larger pool of banks without matching them to the size. Others found conventional banks to be more profitable than Islamic banks, although Islamic banks in Malaysia made the sector less risky and more efficient (Ibrahim, 2020). Ibrahim (2020) compared the efficiency, profitability and risk of Islamic and conventional bank using 16 Islamic and 21 conventional banks for the period 2003 to 2015. Khan et al. (2018) found that Islamic banking was better in profitability, liquidity and risk management.

ii. Profitability

Profitability is one of the most important objectives of any firm. However, it is a difficult element to evaluate and conceptualise (Ross et al., 2021). Profitability ratios portray the ability of a firm to generate revenues.

Comparative studies on profitability found that conventional banks are more profitable than Islamic banks in various countries, such as Oman (Bilal et al., 2016), Malaysia (Wasiuzzaman & Gunasegavan, 2013), United Kingdom (Onakoya & Onakoya, 2013), Egypt (Fayed, 2013), Pakistan (Hanif et al., 2012) and GCC countries (Hadriche, 2015). However, other studies found Islamic banks outperformed conventional banks. For instance, Tri Julian (2015) found that Islamic banks outperformed conventional banks in terms of Return on Asset (ROA). Similarly, Hadriche (2015) found that Islamic banks outperformed conventional banks using GCC countries in his sample. Other studies did not find any significant difference between Islamic and conventional banking (Sehrish et al., 2012).

Studies applied various measures and methodologies to analyse the performance of Islamic and conventional banks. The most common profitability measures used are ROA, ROE, and Profit margin (Bilal et al., 2016) compared to the banks' previous year's ratios, industry averages or with their competitors. However, their sample and analysis differ in size, duration, and counterpart. This could be the primary cause of the outcome of their results. In addition, comparison of firms needs not only be matched by year and industry but also by size (Fernández et al., 2019) to attain unbiased results.

iii. Liquidity Management

Measure of liquidity management in banking comprehends how fast a bank can meet its short-term obligation or if the bank will pay its obligations when due (Alkassim, 2005). Previous studies compared Islamic and conventional banking to identify which category is better off in managing liquidity risks. Hanif et al. (2012) who applied different ratios in comparing the liquidity, found that conventional banks are more liquid compared to Islamic banks. Onakoya and Onakoya (2013) and Fayed (2013) found similar results when they examined liquidity superiority between Islamic and conventional banking in the United Kingdom and Egypt, respectively.

However, the results were inconsistent with that of Wasiuzzaman and Gunasegavan (2013), who found that Islamic banks were better in terms of liquidity compared to conventional banks. The study was conducted between 2005 and 2009, using a sample of five (5) Islamic and nine (9) conventional banks in Malaysia. The study used descriptive statistics to understand the difference in characteristics and t-test to show the significant differences in comparing the liquidity between Islamic and conventional banks. Similarly, Usman and Khan (2012), who used t-test to compare three (3) Islamic banks and three (3) conventional banks in Pakistan from 2007 to 2009, found that Islamic banks are more liquid compared to conventional banks. Also, the results were like those of (Tri Julian, 2015) who conversely conducted a comparative analysis of financial analysis between Islamic and conventional banks from 2004 to 2016 in Indonesia in terms of LDR.

Although Islamic banks seem to be more cost-effective in terms of liquidity, conventional banks outperformed Islamic banks in meeting their financial obligations on time as they have invested in short-term instruments such as the Treasury bill which is not easily liquidated. Islamic banks could not be superior since they could not invest in Treasury bills because they are interest-bearing instruments and they use assets like *Murabaha* which could not be converted easily into cash with a fixed duration.

The above studies show that conventional banks perform better than Islamic banks in terms of liquidity. Others concluded that there were no significant differences in terms of liquidity (Moin, 2008). In a study conducted in Tanzania, Peter (2017) used a CAMEL framework and concluded that conventional banks are better in terms of liquidity compared to Islamic banks. However, the comparison was based on banks of different sizes in terms of total assets.

iv. Credit Risk Management

Credit risk management is the practice of mitigating losses by understanding the adequacy of a bank's capital and loan loss reserves. It is a risk that a bank faces when a borrower cannot pay either partial or the total debt, that is a principal or interest, or both. Credit risk management is conducting a thorough analysis of a customer by assessing the correlation between the capital of a bank and reserves for loan losses at any period to manage the risk of a default (Afriyie et al., 2018). Credit risk management ratio analyses the performance of a bank by identifying the number of customers who have defaults from lending activities of a bank (Sufian, 2007).

Studies on credit risk management show that Islamic banks are dominating (Hanif et al., 2012) and are better at managing their credit risks and have low credit risks compared to conventional banks (Sehrish et al., 2012). However, conventional banks are better off in terms of credit risk management compared to Islamic banks. The ratios used were equity to total assets, equity to loan, and impaired loan to gross loan ratio.

3.2 Hypothesis development

Also, lack of legal support, negative perception of people towards Islamic banks, few specialists in the field and the accounting and auditing standards pose as challenges for an Islamic banks to flourish to suit the operation of Islamic banks. Therefore, their performance may not be similar or superior to that of conventional banks.

Comparative studies have mixed results on which banks had higher profits. Some studies found that conventional banks were more profitable (Bilal et al., 2016; Hadriche, 2015; Wasiuzzaman & Gunasegavan, 2013). Others found that Islamic banks were more profitable (Tri Julian, 2015) while some others did not find any significant difference (Sehrish et al., 2012). The hypothesis presented here is:

H1: There is a significant difference in financial performance between Islamic and conventional banking in Tanzania in terms of profitability.

In comparing the liquidity, researchers found that conventional banks are more liquid compared to Islamic bank (Fayed, 2013; Hanif et al., 2012; Onakoya & Onakoya, 2013). However, the results were inconsistent to that of (Usman & Khan, 2012; Wasiuzzaman & Gunasegavan, 2013), who found that Islamic banks were better in terms of liquidity compared with conventional banks. Others concluded that there were no significant differences in terms of liquidity (Moin, 2008). The hypothesis presented here is:

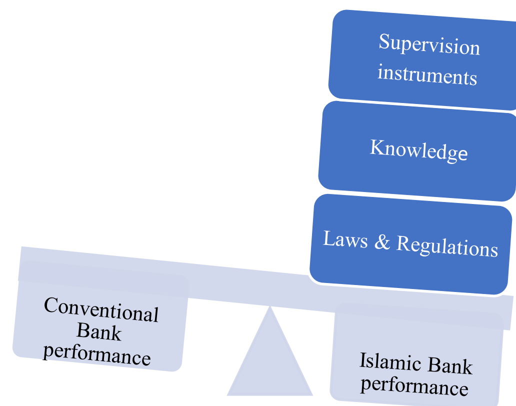
H2: There is a significant difference in financial performance between Islamic and conventional banking in Tanzania in terms of liquidity management.

Comparative studies in credit risk management show that Islamic banks are dominating (Hanif et al., 2012). Although, conventional banks are better off in the managing of credit risks. The hypothesis presented here is:

H3: There is a significant difference in financial performance between Islamic and conventional banking Tanzania in terms of credit risk management.

4. Conceptual Framework

Figure 1: Conceptual framework – Islamic Vs conventional banking performance



5. Research Methodology

5.1 Data and sample selection

The study used secondary data obtained from individual banks annual reports for the period of seven (7) years starting from the year 2014 to 2020. There are nineteen (19) medium-size banks in Tanzania, according to Ernst & Young banking sector overview report (Ernst and Young LLP, 2023). Their total assets range from 7 billion to 250 billion. Only one bank, Amana Bank, is a full-fledged Islamic bank in Tanzania. The study excluded three (3) banks from our analysis; PBZ, Stanbic and KCB as they operate Islamic window in their banks. In addition, DCB is removed as it is listed in the Dar es Salaam Stock exchange. In addition, the study compares Amana Bank with the average of the remaining fifteen (15) banks in the sample selection, as in Table 1. Using the average provides more stable results, as the exact match by the total asset amount for Amana Bank could not be obtained.

Table 1: Sample selection

Description	Number of banks
All medium-size banks	19
Remove Amana full-fledged Islamic	1
Remove banks with Islamic window	3
Total	15 anks

5.2 Data Analysis

The study conducted financial ratio analysis and later applied univariate analysis to examine whether profitability, liquidity, and credit risk management ratios are statistically different between Islamic and conventional banking. For each of these three categories, three ratios were calculated. First, return on asset, return on equity and cost to income ratio were used to compare the profitability. Secondly, loan to asset ratio, liquid asset to deposit ratio and loan to deposit ratio were used for liquidity. Finally, credit risk management used equity to total assets, equity to loans and percentage of impaired loans. The ratios were then compared using t-test to evaluate whether there was a significant difference between the means of these two categories of banks in terms of profitability, liquidity management and credit risk management. The following variables were tested.

i. *Profitability*

Return on Asset (ROA) is a ratio which shows how effective a company or bank is in using its assets to generate returns. It is one of the main ratios used to measure whether a bank is profitable. Higher ratios indicate that the bank can generate more profit from investments in its assets. This ratio is determined by dividing net income by the total assets of a bank.

Return on Equity (ROE) shows the ability of a bank to generate profit from the shareholders' equity. It can be calculated by dividing the net income with shareholder's equity. Higher ratios indicate that a bank can generate more profit from its shareholders' funds.

Cost to Income Ratio (CIR) is a ratio which shows the relationship between the cost and income of a bank. This ratio is interpreted as the cost incurred per income generated and calculated by dividing Non-Interest Expense to Gross Income.

ii. *Liquidity Management*

Loan to Asset Ratio (LTA) shows the amount of the asset tied up in loans, meaning it measures the total loan the bank has provided as a percentage of the total assets of the bank. Higher ratios show the bank is illiquid because it has provided most of its cash as loan and therefore may not meet its current obligations.

Loan to Deposit Ratio (LTD) measures the liquidity of a bank, which is calculated by dividing the total loan to the total deposits of a bank. This ratio shows how well a bank can cover its loan losses and withdrawals by customers. Higher ratio shows the bank has low liquidity, since it uses most of its deposits to provide loans. It can also show whether the bank is at a high risk of default from the loans which have been provided.

Liquid Asset to Deposit Ratio (LATD) shows how liquid the bank is, which is funded by deposits rather than debts. This shows if a bank is liquid enough in terms of assets but funded by deposit from the customers and not otherwise. A higher ratio shows a bank has more liquid assets funded by deposits and hence a bank is liquid enough to meet its short-term obligations.

iii. *Credit Risk Management*

Equity to Asset Ratio (EQTA) is used to assess the credit risk management of a bank, which assesses the amount of equity used to finance the assets of a bank. It measures the amount of capital with which the bank must finance its assets. It also represents the percentage of protection that a bank provides to its assets and investments. The higher the ratio, the greater the bank can sustain its loan losses, that is the better the bank can finance its loan asset losses. The ratio is calculated by dividing the total equity with the total asset of the respective banks.

Equity to Loan Ratio (EQL) is used to assess the credit risk management of a bank, which assesses the amount of equity used to absorb the loan losses of a bank. It measures the amount of capital the bank has to finance its loan losses. It also represents the percentage cushion a bank must absorb its loan losses. The higher the ratio, the greater the bank can sustain its loan losses, that is the better the bank can absorb its loan losses. It can be calculated by dividing the total equity with the net loan of the respective bank.

Impaired Loan to Gross Loan (IMLGL) measures the percentage of impaired loans found in the gross loans of a bank and calculated by dividing the impaired loan with the gross loan. A higher ratio shows the bank has a high percentage of impaired loan, while a low ratio shows a bank has a low percentage of impaired loans. A low impaired loan to gross loss indicates that the bank may have low credit risk.

6. Results and Discussion

Table 2 shows the descriptive statistics of both Islamic and conventional banks in Tanzania. The descriptive statistics include mean, which is the average of the ratios for seven years from 2014 to 2020.

Table 2: Descriptive statistics and independent t- test

Variables	Islamic N= 7				Conventional N= 99					
	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	F	Sig. (2-tailed)
ROA	-0.033	0.005	-0.005	0.015	-0.129	0.044	-0.010	0.035	3.712	.740
ROE	-0.269	0.047	-0.044	0.126	-1.874	0.287	-0.078	0.290	1.376	.760
CIR	0.291	0.547	0.382	0.085	-0.712	2.041	0.379	0.282	2.064	.981
LTA	0.643	0.701	0.670	0.020	0.186	0.755	0.493	0.123	8.149	.000
LTD	0.726	0.810	0.777	0.028	0.329	2.097	0.866	0.277	5.003	.003
LATD	0.266	0.350	0.298	0.028	0.229	2.887	0.591	0.304	3.161	.013
EQTA	0.098	0.134	0.112	0.012	0.000	0.765	0.166	0.090	2.380	.119
EQL	0.144	0.204	0.168	0.020	0.000	3.106	0.382	0.355	2.119	.115

a. Profitability

In terms of ROA, on average, both Islamic and conventional banks are not generating adequate return for their asset invested. A conventional bank, on average, is generating a loss of TZS 0.01 shilling compared to an Islamic bank, which generates a loss of TZS 0.033 per shilling of asset invested. Similar results are observed in ROE, as both conventional and Islamic banks are losing their shareholders' money. However, the results show that conventional banks are losing more of their shareholders' money (TZS -0.078) per shilling invested compared to Islamic banks (TZS -0.044) per shilling invested by shareholders. The average CIR of Islamic and conventional banks is 38.2% and 37.9%, respectively, which means that conventional banks are better in terms of CIR compared to the Islamic counterparts. This shows that Islamic banks incurred a cost of TZS 0.382 per shilling of income generated, while conventional banks incurred a cost of TZS 0.379 per shilling of income generated. Hence, Islamic banks use more costs in generating income while conventional banks use less cost in generating income and therefore, conventional banks operate more efficiently compared with Islamic banks.

Overall, the results on profitability show that there is no significant difference between Islamic and conventional banks on ROA. Both generate a similar level of returns from their assets throughout the study period of seven years. These results are consistent to that of Samad (2004) and Tri Julian (2015). ROE shows similar results, whereby there is no significant difference in ROE between Islamic and conventional banking in terms of ROE. This means that Islamic banks and conventional banks generated similar levels of returns from shareholder equity during the study period, consistent with Samad (2004). Similarly, there is no significant difference between Islamic and conventional banks in terms of CIR. These results are consistent to that of Uddin et al. (2017) who conducted their research in Bangladesh and Samad (2004) who conducted his study in Bahrain.

b. Liquidity management

The average LTA of both Islamic and conventional banks are 67.0% and 49.3% respectively. This means that conventional banks are more liquid compared to Islamic banks. These results show that Islamic banks use most of their assets to provide loans. For every one shilling of Islamic banks' assets, TZS 0.673 is provided as a loan. Thus, making them less liquid compared to the conventional banks that provide only TZS 0.493 per one shilling of their assets. From Table 2, the t-test shows a significant difference between Islamic and conventional banks in terms of LTA. These results are contrary to that of Uddin et al. (2017) who conducted their study in Bangladesh.

The average LTD ratio of both Islamic and conventional banks is 77.7% and 86.6% respectively. This means that Islamic banking is more liquid compared to conventional banking because it uses fewer deposits to provide loans. From table 2, the t-test shows a significant difference between Islamic and conventional banking in terms of LTD. These results are contrary to that of Samad (2004) in Bahrain and Hadriche (2015) in GCC countries.

The mean of LATD ratio between Islamic and conventional bank is 29.8% and 59.1% respectively. This means that 59.1% of conventional bank's liquid assets are funded by customer deposits rather than other sources. This ratio is higher compared to that of Islamic bank, whose 29.8% of their liquid assets are funded by customers' deposits, and they utilize a small amount of their customer deposits to finance their short-term obligations. The t-test results show a significant difference between Islamic and conventional banking in terms of the LATD ratio. These results are contrary to that of Islam and Ashrafuzzaman (2016) and Hadriche (2015).

c. Credit Risk Management

On average, EQTA ratios of Islamic and conventional banks are 11.2% and 16.6% respectively. This means both conventional and Islamic banks are highly leverage at more than 80%. Conventional banks are financed by their own equity by only TZS 0.166 per one shilling of asset compared with Islamic bank, which has only TZS 0.112 of equity per one shilling. Thus, conventional banking is better at managing credit risk by using equity compared to Islamic banking, although both are highly leveraged. The mean of EQL ratio between Islamic and conventional banking is 16.8% and 38.2% respectively. This means that conventional banking has a higher ability to absorb loan losses using TZS 0.382 of equity per one shilling of loan loss compared to Islamic banks, which can use TZS 0.168 of equity per one shilling of asset to finance each loan loss. These results are consistent with Hanif et al. (2012).

7. Conclusion and Recommendation

This current study compares the financial performance between Islamic and conventional banks in Tanzania for seven years, from 2014 to 2020. The study focused on variables relating to profitability, liquidity management and credit risk management in comparing between these two categories of banks. To measure the three variables; profitability used ROA, ROE and CIR, liquidity used LTA, LTD and LATD, and credit risk management used EQTA and EQL. We extracted the data from the financial reports of the respective banks' websites to calculate their ratios.

The results were calculated in three steps. Firstly, the study conducted a financial ratio analysis. Next, the descriptive statistics were generated to showcase the mean, median, maximum, and minimum values for both banks. In order to determine if there is a significant difference between the means of Islamic and conventional banks, the final step involved calculating the t-test. On average, the results found the conventional bank was better than an Islamic bank in profitability ratios and liquidity management ratios, while Islamic banks are better at managing credit risk.

The results established that conventional banks make more profits, measured by ROA and ROE, compared with Islamic banks. However, the difference is not statistically significant between conventional and Islamic banks. In terms of cost to income ratio, conventional banks are better at managing their cost than Islamic bank and therefore retaining more income. The study also examined liquidity management ratios, whereby the results found out that there was no significant difference in terms of LTA and LTD, but there was a significant difference in terms of LATD, whereby the conventional banks outperformed the Islamic banks in this ratio. The credit risk management ratio showed no significant difference between Islamic and conventional banking.

The study concludes that Islamic banking is an emerging phenomenon and facing operational challenges in Tanzania. Among other factors contributing to this challenge are, unaligned policies and laws, lack of

appropriate regulatory and supervisory guidelines on Islamic finance (Dolgun et al., 2019), absence of Shariah compliant liquidity instrument and interbank deposits (Rassool, 2018), lack of knowledge and understanding of Islamic finance (Islamic Financial Services Board, 2017).

To improve Islamic banking performance, the following recommendations should be considered. First, the government and other policy makers should introduce policies that fully support the operations of an Islamic bank in Tanzania. For instance, the Bank of Tanzania should allow the sale of more interest free products in Tanzania, such as investment products, to enable Islamic banks to diversify their income streams rather than relying solely on a limited number of sources, as they currently do. Second, increase public awareness of products and services offered by the Islamic banks and change the public perception on Islamic banking. Lastly, the Islamic community and banks should train their staff on Islamic finance to increase their knowledge and understanding.

This study has the following limitations. First, it is based on only one fully fledged bank compared to a group of conventional banks. Second, it has limited its analysis to three areas: profitability, liquidity, credit risk management ratios. More understanding of financial performance can be obtained by increasing the number of both groups; fully fledged Islamic banks and a group of conventional banks to gain better insights on their performance and broaden the analysis to other areas such as capital adequacy, efficiency and solvency ratios; and it should also include motivating factors such as customer behaviour and perception of Islamic in Tanzania. Whereas Islamic banking is still a fresh and emerging phenomenon in Tanzania, more studies should be conducted, to establish, amongst others, how Islamic banking should manage liquidity risk in Tanzania, the operation of Islamic banking and the role of Islamic banking in financial inclusion.

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Financial Performance of Islamic Banks in Malaysia during the Covid-19 Pandemic

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Abstract

The purpose of this study is to examine the financial performance of Islamic banks in Malaysia during the Covid-19 pandemic. The methodology of the study are data from the annual reports of 15 Islamic banks in Malaysia that were collected for the years 2019, 2020, and 2021. The banks' performance was evaluated based on financial ratios consisting of profitability ratios, liquidity ratios, solvency ratios, and efficiency ratios. Findings of the study is the Islamic banks were able to manage their liquidity positions during the years 2019, 2020, and 2021. This study extends the literature by examining the financial performance of Malaysian Islamic banks before and during the Covid-19 pandemic. Islamic banks can improve their performance by becoming more competitive in the current environment of the financial industry. They need to take preventive measures in all their activities to prevent any unprecedented events in the future. More importantly, Islamic banks need to uphold Islamic ethics throughout their business operations to ensure compliance with Shariah. This study also provides practical implications for regulators and policymakers in the context of unprecedented uncertainty resulting from the Covid-19 pandemic. This is a pioneer empirical study that focuses on the financial performance of Malaysian Islamic banks before and during the Covid-19 pandemic.

Keywords: Financial performance, Covid-19, Islamic banks

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1. Introduction

The Covid-19 pandemic caused the downside risk of the global economy in 2021 consequently weakening the real sector in terms of productive capacity and long-term funding disruption. While the total assets of the Islamic financial services industry maintained a growth of 10.7% globally, Malaysia's Islamic banking assets experienced a declining growth to 7.8% compared to 9.0% in 3Q19. Furthermore, the global Islamic banking assets only increased by 2.2% which is equivalent to 11.2% in 2021. In terms of the Islamic banking share in total banking assets by jurisdiction, Malaysia occupied the 6th place at 31.5% share of the global Islamic banking assets. This scenario is concerning, as Malaysia is targeting to provide finance for all, continue to become an international financial hub, and attain financial sustainability by the year 2026 (Bank Negara Malaysia [BNM], n.d.).

During the Covid-19 pandemic, the government announced measures that affected cash flows. The moratorium and targeted repayment scheme had affected banks, including Islamic banks. Therefore, this study aims to examine the financial performance of Malaysian Islamic banks before 2019 and during 2020–2021, the Covid-19 pandemic. Islamic banks in Malaysia consist of local full-fledged Islamic banks, foreign full-fledged Islamic banks, local Islamic banking subsidiaries, and foreign Islamic banking subsidiaries. The implication of this study pertains to extending the literature regarding the financial performance of Malaysian Islamic banks before and during the Covid-19 pandemic. Besides, the results of this study indicate that Islamic banks should

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implement preventive measures to maintain their financial performance. This paper is organised as follows: Section 2 discusses the literature review of previous studies on Islamic banks, Section 3 describes the data collection process and the methodology used, and Section 4 presents the results of the study. Finally, the discussion and conclusion of this study are presented in Section 5.

2. Background of the Study and Literature Review

2.1 Malaysia and Malaysian Islamic banks

Malaysia operates a dual banking system, with Islamic banks operating side by side with conventional banks (BNM, 2009). This structure makes the Malaysian financial system different from those in other countries such as Iran and Sudan, which offer only full-fledged Islamic banking (IFSB, 2017). The dual financial system practised in Malaysia has promoted competition between these two types of banks. Thus, it is imperative that Islamic banks can maintain and sustain their position in line with conventional banks. Secondly, research in the Malaysian context is interesting due to the uniqueness of the Malaysian environment, which consists of multireligious and multiracial communities (Department of Statistics Malaysia, 2019). It is challenging for Islamic banks to cater to the needs and demands of the multireligious and multiracial population. Thus, research is needed to ensure that Islamic banks can fulfil those needs and demands in the long run. Thirdly, Malaysia's target by 2026 is to provide finance for all by focusing on digital banking, strengthen the financial safety net of the people and obtain customers' confidence, in order to transform the finance by promoting alternative finance and continued leadership for the country as the international gateway for Islamic finance, and achieve financial sustainability by aligning with value based intermediation (VBI) and promoting green financing (BNM, n.d). Therefore, there is a need to monitor this sector in order to achieve the objective of positioning Malaysia as an international financial hub.

2.2 Financial performance of Islamic banks during the Covid-19 pandemic

The end of 2019 marked the emergence of a new virus known as SARS-CoV-2 coronavirus (Covid-19). This virus causes respiratory diseases such as flu, cough, sore throat, fever, and in more serious cases, pneumonia. Covid-19 was discovered in China's Wuhan Province in 2019. World Health Organisation (WHO) announced this global health issue as a pandemic. To curb the spread of the Covid-19 virus, many governments around the globe-imposed restrictions which had affected various sectors, including the Islamic finance industry. The movement control order was one of the major restrictions implemented that led to reduced spending (Rio-Chanona et al., 2020).

In Malaysia, the government announced a six-month moratorium on loan/financing repayments and the restructuring of outstanding credit card balances from 1 April 2020 until 30 September 2020. This move, involving approximately RM100 billion, was expected to ease the burden faced by small-medium enterprises (SMEs), individuals, and the corporate sector during the Covid-19 pandemic. The moratorium period was extended for another 3 months after the automated moratorium period ended on 30 September 2020. This extended moratorium, known as targeted repayment scheme, was aimed at helping those affected by the Covid-19 pandemic, be it individuals who lost their jobs or businesses that experienced reduced incomes. Unlike the initial moratorium, customers did not receive a full deferment but were able to restructure their loans/financings instead. The restructuring could be in the form of an extension of the loan/financing tenure for a revised monthly instalment amount and possibly with interest/profit as well, and the terms differed from bank to bank, with some offering further deferment.

A second moratorium scheme was introduced on 7th July 2021 for individuals, microenterprises, and SMEs. According to the information on BNM's website on Loan/Financing Repayment Assistance, all banks, including Islamic banks recognised the continued challenges faced by borrowers/customers during the Covid-19 pandemic. Therefore, between 1 June 2021 and 29 October 2021, more than 2.7 million individual customers and 93,000 SME customers had obtained some form of loan/financing repayment assistance from their respective banks. The moratorium and targeted repayment scheme might have some impacts on the profitability and liquidity of the banks, including Islamic banks.

Regarding profitability, while the moratorium was in place, interest/profit continued to be charged on the outstanding balances. The aim of this stimulus package was to provide some relief to individuals and businesses who faced temporary financial constraints during the Covid-19 pandemic. Customers would have a chance to recover from the temporary financial constraints and resume paying after the end of the moratorium. This would

help banks mitigate potential losses in revenue and profit that would otherwise have occurred without the package.

The moratorium affected the liquidity of the banks. The government specified that all deferments of loans/financing would be automatic. As a result, the banks might face a liquidity crunch with a significant reduction in cash inflows and liquidity drying up in the money market. Despite this, the banks were expected to continue supporting the lending/financing activities and thus might be struggling to comply with the minimum liquidity requirements.

Khairul Anwar et al. (2020) discussed the impact of the Covid-19 pandemic on the banking industry, specifically the Islamic banking sector, as Malaysia is one of the global Islamic finance hubs in the world. The discussion included the impacts of the moratorium in terms of benefits for bank loans borrowers or financing customers, special tax treatment on the moratorium interest/profit, and lower overnight policy rates (OPRs) that affected Islamic banks' performance. Other matters discussed included the Special Relief Fund for SME customers, restructuring of Islamic financing facility, business continuity management, iTEKAD Micro-Financing Scheme, and the severe impacts of the Covid-19 pandemic on many industry players, especially SMEs which were unable to sustain their operations leading to bankruptcy.

2.3 Previous studies on the financial performance of Islamic banks during the Covid-19 pandemic

Hasan et al. (2021) explored the effect of the Covid-19 pandemic on Islamic and conventional stock markets from a global perspective and examined the co-movement between Islamic and conventional stock markets. The pandemic created identical volatility in the two types of stock markets. Meanwhile, Almonifi et al. (2021) assessed the impact of the Covid-19 pandemic on the performance of the Islamic banking sector in the Kingdom of Saudi Arabia, specifically Al Rajhi Bank's performance before and during the Covid-19 pandemic. It was found that the Covid-19 crisis had only a minor impact on Saudi Arabia's Islamic banking system, especially the bank under investigation, and that Islamic banks could avoid the financial and economic risks associated with the crisis. Islamic banks are distinguished from other banks by their ability to respond quickly to crises such as economic and financial shocks. Candera and Indah (2020) showed that there were differences in the financial performance of Islamic banks before and during the Covid-19 pandemic in Indonesia. In addition, there were significant differences in Islamic banking financial performance in terms of non-performing finance (NPF), capital adequacy ratio (CAR), and return on assets (ROA). A further study by Ichsan et al. (2021) looked at the financial performance of Islamic banks in Indonesia during the Covid-19 pandemic. Data were collected from the banks' annual financial statements from 2011 to 2020, and five performance ratios were analysed. The t-test results showed that CAR, operating costs to operating income (BOPO), and financing to deposit ratio (FDR) had a positive and significant effect on financial performance measured by ROA. Further, NPF had a negative and insignificant effect on ROA. Mirzae (2021) evaluated the stock performance of Islamic banks relative to their conventional counterparts during the initial phase of the Covid-19 crisis from 31st December 2019 to 31st March 2020. It was discovered that the stock returns of Islamic banks were about 10% to 13% higher than those of conventional banks after controlling for bank- and country-level variables. Islamic banks recorded significantly higher stock returns relative to conventional banks during the Covid-19 crisis, and this superior stock performance can be explained by their pre-crisis efficiency levels. These findings extend the confidence in the resilience of Islamic banks during economic fallouts and highlight the importance of bank efficiency in holding out against potential adverse effects. Arafat et al. (2021) examined the impact of Covid-19 on the performance and stability of conventional and Islamic banks in the Gulf Cooperation Council (GCC) region, Malaysia, and Pakistan. The findings showed that the Covid-19 pandemic had a significant and negative impact on the financial performance of both types of banks. However, they did not find any significant evidence of the impact of the Covid-19 pandemic on the stability of these banks.

3. Research Method

Since this study aims to examine the financial performance of Malaysian Islamic banks before 2019 and during 2020–2021 the Covid-19 pandemic, the secondary data pertaining to 15 Islamic banks in Malaysia for the years 2019–2021 are used in the study. Secondary data refer to the use of information that is collected from available sources. In this study, the data were obtained from the Islamic banks' financial statements, which were included in their respective annual reports and posted on the banks' websites. The year 2019 represented the pre-pandemic period of Covid-19, and the years 2020–2021 were considered the pandemic period of Covid-19.

3.1 Sample size and data collection

Table 1 summarises the list of local (L) and foreign (F) Islamic banks included in this study. This list covers the whole population of Islamic banks in Malaysia during the data collection process in 2023.

There are 16 Islamic banks in Malaysia. However, since the annual reports of AmBank Islamic Berhad were not available on their website, the bank was excluded from the study. Therefore, the study only covers 15 Islamic banks in Malaysia.

Table 1: List of Islamic banks in Malaysia

No.	Islamic Banks	Ownership
1.	Affin Islamic Bank Berhad	L
2.	Al Rajhi Banking & Investment Corporation (Malaysia) Berhad	F
3.	Alliance Islamic Bank Berhad	L
4.	AmBank Islamic Berhad	L
5.	Bank Islam Malaysia Berhad	L
6.	Bank Muamalat Malaysia Berhad	L
7.	CIMB Islamic Bank Berhad	L
8.	Hong Leong Islamic Bank Berhad	L
9.	HSBC Amanah (Malaysia) Berhad	F
10.	Kuwait Finance House (Malaysia) Berhad	F
11.	Maybank Islamic Berhad	L
12.	MBSB Bank Berhad	L
13.	OCBC Al-Amin (Malaysia) Berhad	F
14.	Public Islamic Bank Berhad	L
15.	RHB Islamic Bank Berhad	L
16.	Standard Chartered Saadiq (Malaysia) Berhad	F

The study used document analysis and descriptive analysis to examine the financial performance of Malaysian Islamic banks during the Covid-19 pandemic. Document analysis consists of skimming (superficial study), reading (depth examination), and interpretation (Bowen, 2009). Descriptive analysis is the process of using current and historical data to identify trends.

Table 2 shows that Malaysian Islamic banks are categorised into local full-fledged Islamic banks, foreign full-fledged Islamic banks, local Islamic banking subsidiaries, and foreign Islamic banking subsidiaries.

Table 2: Categories of Islamic banks

Categories	Islamic banks
1. Local full-fledged Islamic banks	Bank Islam Malaysia Berhad
	Bank Muamalat Malaysia Berhad
	MBSB Bank Berhad
2. Foreign full-fledged Islamic banks	Al Rajhi Banking & Investment Corporation (Malaysia) Berhad
	Kuwait Finance House (Malaysia) Berhad
3. Local Islamic banking subsidiaries	Affin Islamic Bank Berhad
	Alliance Islamic Bank Berhad
	CIMB Islamic Bank Berhad
	Hong Leong Islamic Bank Berhad
	Maybank Islamic Berhad
	Public Islamic Bank Berhad
	RHB Islamic Bank Berhad
4. Foreign Islamic banking subsidiaries	HSBC Amanah (Malaysia) Berhad
	OCBC Al-Amin (Malaysia) Berhad
	Standard Chartered Saadiq (Malaysia) Berhad

3.2 Financial performance measures

This study used 13 financial ratios adapted from Samad and Hassan (2000) and Samad (2004) to measure the financial performance of the banks for the years 2019 to 2021.
These ratios fall into four main categories, as shown in Table 3.

Table 3: Financial ratios

Ratios	Types	Formula
Profitability ratios	Return on assets (ROA)	Profit after tax/Total assets
	Return on equity (ROE)	Profit after tax/Equity capital
	Return on deposit (ROD)	Profit after tax/Total deposit
Liquidity ratios	Cash to deposit ratio (CD)	Cash/Deposit.
	Cash to deposit and investment ratio (CDI)	Cash/Deposit and investments
	Financing to deposit and investment (FDI)	Financing/Deposit and investment
Solvency ratios	Debt to equity ratio (DE)	Debt/Equity capital
	Debt to total assets ratio (DTA)	Debt/Total assets
	Equity multiplier ratio (EM)	Total assets/Share capital
Efficiency ratios	Asset utilisation ratio (AU)	Total operating income/Total assets
	Operating efficiency ratio (OE)	Total operating expenses/Total operating income
	Financing to total assets ratio (FTA)	Financing/Total assets

3.2.1 Profitability Ratios

Profitability ratios are used to measure a bank's ability to earn profit using the existing assets, equity, and funding from the customers. The ratios used in this study to measure the profitability of the Islamic banks are shown in Table 4.

Table 4: Profitability ratios

Ratio and Formula	**Description**
Return on assets (ROA) = Profit after tax/Total assets	It shows how a bank can convert its asset into net earnings. A higher value of this ratio indicates higher capability of the bank. This ratio is an indicator of managerial efficiency (Samad & Hassan 2000; Samad, 2004)
Return on equity (ROE) = Profit after tax/Equity capital	This ratio indicates how a bank can generate profit with the money shareholders have invested. A higher value of this ratio shows higher financial performance. Like ROA, this ratio is an indicator of managerial efficiency.
Return on deposit (ROD) = Profit after tax/Total deposit	This ratio shows the percentage return on each dollar of customers' deposit. It indicates the effectiveness of a bank in converting deposit into net earnings.

3.2.2 Liquidity Ratios

Liquidity ratios measure the capability of a bank to meet its short-term obligations. Generally, a higher value of this ratio indicates that the bank has a larger margin safety to cover its short-term obligations. Among the various liquidity measures, this study used the ratios shown in Table 5

Table 5: Liquidity ratios

Ratio and Formula	Description
Cash to deposit ratio (CD) = Cash/Deposit	A higher value of this ratio shows that the bank is more liquid.
Cash to deposit and investment ratio (CDI) = Cash/Deposit and investments.	A higher value of this ratio shows that the bank is more liquid.
Financing to deposit and investment ratio (FDI) = Financing/Deposit and investments.	A low value of this ratio indicates that the bank has excess liquidity. This ratio also indicates the effectiveness of the bank's mediation function.

3.2.3 Solvency Ratios
This study used the ratios shown in Table 6 to measure Islamic banks' solvency.

Table 6: Solvency ratios

Ratio and Formula	Description
Debt to equity ratio (DE) = Debt/Equity capital	This ratio shows how a bank finances its operations with debt relative to equity.
Debt to total assets ratio (DTA) = Debt/Total assets.	This ratio indicates the proportion of assets financed with debt. A high value of this ratio indicates that the bank is involved in a riskier business.
Equity multiplier ratio (EM) = Total assets/Share capital.	This ratio shows how many dollars of assets must be supported by each dollar of equity capital. A higher value of this ratio signals risk failure.

3.2.4 Efficiency Ratios
The three ratios in Table 7 were used to measure the efficiency of Islamic banks.

Table 7: Efficiency Ratios

Ratio and Formula	Description
Asset utilisation ratio (AU) = Total operating income/Total assets.	This ratio measures the capability of a bank to generate revenue with its assets. A high value of this ratio indicates high productivity of the bank's assets.
Operating efficiency ratio (OE) = Total operating expenses/Total operating income.	This ratio indicates how efficiently a bank uses its assets, generates revenues, and minimises expenses. It shows how well the bank can reduce its expenses and improve productivity.
Financing to total assets ratio (FTA) = Financing/Total assets	This ratio measures the percentage of financing to total assets.

4. Findings

The objective of this study is to examine the financial performance of Malaysian Islamic banks during the Covid-19 pandemic. Using data from the annual reports of Islamic banks, this study computed the profitability, liquidity, solvency, and efficiency ratios for the years 2019 to 2021 for the four categories of Islamic banks in Malaysia: local full-fledged Islamic banks, foreign full-fledged Islamic banks, local Islamic banking subsidiaries, and foreign Islamic banking subsidiaries.

4.1 Profitability Ratios
Table 8 provides a summary of the profitability ratios of Malaysian Islamic banks.

Table 8: Summary of profitability ratios of Malaysian Islamic banks

	Return on Assets (%) ROA			Return on Equity (%) ROE			Return on Deposits (%) ROD		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
Local full-fledged Islamic banks	0.70	0.66	0.92	6.39	6.16	7.77	6.39	6.16	7.77
Foreign full-fledged Islamic banks	0.57	-46.35	-0.11	3.07	-475.31	-0.33	0.75	-54.35	-0.15
Local Islamic banking subsidiaries	1.38	0.50	0.78	19.32	8.05	12.37	1.65	0.61	0.94
Foreign Islamic banking subsidiaries	0.12	0.36	0.83	1.08	3.30	8.64	0.07	0.50	1.33

Table 8 shows that overall, the profitability of the Islamic banks in Malaysia was affected by the Covid-19 pandemic. The impact on financial performance was very high for foreign full-fledged Islamic banks and foreign Islamic banking subsidiaries. Foreign full-fledged Islamic banks recorded negative ROA and ROE for 2019 and 2020, indicating losses were incurred in both years. Furthermore, they recorded higher losses in 2020 than in 2019 due to the Covid-19 pandemic. Similarly, foreign Islamic banking subsidiaries recorded a decrease in ROA from 0.83% to 0.36% from 2019 to 2020, indicating that the Covid-19 pandemic affected the profitability of the banks.

Regarding local Islamic banks, full-fledged Islamic banks and Islamic banking subsidiaries experienced a decline in profit for the year 2020, but the decline was not as severe as that experienced by foreign Islamic banks. Moreover, the decline reflected a subdued economic environment and a continued impact of low interest rates. The impact of the Covid-19 pandemic remained substantial across all areas of operating environment in 2021, but society and businesses were effective in adapting to the new reality. The banks had instituted robust measures in response to Covid-19, which allowed them to manage the continued impact of the Covid-19 pandemic in 2021. This loss on modification due to the moratorium had affected the profit of Islamic banks during the Covid-19 pandemic.

i. Return on Assets (ROA)

The ROA of local full-fledged Islamic banks decreased from 0.92% during the pre-pandemic in 2019 to 0.66% during the Covid-19 pandemic in 2020 but increased slightly to 0.7% in 2021. The decline in ROA suggests that local full-fledged Islamic banks were affected by the pandemic. Meanwhile, the ROA of foreign full-fledged Islamic banks experienced a sharp drop from 0.33% in 2019 to −46.35% in 2020 and a substantial recovery to 0.5% in 2021. Thus, in Malaysia, foreign full-fledged Islamic banks were more affected than local Islamic banks by the Covid-19 pandemic.

The ROA of local Islamic banking subsidiaries decreased from 0.78% in 2019 to 0.5% in 2020 but increased substantially to 1.38% in 2021 during the endemic period. An endemic is a constant presence in a community. It differs from a pandemic because the virus is somewhat contained and not spreading out of control. In this situation, it does not strain the healthcare infrastructure, and hence, it is easier to prevent and treat the Covid-19 infection. Therefore, the impact on banks' financial performance also decreased.

The profitability ratios of foreign Islamic banking subsidiaries showed a decreasing trend. Before the Covid-19 transmission in 2019, the banks' ROA was 0.83%. However, during the Covid-19 pandemic, ROA dropped to 0.36% and 0.12% in 2020 and 2021, respectively. This was because during the Covid-19 pandemic, OPR hit the lowest at 1.75% on 7th July 2020. In addition, the financing products of most of the foreign Islamic subsidiaries were stagnant during the Covid-19 pandemic from the effect of the pre-Covid-19 in 2019. The findings revealed that most of the foreign Islamic banking subsidiaries could not utilise their assets, especially financing products, to generate profit. Accordingly, ROE showed a decreasing trend from 8.64% (2019) to 3.3% (2020) and 1.08% (2021). This was because one of the foreign Islamic banking subsidiaries incurred a loss in 2021, which affected the ROA.

ii. *Return on Equity (ROE)*

Local full-fledged Islamic banks and local Islamic banking subsidiaries recorded a decrease in ROE. The ROE of local full-fledged Islamic banks decreased from 7.7% before the Covid-19 pandemic in 2019 to 6.2% during the Covid-19 pandemic in 2020 but slightly increased to 6.4% in 2021. Regarding local Islamic banking subsidiaries, ROE decreased from 12.4% in 2019 to 8.1% in 2020 but recovered substantially to 19.3% in 2021. These findings revealed that the pandemic affected local Islamic banks. For foreign full-fledged Islamic banks, the increase in losses in 2020 caused the ROE to decrease to −475.3%. Foreign Islamic banking subsidiaries also experienced a decline in the ROE, albeit to a smaller extent, during the Covid-19 pandemic.

iii. *Return on Deposit (ROD)*

The ROD of local full-fledged Islamic banks was relatively stable at 7.77% in 2019, 6.16% in 2020, and 6.39% in 2021. For local Islamic banking subsidiaries, ROD declined from 0.94% in 2019 to 0.61% in 2020 but increased to 1.65% in 2021. Thus, the Covid-19 pandemic had a mild impact on local Islamic banks. Foreign full-fledged Islamic banks recorded volatile ROD during the 3-year period from −0.15% in 2019 to −54.35% in 2020 and 0.75% in 2021. The impact on foreign Islamic banking subsidiaries was milder, where their ROD decreased from 1.33% in 2019 to 0.50% in 2020 and 0.07% in 2021.

4.2 Liquidity Ratios

The results of the study for liquidity ratios are presented in Table 9.

Table 9: Summary of the liquidity ratios of Islamic banks in Malaysia

	Cash to Deposit (CD)			Cash to Deposit and Investment (CDI)			Financing to Deposit and Investment (FDI)		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
Local full-fledged Islamic banks	0.06	0.10	0.07	0.06	0.09	0.07	0.90	0.90	0.88
Foreign full-fledged Islamic banks	0.05	0.05	0.06	0.05	0.05	0.06	0.72	0.75	0.76
Local Islamic banking subsidiaries	0.08	0.07	0.06	0.08	0.07	0.06	0.86	0.88	0.89
Foreign Islamic banking subsidiaries	0.29	0.23	0.30	0.26	0.21	0.27	0.60	0.97	1.02

Three types of Islamic banks, namely local full-fledged Islamic banks, foreign full-fledged Islamic banks, and local Islamic banking subsidiaries recorded CD, CDI, and FDI of less than 1 during the study period. For CD, the range was between 0.05 and 0.10 for these three types of Islamic banks. This finding indicated that these three types of Islamic banks held less cash between pre-pandemic and during pandemic than before the pandemic, thus showing that they were able to manage their liquidity by providing financing and investment to customers. The ideal of financing and investment ratio ranged from good:75% – 85% to pretty good: 85%–100% (Hadian & Phety, 2021).

However, foreign Islamic banking subsidiaries recorded significant CD of 0.23–0.30. In 2019, one of the foreign Islamic banking subsidiaries experienced strong growth in current deposits (Standard Chartered Saadiq Berhad, 2019). However, the total financing declined during 2019 (Standard Chartered Saadiq Berhad, 2019), which explains the FDI ratio of 1.02 for foreign Islamic banking subsidiaries in 2019.

Overall, Islamic banks continued to operate efficiently to better manage capital and liquidity by maintaining prudent credit risk management, proactively managing any potential stress in asset quality, and implementing intensive recovery plans. Also, the Islamic banks maintained healthy funding and liquidity positions by supporting the government initiatives during the pandemic.

i. *Cash to Deposit and Investment (CDI)*

The trend for CDI ratio also shows mixed trend from 2019 until 2020. The result is similar to CD ratio. The increasing trend of CDI ratio in Islamic banking subsidiaries and foreign Islamic banking subsidiaries could

be attributed to the attractiveness of the products and good marketing strategy. In addition, from the analysis, it can be concluded that the fund received from customers' deposit and investment is channelled to the financing activities for most of the Islamic banks.

ii. Financing to Deposit and Investment (FDI)

Local full-fledged Islamic banks showed that the fund from the deposit and investment was channelled to financing activities. Despite a decreasing trend in cash to deposit and investment, the local full-fledged have shown a good performance in providing the fund to financing activities. The result indicates that the banks are trying their best to manage their liquidity position and increase profitability. However, for foreign Islamic banking subsidiaries, even though there is an increasing trend of the cash deposit and investment, but the FDI ratio is decreasing. The result portrays that fewer financing activities occurred after the pandemic.

Overall, Islamic banks have continued to operate efficiently to better manage capital and liquidity by maintaining prudent credit risk management, proactively managing any potential stress in asset quality and implementing intensive recovery plan. Also, the Islamic banks have maintained healthy funding and liquidity positions by supporting the government initiatives during the pandemic.

4.3 Solvency Ratios

Table 10 shows the solvency ratios for all four types of Islamic banks during 2019–2021.

Table 10: Summary of the solvency ratios of Malaysian Islamic banks

	Debt to Equity (DE) (%)			Debt to Total Assets (DTA) (%)			Equity Multiplier (EM) (%)		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
Local full-fledged Islamic banks	8.55	8.03	8.01	0.88	0.89	0.88	17.03	16.99	16.28
Foreign full-fledged Islamic banks	7.81	6.29	6.52	0.85	0.83	0.85	7.14	6.07	6.85
Local Islamic banking subsidiaries	13.98	14.76	14.38	0.93	0.93	0.93	50.20	55.10	42.12
Foreign Islamic banking subsidiaries	9.20	8.46	9.40	0.90	0.89	0.90	26.81	24.94	26.97

i. Debt to Equity (DE)

The DE of local full-fledged Islamic banks increased from 8.01% (2019) to 8.03% (2020) during the Covid-19 pandemic and increased further to 8.55% in 2021, indicating that the pandemic had little impact on DE. Although the high solvency ratios might mean that the banks were involved in riskier businesses and signalled risk failure, the increase in debt might also be a good indicator of increased cash deposits and current liabilities, as Islamic banks usually use deposits to offer financing (assets) to customers. For foreign full-fledged Islamic banks, their DE decreased from 6.85% in 2019 to 6.29% in 2020, indicating that the pandemic influenced their DE. However, their DE increased to 7.81% in 2021, indicating that the foreign full-fledged Islamic banks increased their debts. In contrast, local Islamic banking subsidiaries showed a different trend where the DE slightly increased from 14.38% in 2019 to 14.76% in 2020 but decreased to 13.98% in 2021.

ii. Debt to Total Assets (DTA)

DTA was relatively stable for the years 2019–2021 for all types of Islamic banks, as shown in Table 10. The findings indicate that the Covid-19 pandemic had minor impact on the DTA of Islamic banks in Malaysia.

Equity Multiplier Ratio (EM)

The EM of local full-fledged Islamic banks showed an increasing trend from 16.28% in 2019 to 16.99% in 2020 and 17.03% in 2021. The findings indicated that these Islamic banks used high amounts of debt instead of equity to finance their assets. This is expected as Islamic banks function as the financial intermediaries between depositors and financiers. For foreign full-fledged Islamic banks, their EM decreased

from 6.85% in 2019 to 6.07% in 2020 and then increased to 7.14% in 2021. As for local Islamic banking subsidiaries, they showed a relatively flat trend in the solvency ratios except for EM, which increased during the Covid-19 pandemic. The increase in EM showed that local Islamic banking subsidiaries relied more on debt to finance their assets during the Covid-19 pandemic period (55.10% in 2020 and 50.20% in 2021) than before the Covid-19 pandemic period (42.12% in 2019). Meanwhile, the EM of foreign Islamic banking subsidiaries decreased slightly during the Covid-19 pandemic period but increased again in 2021. Hence, EM supports the reason behind less liquidity in foreign Islamic banking subsidiaries, as shown in the discussion on liquidity ratios. The overall results showed that the solvency ratios did not differ substantially between pre- and during the Covid-19 pandemic.

4.4 Efficiency Ratios

Table 11 provides a summary of the efficiency ratios of Malaysian Islamic banks during 2019–2021.

Table 11: Summary of the efficiency ratios of Malaysian Islamic banks

	Asset Utilisation			Operating Efficiency			Financing to Total Assets		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
Local full-fledged Islamic banks	0.03	0.04	0.04	0.38	0.35	0.33	0.38	0.35	0.33
Foreign full-fledged Islamic banks	0.04	0.04	0.05	0.52	0.56	0.40	0.58	0.60	0.62
Local Islamic banking subsidiaries	0.03	0.04	0.05	0.14	0.20	0.16	0.75	0.76	0.75
Foreign Islamic banking subsidiaries	0.02	0.03	0.05	0.50	0.37	0.26	0.64	0.67	0.63

The efficiency ratios of all the Islamic banks were relatively stagnant with very minimum variations over the 3 years, indicating that the Covid-19 pandemic did not have a significant impact on the Islamic banks' performance. However, the operating efficiency of foreign Islamic banking subsidiaries was affected as evidenced by the increase from 0.26 in 2019 to 0.37 in 2020 and 0.50 in 2021.

i. Asset Utilisation Ratio (AU)

The AU of local full-fledged Islamic banks was not affected by the pandemic, as shown by the relatively unchanged AU from 2019 to 2021. Similarly, the AU of foreign full-fledged Islamic banks was also relatively unchanged from 2019 to 2021.

As the asset utilisation ratio decreases marginally from 2019 to 2021, the average ratio illustrates the stability of local IBS efficiency.

ii. Operating Efficiency Ratio (OE)

The OE of local full-fledged Islamic banks, foreign full-fledged Islamic banks, and foreign Islamic banking subsidiaries showed an increasing trend from 2019 to 2021. Meanwhile, the OE of local Islamic banking subsidiaries increased from 0.16 in 2019 to 0.20 in 2020 but decreased to 0.14 in 2021. The findings indicated that the Covid-19 pandemic did not have a big impact on local Islamic banking subsidiaries.

iii. Financing to Total Assets Ratio (FTA)

The FTA of local full-fledged Islamic banks increased from 0.33 in 2019 to 0.35 in 2020 and 0.38 in 2021, indicating that the pandemic affected the FTA of local full-fledged Islamic banks in Malaysia. In the case of local Islamic banking subsidiaries, FTA was relatively flat during the period, indicating that the pandemic had little impact on them.

For foreign full-fledged Islamic banks, FTA decreased from 0.62 in 2019 to 0.60 in 2020, indicating that the pandemic affected the FTA of foreign full-fledged Islamic banks. However, FTA decreased to 0.58 in 2021.

5. Conclusion and Recommendation

This study examined the financial performance of Islamic banks in Malaysia during the Covid-19 pandemic. Financial performance indicators, namely, profitability, liquidity, solvency, and efficiency were used in this study. Also, this study used the Islamic banks' financial statements, which were obtained from their annual reports, for the years 2019–2021. The year 2019 represented the pre-pandemic period of Covid-19, and the years 2020–2021 were considered the Covid-19 pandemic period.

Most of the financial ratios showed positive performance but with a decreasing trend during the Covid-19 pandemic period. It means that the pandemic had some impact on the performance of Islamic banks. One of the foreign Islamic subsidiaries incurred a loss and some of the foreign Islamic subsidiaries reported lower performance during 2020–2021, which affected their ROA during the pandemic. This was because, during that time, the OPR hit the lowest point at 1.75%, which resulted in lower financing income and high net impairment. Besides, some banks had lower performance due to lower income derived from investment of depositors' funds and shareholders' funds.

These findings provide practical implications for regulators and policymakers in the face of unprecedented uncertainty caused by the Covid-19 pandemic. The findings demonstrate that the Covid-19 pandemic affected the financial performance of Islamic banks in Malaysia. Future studies can examine the financial performance of other Islamic financial institutions, such as takaful companies during the Covid-19 pandemic and compare its impacts on Islamic and conventional financial institutions. In addition, financial performance of Islamic banks can have a positive impact on the Malaysian economy by increasing economic activities and job creation that can positively affect the Malaysia's Gross Domestic Product (GDP). High-performing Islamic banks may instil confidence in potential customers, enabling them to entrust their savings and investments to these banks, subsequently increasing the financing activities to meet the demands of the customers.

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Bibliometric Review on Takaful Insurance: Application of R Biblioshiny

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Abstract

This literature review aims to examine the evolution of articles on Islamic insurance published by leading journals. The data are sourced from the Scopus database spanning the years 1985 to 2023. The data are then processed and analyzed using the bibliometric application R to establish the bibliometric map of Takaful development. The results showed that the number of publications on the subject of Islamic insurance has increased. The most popular author is Hassan Mk, and the keywords most used in this search are Takaful, Islamic Insurance, Insurance, Islamic Finance. Trend analysis reveals new challenges faced by Takaful companies, particularly in terms of governance and risk management. Further research on the topic of Islamic insurance, focusing not only in Malaysia but also in other Muslim countries, is therefore needed to foster the development of Islamic insurance companies.

Keywords: Takaful, Islamic insurance, Shariah insurance, bibliometric, R, biblioshiny.

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1. Introduction

Takaful is an Islamic alternative to conventional insurance. The word "Takaful" comes from the Arabic verb "Kafala", which translates as "guarantee" or "responsibility". It is an Islamic insurance model based on the principles of mutual aid and voluntary contributions. This model involves the separation of shareholders' and policyholders' funds, the distribution of underwriting profits to policyholders, Shariah-compliant assets and certification by the Shariah council. In a second definition, Takaful is defined as a system of Islamic financial protection involving a common guaranteed scheme against the pure risk of loss or damage to the life or property of the insured due to unforeseen circumstances by offering compensation. It is a scheme in which a group of "members" undertake the responsibility to help each other in the event of the occurrence of a risk specified in the insurance contract, through the payment of a periodic sum known as a "contribution". The "contributions" are used to create the "Takaful fund", to compensate "members" in the event of a risk (Fintiz 2023).

Worldwide, Takaful research has grown significantly, contributing to the creation of numerous Takaful companies. This suggests that understanding of the Takaful concept has improved among the general public, with many people needing insurance to protect their lives (Purnamasari & Alam, 2020). Given the enormous potential of Takaful, experts continue to encourage its development, particularly in Muslim-majority countries (Kusmayadi et al., 2021).

There is a growing demand for Shariah-compliant insurance, not only in Muslim-majority countries, but also in several European countries (Al-Amri & Hossain, 2017). This phenomenon highlights the importance of bibliometric studies on Takaful to obtain a comprehensive picture of the development and direction of the Takaful industry in the future. Bibliometric analysis of Takaful publications should contribute to a better understanding of the Takaful industry within the global community.

This research aims to perform a bibliometric analysis by mapping Takaful-related research as indexed in Scopus. Among the analyses undertaken as part of this study are the evolution of the number of Takaful research

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papers published from 1985 to October 2023, productivity in terms of the number of Takaful research publications by author, country and source, the most cited documents, and the creation of a network and overlay visualization of Takaful studies based on author keywords.

This study addresses the following research questions:

i. Q1: What is the current state of Takaful research, and what are its trends?
ii. Q2: Who are the main contributors to Takaful studies in terms of authors, countries of origin and sources?
iii. Q3: What are the most frequently cited documents?
iv. Q4: What are the key words and themes in Takaful research?

To answer our research questions and achieve the objective of this article, our work will be divided into three parts. The first part will be dedicated to presenting the methodology used to conduct our bibliometric study on the subject of Takaful insurance, as well as the process for selecting the articles analysed.

The second part of our article will present the results of our bibliometric study. The aim of this section is to map articles concerning Islamic insurance, highlighting the authors, sources, most relevant keywords, and countries that have played a leading role in the publication of articles on Islamic insurance. Finally, the last section will be devoted to a discussion of the results obtained from our investigation.

2. Methodology

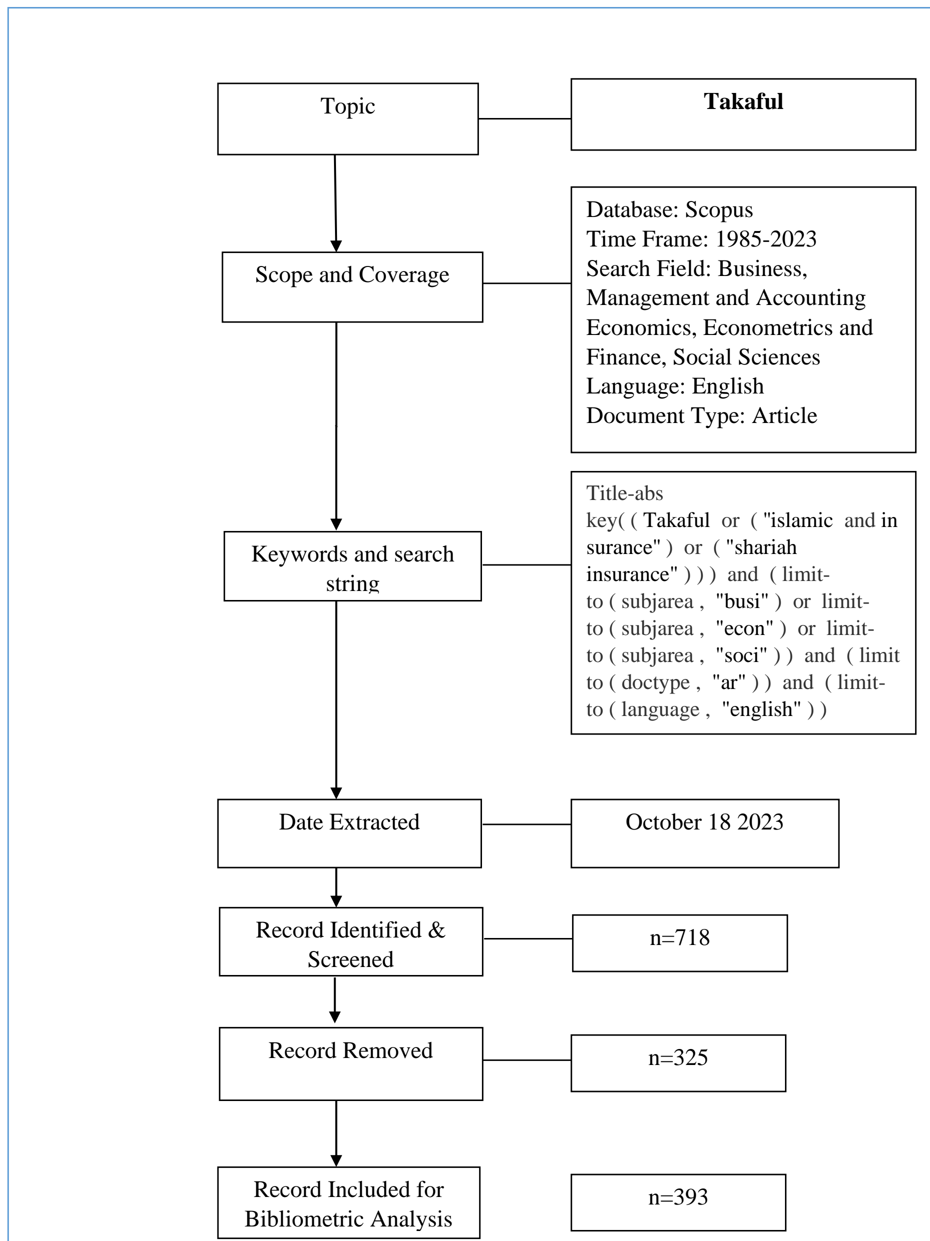
Bibliometric mapping is a research topic in the field of bibliometrics (Börner et al., 2003). Two aspects of bibliometrics can be distinguished: the construction of the bibliometric map and the graphical representation of the map. In the bibliometric literature, the construction of bibliometric maps is the main concern. Past research focused on the effect of differences on size similarity (Ahlgren et al., 2003) which has been tested by various mapping techniques (Boyack et al., 2005). However, the graphical representation of bibliometrics has received less attention. Although some researchers are keen on seriously investigating the problems associated with graphical representation (Chen, 2003), most articles published in the bibliometric literature rely on simple graphical representations provided by computer programmes. This current study uses the publication data of articles from various scientific journals on the topic of Islamic insurance "Takaful" research.

Our study addresses this gap by proposing innovative graphical representation techniques tailored for bibliometrics data. Through the development of interactive visualization tools, integration of multiple data sources, and evaluation of effectiveness, this research aims to fill this gap by advancing the state-of-the-art in graphical representations in bibliometrics. Undeniably, this study has the potential to advance graphical representation techniques in bibliometrics by exploring innovative visualization methods, tailoring representations to bibliometric data, developing interactive tools, integrating multiple data sources, and evaluating effectiveness for various stakeholders. Through these efforts, our study aims to enhance our understanding of scholarly communication networks.

This study uses R biblioshiny software to process data from scientific journal articles with the Islamic insurance term "Takaful" in the scopus database, because it offers an interactive and personalized experience for bibliometric analysis. Its seamless integration with R guarantees the power and flexibility of the statistical programming language. Thanks to its user-friendly interface and automatically generated scripts, it facilitates the reproducibility of analyses. Drawing on the active R community, it also offers additional extensibility and support. All in all, R Biblioshiny represents an attractive choice for efficient and flexible bibliometric analyses.

Our data was collected from Scopus database because it is considered to be the largest abstract indexing database, ensuring that important articles are not overlooked or excluded from the study (Abbas et al., 2022). This database also covers a wide range of topics and offers advanced search options to help researchers develop search strings with precise results, particularly in general fields. Indeed, our study focused on examining the knowledge structure of English journal articles between 1985 and 2020 regarding Takaful insurance, utilising the keywords 'Takaful,' 'Islamic insurance,' and 'Shariah insurance.' The analysis initially identified 718 relevant documents among the published papers. However, due to certain limitations, this number was reduced. The decision was made to specifically select articles in English based on the author's linguistic capabilities and the prevalence of English in the Scopus database. Additionally, research areas were narrowed down to Business, Management and Accounting, Economics, Econometrics and Finance, Social Sciences to yield more pertinent results related to the subject matter. Ultimately, the final number of selected articles amounted to 393, with 325 documents removed during the process, as depicted in Figure 1 below.

Figure 1: Research methodology

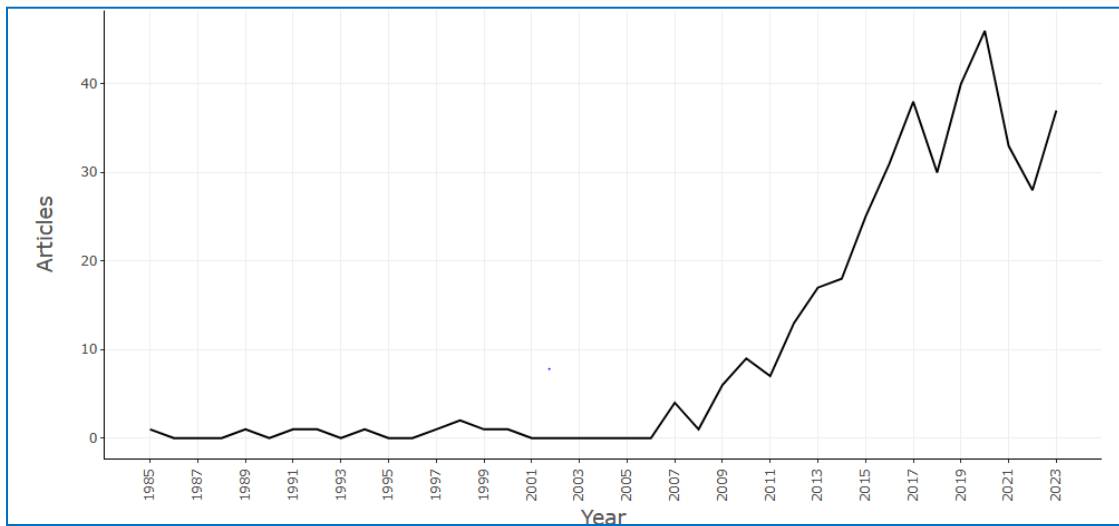


3. Analysis of the Results

3.1 Annual Scientific Production

There has been a marked increase in the number of articles on Takaful insurance, as evidenced by the number published articles every year. However, it is important to note that the first article published in this field dates back to 1985. Figure 2 illustrates the evolution of journal publications over the years. The figure also shows that, from 1989 to 2023, the highest number of publications on Scopus was reached in 2020, with a total of 46 research articles published in that year.

Figure 2 : Annual scientific production



Source: Author

In addition, the research is also based on the average number of citations in articles related to Islamic insurance in the fields of economic research and Islamic finance, both on average per year and per article. This research was conducted over a 26-year period, from 1985 to 2023. Table 1 below shows that the years 2019 and 2020 recorded the highest number of publications on the topic of Takaful in Islamic economic and financial research, with 40 and 46 articles published respectively. However, it is important to note that this does not exclude the possibility of an increase in the number of studies in 2023 compared to previous years, such as 2021 and 2022.

Based on the average total citations for each article, the highest peak was reached in 2007, with an average of 34.75 citations per article. In terms of average annual citations, the most cited studies were carried out in 2020, with an average of 2.15 citations per year, closely followed by 2007, with an average of 2.04 citations per year. These data indicate that articles published in 2007 and 2020 were more frequently cited than those published in any other years in the field of Islamic "Takaful" insurance.

Table 1: Total citations

Years	N	Citation by article	Citation per year	Citable Years
1985	1	1	0,03	39
1989	1	6	0,17	35
1991	1	8	0,24	33
1992	1	5	0,16	32
1994	1	9	0,30	30
1997	1	3	0,11	27
1998	2	9,5	0,37	26
1999	1	2	0,08	25
2000	1	2	0,08	24
2007	4	34,75	2,04	17
2008	1	4	0,25	16
2009	6	8,5	0,57	15
2010	9	24,56	1,75	14

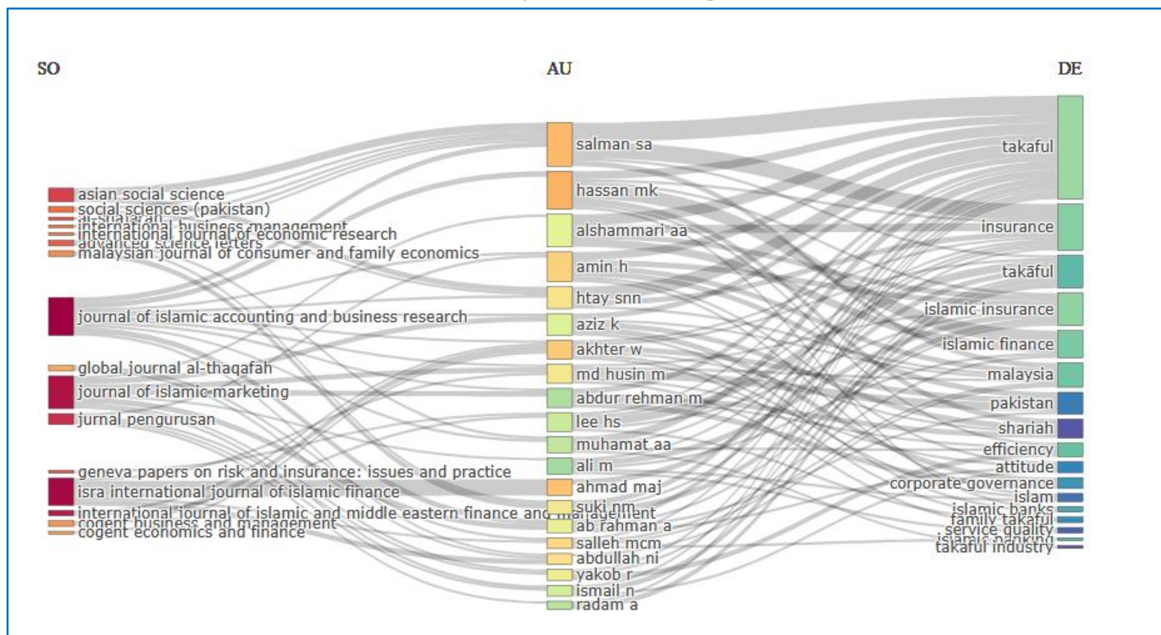
2011	7	21,57	1,66	13
2012	13	10,69	0,89	12
2013	17	10,88	0,99	11
2014	18	7,94	0,79	10
2015	25	12,36	1,37	9
2016	31	11,65	1,46	8
2017	38	9,05	1,29	7
2018	30	6,87	1,15	6
2019	40	8,03	1,61	5
2020	46	8,61	2,15	4
2021	33	4,18	1,39	3
2022	28	1,61	0,80	2
2023	37	0,59	0,59	1

Source: Author

3.2 *Three-fields Plot*

Figure 3 below is a diagram composed of three elements: the name of the publication journal, a list of authors' names and the themes/subjects used. The three elements are linked by a grey plot. Starting with the journal's name, each journal indicates the author who often contributes to its publication. Each author indicates the topic he or she often uses for research on Islamic insurance within the framework of Islamic economic and financial research. The size of the rectangle illustrates the large number of publications associated with each of these items.

Figure 3: Three-field plot



Source: Author

The figure above shows that in the first element, there are 16 indexed journals publishing articles on the theme of "Takaful" Islamic insurance. The journal that publishes the largest number of articles on the topic of Islamic insurance in Islamic economic and financial research is "Journal of Islamic Accounting and Business

Research", which is represented by a red rectangle linked to several authors, namely Salman Sa, Hassan Mk, Ab Rahman A, Amin H, Abdur Rehman M, Muhamat AA.

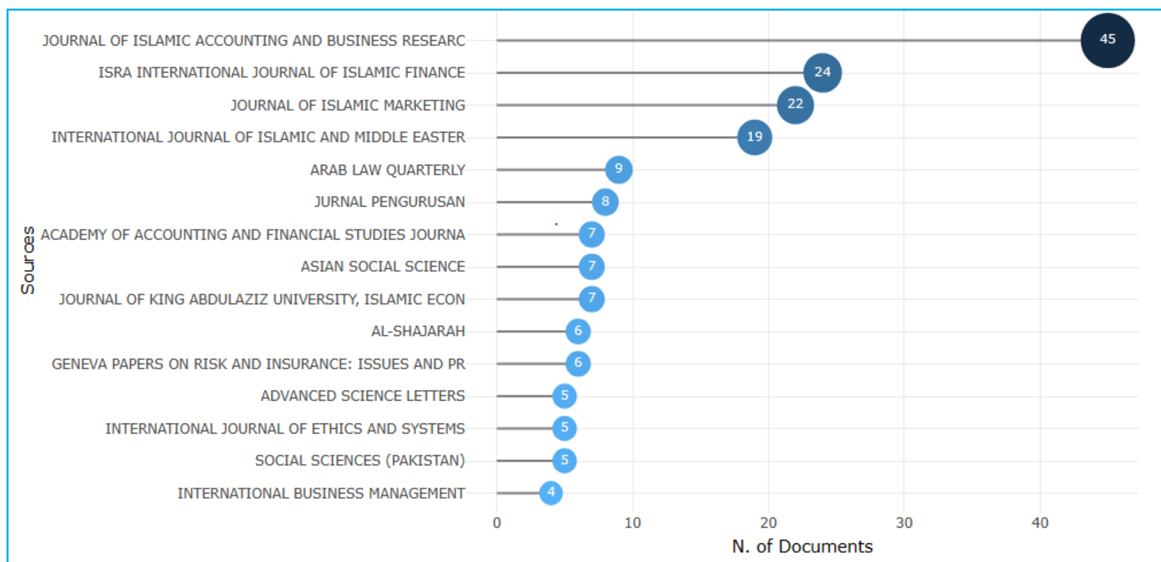
Next, the second element in the middle of the figure, showing the author's name, where several authors are linked to previous journals. In addition, the author will also be associated with often-used thematic keywords on the right of the figure. In this study, 20 top researchers were registered in this plot. The size of the rectangle indicates the respective quantity of research publications by each author. The authors who publish most often on Islamic Takaful themes in Islamic economic and financial research are Salman Sa, Hassan Mk, Alshammari AA, Amin A, Hty Snn, represented by orange and yellow rectangles.

Finally, the third element describes the research topic on the right of the figure. Each topic is linked to authors who write extensively on related subjects. The results show that 20 keyword search topics were listed. Among all the topics that appeared, the words "Takaful" and "insurance" are often marked by light green rectangles. This shows that "Takaful" and "insurance" are closely linked to research on the topic of Islamic insurance in Islamic economic and financial research.

3.3 Most Relevant Sources

Figure 4 below shows the number of research papers published by each journal according to the degree of relevance of the topic of Islamic insurance in Islamic economic and financial research. The data includes a list of the names of the main journals and the range of the number of papers published, presented in a bar graph. The darker the blue color, the greater the quantity and relevance of the research theme.

Figure 4: Most relevant source



Source: Author

"Journal of Islamic Accounting and Business Research" stands out in first place with the highest number of papers published, as shown in the dark blue bar chart, totaling 45 papers, thus outstripping all other journals. The third and fourth positions go to "Isra International Journal of Islamic Finance" and "Journal of Islamic Marketing" respectively, with 24 and 22 papers published. In contrast, the journals in last position are represented by light blue bars, suggesting that in terms of quantity and relevance, the topic of Islamic insurance seems less present. Furthermore, it is important to note that a total of 15 journals are listed among the most relevant data sources in this study.

3.4 Most Relevant Affiliations

Most Relevant Affiliations of articles published on the topic of Takaful" refers to the primary institutions, organizations, or affiliations associated with scholarly articles that are considered particularly pertinent or influential within the field of Takaful.

Table 2: Most relevant affiliations

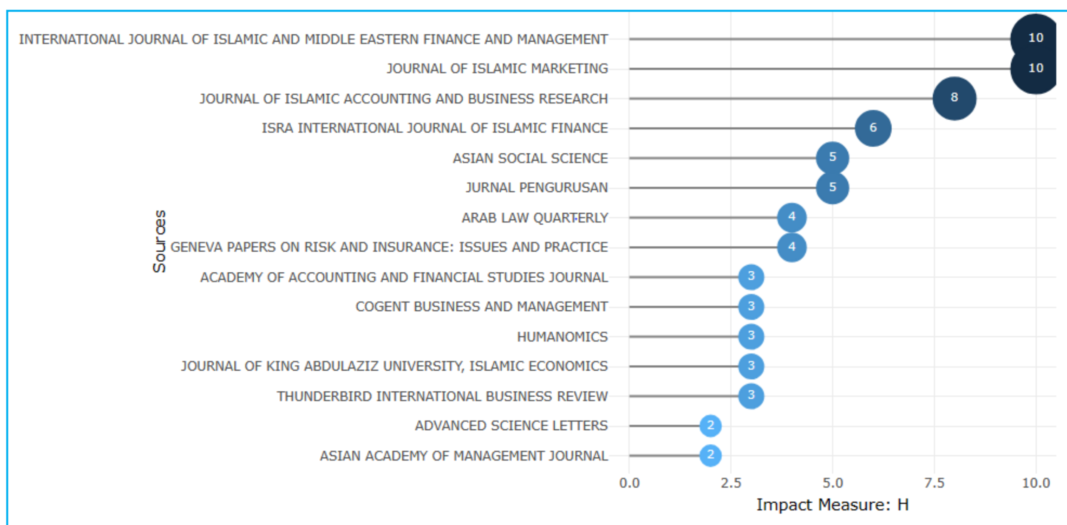
Affiliation	Articles
International Islamic University Malaysia	41
University Of Malaya	28
Universiti Sultan Zainal Abidin	23
Universiti Utara Malaysia	23
Universiti Kebangsaan Malaysia	21
Universiti Teknologi Mara	17
Universiti Sains Islam Malaysia	14
International Islamic University	12
Universiti Putra Malaysia	12
Comsats Institute Of Information Technology	11
Iqra University	11
International Shari'ah Research Academy For Islamic Finance	7
Istanbul Sabahattin Zaim University	7
Universitas Airlangga	7
University Of New Orleans	7

Table 2 gives an overview of the distribution of institutional publications in takaful studies. The International Islamic University Malaysia ranks first with 41 publications. Second and third are University of Malaya, with 28 publications, and Universiti Sultan Zainal Abidin, with 23 publications respectively. Not surprisingly, the International Islamic University of Malaysia dominates Takaful-related publications. This is because the International Islamic University Malaysia is the first campus in the world to integrate the Islamic sciences curriculum with the existing general sciences (Amin et al., 2013). As a result, researchers at the International Islamic University Malaysia have initiated numerous developments in takaful-related sciences.

3.5 Sources impact

Journal calculations are not based solely on the quantity produced or its relevance. However, this research is also conducted on the basis of the impact of each journal that publishes an article on the topic of Islamic insurance by calculating the journal's h-index, represented in a bar chart. The diagram below shows the journal's impact in blue. The darker the blue, the greater the journal's impact.

Figure 5: Sources impact

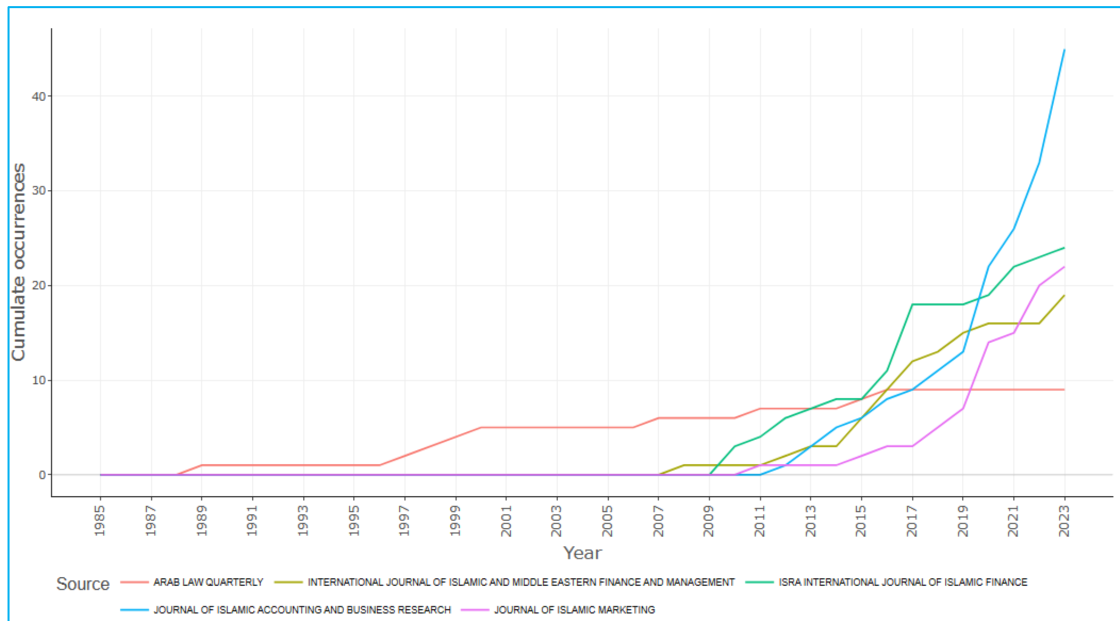


Source: Author

The data presented indicate that the "International Journal of Islamic Eastern Finance and Management" and the "Journal of Islamic Marketing" occupy first place with an h-Index of 10, highlighted by the dark blue color. In comparison, the third and fourth positions go to the "Journal of Islamic Accounting and Business Research" and the "Isra International Journal of Islamic Finance", with h-Index values of 8 and 6 respectively.
For journals with an h-index of 2 and 3, there are highlighted with a bright blue color, suggesting that they have a less significant impact in terms of citations and influence compared to journals with a higher index.

3.6 Sources Growth
Our study also examines the evolution of journals that are a source of research on Islamic insurance in the fields of economic research and Islamic finance. The curve below shows the annual occurrence of each journal from 1985 to 2023. The curve shows that several journals began to grow between 2007 and 2011, and this upward trend continues to the present day. These include the Journal of Islamic Accounting and Business Research and the Isra International Journal of Islamic Finance. However, it should be noted that the "Journal Arab Law Quarterly" did not experience any significant evolution over the same period.

Figure 6: Growth of sources



Source: Author

3.7 Authors Impact
Authors who have published their articles can also be sorted according to the impact they have had, based on the h-index. The h-index values range from 0 to 7.
Figure 7 below clearly shows that author Hassan Mk has the highest h-index, which is 7, marked in dark blue in the bar chart, testifying to his maximum impact in his publications. Next, there are two other authors with an h-index of 5, reflecting considerable impact, and a further five authors with an h-index of 4, also indicating a relatively good level of impact. Finally, the last seven authors have an h-Index of 3, which means they have a lower level of impact compared to authors with higher indices.

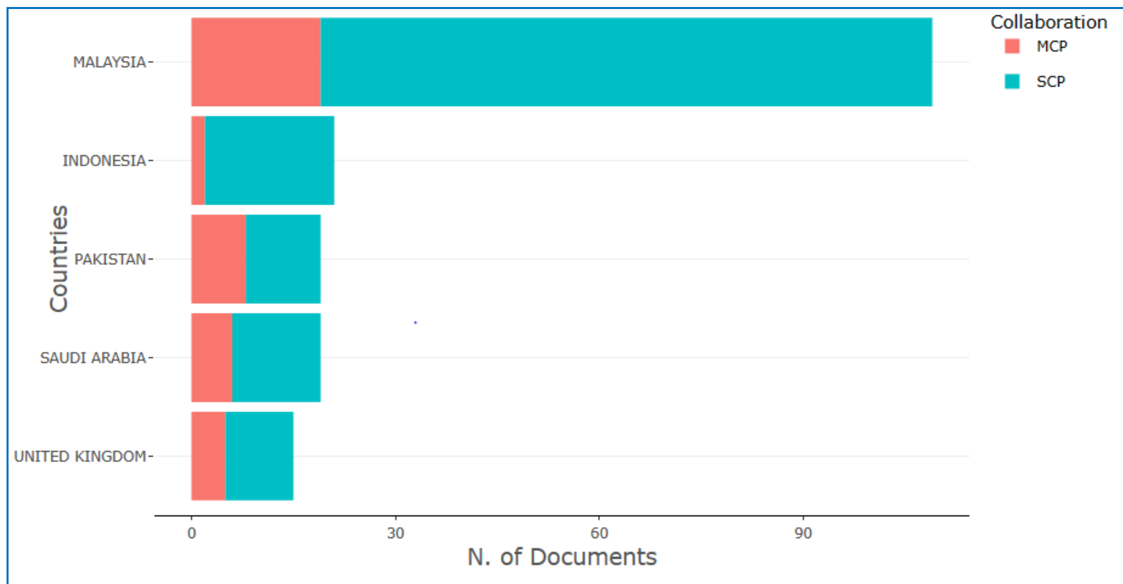
Figure 7: Author impact

Source: Author

3.8 Corresponding Author's Country

The author's countries of correspondence in each article are illustrated in Figure 8, calculating the total form of collaboration between SCP (single country collaboration) or collaboration between a single country, and not MCP (multiple country collaboration) or collaboration between several countries. There are 5 main countries included in this data, and the range of paper quantity is from 0 to over 90 papers published on the topic of Takaful insurance.

Figure 8: Country of the corresponding author



Source: Author

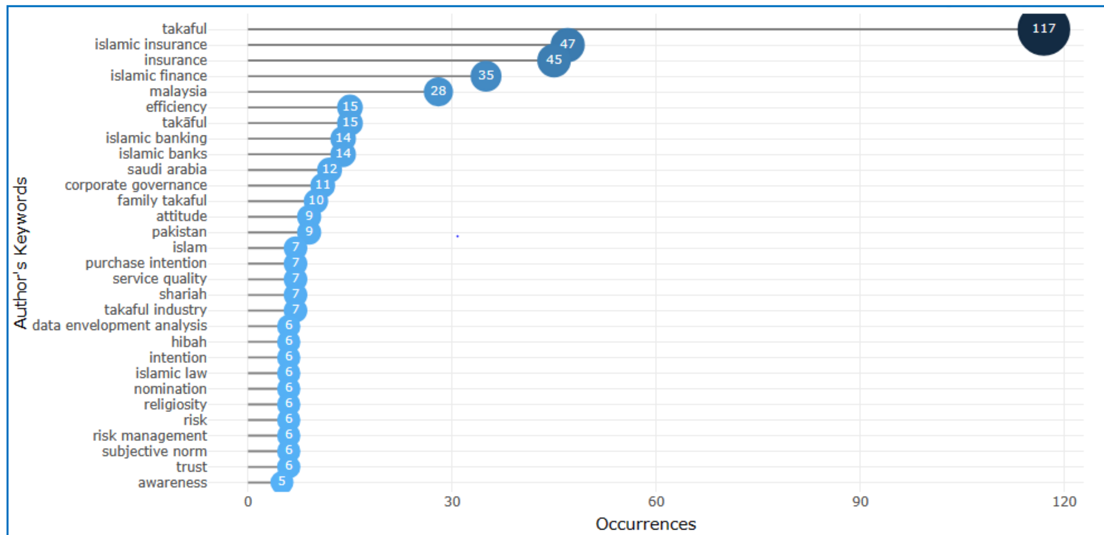
The results show that Malaysia ranks first in terms of the number of authors who matches, with over 90 articles published. Indonesia follows in second place, with fewer than 30 published articles. Third and fourth place go

to Pakistan and Saudi Arabia respectively, with a total of 19 articles. Finally, the United Kingdom comes in fifth, with 15 articles published.
These data indicate that most articles on the subject of Islamic insurance are concentrated in Malaysia, where the Islamic financial industry is far more developed than in other countries.

3.9 Most Relevant Words

Our study also counted the relevant words used in the collection of documents that were the subject of the study, where there were several words with multiple occurrences ranging from 0 to 120 times. The first 30 words in the list, marked in blue in the diagram, show the comparison of the number of occurrences of each word used and its relevance to the theme of Islamic "Takaful" insurance. In fact, the most relevant words are shown in the dark blue diagrams.

Figure 9: Most relevant words



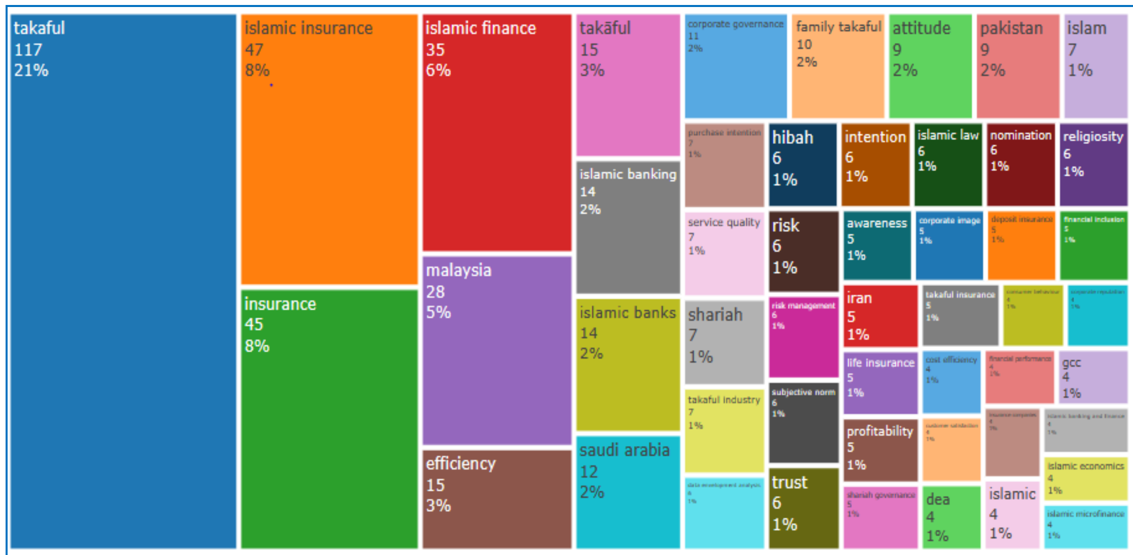
Source: Author

The word with the highest number of occurrences and most related to the research theme is the word "Takaful", used 117 times. In addition, the word "Islamic insurance" comes second with an occurrence of 47 times. The third and fourth most recurrent terms are "insurance" and "Islamic finance", with 45 and 35 occurrences respectively. This indicates that the theme of Takaful research is strongly associated with Islamic terms, which are frequently used in studies on the subject.

3.10 Word Tree Map

The tree map highlights the combinations of 50 available keywords used by the authors. Figure 10 enables us to identify them and use the word cloud to indicate what they represent: "Takaful", "Islamic insurance", "insurance", "Islamic finance" and "Malaysia".

Figure 10: The Tree map



Source: Author

3.11 Word Cloud

Word Cloud it is a visual representation of text data in which words appear as a cloud. Words are generally displayed in different sizes, depending on how often they appear in the text. The most frequent words are often displayed in larger characters, making it possible to quickly visualize the key terms in a set of textual data.

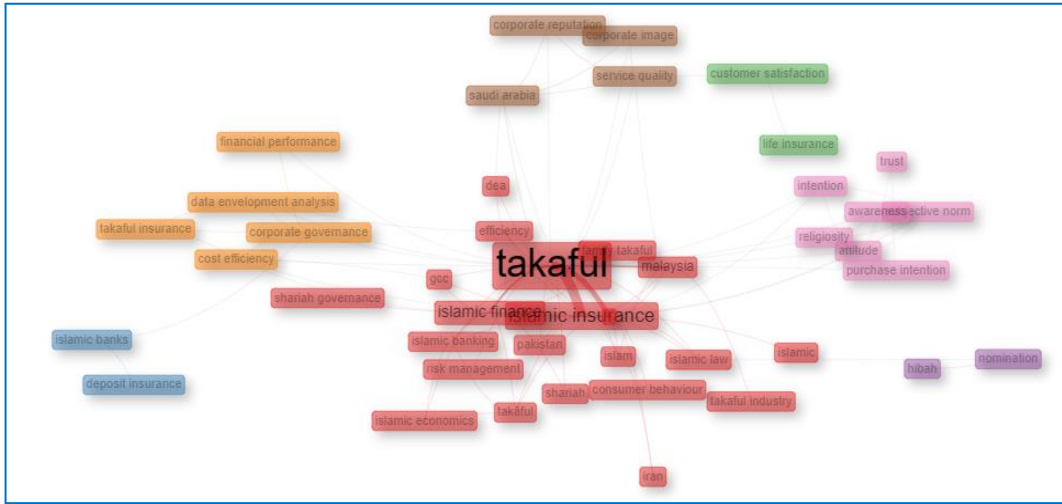
Figure 11: Word Cloud

Source: Author

3.12 Co-occurrence

A "co-occurrence network" displays an overview of words, varying in size according to the number of words appearing. In terms of placement, word clouds tend to be random, but dominant words are placed in the middle to be more visible thanks to their large size. While the word tree map displays words that often appear in boxes similar to the map's regions, the greater the number of words appearing, the larger the square area. Grouping displays words in coloured clusters, taking into account the relationship between one word and another.

Figure 12: Co-occurrence



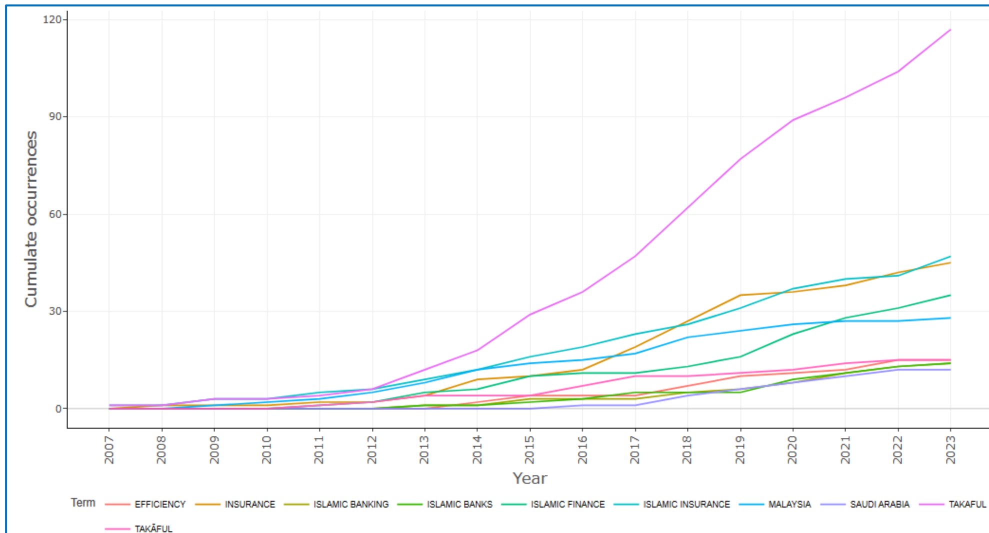
Source: Author

The above groupings are descriptions of words that often appear in data collections of research papers on the topic of Islamic insurance "Takaful" in Islamic economic and financial research in various forms. However, the results are the same, namely that the words that often appear in the first order "Takaful". The terms "Islamic insurance" and "Islamic finance" occupy second and third place respectively in terms of frequency.

3.13 Words Growth

In this study, frequently used words are also translated into an annual evolution curve, indicating their average occurrence rate each year in the collection of data on the topic of Takaful. Figure 13 below shows that most words that often appears and have been used since 2011 tend to increase. The highest increase was achieved by the word "Takaful", with the value of annual occurrence increasing every year.

Figure 13: Words Growth

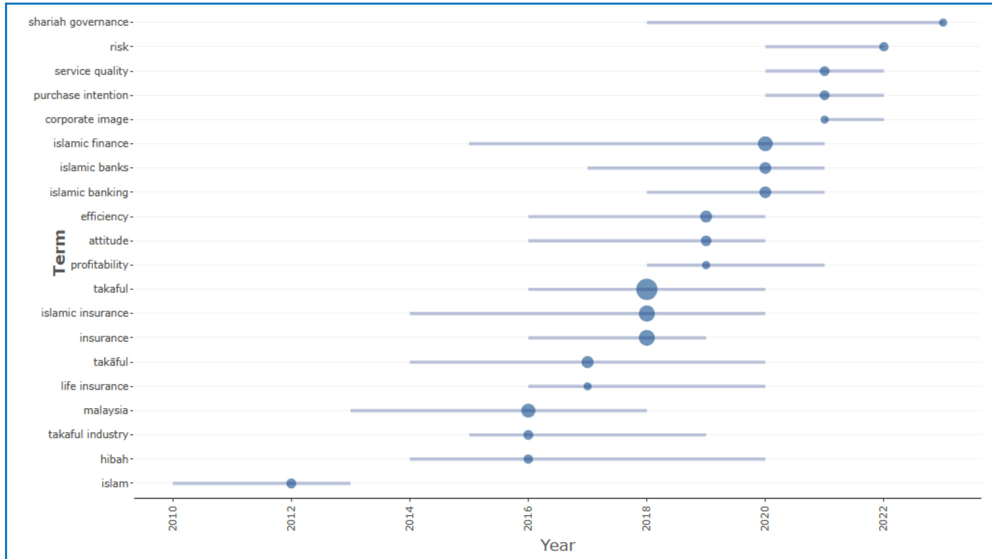


Source: Author

3.14 Trend Topics

Theme trends are also part of this research. Figure 14 below gives an overview of theme trends from one year to the next, with a breakdown by year. The emergence of topics is also adjusted to the frequency of the number of words appearing in the search on the topic of Takaful insurance in Islamic economic and financial research.

Figure 14: Trend topics



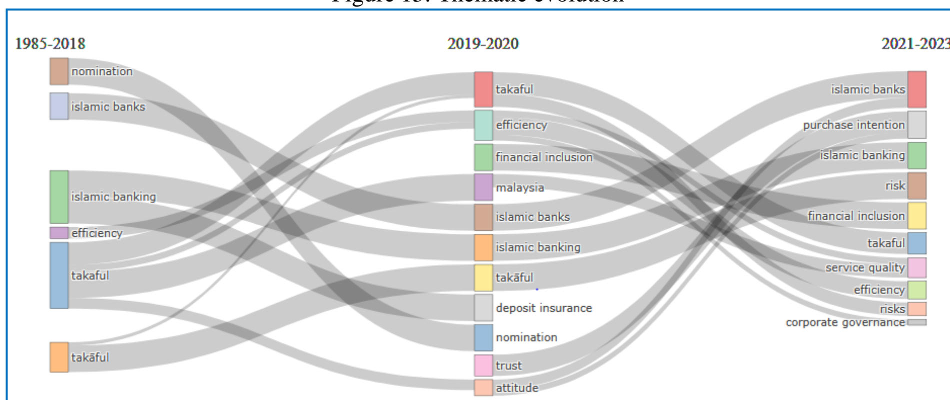
Source: Author

Figure 14 illustrates that the development of the topic has begun to experience a significant increase since 2016. According to the data described above, the topics that were frequently discussed between 2016 and 2018 are mainly related to Takaful insurance. Starting in 2019, new words began to appear, particularly those related to the adoption of Takaful insurance, such as "purchase intention," "attitude," as well as terms related to Takaful services such as "service quality" and "brand image." In addition, from 2022 onwards, some particularly interesting new words have appeared, including "risk" and "governance".

3.15 Thematic Evolution

The themes used in the articles being researched continue to change, particularly between recently published articles and those published long ago. The evolution of theme is illustrated in Figure 15 below. Although the theme of this research is Islamic insurance "Takaful”.

Figure 15: Thematic evolution

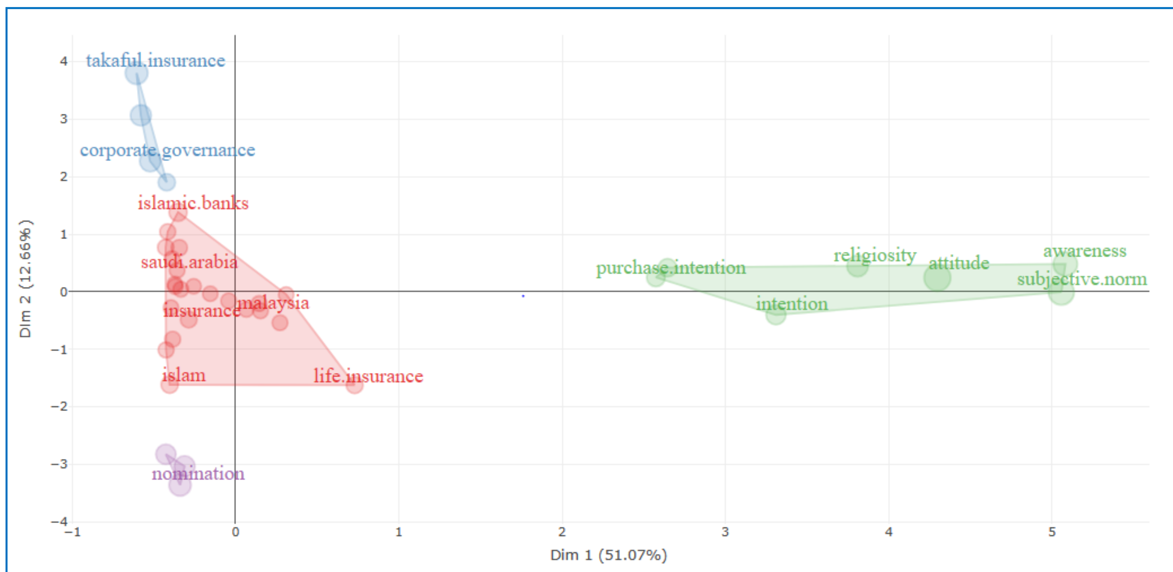


Source: Author

The data reveal that several sub-themes are frequently addressed. The left-hand side highlights several themes that were widely explored from 1985 to 2018. There are six themes listed, each displaying a different size according to how frequently they are used. The "Takaful" theme occupies first place, followed by the "Islamic Banking" theme.
The second part of the central section highlights several themes that were frequently discussed between 2019 and 2020. Some of these themes have evolved from previously used themes and are related to their previous content. In addition, new themes have appeared in this section, including "financial inclusion," "efficiency," "attitude," "trust," and "deposit insurance."
The third section on the right reveals the themes most recently used between 2021 and 2023. Three new themes have appeared, namely "purchase intention," "service quality," "risk," and "governance".

3.16 Conceptual Structure Map
Our study also includes the creation of a conceptual structure map or contextual structure map for each word frequently used in Islamic insurance research papers. These maps are generated by dividing the words according to the relationships between them, established through zone mapping. Each word is positioned according to Dimension 1 and Dimension 2 values to create a mapping of words with similar values. This allows us to visualize relationships between words that have conceptual or contextual similarities.

Figure 16: Conceptual structure map - Method: MCA

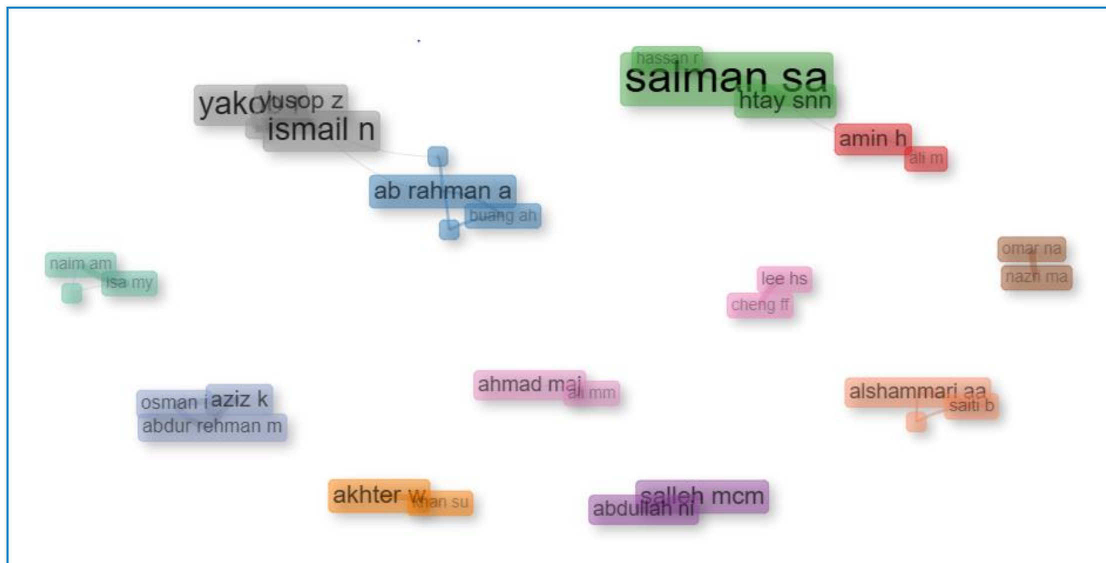


Source: Author

According to the figure above, there are three parts of the divided area, namely the red, blue and green zones, each of which contains words that are related to each other. The red and green zones are particularly rich in interconnected words, suggesting that many search documents establish relationships between the terms included in these two zones.

3.17 Collaboration Network
Figure 17 indicates a collaborative network of authors of articles on the subject of "Takaful" Islamic insurance. The figure below shows several authors' names, linked to each other. This relationship between authors is being indicated by groups of coloured equations and lines between one name and another. The size of each square also indicates the number of articles published on that theme.

Figure 17: Collaboration network



Source: Author

The data above highlight the collaboration between the 12 groups of authors, but there are three particularly important groups in this study. The first group, represented in green, shows the collaboration between Salman Sa, Htay Snn and Hassan R. The second group, in grey, highlights the collaboration between Yakob R, Ismail N, Yusop Z and Radam A. Finally, the third group, in blue, highlights the collaboration between Ab rahma A, Buang Ah, Abdutalib M and Md hussin M.

4. Discussion

The research results indicate a bibliometric analysis of journal articles with a numerical identifier, carried out with R Biblioshiny on the topic of Islamic insurance indexed in the Scopus database. Research related to Islamic insurance has become an important topic of interest due to the need to develop this industry. This need has prompted researchers to produce various scientific studies on Takaful. In recent years, there has been growing interest in the expansion of Takaful literature. This literature covers various aspects, including the principles of Takaful insurance, operating mechanisms, adoption factors, governance and risk management within Takaful companies.

This article on the subject of Islamic insurance bears witness to the continuing development of the Islamic insurance industry. Researchers certainly have plenty of ideas to contribute to the advancement of the Islamic insurance industry through research, so the number of articles continues to grow year by year.

Based on the above results, it appears that research on Islamic insurance has been widely published in various journals. The results of the three-field graph show the three data points, namely journals, authors and subjects, make it possible to identify the relationship between the three, the subjects covered by the authors and the journals in which the authors publish their research. These data also describe the most frequently published journals, the most productive authors, and the most discussed topics. The "Journal of Islamic Accounting and Business Research" is the most productive journal on Islamic insurance, with 45 papers published. However, the "International Journal of Islamic Eastern Finance and Management" and the "Journal of Islamic Marketing", have a high impact with an h-index of 10. In terms of the development of each journal, the "Journal of Islamic Accounting and Business Research" is in the lead. This journal can be a reference for researchers looking for sources of research on this topic.

According to the study, the authors who have published articles on Islamic insurance and have had a significant influence in this field, it was found that author Hassan Mk has the highest h-index of 7, indicating the maximum impact of his publications. Similarly, the corresponding countries of the authors in each article show that Malaysia occupies the top position in terms of the number of authors matches, with over 90 published

articles.

The most relevant terms used in the articles analyzed on the topic of Islamic insurance, and the most appropriate to use, are mainly "Takaful," followed by "Islamic Insurance," "Insurance," and "Islamic Finance," among others. This indicates that the topic of Takaful research is strongly associated with Islamic terms and Islamic finance, which are frequently used in studies on this subject.

It is interesting to note that several countries and regions of the world, also appeared in the tree map, word cloud and word cluster, such as, Malaysia, Pakistan, Saudi Arabia and Iran. This demonstrates that these countries are attracting strong interest as subjects of study in Islamic insurance research, while the thematic evolution offers an overview of the position of each subject, as well as a trajectory of the terms used in the various articles published on Islamic Takaful insurance.

5. Conclusions

This study describes the evolution of articles on Islamic insurance in the Scopus database, covering the period from 1985 to 2023. The bibliometric analysis, carried out using R Biblioshiny software, is presented through tables and graphs. A total of 393 articles were collected and analyzed. The results showed that research on the subject of Islamic insurance is constantly expanding. The most prolific author on this theme was Hassan Mk during the research period. In addition, the keywords used in this search include, Takaful", "Islamic Insurance", "Insurance" "Islamic Finance". Trend analysis reveals new challenges faced by Takaful companies, particularly with regard to their governance and risk management.

In line with the introduction to this study, our analysis is based on data provided by Scopus, reputed to be the most authentic source of data. In addition, our study has generated theoretical implications suggesting that Islamic insurance has a considerable history and offers vast opportunities for development in terms of its products and the aspects that distinguish them from conventional insurance. Similarly, this study offers guidance for future Takaful research. For stakeholders in the sector, this study can provide an overview and roadmap for the development of Takaful research worldwide.

In addition, it is important to pay greater attention to and conduct systematic studies on the themes of Takaful adoption, risk management and Takaful company governance. At the same time, it should be noted that there is a lack of in-depth studies examining the importance of using digital technology to improve Islamic insurance institutions, so there is still plenty of opportunity for researchers to continue developing Islamic insurance research to foster the development of Islamic insurance companies.

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Murabaha & Tawarruq: An Examination of Issues and Challenges from an Accounting Perspective

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Abstract

This study investigates the critical issues surrounding the accounting treatment of Murabaha and Tawarruq within the scope of Islamic finance. It aims to propose recommendations for augmenting the Islamic financial accounting standards, thereby aligning them with Shariah principles and ensuring their practicality and relevance in financial reporting. Employing a qualitative approach, the study conducted an in-depth comparative analysis of the International Financial Reporting Standards (IFRS) and the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI). Through an extensive review of relevant literature and accounting standards, the article presents a comprehensive assessment of contemporary practises in contrast to Shariah-prescribed accounting principles. Notably, the accounting treatments of Murabaha and Tawarruq under IFRS and AAOIFI exhibit significant variations, necessitating a critical evaluation of conventional accounting standards' applicability to Islamic financial modes. This concern is further magnified by the application of uniform accounting principles to two distinct financial modes operating on disparate models. By identifying the limitations in the accounting for Murabaha and Tawarruq, this study contributes to the development and improvement of Islamic financial standards. The findings offer valuable insights into the deficiencies within current accounting practises and pave the way for the implementation of enhanced Islamic financial accounting standards that adhere more closely to Shariah requirements. Consequently, the proposed improvements seek to enhance the practicality and relevance of financial reporting while upholding the principles of Shariah in the accounting treatment of these integral modes of Islamic finance.

Keywords: Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), accounting, International Financial Reporting Standards (IFRS), Murabaha, Tawarruq

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1. Introduction

Murabaha and Tawarruq stand as essential pillars in Islamic finance, embodying ethical alternatives to conventional interest-based transactions while adhering to Shariah principles. Murabaha fosters transparency by disclosing both the cost and profit margin upfront, facilitating trade and commerce within Islamic parameters. Meanwhile, Tawarruq enables liquidity management and short-term financing needs without resorting to interest-bearing loans, providing individuals and businesses access to cash while remaining Shariah-compliant. Together, these practices promote financial inclusion and contribute to the development of a robust Islamic finance industry, underpinning economic growth and stability within Muslim-majority countries and beyond.

Accounting plays a crucial role in the business world, enabling the identification, measurement, and communication of economic information for informed decision-making. As the language of business, accounting allows stakeholders to assess product success, the financial reality of investments, and overall business performance. Islamic financial institutions (IFI), operating on Shariah principles that emphasise the

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recording of transactions, face unique challenges in adopting conventional International Financial Reporting Standards (IFRS) for financial reporting, particularly concerning the instruments of Murabaha and Tawarruq (Ahmed et al., 2019).

While globally accepted accounting standards such as IFRS promote transparency, accountability, and market efficiency, IFI encounters difficulties in aligning with these standards due to Shariah compliance priorities and the distinction of form over substance. The concept of a 'substance gap' further highlights the need for accounting standards that cater specifically to IFI's operations and transactions. To address these challenges, the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI) has developed Financial Accounting Standards (FAS), tailored to suit the reporting requirements of IFI (Sarea & Hanefah, 2013).

This study examines the difficulties IFIs face in adopting IFRS and explores the reasons behind the development of FAS. Additionally, it analyses other accounting standards, such as Generally Accepted Accounting Principles (GAAP) and Malaysian Financial Reporting Standards (MFRS), while highlighting the limited acceptability of standards beyond IFRS and FAS. The study discusses the differences between IFRS and FAS in terms of substance over form, form over substance, and the time value of money, which result in disparities in reporting objectives, information types, measurement, valuation, recording, and communication.

With the growth of Islamic finance, accounting practices tailored to Shariah principles have gained prominence, necessitating a closer examination of the challenges and issues that emerge within this context. As the language of business, accounting plays a pivotal role in facilitating economic information dissemination, informed decision-making, and stakeholder assessment of business performance. While conventional International Financial Reporting Standards (IFRS) have been globally accepted as a framework that promotes transparency, accountability, and market efficiency, their alignment with the operations of Islamic financial institutions (IFI) is not always seamless. IFI's adherence to Shariah principles, emphasizing the ethical and moral aspects of financial transactions, introduces a distinctive layer of complexity in the adoption of conventional accounting standards. This complexity is particularly evident in the case of two key instruments: Murabaha and Tawarruq. As Islamic finance strives to bridge the gap between financial modernity and Shariah compliance, it encounters a multifaceted challenge in adapting these instruments to the conventions of IFRS. This paper aims to examine the nuances of Murabaha and Tawarruq from an accounting perspective, shedding light on the intricacies, dilemmas, and prospects associated with their treatment within the framework of international accounting standards.

The study will fill the gap by examining the following; firstly, it seeks to explore the specific accounting practices and challenges associated with Murabaha and Tawarruq transactions, which are essential components of Islamic finance but often lack comprehensive accounting standards and guidelines. Secondly, the study intends to investigate the implementation of these Islamic financial instruments within the broader framework of international accounting standards, identifying any discrepancies or areas of divergence. Thirdly, it aims to shed light on the practical implications for financial reporting and disclosure requirements related to Murabaha and Tawarruq transactions, providing insights for regulators, practitioners, and scholars. By addressing these gaps, the study aims to contribute to the ongoing discourse on Islamic finance accounting practices and enhance the understanding of the complexities and nuances inherent in these transactions from an accounting perspective.

The motivation of conducting this study is as follows; firstly, regulatory compliance drives the need for greater clarity and uniformity in accounting practices related to these Islamic financial instruments, ensuring adherence to relevant regulations and standards. Secondly, enhancing financial reporting integrity is crucial, as accurately reflecting Murabaha and Tawarruq transactions in financial statements bolsters transparency and trust in Islamic financial institutions. Investor confidence is also a driving force, as stakeholders seek assurance and transparency regarding the financial activities of these institutions. Additionally, effective risk management is essential, and understanding the accounting implications of these transactions aids in identifying and mitigating associated risks. Lastly, academic inquiry fuels the desire to contribute to the growing body of knowledge in Islamic finance and accounting, leading to the development of theoretical frameworks and practical guidelines that advance understanding in this field.

The subsequent sections of the paper examine the significance and related issues of the topic, drawing upon expert insights. The research also examines Shariah considerations, including the legality and permissibility of Murabaha and Tawarruq, as well as the operational structures of these two modes. An in-

depth analysis of the accounting treatments for both instruments reveals notable issues arising from the adaptability of conventional standards to Islamic products. The paper concludes with a set of recommendations aimed at improving the applicability and effectiveness of accounting standards for IFI, facilitating their adherence to Shariah principles, and ensuring sound financial reporting practises.

2. Literature Review

The purpose of existence of IFI is different from conventional institutions, and the scope of IFI is to trade in real goods, share risk and reward by engaging in business as partners, and invest in projects while following the guidelines of Shariah and overall achieving socioeconomic objectives (Hanif, 2016; Alwi et al., 2019; Radzali et al., 2019). On the other hand, conventional financial institutions trade money to maximise profit (Terrien et al., 2018; Taskinsoy, 2012). Due to such dissimilarities, both institutions require accounting standards that can best represent the performance of their instruments in fulfilling their objectives. As documented by clerics, the objectives of IFI as per Shariah include the prohibition of interest and usury in financial dealings, avoiding gharar and maysir, profit and loss sharing, and overall working towards the achievement of Maqasid-e-Shariah (Mohammad & Shahwan, 2013; Qureshi & Hussain, 2022; Alam et al., 2022).

Standards of both IFRS and AAOIFI provide transparent, true representation and disclosure of useful information to the concerned stakeholders (Rosman et al., 2016; Ajili & Bouri, 2017). The primary distinguishing feature of IFIs from their conventional counterparts is Shariah compliance, i.e., whether all aspects of business are compliant with Islamic legal principles (Muhamad Sori, 2017; Fakhruddin & Jusoh, 2018). One of such aspect is financial reporting since the purpose of reporting differs in conventional and Islamic finance. Another major distinguishing factor of Islamic finance is the avoidance of interest in commercial dealings (Ahmed et al., 2019).

Shariah scholars have criticized a few aspects of Murabaha and Tawarruq. Although the overall structure of Murabaha is compliant with Shariah, the widespread reliance of Islamic banks on this mode of finance has raised questions about the sincerity of Islamic financial institutions and their dedication to utilise funds for projects that are long-term, as this has reduced their inclination to provide a full range of financing modes to customers (Roslan et al., 2020).

Tawarruq is an Islamic financing mode that has been a centre of criticism by Shariah scholars due to its similarity with Inah, which is strictly prohibited in Shariah (Ahmed, Yahaya, Harashid, 2012; Ajija, Fathia, & Suarni, 2010; Noor & Azl, 2009). There are proofs available for the permissibility of Islamic financial transactions. Holy Quran verse 275 of chapter 2 says "Allah has allowed trade and has prohibited riba". By this verse, it is evident that all forms of trade that do not involve Riba are permissible, and Tawarruq falls under this generalisation (Ingratubun et al., 2022; Choudhury et al., 2018; Aleshaikh, 2011). Similarly, objectors to the permissibility of Tawarruq have their own reasons and evidence. Firstly, the basis on which decisions are made is different for different schools of thought. Scholars of Hanafi and Shafi'e schools consider a transaction permissible only if it satisfies the prerequisite conditions and pillars of Shariah. Secondly, there is written evidence available for the prohibition of Inah, but none exists for the prohibition of Tawarruq (Aleshaikh, 2011).

Scholars belonging to different schools of thought have different perspectives on this topic. Imam Shafi'e himself permitted Inah, but only in cases where the intentions of the parties were unknown. Later scholars of his school are not in favour of it and dislike it as it puts the needy under pressure with high deferred prices. Malilki scholars, if a transaction contains an arrangement between the seller and a third party, it is Inah and is prohibited. However, if there is no pre-agreement between the first seller and the final buyer, then the transaction is permissible, as in the case of Tawarruq (Dar, Sofiza, & Bushra, 2016). Hanafi scholars consider it to be very similar to Inah. There are two positions of Hanafi scholars on Tawarruq: one suggests that it is allowed but not preferred, and the other dislikes it. Hanbali scholars generally permit Tawarruq transactions, but a few scholars such as Ibn Taymiyah and Ibn Qayyim prohibit them (Roslan et al., 2020; Dar et al., 2016).

Conventional financial systems prioritize interest over form, necessitating a reporting standard that caters to stakeholders' needs (Ismail, 2017; Hassan et al., 2013; Muhamad Sori, 2017). IFRS emphasizes substance over form in accounting standards, while Shariah requires Islamic Financial Institutions (IFIs) to comply with their own regulations (Ehsan et al., 2021; Mohammed et al., 2019; Aribi & Gao, 2011; Haniffa & Hudaib, 2010). This is particularly important for special financial instruments like Murabaha and Tawarruq, where

adhering to Shariah-prescribed legal forms becomes critical. AAOIFI developed its own accounting framework to address these challenges. IFRS's core philosophy is based on substance over form and the time value of money, but these practices are not in accordance with Shariah and cannot be adopted for Islamic banking instruments (Ahmed et al., 2019; Mohammed et al., 2015). AAOIFI emphasizes financial reporting ensuring Shariah compliance and communicating stakeholders' rights and obligations (Vinnicombe, 2020; Muhamad Sori, 2017; Atal et al., 2020; Chelhi et al., 2017).

The study explores the challenges of Islamic finance and global accounting standards, particularly in the context of Murabaha and Tawarruq. It highlights the complexities of reconciling ethical and financial considerations, the tension between transaction form and substance, and the need for accounting standards that accurately reflect Islamic financial transactions. The Accounting and Auditing Organisation for Islamic Financial Institutions developed Financial Accounting Standards (FAS) to bridge this gap. However, other accounting standards, such as GAAP and MFRS, have limited applicability. The study highlights the ongoing evolution of Islamic accounting practices to ensure compliance with Shariah principles and internationally recognised standards.

2.1 Shariah Considerations on Murabaha

Murabaha financing has the largest share in total financing of all the Islamic banks around the globe (Ismal, 2009). One of the reasons for its preference is that most of the financing facilitated by IFI is directed towards trade; thus, Murabaha by default becomes a very attractive instrument due to its trade financing nature. Another reason is the advantage that Murabaha provides due to its susceptibility to short-term financing. This is an attractive feature for banks, as they can liquidate their assets swiftly if the need arises. Finally, Murabaha is a low-risk financial mode that is non-complex and more convenient than its profit-sharing counterparts (Mushtaq, 2015; Sairally, 2002; Awalludin & Al-Aidaros, 2015). Islamic banks are criticised for heavily relying on Murabaha contact and having low profit-sharing modes. Critics argue that Islamic banks charge markup on Murabaha transactions, similar to interest charges. However, scholars argue that Murabaha is a financing service providing credit at a higher price, and Shariah allows compensation for time value in sales but prohibits loans (Ahmed, Sabirzyanoy, Rosman, 2016; Azhar Rosly, 2010).

Another criticism of Murabaha is the calculation of its profit or markup rate because of the London Inter-Bank Offer Rate (LIBOR) (Ahmed et al., 2018; Supriyanto, 2017). Critics consider this act to be against Shariah regulations. Although it is recommended that using interest rates as a basis for the calculation of markup be avoided, in the contemporary environment, it will be impractical for Islamic banks to operate with their conventional competitors without existing in the same landscape. Moreover, the mere calculation of markup does not make the mode non-compliant with Shariah, as the transaction itself does not contain interest. According to the analogy of Usmani (1998), the calculation of profit rate based on interest rate does not invalidate the transaction in the same manner as conventional transactions cannot be termed Shariah compliant if they base their interest rate calculation on Islamic markup.

Shariah scholars debate the permissibility of requiring security in transactions. Two rules allow security to be claimed after creating a liability or debt, or when the commodity is given as security by the customer. In cases of default, institutions may require a third-party guarantee, with differing views on the fee charged by the guarantor (Muneeza et al., 2019; Izhar, 2010; Çizakça, 2014). Shariah scholars have differing opinions on wa'd, with some arguing that promises are moral obligations, while others believe they have legal and moral obligations. Nonfulfillment of promises can lead to liability for IFIs, making them legally enforceable. A consensus is needed to ensure consistent transactions and practices worldwide (Nawaz, 2013). There are some considerations in Murabaha that are unanimously agreed upon by Shariah scholars. If the buyer fails to meet the obligations, it is not permissible to roll over the Murabaha to another term with an increased markup (Shah & Niazi, 2019). The reason is that Murabaha is not a loan; it is a deferred sale transaction, and the asset no longer remains the property of the seller.

2.2 Shariah Considerations on Tawarruq

Tawarruq was introduced as an alternative to Inah (Ahmad et al., 2020), which, due to its structure, is prohibited in Shariah. The objective behind this alternative was to segregate Inah from classical Tawarruq. However, its application has been a centre of debate among Shariah experts as it obliquely operates in Riba. In the contemporary Islamic financial landscape, the application of Tawarruq is limited to Malaysia. The primary

reason for its adoption is that it provides cash liquidity to IFIs and, at the same time, ensures that customers are engaged in business with them for a longer period. Scholars of the Hanbali, Shafi'e, and Hanafi schools of thought consider it permissible. However, the critics of Tawarruq argue that the modern form of Tawarruq is not as prescribed by the scholars or Shariah.

According to Maliki School, Inah is when a person sells a commodity to another at a price and then rebuys it from him at a higher price but on a deferred basis. According to Hanafi scholars, Inah is when a commodity is sold to a buyer at a known price but on a deferred basis, and then the buyer sells it back to the original owner for cash at a lower price (Mokal & Abd Halim, 2023; Ahmad et al., 2020; Abubakar & Ogunbado, 2016). As per the scholars of the Shafi'e sect, Inah happens when a person sells a commodity to another at a deferred price for a known period and then repurchases the same asset from him at a price less than the original deferred price. Similarly, according to Hanbali scholars, Inah happens when a commodity is sold at a deferred price and then bought back for cash at a lower price (Dabu, 2007). It is evident that in every school of thought, the main aspect of an Inah transaction is that the commodity is sold back to its original owner by the buyer.

Some scholars of the Hanafi School, like Ibn Taymiyyah and Ibn Qayyim, regarded Tawarruq as impermissible and equated it with Inah. They argued that because of its exploitative nature, it is not compliant with the guidelines of Shariah (Ibn Taymiyyah, 2012). In Tawarruq and Inah, the person is forced to have liquidity, which the other party does not agree to provide by loan; instead, he sells a commodity at a higher price. Currently, organised Tawarruq is practised in banks, as they act as agents to sell the commodity to third parties. However, to make Tawarruq legitimate in Shariah, the seller should not be involved in the reselling of the commodity.

In its 15th meeting (1998), the Organisation of the International Council of Islamic Fiqh Academy permitted the use of Tawarruq al-Fardi (classical Tawarruq) (Ahmad et al., 2017). However, in the 17th meeting of the OIC Fiqh Academy, they rectified their decision because Tawarruq is adopted in its organised form, that is, Tawarruq Munazzam, rather than Tawarruq al-Fardi. In classical Tawarruq, a commodity that is possessed and owned by a seller is sold to a buyer on a deferred basis, which is then sold to a third party for cash. In classical Tawarruq, the seller has no pre-arrangement with the end buyer and thus plays no part in the resale of the commodity, but in organised Tawarruq, the seller is involved, and this aspect is regarded as non-compliant to Shariah by scholars.

Tawarruq, as adopted in Malaysia, does not fulfil validity in purpose, as per some scholars, which means that a contract should be for a valid purpose. In organised Tawarruq, according to critics, the objective is to get a sum of money in exchange for a higher sum of money in the future. In cases where the customer is interested in a commodity, the markup is justifiable (Fa-Yusuf & Ndiaye, 2017; Mihajat, 2012). This exchange is not as per the standards of Shariah, as it deals with interest implicitly. The critics also suggest that organised Tawarruq is a form of *hilah* (trick) with the purpose of legitimising the time value of money; for this reason, Tawarruq was declared impermissible by the ICFA in April 2009 (Khan, 2009).

The role of IFI as a dual agent is disapproved of by scholars. Banks act as buyers on behalf of customers to purchase the asset and simultaneously act as agents to sell the commodity on behalf of customers (Fa-Yusuf & Ndiaye, 2017). It becomes easy for banks to take advantage of customers, which gives them an unfair advantage in contracts, a practise that is not encouraged by Shariah.

In organised Tawarruq, banks charge a fee for the delivery of commodities. Ideally, there should not be an extra fee for the delivery, and the inclusion of this fee is a way to incentivise the customer to not want the commodity to be delivered. This stirs up more debate about the application of Tawarruq and the intended purpose for which it was permitted in Shariah. Thus, critics argue that the Tawarruq that is practised in Malaysia does not follow the requirements of Shariah (Roslan et al., 2020).

Tawarruq, a Shariah-compliant method of private loans, is a unique aspect of Islamic finance. It does not involve risk-sharing, unlike other financing methods like Musharkah and Mudarbah. This risk- and return-sharing nature has led to concerns among Shariah scholars. However, Tawarruq's role is to address genuine financial needs while avoiding forbidden interest-based transactions. Scholars emphasise the importance of genuine commodity transactions, transparency, and ethical conduct in Tawarruq contracts. Shariah boards and scholars play a crucial role in ensuring compliance. Constant evaluation and refinement of Tawarruq practices are essential to maintain compliance. Education and awareness among practitioners are crucial for navigating the balance between financial innovation and adherence to Islamic principles (Mokal & Ahmad, 2023; Ibrahim & Mohd Sapian, 2023).

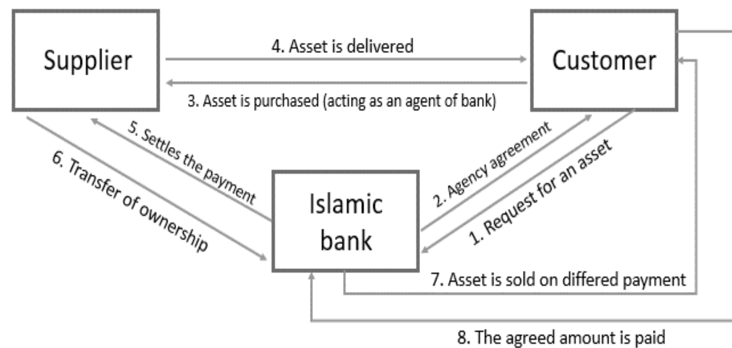
3. Operations and Legal Structures

Islamic finance involves two operational and legal structures: Murabaha and Tawarruq. Murabaha involves a buyer-seller relationship, with the financial institution acting as an intermediary. It ensures that transactions are grounded in tangible goods and economic activities, adhering to Shariah's prohibition of interest-based transactions. Tawarruq is a more complex process used for liquidity management, where the customer seeks financing and enters a sale contract with the financial institution. Both structures emphasise Shariah compliance, transparency, and ethical conduct. Financial institutions must maintain strong relationships with Shariah scholars and boards to ensure transaction integrity.

3.1. Murabaha

The general legal structure of Murabaha is as follows:

Figure 1: Modus operandi of Murabaha



However, in more complex scenarios, the process starts with the customer realising a need for an asset and approaching an Islamic bank, which obtains the asset through import as per the specifications. LC is opened in the name of the customer after receiving a guarantee and promise to buy endorsement, and copies are sent to the corresponding bank and exporter. The exporter decides on the shipment and submits the documents to the correspondent bank, which sends them to the bank. The bank receives the goods, signs a Murabaha contract with the client, and handovers the assets to the customer. In the case of a local purchase, an Islamic bank purchases an asset from the local market by appointing an agent who can be the customer himself (Abdul-Khaliq, 2014).

In the case of mortgaged assets, the customer approaches the bank with a request to purchase the asset. The bank purchases the assets from a seller, and after obtaining an appropriate guarantee from the customer, it signs a Murabaha contract with him and sells the assets on a deferred basis. The condition of the guarantee might stipulate the mortgage of an asset to the bank.

3.2. Tawarruq

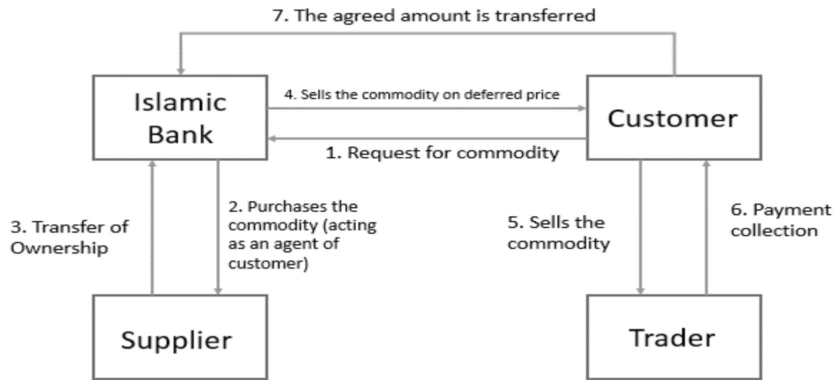
There are two forms of Tawarruq that are segregated from each other based on the involvement of Mutawarriq (IFI) in the final sale of the commodity. If the customer sells the commodity directly to a third party without the involvement of a bank, then this mode is categorised as classical Tawarruq. On the other hand, if the bank is involved in the sale of a commodity from the client to a third party, then this mode is classified as organised Tawarruq (Ahmad et al., 2020).

3.2.1. Classical Tawarruq

Classical Tawarruq starts with the customer realising the need for cash. He approaches an Islamic bank, and they both enter a Tawarruq contract. Islamic banking purchases a commodity by the same process as Murabaha and sells it to the customer for a deferred but fixed price, which includes cost and markup (Ahmad et al., 2023; Mohamad & Ab Rahman, 2014). The time is defined in the contract. Subsequently, the ownership of the commodity is transferred to the customer. The customer takes the commodity, sells it to a third party on the spot, and receives cash. Both transactions must be independent of each other and without the involvement of the bank. The ownership of the commodity is then transferred to the third party. The

customer fulfils his needs, and on the specified date, he is bound to repay the agreed amount to the bank. As per the rules of Islamic banking, the bank cannot increase or decrease the prices if the customer pays the amount earlier or later than the specified date. However, Islamic banks usually charge an extra amount in cases of late payment or non-payment, but the bank is required to transfer that amount to a charitable institution (Roslan et al., 2020).

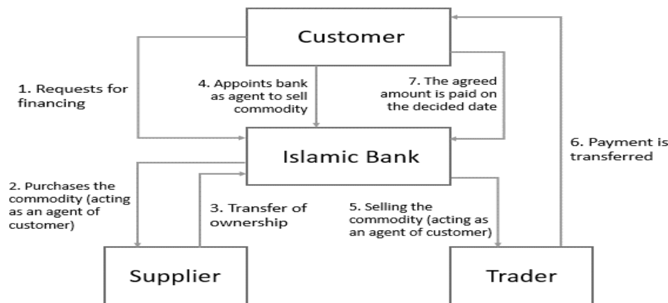
Figure 2: Modus operandi of Classical Tawarruq



3.2.2 Organised Tawarruq

The process of organised Tawarruq is the same as classical Tawarruq except for one difference: the customer sells the commodity to a third party by appointing a bank (Mutawarriq) as his agent. Usually, banks charge a service fee to act as agents. In some cases, the bank might not arrange for the sale of the commodity; instead, the bank can provide the information of the third party to the customer, whom the customer can approach and sell the commodity himself. Furthermore, the bank can appoint the customer to purchase the assets from the supplier by acting as its agent, like in Murabaha.

Figure 3: Modus operandi of Organized Tawarruq



4. Methodology

In order to reach the objective of the study which is to investigate the critical issues surrounding the accounting treatment of Murabaha and Tawarruq within the scope of Islamic finance, this study adopts a qualitative method. The data collection procedure involved secondary data collection methods. The secondary data is obtained through a systematic review of existing literature on the topic. The literature search is conducted using academic databases such as Google Scholar and Scopus, and the selection criteria include relevance, quality, and recency. The authors referred to 62 research papers that were published in 38 different journals. In addition to this, four conference proceedings, eight internet sources, and one doctoral dissertation were also used to collect the relevant information on Tawarruq and Murabaha. The sources to which the authors referred to get the appropriate information were published between 1981 and 2023. After collecting the relevant information,

the authors analysed the information based on the objective of the study and aligned the information in order to achieve the purpose of the study.

5. Findings and Discussion

5.1. Accounting Treatments- Murabaha

According to IFRS, Murabaha is treated as a trading instrument, so IAS 2 (inventories), IAS (Revenue), and IFRS 9 (financial instruments) are relevant for it. On the other hand, Financial Accounting Standard No. 2 of AAOIFI is dedicated to Murabaha, which has standards for revenues, profit and loss, receivables, and expenses (Ahmed, Sabirzyanov, & Rosman, 2016).

In IFRS, IAS 2 (inventories) is applicable as Murabaha assets are held to be sold to customers. Paragraphs 6 and 8 of IAS 2 deal with the recording of Murabaha assets, which is at initial recognition cost and includes purchasing costs, conversion costs, and transportation costs (money spent on bringing the asset to the bank's location). It also provides the types of costs that are included or excluded in the recording. In AAOIFI standards, FAS 2 records Murabaha assets at historical cost, which is the purchase price, and all the directly related expenses that were incurred in the process of purchasing the asset. Unlike IFRS, AAOIFI does not explain the types of expenses that are included, which results in different interpretations and thus can lead to differences in practise.

In scenarios where the customer is obliged to fulfil the promise of purchasing Murabaha assets, Para. 9 of IAS 2 requires the inventories to be carried out at historical cost. According to Paragraph 6, the historical cost is calculated by subtracting the expected costs of selling the asset from the expected selling price. However, as per Paragraph 31, the net realisable value is equal to the contract price if the asset is being held to satisfy the firm's sale. AAOIFI uses the economic consequence concept as mentioned in Appendix D of FAS No. 2. As per AAOIFI, Paragraph 3 of FAS No. 2 stipulates that if the customer is obliged to purchase the asset, then it will be recognised at historical cost. However, the value can decline due to damage or unforeseen circumstances. In the scenario of unforeseen circumstances, the decline in value is recognised at the end of the financial period. Unforeseen circumstances are not defined in AAOIFI, which can cause multiple interpretations and confusions regarding the inclusion of non-physical damages, for example, obsolescence.

For the accounting of assets when the customer is not obliged to fulfil the promise, IAS 2 Para. 9 of IFRS is used. It states that inventories are to be carried at their net realisable value. As per Paragraph 6, by subtracting the expected selling cost from the expected selling price, the net realisable value is obtained. If there is any write-down, it is recorded as an expense, and following the write-down, if the net realisable value increases, then, as per Para 34 of IAS 2, the write-down is reversed to the level of the previous write-down in the period in which the reversed write-down is being performed. Dissimilar to IFRS, AAOIFI does not provide extensive details about different scenarios for recognising the asset when the customer is not obliged. Due to this, problems can arise when accounting for unusualness. AAOIFI uses FAS 2 Appendix D for the treatment of assets if the customer is not obliged to fulfil his promise and uses the cash equivalent value (same as net realisable value) as per Paragraph 4 of FAS 2. Statement of Financial Accounting No. 2: Paragraph 89 describes cash equivalent value as the sum of money that is realised at the current date. If there is a decrease in the asset value, Paragraph 4 of IAS 2 stipulates the recognition of a provision. Like the case where the customer is obliged to fulfil the promise, AAOIFI uses the economic-consequence concept.

Paragraph 11 of IAS 2 of IFRS is relevant in the case of a discount received by an Islamic bank on a credit purchase. Paragraph 11 stipulates that rebates, trade discounts, and other similar items are subtracted from the cost of inventory. However, no mention is found of a prompt payment discount. In AAOIFI, two varying approaches are mentioned in Paragraphs 5 and 6 of FAS No. 2. One approach is that the discount should be subtracted from the cost of the assets. The second approach is to consider the discount as revenue for the bank, but this is dependent upon the decision of the Shariah Supervisory Board (SSB). Appendix B, item 3(f) of FAS No. 2, mentions that, as per the perspective of some Shariah scholars, the discount should be reduced from the Islamic bank's selling price, which is the bank's profit. Nonetheless, no stipulations are found regarding how this reduction will be reflected in the financial statements of Islamic Bank, and no instructions are found regarding cash sales where liability is already settled. IFRS does not cater to the decisions of the SSB. Furthermore, the discount can only be subtracted from the asset's cost if it exists in the IFI books; otherwise, it will be recorded as income.

Regarding the point at which the sale is recognised, Paras. 14 to 19 of IAS 18 provide the guidelines that

the sale is recognised at the time when a notable proportion of risk and return is transferred to the customer. In AAOIFI, FAS No. 2, Para. 8, states that sales are recognised at the time of conclusion of the contract. No specific guidelines create ambiguity, which can cause different interpretations and divergent practises.

After the point of sale, the need to record profit arises. As per IFRS, the profit is recorded at the time of sale if the nature of the sale is cash or short-term credit. In the case of a long-term credit sale, the profit is not recorded at the time of sale but instead the discounted value of the receivable (equal to the cost of the asset) as per Paragraph 11a of IAS 18. The difference between the normal value and discounted value will be recorded as the profit of the Islamic bank in the income statement through the unravelling of Murabaha receivable discounting, according to Para 11 of IAS 18; Para 11 of IAS 39; Para 5.1.1; and Para B5.1.1 of IFRS 9. On the other hand, Paragraph 8 of FAS No. 2 states that the whole profit is recognised at the time of the contract if the sale is cash-based or is of a credit term that falls under the ongoing financial term. If the credit term stretches beyond the ongoing financial term, it is recorded as deferred profit, which will ultimately be settled against Murabaha receivables as explained under Paragraph 9 of FAS 2. Appendix D of FAS 2 explains that there are two alternatives available for recording a profit in long-term credit sales due to the diverging views of scholars from different schools of thought. One option is to proportionately allocate over the credit term despite the payment receipt by the bank; this is preferred. The other option, as stipulated in Paragraph 8 of FAS 2, is subject to the approval of SSB and allocates the deferred profit based on payments received. In the case of cash or short-term credit, no significant difference can be found. In long-term credit, IFRS uses the time value of money, which will result in higher income recorded in the initial years as compared to AAOIFI, which uses the proportionate allocation method.

In IFRS, at the time of initial recognition of long-term receivables, the recognised amount is obtained by discounting the cash to be received in the future to a present value, guidelines for which are provided in IAS 18, Para. 11; IFRS 9, Para. 5.1.1; and B5.1.1. In AAOIFI, Para 7 of FAS 2 states that receivables will be recognised at face value in the case of both short- and long-term sales. Moreover, Paragraph 9 of FAS 2 explains that face value means the amount that is agreed upon by the customer and bank. The difference between IFRS and AAOIFI in recognising receivables is that IFRS operates on economic consequences, i.e., substance over form, while AAOIFI recognises revenues and receivables based on the guidelines of Shariah. Since deferred profit is subtracted from the face value and the resulting value is the same as how IFRS calculates present value by discounting, this aspect can help in the convergence of both standards.

For the recording of receivables at the end of the credit term, Paragraph 4.1.1 of IFRS 9 states that assets can be measured at either fair value or amortised cost. However, the Murabaha asset is measured at amortised cost as it is held by an Islamic bank to collect cash payments at specified dates, which will be comparable to the interest rates in the market, according to Paragraph 4.1.2 of IFRS 9. In the case of a loss, Paragraph 58 of IAS 39 stipulates that the loss can either be recorded directly or through an allowance account. In AAOIFI standards, the receivables are recorded as per their cash equivalent value, which is described in Para 7 of FAS 2 as the sum obtained after subtracting any provision for doubtful debts from the number of receivables. In Appendix D, AAOIFI mentions that the provision for investment risk can also be included in addition to the provision for doubtful debts, but it is discretionary to the SSB decision. Nonetheless, the treatment of rebates or reductions in profit due to early settlement will be considered in the calculation of cash equivalent value. Furthermore, the guidelines to deal with deferred profit in cases of damage to receivables are not mentioned in the AAOIFI standards. Both approaches might yield the same result at the end of the period, but due to the difference in approach, a varied value of revenue or loss can be recorded. Keeping aside rebates and losses, receivables under IFRS will grow beyond the amount receivable under AAOIFI till a certain point, and then the difference will decline and ultimately be null.

The major differences in the accounting treatment of Murabaha under both standards are summarised in Table 1:

Table1: Difference between IFRS and FAS (Murabaha)

Accounting treatment	IFRS (IASB)	FAS (AAOIFI)
Initial recognition of asset	At cost; including purchasing, conversion, and transportation cost	At historical cost with all directly related expenses.
When customer is bound to purchase the asset	At historical cost	At historical cost
If customer is not bound to purchase the asset	Net realisable value	Cash equivalent value
Discount received by bank on credit purchase	rebates, trade discounts etc are subtracted from inventory cost	Two approaches A discount should be subtracted from the assets' cost. Record discount as a revenue for bank.
Sale recognition point	when a notable proportion of risk and return is transferred	No available
Recording profit	Cash & short term: profit recorded at time of sale. Long term: receivable's discounted value is recorded as profit.	Cash & short term: profit recorded at time of sale. Long term: discounted value of receivable is recorded as profit.
Initial recognition of receivables	discounting cash to be received in the future to present value	at the face value
Recording receivable at end	at amortised cost	at cash equivalent value

5.1.1. Issues in Accounting Treatment

Based on the preceding section a summary of accounting issues is as follows:

Although IFRS provides much more detailed accounting treatments, the core philosophy of IFRS prefers substance over form and does not incorporate Shariah compliance, which is not in accordance with the reporting objectives of IFI. On the other hand, AAOIFI standards are based on Shariah principles but lack the depth that is required to deal with various scenarios. Despite Murabaha requiring different treatments when the customer is obliged to and not obliged to purchase the asset, IFRS treats both transactions in the same way. AAOIFI provides different standards for both scenarios; however, the use of ambiguous terminologies allows for different interpretations, which can lead to variance in practise and thus a lack of uniformity. IFRS provides concrete standards for Murabaha, but it does not have the flexibility to adapt its standards as per the decisions of the Shariah Supervisory Board.

The concept of the time value of money is contradictory to Shariah principles, but IFRS uses this concept for profit recognition in Murabaha. Recognition for deferred profit is a crucial aspect of Islamic finance, as stakeholders must be informed that IFI is not operating using the time value of money; however, distinct guidelines for treating deferred profit are absent in AAOIFI standards. Despite achieving the same receivable value at the end of the period under both standards, there are vast differences between the approaches of IFRS and AAOIFI, as they both follow different approaches.

5.2. Accounting Treatment- Tawarruq

In their 17th meeting, the OIC Fiqh Academy regarded the organised and reverse Tawarruq as impermissible as it contained an aspect of Riba (Ahmad et al., 2017). Organised Tawarruq is not practised in IFI except for Malaysia. Malaysia has extensive use in deposits, financing, investment, and capital markets since organised and reverse Tawarruq are permissible as per the Fatwa of Bank Negara's Shariah Advisory Council. However, in Shariah Standard 30: Monetization (Tawarruq), organised Tawarruq is considered impermissible. As per 4/7 of SS-30, the same IFI cannot be appointed as agent to sell the commodity from which it was bought. Similarly, in 4/8, it is stated that the IFI cannot arrange for a proxy third party to sell the commodity on behalf of the agent. Finally, in 4/9 and 4/10, it is written that the sale of an asset can be done by the client himself or by appointing an agent independent of IFI; however, IFI should provide the information that is required by the agent to sell the commodity (Ahmad et al., 2017). Accounting standards for Tawarruq are unavailable due to

their impermissibility. Thus, IFRS is used in Malaysia for its accounting.

For the accounting of Tawarruq, three standards are applicable: IFRS 15, IAS 2, and IFRS 9. IFI can apply IFRS 15 with IAS 2 if the purchase and sale of commodities constitute generating revenue, or IFRS 9 if the arrangement is for the purpose of financing the customer's business. To apply IFRS 15 with IAS 2, IFI recognises the cost of commodities, the sale and cost of commodities, and the financial income generated. The amount at which the commodity is sold is translated into receivables, which are then discounted using the interest rate to account for the time value of money, and the resulting amount is recognised as financial income. This process is like the amortised cost approach in IFRS 9. Paragraph 108 of IFRS 15 states that receivables recorded under IFRS 15 will be accounted for under IFRS 9. Furthermore, paras. 113 to 122 of IFRS 15 contain disclosures regarding sales and receivables. To record inventory, IAS 2 is applied, which includes revenues and associated costs. Paragraph 6 of IFRS 15 states that IFRS 15 is only applicable if the relevant contract with customers relates to the output of the institution's ordinary activities. Some argue that the commodities purchased and sold by IFI are not related to its output, so IFRS 15 should not be applied. However, the proponents argue that if a commodity is purchased frequently, then it can be considered an ordinary activity, yet no criteria for frequency is mentioned in IFRS.

IFRS 15 requires that IFI has some control over the commodity during the process, which is passed on to the customer. IAS 2 also requires control over commodities. Paragraph 33 of IFRS 15 defines control as the capability of instructing the usage and allowing the derivation of benefits or restricting the usage and limiting the derivation of benefits from the asset. It further explains that the benefits include cash inflows and savings in outflows arising from the usage of assets to produce goods or provide services, incrementing the value of other assets, offsetting liabilities or expenses, selling or exchanging assets, pledging an asset for a loan, or holding the asset. In the view of critics, the IFI does not have control over the commodity, as generally the IFI does not store the commodity for more than a day, and the asset is just a means to an end—Shariah-compliant financing. In Islamic banks, the commodity is not traded or speculated on as it is prohibited by the rules of Shariah due to its proximity to Maysir (gambling). Thus, critics argue that IFRS 15 is not a suitable standard for the accounting of Tawarruq as the IFI does not have control over the commodity as defined in IFRS 15:33.

In addition to IFRS 15-33, another description of control is defined in IFRS 15-B37, which is the control an entity has over an asset due to its role as principal. IFRS 15-B37 mentions that the organisation is responsible for the acceptability of the asset, bears the risk of the asset, and has discretion in the establishment of prices. However, in Tawarruq, IFI is not responsible for the acceptability of the commodity. Usually, IFI is just concerned about not dealing in prohibited commodities. Also, in the Tawarruq arrangement, the customer bears the risk rather than IFI, and a competitive market determines prices. Thus, IFI does not fulfil the criteria of control as a principle. Apart from the control perspective, Para. 36 of IFRS 15 specifies that IFRS 15 can be applied if an entity acting as an agent decides for the purchase and sale of an asset and records a commission or service fee as revenue. IFI in Tawarruq does assume the role of an agent as part of the arrangement, but the purpose is not to earn the service fee but to facilitate the arrangement and provide a complete solution to the customer. Therefore, the IFI role cannot be classified as an agent for the customer in Tawarruq as per IFRS 15–36.

IFRS 9 can be more appropriately used for the accounting Tawarruq in which the commodity classification is included, and thus relevant measurement requirements can be applied as the purpose of Tawarruq is to provide financing to the customer for his business. However, as per Paragraph 4.1.1 of IFRS 9, IFI will have to make necessary changes to its business model in the management of the commodity and the subsequent cash flows that it receives as part of Tawarruq (ignoring the fair value option). If the commodity is held for the purpose of collecting payments from the customer and the payment comprises principal plus interest on the outstanding principal, the amortised cost approach can be used for the measurement of the commodity and the expected credit loss model as described in Paragraph 5.1.1 of IFRS 9 for impairment testing of the commodity.

5.2.1 Issues in Accounting of Tawarruq

AAOIFI standards are unavailable for Tawarruq as organised Tawarruq is prohibited in Shariah standards; this compels IFI to adopt IFRS, which prioritiss substance over legal form. IFRS calculates the receivable amount by the time value of money, which is prohibited by Shariah. No consensus is achieved regarding the inclusion of commodities under contracts relating to the output of IFI, which is the basic criteria for the IFRS 15 application.On the other hand, scholars state that IFRS 15 can be applied as the commodity is purchased

frequently, but no such application criteria are defined in IFRS 15. IFRS 15 along with IAS 2 have detailed standards that can be used for the accounting of Tawarruq; however, IFRS 15 requires IFI to have control over the commodity and charge the agency fee as revenue. Since both stipulations are not in accordance with the model of Tawarruq, using IFRS 15 is against its rules. To apply IFRS 9, the fair value option must be ignored, which is not in accordance with Shariah. IFRS 9 records Tawarruq using discounting and the time value of money, which is not a Shariah-compliant approach.

6. Conclusion and Recommendations

It is evident that although IFRS is comprehensive for accounting Murabaha and Tawarruq, it fails to capture the essence of Islamic financing due to its focus on the economic substance of the instrument rather than its legal form. IFRS also recognises revenues using interest, which is prohibited by Shariah. Additionally, IFRS is not designed for unique products like Murabaha and Tawarruq, which can cause conflict with its operational structure. AAOIFI, on the other hand, can record the legal form or Shariah compliance but lacks depth to deal with various scenarios. The absence of standards for Tawarruq leaves IFI with conventional standards that fail to report aspects not in accordance with Shariah. Future research should incorporate quantitative-based analysis and primary data to better understand the subject matter.Scholars should agree on permissibility and impressibility criteria for Islamic financial standards to reduce differences in practices and simplify the development process. AAOIFI should develop comprehensive Financial Accounting Standards (FAS) to cater to different financing scenarios and recognise unusual activities. IFRS should be adapted to Shariah, and accounting guidelines for Islamic financing modes like tawarruq should be developed. Central banks and Shariah Advisory Boards should make it mandatory for IFIs to adopt AAOIFI standards to fulfill Islamic financial reporting and accurately represent operations and transactions in financial statements. Murabaha and Tawarruq are two distinct Islamic financial instruments with distinct legal structures and Shariah considerations. Future research should incorporate quantitative-based analysis and primary data for more comprehensive understanding. The study makes significant contributions to the field of Islamic finance by highlighting the inadequacies of existing accounting standards, particularly IFRS, in capturing the essence of Islamic financing, specifically Murabaha and Tawarruq transactions. By emphasizing the discrepancy between the legal form and economic substance of these transactions, the study underscores the limitations of IFRS in addressing Shariah compliance and recognising revenues derived from interest-based activities, which are prohibited in Islamic finance. Furthermore, the study critiques AAOIFI standards for their lack of depth in handling various scenarios and the absence of specific standards for Tawarruq, leaving Islamic financial institutions (IFIs) with conventional standards that may not fully align with Shariah principles. The call for future research to incorporate quantitative analysis and primary data reflects a commitment to advancing scholarly understanding in this area, while the recommendations for standardisation and the development of comprehensive Financial Accounting Standards (FAS) by AAOIFI aim to address the current deficiencies in accounting practices for Islamic financing modes.

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Examining Investor Protection in the South China Sea through an Islamic Large Language Model Legal Analysis

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Abstract

The Asia-Pacific area, which comprises a sizeable portion of the world economy, has become a popular destination for investment. Furthermore, there is a significant Muslim population in the Asia-Pacific region that is increasingly seeking financial services and products that align with their religious principles. This includes the South China Sea (SCS), which borders several nations including China, Vietnam, Malaysia, Singapore, Indonesia, Brunei, Thailand, and the Philippines, has drawn a lot of attention. Over the past few years, there has been a lot of focus on the growing tensions resulting from conflicting territorial claims. Foreign investors are growing more concerned about protecting their capital in light of the escalating tensions in the South China Sea (SCS). This article explores the application of large language models, specifically Llama 3, in analysing investment treaties and their relationship with measures to protect Islamic finance investors. The methodology employs a comparative legal case approach that integrates principles of Islamic finance to examine investor protection in the South China Sea. The analysis includes the implications of the outcomes of tribunals in the Crimea cases, commonly known as effective control. Under the jurisdiction of the host state, they carried out investment treaties within the territory even without meeting the international legal definition of territory. Given the large Muslim population in the territory, LLMs may utilise the textual information and reasoning for textual information processing and conclusion. This also resulted in the conclusion that implementing investment treaties beyond national boundaries would allow for discussions on the maritime rights of SCS governments without the need for precise demarcation, enabling the application of a uniformly held Islamic legal principles for dealing with Investor protection irrespective of the domestic legislation. Future research may focus on the utilisation of LLMs for decision making in investor dispute tribunals, thereby providing more consistent decisions taking into account Islamic principles that are more uniformly held.

Keywords: *Islamic finance, investor protection, state disputes, South China Sea, artificial intelligence*

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1. Introduction

The Asia-Pacific region has become a major region for investment, representing a significant size of the global economy. Additionally, the Asia-Pacific region is home to a sizeable Muslim population that has growingly outlined the desire to have financial products and services that align with their faith. The South China Sea (SCS) is a region of great geopolitical importance, bordered by several countries including such as China, Vietnam, Malaysia, Singapore, Indonesia, Brunei, Thailand, and the Philippines. Over the last several years, significant attention has been paid to the rising tensions that arise from overlapping territorial claims. Given the rising South China Sea (SCS) tensions, foreign investors are becoming more worried about safeguarding their capital. This results from growing military and offshore interests in SCS, which include undeveloped subsurface energy deposits. Consequently, both the host nations in the South China Sea (SCS) and the foreign investors attracted to them prioritise safeguarding their existing and prospective foreign investments. Additionally, investors and banks outline the importance of minimising the risk of losing their capital and a significant return on investment requirements (Guan, 2000).

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The protracted disagreement makes it more difficult to include a maritime investment in a coastal state in the South China Sea under the bilateral investment treaty's (BIT) territorial jurisdiction. As a result, a system for categorising different kinds of disputed maritime areas has been developed. The framework examines how investments are protected outside a host state's territorial sea, particularly in contested or ambiguously bordered maritime areas. There have been inquiries over investments in underwater cables and deep seabed mining. Similarly, earlier investment tribunals have handled claims against the disputed area. Examples include the Crimea proceedings involving the controversial annexation and in-state succession of Kosovo and Hong Kong/Macao (Fravel, 2011).

However, there has never been investor-state arbitration about a marine sovereignty dispute. In contrast, cases about interstate marine delimitation have been brought before the PCA, ITLOS, and ICJ. These bodies arbitrate cases concerning offshore concession blocks given to foreign companies, and one such case is the maritime border dispute between Ghana and Côte d'Ivoire (Abadikhah, Nigmatullin & Sergeevna 2023).

Foreign investments have also been made in disputed maritime areas that may be eligible for territorial protection. Academic research has demonstrated that the jurisdiction of investment tribunals may be so restricted that they are unable to make decisions on the maritime rights of sovereign states. When the government opposes the contested oceanic territories, this aligns with the Monetary Gold principle. In this instance, the protesting state is not a party to the investor-host state conflict, whereas the host state grants rights to foreign investors. The article addresses the Islamic finance legal challenges related to maritime disputes in the SCS and how Islamic finance may support the development of such foreign investments while protecting the investors according to Islamic principles.

2. Literature Review

The SCS is a 3,685,000 km2 body of water that stretches from the Taiwan Strait, which forms its northern border, to the Karimata Strait, the island of Borneo, the eastern and southern boundaries of the Malacca and Singapore straits, and the Taiwan Strait. The Philippine islands of Luzon, Balabac, and Mindoro Straits form the eastern border, while the southern tip of Thailand's Gulf and the Malay Peninsula's east coast form the western border. Roughly 90% of the SCS is covered by the Nine-dash line, representing China's territorial claim of the SCS (Park, 1978). The Paracel, the Spratly Islands, Pratas, Scarborough Shoal, and a portion of the Natuna Islands are all included in the demarcation line that China uses to support its claims in the South China Sea. The EEZ and continental shelf of China's bordering countries, such as the Philippines, Vietnam, Malaysia, Brunei, and Indonesia, overlap. Even though China has never formally acknowledged it as its boundary, there are claims that its territorial waters extend 12 nautical miles from the country's mainland to the disputed offshore islands. It ties claims to island groups in the SCS to any possible maritime entitlements resulting from them. The central point of dispute in the SCS is thus that China claims the SCS inside its area of maritime authority (Macaraig & Fenton, 2021).

Foreign investors are drawn to the SCS due to its substantial oil and gas potential. Recently, foreign energy businesses investing in the SCS were found to own operating and exploration blocks, according to the research tank CSIS. It displays dozens of blocks located in places where the EEZs, or continental shelf claims of the governments comprising the SCS intersect.

In 2019, the Spanish energy company Repsol made the largest gas discovery in Indonesia in 18 years. The initial estimate suggests that there are at least two trillion cubic feet of recoverable resources. With an estimated potential of 5,006 billion cubic feet of gas and 3,436 million barrels of oil, Indonesia intended to auction ten oil and gas blocks in 2020. Nevertheless, out of the 126 sediment shelves, only 54 have been investigated. In February 2021, a Thai state energy business found its greatest gas approximately 90 kilometers offshore the state of Sarawak. The project's operator is partnered with three other companies: Malaysian National Oil and Gas, Kuwait's Energy, and a Malaysian subsidiary of Thai State Energy (Tzeng, 2018).

In October 2020, the Philippines declared that it would start exploring for oil and gas in the SCS again. This followed the 2014 suspension of exploration and drilling operations by the administration of former President Benigno Aquino III because of concerns with China. With support from the Philippines, Forum, a UK-based company, has a contract to explore the oil and gas-rich area near Reed Bank. Due to Chinese interference, the Philippines has taken advantage of the region. In addition, the state-owned Philippine oil business and the Hong Kong-based PXP hold contract to operate in this sector.

Renewable energy projects that generate electricity using submerged platforms or gadgets have also drawn

interest from investors. This covers power production from offshore geothermal heat sources, including marine or seabed volcanoes. The NEC volcanic complex in the Indonesian Banda Sea and the ones next to Sangihe Island are two examples. The Philippines' Foreign Direct Investment (FDI) policy declared that large-scale geothermal project exploration, development, and usage would be permitted with 100% foreign ownership.

Vietnam and Exxon Mobil signed a $5.09 billion LNG power and terminal project in August 2020. Alongside this, a second joint venture (JV) was formed with Exxon for the Blue Whale Project28, which aimed to build an offshore platform, an onshore gas treatment plant, a pipeline to the shore, and pipes for tea delivery. Italian Saipem won an onshore-offshore front-end engineering design contract for the project. ENI, a well-known energy investor from Italy, confirmed one of the biggest finds in Southeast Asia in the last 20 years. The field is a sizable gas and condensate resource in the Red River Basin.

Western foreign investors dominate the energy sector, but the Three Buckets of Oil—three Chinese national oil corporations—compete fiercely against them. These companies fund SCS activities outside of the energy sector, such as shipbuilding and the development of artificial islands. In addition, China has built up and strengthened its domestic capabilities in the SCS's offshore sectors, including aquaculture, seabed mining for minerals and precious metals, offshore wind and solar farm building, and submarine cable construction. Political pressure from its economic and geostrategic interests in the SCS has affected government decision-making about specific FDI efforts by exerting pressure on the neighbours. This was made clear by the Philippines' 2014 exploration and drilling activity embargo.

China alleged that Vietnam's claimed EEZ overlapped with its maritime rights, forcing Vietnam to revoke the licenses of a Russian-Spanish-Emirati investor consortium operating in the outer limit of Vietnam's EEZ in the summer of 2020. Vietnam settled the matter by paying a settlement of one billion dollars. Whether Vietnam's joint ventures with Eni and Exxon would suffer the same fate is still up in the air. The regent of the Indonesian Natuna Islands appealed for investments from the United States, Japan, South Korea, and Australia on the island in response to China's political pressure. One of the disputed island groupings in the SCS conflict is the southernmost point of the nine-dash line. China has broken relations with foreign investors and geopolitical rivals by using its economic statecraft. As in Brunei's case, this has also led to the SCS claims being implicitly renounced, which obtained investments tied to the Belt and Road Initiative (Amer, 2014).

3. Methodology

Text analysis is essential in several social scientific fields, including political science, psychology, sociology, and communication studies. The significance and potential of text analysis have increased dramatically in recent years because most human communication is now recorded and processed as digital data due to digitalization. Nevertheless, text analysis is still a challenging task.

Even though machine learning and natural language processing, two computer techniques for evaluating textual data, have advanced rapidly in recent years, they are still challenging to use and frequently require substantial amounts of manually coded training data and an in-depth understanding of computational techniques. However, these approaches often achieve only a restricted level of precision as they struggle to comprehend irony and sarcasm, make inferences that require prior knowledge about the world, and perform crucial interpretative tasks such as empathising with the author's perspective. Humans have been regarded as the unmatched gold standard for text analysis. Nevertheless, humans are subject to notable limitations. Manual text reading is time-consuming and expensive, restricting research to small sample sizes, especially for interpretive tasks requiring more in-depth analysis. Manual text analysis has been associated with bias, as well as with a lack of rigour, repeatability, and poor data quality (Chang et al., 2024).

However, the advent of Large-Language Models (LLM) like ChatGPT may change this and the way text analysis is done in the social sciences. Pre-trained on a significant portion of all material on the Internet and in all books ever published, ChatGPT is built on a massive neural network with billions of parameters. These LLMs have proven capable of several unexpected emergent tasks, including programming and translation. Studies have shown that LLMs can perform almost any task related to text processing (Wang et al., 2023).

These models have the ability to accomplish tasks that previous computational methods were unable to, such as detecting irony, sarcasm, or subjective and contextual interpretation because they are general rather than task-specific. According to recent research, LLMs work effectively for many tasks, such as text annotation assignments, ideological scaling, mimicking samples for survey research, and much more. Many academics feel that LLMs constitute a paradigm shift in text analysis in the field of social sciences because they are simple

to use, quick, inexpensive, and relevant to various text analysis tasks. They also disrupt the traditional distinction between the quantitative and qualitative domains by enabling computational analysis of novel challenges (Homoki & Ződi, 2024).

Advanced artificial intelligence (AI) systems called large language models are made to understand and produce human language. These models use enormous volumes of textual data to understand patterns, semantics, and syntax. This is done using deep learning techniques based on artificial neural networks, essentially abstract mathematical models of brains.

Currently, ChatGPT which is an AI chatbot, is the most well-known LLM. It was created by OpenAI and released in November 2022. ChatGPT mimics a dialogue with the user. It is built on OpenAI's LLMs GPT-3.5 and GPT-4 and belongs to the Generative Pre-trained Transformer (GPT) family of language models. After being trained on an incredibly large corpus of text, the GPT models were refined to provide replies similar to those of humans by having human trainers serve as both the user and the assistant to the AI solution. Although smaller transformer-based language models operate like advanced autocomplete systems, larger models have shown unexpected emergent characteristics and acquired capabilities that were not part of their specific training. For example, ChatGPT generates fresh sentences and information instead of repeating previously spoken words. In addition, the chatbot may create prose or poetry on any subject in a specific manner, translate between multiple languages, and even generate programming codes. One of the most significant emerging capacities for social scientists is the models' ability to interpret almost any textual statement. Almost any query concerning a particular text can be posed to the model by researchers, such as determining themes or topics, identifying false information in a text, analysing the emotions conveyed, and determining the potential objectives of the author. The models are also found to perform exceptionally well on some other tasks. For instance, in interpretive textual analysis, early research has demonstrated that the models can perform better than human experts, demonstrating higher accuracy, reduced bias, and more dependability across languages and regional settings (Mökander et al., 2023).

Therefore, LLMs can perform various text analysis tasks, including subjective interpretation, contextual inference, and irony and sarcasm comprehension that were previously outside the purview of computational techniques. However, given that the exact constraints and features of the models are still unknown, some specific warnings need to be mentioned. For the textual analysis of investor protection in investment treaties, the Llama 3 large language model was utilised to determine investor protection and compare the documents against each other based on their demonstration of investor protection measures and those protection measures provided by Islamic principles. The analysis investigated the similarity and compared Islamic finance principles and investor protection in the SCS.

4. Legal Analysis

A state's territorial sea or archipelagic waters, as well as its land, subsoil, internal waterways, and airspace above it, are all considered inside its sovereign territory under international law. Beyond this marine belt, nevertheless, new zones of functional rights and authority have developed. First, the coastal state may perform specific maritime administrative duties within the contiguous zone (Article 33 UNCLOS). Second, according to UNCLOS Article 87, the coastal state has sovereign rights over natural resources and other rights pertaining to maritime research within the exclusive economic zone (EEZ). Third, according to Article 76 of UNCLOS, the coastal state has the right to resource exploitation over the continental shelf, an underwater area that includes the seabed and subsoil. What is considered inside the BIT"s territorial scope must be precisely defined under the treaty. When it does not give a definition, Article 29 of the VCLT takes over, stating that treaties automatically apply to the territory of the contracting state party. Therefore, an investment treaty would not cover maritime zones outside the contracting state's maritime belt without explicit guidance regarding its territorial reach (Hossain, 2013).

Examining the BITs in the SCS reveals a trend where the concept of "territory" includes maritime zones outside the coastal state's maritime belt. This pattern was earlier noted in a UNCTAD report. When a Bilateral Investment Treaty (BIT) is signed between two states on the shore, the inclusion is common. The six SCS and twenty-one additional coastal governments reached a consensus that the BITs under consideration were analysed. Only fourteen of the 126 BIT constellations that could have existed had no definition. The remaining 86 were either publicly available or already in existence. The territory definition for the remaining seventy-four BITs referred to the sea and the marine zones that extend beyond. As a result, they produced an 86% probability

that marine zones will be covered by BITs between SCS and other coastal states (Phan & Nguyen, 2018).

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There were 45 potential land-locked coastal-state-BIT constellations because the sample contained seven land-locked states and five SCS. Only twenty-five constellations had BITs or were open to the public, sixteen of which had territorial definitions. In addition, twelve definitions covered maritime zones, whereas four merely covered general definitions, such as the territory of a state as defined by its laws or the area over which a state exercises its sovereign powers and jurisdiction in accordance with international law. There were nine constellations with no clearly defined region. The SCS government defined territory to include maritime zones in their treaty-making procedures. To interpret this remark as a BIT, which does not include marine zones, would be erroneous. The omission may also reflect the contract parties' aim to limit the territorial investment on land. Unless there is an alternative definition or it is defined differently, a treaty applies to the whole territory of each party, according to Article 29 of the VCLT. The objective of the treaties is to safeguard investments made in domains under the contractual party's effective or de facto jurisdiction, such as the host state. The investment would not have been feasible otherwise. This understanding covers marine areas outside of the contracting party's territorial waters over which it exercises sovereign rights or jurisdiction and places over which it has sovereignty (territory). Using teleological interpretation, SCS BITs would probably define territory to include maritime zones (Pappa & Pereira, 2019).

Consequently, the territorial reach of the bilateral investment treaties (BITs) signed by coastal governments may include maritime or offshore investments made in the SCS. This suggests that jurisdiction ratione locus may be granted. The protection of investments made in the disputed region becomes a new challenge based on the status of the contested marine zones.

China and the Philippines agreed in November 2018 to cooperate on oil and gas development. They created working groups for entrepreneurs and an intergovernmental joint steering committee to discuss and pursue cooperation agreements for oil and gas. Joint Development Areas are those covered by such an agreement (JDA). According to UNCLOS Articles 74(3) and 83(3), which mandate that nations with overlapping EEZs and continental shelf claims enter into workable temporary agreements, coastal states are making these commitments. The only other JDA amongst SCS states is that between Malaysia and Vietnam, which, together with Malaysia and Thailand, constitutes the world's first tripartite JDA (Nong et al., 2013).

This is a temporary demarcation of the disputing party that is not present in the SCS yet. Under Article 76 UNCLOS, Malaysia and Vietnam submitted a joint submission to the CLCS in 2009 about their extended continental shelf claims. The submission, however, omitted any definition of each nation's enlarged continental shelf claim. Rather, it just delineated the territory that both nations jointly claim. The Prime Minister of Malaysia described it as a wide understanding of the apportionment of the respective territory. As a result, verbatim remarks opposing this contribution were issued by China and the Philippines. This analysis just looked at investments made in the unregulated sectors that make up the potential investor-state scenarios under the SCS. There are no provisionally delimited regions, as there is just one agreement and one MoU on JDA (Desierto, 2020).

Due to competing claims to their continental shelves, exclusive economic zones, and territorial seas, the states encounter challenges in agreeing on how to define maritime borders. The SCS Dispute stems from the overlap of China's Nine-dash line with its neighbors' continental shelf and EEZ entitlements. In this sense, rather than being created by China's mainland coastline, the Nine-dash line is anchored by its sovereignty claims

over island groups in the South China Sea. This would be related to the other categories of contested regions. Disagreements among China's SCS neighbors on overlapping entitlements would continue if China did not assert its Nine-dash line claim. One instance is the Philippines' objection to Malaysia and Vietnam's combined application to the CLCS (Gau, 2019).

A land border agreement from the previous year conflicted with China and Vietnam's 2000 maritime delimitation in the Gulf of Tonkin. It was not a legal requirement to establish claims but rather a political move to further negotiate marine boundaries. Furthermore, the placement of Chinese and Vietnamese islands in those waters, rather than their coastline land, was taken into account when defining the boundaries of the Gulf of Tonkin. In the Guyana v. Venezuela International Court of Justice case, for instance, Venezuela challenged an arbitral ruling that established a land boundary, making establishing a definitive maritime delimitation more difficult. China's acceptance of UNCLOS is consistent with its nine-dash line, which is anchored by its claims of sovereignty over islands in the South China Sea. Reiterating its sovereignty over all of its archipelagos and islands, as specified in Article 2 of the Law of the People's Republic of China on the Territorial Sea and Contiguous Zone, it filed a declaration with UNCLOS. This clause defines China’s land area as its mainland, which includes Taiwan, the Penghu Islands, and its coastal islands. In addition, Dongsha, Xisha, Zhongsha, and Nansha Islands (Pratas, Paracel, Macclesfield Bank, and the Spratlys) are islands in the SCS, as are the Diaoyu (Senkaku) islands in the East China Sea. States may contest the rights even after sovereignty over land or marine areas is established.

The main question to these territorial claims is the definition of an island or a rock. A rock is solely entitled to a territorial sea under UNCLOS Article 121, but an island creates both a territorial sea and an EEZ. Whether the characteristic supports economic life or human habitation is what makes it different. In this sense, the Spratly Islands or any of its features could not give rise to an EEZ, according to the ruling of the PCA judgment in the Philippines v China. This indicates that the UNCLOS definition of an island does not apply to the Spratly Islands (McDorman, 2016).

Based on this, the question arises of what low tide elevation (LTE) represents. An island must be above water at high tide in accordance with UNCLOS Article 10. As opposed to this, an LTE is a naturally occurring region of land that is above and surrounded by water at low tide but submerged at high tide. Only under specific conditions (Article 7 (4) UNCLOS) may it establish straight baselines or estimate the width of the territorial sea (Article 11). Unlike rocks, which are always above the water, LTEs don't give rise to marine rights. Consistent with this, The Philippines contended in the PCA case that the LTEs Gaven Reef and McKennan Reef were rocks, as determined by the tribunal.

Another critical issue is the conflict over the baseline drawings. Maritime entitlements may be overreached when a coastal state draws baselines that violate UNCLOS or CIL. This is frequently the case when straight baselines are misused, which is only allowed under specific circumstances per Art. 7 UNCLOS. Specifically, this requires connecting specified sites with a straight line instead of taking low-water lines down the coast. China filed a proclamation after ratifying UNCLOS, indicating that it would measure its territorial sea from both the mainland and the Paracels using straight baselines. The question of whether a dispute over maritime areas impacts jurisdiction ratione loci, the geographical reach of the Bilateral Investment Treaty (BIT), or jurisdiction ratione materiae emerges. A further query relates to the tribunal's authority to rule on an investor-state conflict that is connected to a territorial maritime dispute between states. Subject to governmental approval, the tribunal's jurisdiction ratione materiae refers to the investment issues it considers. Only matters that the states agreed would be subject to arbitration may be decided by the tribunal (Wallace, 2014). These include disagreements about losses and damages that the investor claims were caused by the host state's purported violations of the Bilateral Investment Treaty (BIT).

The maritime zones created by international law were included in the definition of territory in the BITs study, with certain BITs specifically citing UNCLOS. The UK-China Bilateral Investment Treaty (BIT) is an exception to this rule, as it only applies to domains where sovereignty, sovereign rights, or jurisdiction are exercised without reference to international law. Nonetheless, as seen in the Greece-Vietnam BIT, BITs frequently contain an applicable law language that permits consideration of international legal norms. International law may be applied in cases where BITs, which provide for ICSID Arbitration, lack such terms. This is permitted by ICSID Convention Article 42 (1).

An investment in the host state's territory signifies an agreement for tribunals to use international law to determine the BIT’s territorial scope. Though the governments would not have likely agreed, the tribunal must

rule on matters of marine sovereignty over which it does not initially have jurisdiction. The inherent self-imposed limitations that tribunals place on their jurisdiction when handling renvoi clauses of this nature represent a significant challenge (Nordquist & Phalen, 2017).

A permissive interpretation of applicable law clauses permits the application of international legal norms that are brought up during the arbitration and are relevant to the filed claims. In the past, tribunals have used tools, including the UNESCO Conventions, the UN Convention against Corruption, and the ICCPR. Furthermore, there has been significant discussion regarding the application of non-investment rules in investment arbitration when bringing up the host state's obligations under international human rights law, including expropriation claims. The applicable regulations clause can be interpreted narrowly, allowing only rules that are directly related to investment law to be cited. This would make determining the geographical reach of the relevant BITs particularly difficult when referring to UNCLOS or customary maritime law.

The authority of an investment tribunal to rule on the international legal obligations of host nations is granted. Consequently, it is permissible to depend on international law, particularly where such law regulates a particular aspect of responsibility. Article 31(3)(c) of the VCLT mandates that any pertinent international law standards that apply to the parties' relations be taken into account while interpreting a treaty. The WTO Appellate Body's clinical isolation ruling on the relationship between the WTO and general international law embodies this clause. The International Court of Justice (ICJ) used an integrative approach to treaty interpretation in the Oil Platforms case, considering the relevant rules on the use of force when interpreting the US-Iran Treaty of Amity. Judges who dissented, meanwhile, cautioned against adopting all of the substantive international law.

The host state and the investor's home state are unrelated when interpreting the UNCLOS customary law of the sea regulations that are used to evaluate contested maritime areas under Article 31(3)(c) of the VCLT. Conversely, they are applicable between the host state and the state protesting and not a party to the BIT contract. In addition, the BIT's contracting parties concur that international law defines their area. There may be an unspoken agreement between states in their economic dealings to avoid establishing an investment climate that defies international law because of the possible political cost (Adnan & Shahid, 2020).

The primary difficulty an investment tribunal faces when implementing renvoi clauses relates to another non-investment matter of international law that is outside the purview of its authority. This difficulty occurs when the tribunal possesses ratione materiae jurisdiction over an internal matter. That would, however, entails the exercise of jurisdiction over a matter outside the tribunal's purview. Moreover, renvoi to international law for maritime zones is conceivable. Prior determination would still be necessary for the tribunal to decide if the investment is made in contentious areas that are "in accordance with international law". The tribunal's duty to settle investment disputes does not align with the nature of this ruling, which pertains to interstate maritime conflicts (Yee, 2014).

The external issues that are involved may be inconsequential or indispensable. When the tribunal lacks jurisdiction over the internal matter, the implicated issue becomes essential. This would necessitate a decision on an external matter over which the tribunal is not authorized to preside. Furthermore, when the tribunal has the authority to rule on an external matter, the implicated problem is incidental. Despite being outside of the tribunal's purview, it takes these decisions since they pertain to the internal dispute.

The Aegean Sea Continental Shelf, Pedra Branca, the South China Sea and the Black Sea, the Sea of Azov, and the Kerch Strait were among the maritime cases that fall outside the purview of the PCA and ICJ. According to the rulings of the PCA and ICJ, the Court or tribunal must decide regarding maritime entitlements. The rights relate to China's and the Philippines' claims to sovereignty over islands and marine features, the continental shelf claim of Greek islands, the boundaries of Singapore's and Malaysia's territorial seas, and the sovereignty of Crimea. These matters were deemed outside the tribunal's purview. To determine whether investments made in such locations are deemed protected, an investment tribunal must thus also render a decision on these matters. On the other hand, the PCIJ held in Certain German Interests in Polish Upper Silesia that it could interpret other international accords over which it has authority and that are deemed incidental. Furthermore, the PCA held in the Chagos Marine Protected Area that it has the authority to make these kinds of findings or ancillary legal decisions in order to settle the dispute (Nasir et al., 2020).

Compared to investment tribunals, the ICJ and PCA are two organizations that are better qualified to uphold incidental jurisdiction. If the internal disagreement in the aforementioned ICJ/PCA procedures is more important than an investment dispute, they may refuse to have jurisdiction over concerns pertaining to maritime

disputes. Investment tribunals must deny jurisdiction in this situation as well. Even in cases of renvoi, the tribunals' authority to apply international law principles to a maritime matter is not affirmed by doing so. This is because decisions regarding marine sovereignty or entitlements made by an investment tribunal would inherently be acts of extra vires. As a result, the tribunal's jurisdiction ratione materiae is incompatible with *de lege lata*, the renvoi to international law in the BIT's territorial scope. Nevertheless, significant policy justifications exist for a tribunal to be granted incidental jurisdiction over contested marine territories (Seta, 2022).

Because the tribunal has the authority to exercise jurisdiction in order to settle the issue that was referred to it, decisions may be viewed as incidental. This is because, particularly for investors working in extremely dangerous areas, the omission to exercise jurisdiction could amount to a denial of justice. Investors want reassurance in these areas regarding the host state's commitment to safeguarding their assets against intervention by third parties. A host state that permits investments in contentious areas should not be exempted from its treaty duties under the Bilateral Investment Treaty (BIT) due to estoppel considerations. Instead, the state should assert its adherence to international law on its territory only when it is entirely resistant to any challenges from other states.

The methodology employed by the tribunals in the Crimea cases suggests that an investment tribunal may circumvent the applicability of international law with respect to the region covered by the Bilateral Investment Treaty (BIT). Rather, even in cases when an investment is located on respondent state territory, it should be protected by investment treaties under the effective control of contracting governments. The tribunals in Stabil LLC v. Russia and PJSC Ukrnafta v. Russia determined that the entirety of Crimea under effective Russian control would be covered by the Russia-Ukraine BIT. In set-aside actions, Swiss courts upheld these territorial jurisdiction rulings. The Oschadbank v. Russia verdict was overturned by the Paris Court of Appeals due to the tribunal's absence of ratione temporis. On the subject of territorial jurisdiction, the Court did not reach any conclusions. Investing in disputed areas of the SCS was a calculated risk taken by both the foreign investor and the host state. Furthermore, a coastal state demonstrates its authority and jurisdiction over a maritime area by using its sovereignty to give energy concession blocks to international companies. Since this would jeopardise its maritime claim, it would not protest to a tribunal's lack of territorial jurisdiction (Song & Tønnesson, 2013).

By modifying the extraterritorial application of international human rights legislation for an investment law environment, effective control could be achieved. The purpose of human rights treaties is to ensure that human rights are effectively protected. As a result, in circumstances involving disputed occupying sovereignty and armed conflict, their extraterritorial application is confirmed. The International Court of Justice (ICJ) raised the most significant objections in the cases of Armed Activities on the Territory of Congo and Wall Advisory Opinion. Moreover, effective investment protection in disputed maritime areas could be achieved by applying the same argument. This can entail applying BITs extraterritorially, that is, outside of the territorial waters, in order to extend jurisdiction. As a result, prospective investments in the expanding offshore energy sector would be well-protected.

A third state's marine sovereignty may be jeopardised by the tribunal's duty to ascertain whether the host state exercised its authority or jurisdiction over the purportedly contested nautical territory "in accordance with international law". Consequently, ratione personae present an extra-jurisdictional challenge. An essential party principle known as the Monetary Gold was developed by the International Court of Justice (ICJ) and is relevant to international dispute resolution. It forbids international tribunals and courts from rendering a decision in a dispute between two parties that fall under their purview. This is due to the fact that the case's subject matter, a merit judgment, would have an impact on the legal interests of a third state. Conversely, the aforementioned principle is applicable to precondition determinations wherein the Court must ascertain the legitimacy of a third state's actions or legal stance prior to adjudicating the matter (Thao, 2023).

Investment tribunals have not confirmed the application of the Monetary Principal objections in investment arbitration. The tribunal may grant incidental jurisdiction over contested marine areas based on the SCS. It also has the authority to determine whether the BIT's definition of territory includes the phrase "in accordance with international law". Nonetheless, this would amount to a finding of the legal standing with respect to territorial sovereignty, marine delimitation, or entitlements of another third state. As a result, the tribunal would have to deny jurisdiction over the investment dispute. The protesting state may nevertheless appear before the tribunal as an *amicus curiae* or as a non-disputing party (with regard to the investor-state dispute), even though the tribunal may avoid discussing the issue of maritime sovereignty. The non-disputing party may file a submission

under Article 37(2) of the ICSID Arbitration Rules and Article 5 of the UNCITRAL Transparency Rules in order to give the tribunal an alternative viewpoint on an issue in which it has a substantial interest.

The EU Commission's amicus curiae comments in arbitrations to contest the applicability of intra-EU BITs and Ukraine’s submission in the Crimea disputes are two prominent instances of amicus curiae engagement in investment arbitration. The Commission stated that intra-EU BITs were deemed unconstitutional under EU law due to their creation of a parallel system that overlapped with Single Market regulations. Furthermore, they delegated jurisdiction over issues involving EU law to courts that operate independently of the TFEU’s dispute settlement procedures. When it comes to opposing international tribunals making decisions on matters of sovereignty, the EU's stance is virtually the same as that of any individual state. Ukraine contended in a different amicus that the tribunal may assume jurisdiction without making a determination regarding Crimea's status.

It is yet unclear to the SCS how the protesting state, China, in particular, would approach investor-state procedures strategically. It has a stake in an international tribunal not reaching any conclusions about matters pertaining to its claims to the Nine-dash Line. This would be comparable to Russia’s desire to keep tribunals from rendering judgments about Crimea. In the SCS dispute, however, the state that may protest has the option to file a foreign investment claim against the state that it is disputing the maritime territory. Due to the potential for claims totaling hundreds of millions or perhaps billions of dollars, this poses significant financial risks. As a result, this places a heavy load on the host state's public coffers, particularly in developing economies like all of the SCS states (Kohl, 2017).

However, before China or any other state is faced with an investment claim, this cannot take place. Russia was not eligible for consideration in the Crimean cases. Politically speaking, this might make a difference between China and Russia in the ISDS procedures, raising issues with their influence and sovereign rights over contested territory.

5. Investor Protection under Islamic Finance

Islamic finance incorporates strong legal protection. Legal and economic ownership are clearly distinguished in Islamic law. The institutional unit that is legally qualified to receive benefits related to assets or products is the rightful owner of those objects. The risks and benefits associated with using the relevant assets may be transferred by the legal owner to another economic agent through a contract. By taking the economic risks for the relevant period, this other agent then becomes the economic owner and is the institutional unit allowed to collect the advantages, or rewards, associated with the use of the assets during an economic activity.

When this is not the case, the necessary assets are assigned to the economic owner's sector. Normally, the legal and economic owners are the same. Despite the possibility that Islamic accounting standards indicate different things, this distinction is pertinent to Islamic finance in both national accounting and external sector data. According to Islamic finance accounting rules, the balance sheets of Islamic financial organizations should reflect who owns the underlying non-financial assets. This is true even if they might only own the assets momentarily or not employ them at all in their productive endeavors. Put differently, legal ownership is the main subject of the accounting standards. As a result, it appears from one reading of Islamic financial institutions' financial statements that they are exposed to and participating in non-financial operations to a greater extent than may be the case. Of course, the question of economic ownership is also disregarded in this perspective. An alternative view that could be more in line with the commonalities seen in both Islamic and conventional finance guidelines is that the economic ownership of the assets belongs to the users. As a result, in the majority of situations, the economic owner of a non-financial item can be identified as its user. Thus, the function of Islamic financial institutions and instruments under certain arrangements, as well as the nature of their economic activity under certain arrangements, need to be taken into account (in a macroeconomic statistical sense). This makes it possible to ascertain who owns the relevant assets economically or whether that ownership has changed (Guilfoyle, 2019).

It is helpful to take into account the two complicating factors when addressing the handling of economic ownership in financing agreements. Firstly, Islamic financial institutions and banks, in particular, engage in a range of economic operations. To support these activities, they may establish distinct organizations, which can be unconsolidated or consolidated in their financial statements (i.e., as independent, fully owned institutional units). As a result, it is feasible that Islamic financial institutions create a distinct institutional unit in some of these arrangements, which will subsequently be the rightful and beneficial owners of the underlying assets. In

the case of real estate investment, for instance, Islamic financial institutions may partner with other entities (such as construction companies) to jointly create properties that their subsidiary will hold in a temporary capacity. If so, there is no significant alteration to the arrangement. Second, Islamic financial institutions may function as intermediaries by shifting economic ownership of the goods from the seller to the client (the party requiring the use of these assets), assuming financial risk in the process, whether or not a distinct institutional unit is established. This option does alter the configuration and first distributes economic ownership. In both situations, it is easier to define Islamic financial institutions' (or their wholly owned subsidiaries') roles as providers of financial services that enable the transfer of non-financial assets or products when the economic ownership of the underlying assets is not listed on the balance sheets of these organizations.

Furthermore, Islamic financial institutions' frequently transient ownership of these goods may be viewed as a type of constructive possession (*Qabd Hukmi*) or physical possession (*Qabd Fe'eli*) rather than as economic ownership. The economic owners of the assets acquired through the agreements of Islamic financial institutions are regarded as the final buyers of the underlying non-financial assets. The economic owners assert their ownership of the advantages and take on the usage-related risks. The assumption is that economic ownership transfers at the moment the underlying things are acquired. The date the assets are recorded in the transaction partners' accounts may serve as a reliable indicator of a change in ownership when it is not immediately apparent, or else it may be the point at which actual control and possession are obtained. Combining transactions and positions in Islamic finance instruments according to terms, attributes, and purposes is a practical approach to organizing them. It is possible to evaluate economic ownership for the various arrangements more accurately from that angle.

The financial institution is the product's economic and legal owner when it purchases goods or services for internal usage. On the other hand, early in the arrangement, it is more pertinent to concentrate on shorter-term financing associated with sales of products and services when the buyer/user is the owner or at least the economic owner. In these circumstances, particularly when the products are relatively inexpensive, the Islamic financial institution's only legal right against the borrower is financial. Depending on the specifics of the financial agreement, different rules may apply (Truong, 2018).

In certain cases (like *Murabahah*), the financial institution temporarily acquires legal ownership of the product before selling it.

However, the goal of the majority of these financial agreements is often to make it easier for the customer and final user to make a purchase. The last user of the goods is their legal and economic owner at the time of sale, but the financial institution will have a claim against the customer for the amount financed. In other agreements, the products are temporarily held by the Islamic financial institution. Consider the scenario where products are bought at the moment and occasionally sold for a higher price in the future (*Bai' Salam*, for example). For that brief time only, the financial institution may acquire both legal and economic ownership. Users will become the goods' legal and beneficial owners when they subsequently purchase them.

An additional illustration would be a *Bai' bil Wafa* / *Bai' bil-Istigal* contract with a financial institution, when the purchaser agrees to sell it back to the customer at a certain future date, so becoming the legal and economic owner for a (usually brief) duration. An operating lease (*Ijarah Muntahia Bittamleek*), which is a rental agreement for a duration that does not encompass a sizable percentage of the non-financial asset's economic life, is the final option to take into consideration. At the conclusion of the lease period, the lessee is required to return the item and is not granted the option to buy it. Because it bears the risks and benefits associated with asset ownership, the lessor is the asset's legal and economic owner. When highly expensive commodities, buildings, or project financing are acquired over an extended period of time, substantive questions regarding economic ownership of a funded non-financial asset come up. This funding may come in the form of loans, such as those provided by *Istisna'*. A window of opportunity exists during which the contractor receives progress payments from the Islamic financial institution. The financial institution is the asset's legal and beneficial owner throughout this time. Economic ownership of the asset passes to the real user after it is finished, but the financial institution retains title to the asset until the debt is paid off.

Musharakah (partnerships) and *Mudarabah* financing are two more forms of longer-term funding arrangements. The Islamic financial institution merely provides capital in both cases, albeit it might also get a cut of the earnings (*Musharakah*). Even if the financial institution may continue to be the legal owner of any underlying non-financial assets for the term of the financing agreement, the party making use of those assets

owns them economically. Another longer-term financing option with obvious economic ownership is financial leasing or *Ijarah Wa-Iktina*. In this instance, the lessee inherits the risks and benefits associated with asset ownership throughout the length of the Loan lease, even while the lessor is the asset's legal owner. Additionally, the lessee usually gets the option to buy the assets at the conclusion of the lease term, and the lease term normally covers a significant amount of the asset's economic life. Therefore, the economic owner is the lessee. In exchange for supplying the funds to purchase the asset, the lessor, or Islamic financial institution, receives payment under the terms of the financial lease. At the conclusion of the lease term, the lessor is also entitled to the residual value of the leased asset, which they may obtain either via economic possession of the depreciated asset or as payment for the lessee's purchase of the depreciated asset (Desierto, 2020).

In Islamic finance, there is a possibility of default on corresponding payments for goods purchased for usage under a financing arrangement. Given the social benefit components of Islamic finance that are derived from Shari'ah principles, it seems sense that, in a number of situations, economic ownership remains unaffected when the economic owners of non-financial assets in financing arrangements like *Istisna'* and *Murabahah* fail to make their payments. One could argue that the default does not pertain to the entire arrangement; rather, it merely concerns the monetary payment. Since profit-sharing or participation contracts cannot be deemed fully defaulted, the user will always maintain economic ownership. It follows that defaulting clients will continue to be the economic proprietors, while there may be certain non-mutually exclusive and complicated factors. Nonetheless, it is plausible that default genuinely results in a shift in economic ownership. For instance, if the Islamic financial institution finds that the borrower did not enter into a contract in good faith, the borrower may be penalised, and the institution may be entitled to repossess the assets, temporarily taking both the legal and economic ownership of the property, subject to the terms of the contract.

Additionally, the financial institution might be able to locate a more deserving or needy client in the event that a specific asset, such as a building, is in short supply or is not properly maintained. The nature of the default may be a further factor to take into account. It is possible, for instance, that the borrower is not expected to ever be able to repay the nonperforming loan and that the circumstances indicate that the debt is a write-off. A shift in economic ownership might be appropriate in this situation. To put it another way, a lot depends on the specifics of the case, the kind of funding, and how the commodity is really used. For example, is it utilised as a community building versus a company asset. Finally, and more precisely, things might be more apparent in the case of financial leases or *Ijarah Wa-Iktina*. The lessor will probably look for another lessee in some or most of these cases (Nong et al., 2013).

6. Conclusion

The SCS represents a critical area for investors to be concerned about territory disputes. The area boasts not only rich resources but also plays an important role in logistics, fishing, and other industries, being a choke point for a large amount of the world's trade. Islamic finance has exhibited significant potential given the adjacency of a number of countries that exhibit a large Muslim population. Investor protection represents another key area to ensure economic development and provide confidence to investors that their rights will be protected. The study focused on analysing the BITs that were signed by the states in the SCS, as well as the foreign investment activity in the region. Additionally, the study examined the disputed marine territories among the SCS states. The region attracts international investments because of its contentious status, particularly in the petroleum sector. Investors commit to high-profile, ambitious projects in the contested SCS waters because of this. Foreign investments are therefore opposed to the overlapping maritime claims over contested waters and features, particularly the island groupings, that are at the center of the multilateral interstate maritime dispute. The states include marine areas outside of their territorial sea, such as continuous zones, EEZs, and continental shelves, into their territorial scope of protection, according to the BITs survey. States are generally required to exercise sovereignty, sovereign rights, and jurisdiction over these territories in accordance with international law as per the BIT's definition of territory. Tribunals must determine Proprio motu whether or not they have jurisdiction due to this reference to international law regulations. They should also look into the territorial jurisdiction that the BIT has granted them. However, doing so necessitates rulings on sovereign states' maritime rights that are outside the ratione materiae authority of investment tribunals. The assessment of territorial jurisdiction is substantially impacted by the concerned problem. Decisions over marine entitlements are impacted by defining what is considered territory under the BIT.

Due to the external issue of marine entitlements, this is subsequently connected to the internal dispute over

territorial scope. It was found that *de lege lata* might be the case. Nonetheless, there are justifications (the incidental issues argument) for the tribunal's admission of incidental jurisdiction over the outside issue as a necessary preliminary consideration for the inner question of territorial scope, *de lege feranda*. The first justification is the investor's and the host state's awareness of the political realities of taking a calculated risk by investing in contested waters within the SCS.

The technique adopted by tribunals in the Crimea cases, known as effective control, serves as the second justification. They implemented investment treaties in the territory under the host state's authority. Nonetheless, the region did not fit the definition of territory as defined by international law. The extraterritorial application of investment treaties serves as the third justification. By doing this, the tribunal would be able to discuss the maritime entitlements of the SCS governments without directly deciding on them. As a result, they would not have to deal with the Monetary Gold or necessary parties. Rather, in the investor-(host)-state dispute, the tribunals are limited to considering amicus curiae submissions made by the protesting state as a non-disputing party. Islamic finance may provide some considerable opportunities to leverage risk sharing for investor protection in disputes, given the emphasis on real asset investment as well as ownership transfer to the financial institution. For multinational financiers, this may represent a transfer from one entity in the first country over to another entity in the second country.

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Examining the Trend of the Research on Islamic Financial Literacy from 2016-2023: A Bibliometric Review

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Abstract

The purpose of this study is to identify the dynamics of research literature production in the field of Islamic financial literacy by conducting a bibliometric review. Indeed, this would aid in providing directions for future theoretical and empirical research and identifying the most influential work and authors in the field. A systematic literature search using the Scopus database was carried out and gathered a total of 35 publications from 2016-2023, published in 33 peer-reviewed journals, 1 book series, and 1 conference proceeding on which the researchers carried out descriptive statistics and content analysis. There were 32 articles, 2 conference papers, and 1 review. A comma-separated value (CSV) file containing 35 references was used for analysis on Vos Viewer from 2016 to 2023 to reveal thematic clusters. The literature search was done using seven keywords namely, "Islamic Financial Literacy", "Shariah financial literacy", "Sharia financial literacy", "Shariah financial education", "Sharia financial knowledge", "Islamic financial knowledge", "Islamic financial education". This study revealed that there were four main aspects covered in the reviewed literature. These were basic concepts in measuring Islamic financial literacy, Islamic financial literacy as a determinant of adoption of Islamic banking, measuring the level of Islamic financial literacy, and determinants of Islamic financial literacy. Future research should be focused on analyzing the effect of Islamic financial literacy as a mediator or moderator of other factors of Islamic banking adoption. Indeed, this would help to fill the literature gap by further providing a deeply explored and enhanced Islamic financial literacy concept in the Islamic banking and finance field.

Keywords: *Islamic financial literacy, Bibliometric analysis, financial literacy, Islamic finance, Islamic banking.*

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1. Introduction

Acquisition of knowledge is key in making sense of any situation or object and it's the best way in which individuals can well integrate with the environment sustainably as they realize their well-being in different aspects of life. Besides, forms of well-being are diverse and are in ranges such as health, social, political, and most importantly financial well-being (Abdullah et al., 2017). Indeed, short of sound financial well-being individuals and families can be categorized as financially lacking/poor and they can hardly afford the other forms of well-being because they are limited by financial means. However, knowledge can be acquired through reading or experience and low levels of financial information for both families and authorities can create problems for societies (Kevser & Dogan, 2021).

However, the context of knowledge in our study is the knowledge of financial products and services where the objective is to expose consumers to such products and services through financial literacy. Indeed, in several studies, the importance of financial literacy has been empirically proven to be pivotal in influencing individuals' financial behavior (Ahmad et al., 2020) through promoting accessibility to finance as it aids in the creation of desired financial behaviors such as saving, budgeting, or using credit wisely (Abdullah et al., 2017).

Therefore, financial literacy is human capital that is so vital for individuals to access and acquire to be able to understand financial products and concepts (Pala et al., 2023), and develop the ability and confidence to identify and appreciate financial risks and opportunities. Financial literacy renders individuals financially competent to make informed choices, know where to seek financial help, and when to take alternative actions

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to enhance their financial well-being and satisfaction (Rahim et al., 2016). The financial competence acquired through financial literacy would also help consumers or investors understand complex and multifaceted financial products and services in the market to well make financial choices and make decisions suitably and with responsibility. Indeed, the complexity of financial structures, products, and services has become a concern (Kevser & Dogan, 2021) and thus a dire requirement to make financial knowledge and skills to be fully extended within populations, especially among young people.

As Islamic finance has been expanding for the past four decades (Ahmad et al., 2020), there has been an increase in the development of Islamic products offered in the market for both Muslim and non-Muslim consumers. Besides, this has led to increased development in research on Islamic financial literacy as authors try to explore the concept – through aspects like defining it in reference to the financial literacy concept (Antara et al., 2017), measuring Islamic financial literacy (Albaity & Rahman, 2019) among other aspects. Therefore, the purpose of the current study is to identify the dynamics of research literature production in the field of Islamic financial literacy by conducting a bibliometric review. This considers discussing the main aspects of Islamic financial literacy and providing directions for future theoretical and empirical research – and then identifying the most influential work and authors in this field.

1.2 What is financial literacy?

From the diversified studies done on financial literacy, the terms commonly identified to relate to this concept are financial literacy, financial knowledge, and financial education (Abdullah et al., 2017). However, according to several studies, (Huston, 2010; Atkinson & Messy, 2012; Lusardi, 2009) among others, it can be analyzed that there's no definite definition for financial literacy – although in simplicity, it can be understood as a competency to know, understand, and evaluate finance information.

Besides, financial literacy conceptual definitions are addressed in 5 categories (Abdullah et al., 2017; Kevser & Dogan, 2021).

i. Knowledge pertaining to financial concepts.
ii. Competence to comment on financial concepts.
iii. Ability to manage personal finances.
iv. Skill in making appropriate financial decisions and,
v. Ability to effectively plan future financial needs.

Therefore, financial literacy can be defined as a measurement of the degree to which one understands key financial concepts through appropriate, short-term decision-making and sound long-term financial planning, while being mindful of life events and changing economic conditions (Remund, 2010).

It can also be defined as a measurement of how well an individual can understand and use personal finance-related information (Huston, 2010) and it is categorized into;

i. Understanding (personal finance knowledge) and
ii. Use (personal finance application).

1.3 Islamic financial literacy

Islamic finance is hinged on Islamic law and that's the basis of its robustness (Kevser & Dogan, 2021). Islamic finance is value-based as well as asset-based, a justification that it fosters social equality, poverty reduction, and enhancement of human well-being. So, as financial literacy is the ability to understand finance (Abdullah et al., 2017), Islamic financial literacy can be defined as understanding and applying finance based on Islamic law (Kevser & Dogan, 2021) in line with compliance with the Sharia terms and conditions.

However, there's a distinction between financial knowledge and financial literacy (Huston, 2010) where financial knowledge is the general understanding of products and services developed, whereas financial literacy is the competence/skill gained while using such knowledge. Thus, Kevser & Dogan (2021) asserts that Islamic financial literacy is the practical knowledge sustained while using Islamic financial products and concepts. Therefore, as consumers of Islamic banking products and services seek to satisfy their demands, they are faced with the challenges of understanding of financial terms of their financing – and whether the instruments they seek are Sharia-compliant (Albaity & Rahman, 2019). Therefore, this among other aspects makes the concept of Islamic financial literacy key in aiding consumers to not only become aware of the products and services provided but also to develop the Islamic financial competence to use such products in line with the Sharia principles. The study of Islamic financial literacy is a new concept brought into financial literacy (Rahim et al.,

2016), and there's needed zeal to carry out extensive research to popularise the concept. Consequently, it will gain the objective of enhancement of awareness about Islamic products and services among potential consumers of such products and services (Pala et al., 2023).

2. Research Methodology

This study aims to examine the trend and productivity of research on Islamic financial literacy using bibliometric analysis. Therefore, several bibliometric indicators and network visualization will be presented in this paper.

2.1 Bibliometric Analysis

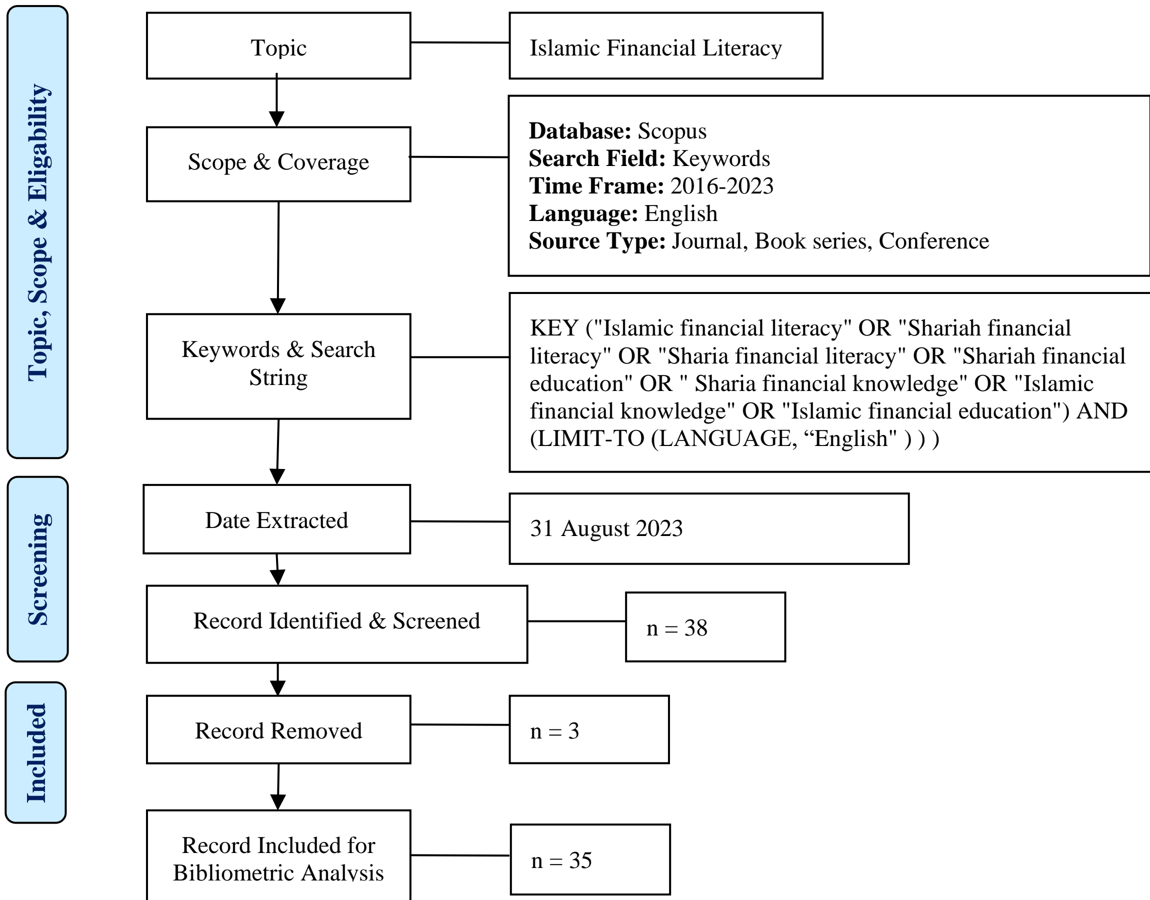
Bibliometric analysis can be defined in different ways and has proved to be pivotal in the field of research in several ways (Donthu et al., 2021). Therefore, having gained popularity in the field of research as one of the most effective methods in revealing the trend of studies (Ahmi & Mohamad, 2019), it can be defined as a quantitative method that uses statistics to measure text and information to enable an analysis of published documents (Ahmi & Nasir, 2019). In another assertion, it's the application of mathematics and statistical methods to books and other media of communication.

Bibliometric analysis is not only popular but also a rigorous pathway/procedure for explaining and analyzing large volumes of scientific data (Donthu et al., 2021). If well done, bibliometric studies can aid in building a firm base for advancing the field of Islamic financial literacy in novel and systematic ways – by empowering scholars to identify knowledge gaps, gain insight into the trends of literature in the field and then getting their intended contributions to the field well positioned (Donthu et al., 2021). Besides, the most examined aspects in bibliographic studies include publication outlet, type of publication, authorship, affiliation, country, and h-index (Ahmi & Mohd, 2019). Other studies further investigate the impact of publications based on the citations (Ahmi & Nasir, 2019), such as citations per publication, citation counts, and co-citation among others. Besides, bibliometric analysis has now been simplified with the use of various tools developed to analyze the bibliometric data (Donthu et al., 2021). The most trending ones are Herzing's Publish or Perish and VOS Viewer (Abdullah & Naved Khan, 2021) where visualization of the bibliometric networks is well constructed in the latter.

2.2 Source and Data Collection

The current study employed a systematic literature search using the electronic database Scopus to identify publications by researchers on the topic of Islamic financial literacy. A total of 38 publications were identified from 33 peer-reviewed journals where 32 articles, 2 conference papers, and 1 review were considered for further analysis and 3 book chapters were left out because of their limited visibility compared to articles, as articles are widely included in various databases. Historically bibliometric analysis has been so much based on journal articles all through its evolution process. Identification of the items from Scopus was done by inputting the required keywords prepared by the researcher reflecting Islamic financial literacy to systematically get all publications extracted from Scopus. Therefore, the search string used in the Scopus database was "Keywords" as it's the most appropriate way of finding articles most relevant to a specific study (Almeida, 2018), (Kaushik & Rahman, 2014). Scopus database was considered the source of the items to be analyzed because it's the largest abstract and citation database of peer-reviewed literature journals consisting of publications from leading authors and publishers. So, the extraction files generated for the study were in the form of a ScopusRIS file, a Scopus CSV file, and a Scopus Refines file. The extraction process is shown in the flowchart below reflecting empirical publications in peer-reviewed journals from 2016-2023 that were considered for the review. Besides, the selection of articles was limited to peer-reviewed journals because they were considered to have published carefully studied articles from Islamic financial literacy (IFL) scholars. Indeed, the 2016-2023 timeline was also considered because the earliest study on developing a measurement scale for IFL was traced to the year 2016 (Antara et al., 2017).

Figure 1: Flow diagram of the search strategy



Source: Authors

2.3 Selection criteria

Based on the scope of the study, the articles selected were only those that were empirically published in peer-reviewed journals and available in the English language. After the extraction and selection of the required items, the researcher exercised due care in storing the extracted for further analysis and to avoid data loss. Therefore, the files were stored in the OneDrive online Microsoft storage platform for all the subsequent analysis and reference. The files stored were named Scopus CSV (real), ScopusRIS (real), and Scopus Refines (real).

2.4 Analysis of Data

After the systematic search of the items, we embarked on carrying out performance analysis and science mapping of Islamic financial literacy using the bibliometric analysis performed on the identified items. This was done to achieve our objective of trying to understand the trends of knowledge in the Islamic financial literacy field and to ascertain intellectual pathways and the respective impact of different publications, authors, and sources of such publications. The consideration of using bibliometric analysis in this study unlike others like meta-analysis and systematic literature review was ideal since this method of literature analysis employs both quantitative and qualitative analysis focusing on large data sets and addressing a broader scope in the field of study (Donthu et al., 2021).

The analysis using the bibliometric method can be insightful with the use of software. Besides, the study employed two kinds of software that are considered effective in generating results for the analysis and at the same time user friendly. The study utilized Publish or Perish software to analyze citation data and descriptive

statistics for the items, using a Scopus RIS file as the data source. The descriptives analysis respective to performance was also run using MS Excel software to generate the charts that graphically represented the trend of publication in the Islamic financial literacy field through the 7 seven years of publication. Then the deeper analysis of performance analysis and science mapping to ascertain the intellectual impact of authors, publications, and sources was done using the VOS viewer software version 1.16.19.0. This aided in ascertaining the trend of future studies in the field of Islamic financial literacy and analyzing the current limitations of the available publications.

Additionally, researchers conducted a comprehensive bibliometric analysis of Islamic financial literacy research. This analysis employed various techniques, including citation analysis, co-citation analysis, bibliographic coupling, co-authorship analysis, and analysis of indexed author keywords. This in-depth approach served two key objectives:

1. Identifying the leading scholars who are shaping the field. (achieved through citation analysis and co-authorship analysis)
2. Mapping the intellectual landscape of the field, revealing the key themes and how they are interconnected. (achieved through co-citation analysis, bibliographic coupling, and keyword analysis).

For example, bibliographic coupling and co-citation might appear to achieve the same objective of identifying leading contributors in the field, but to get all-inclusive results one must buttress the other. So, as co-citation analysis helped this study to identify seminal publications and knowledge in the Islamic financial literacy field, bibliographic coupling accommodated the niche and newest publications in the field, giving a truly diversified view of the impact of publications and authors.

To this end, the research work related to Islamic financial literacy was evaluated from the following aspects considering the articles that have been vetted and passed: Research productivity; documents; source types; the language of publications; subject area; most active source titles; most active institutions; authorship; keyword analysis; and citation analyses.

3. Results and Findings

3.1 Research productivity

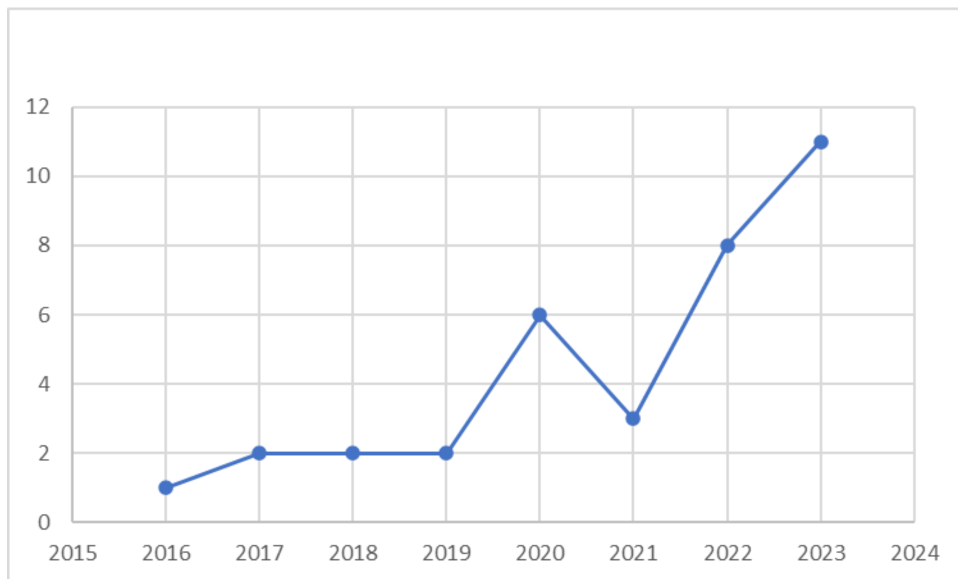
This analysis is based on the number of documents published per year. Examination of documents using the year of publication as a yardstick helps the researcher to observe the pattern and popularity of the subject in question over time (Ahmi & Nasir, 2019). The earliest publication on Islamic financial literacy was done in 2016 (Antara et al., 2017) and since then, publications have been rolled out. Besides the stagnation through the years 2017-2018, there was increased productivity through the year 2019, and then a slight slump in production through the year 2020. However, an increase in publications productivity on Islamic financial literacy was realized since the year 2021 to date an implication that Islamic financial literacy has become a favorite research area in academia as shown in **Table 1** and **Figure 2** below.

Table 1: Publication Trends: A Year-by-Year Analysis

Year	Total Publications	Percentage (%)	Cumulative Percent
2016	1	2.86	5.80
2017	2	5.71	8.71
2018	2	5.71	17.40
2019	2	5.71	21.74
2020	6	17.14	33.33
2021	3	8.57	49.28
2022	8	22.86	100
2023	11	31.43	0
Total	**35**	**100.00**	

Source: Authors

Figure 2: Publication trends year–by–year analysis.



Source: Authors

3.2 Document and Source Types

Published documents that were extracted were further analyzed based on their type and source. Document types are the types of documents based on their originality such as conference proceedings, journal articles, or book series. Whereas source type is about the source documents whether it's a journal, conference paper, book chapter, or book itself (Ahmi & Nasir, 2019). This study found articles, a conference paper, and a review as the three types of documents that have been published on Islamic financial literacy from the Scopus database as shown in **Table 2** below.

Table 2: Document type

Document Type	Total Publications	Percentage (%)
Article	32	91.43
Conference Paper	2	5.17
Review	1	2.86
Total	**35**	**100.00**

Source: Authors

Besides, **Table 3** presents documents classified into three different source types, of which journals represent the highest contributing source with 33 documents (94.29%), followed by conference proceedings and book series with 1 document (2.86%) each respectively.

Table 3: Source type

Source Type	Total Publications	Percentage (%)
Journals	33	94.29
Conference Proceedings	1	2.86
Book Series	1	2.86
Total	**35**	**100.00**

Source: Authors

3.3 Language of Documents

In addition to core metrics, a comprehensive bibliometric analysis should identify the languages in which the documents have been published (Ahmi & Nasir, 2019). So, in this study, all the 35 documents analyzed were published in the English language as presented in **Table 4** below.

Table 4: Languages used for publication of documents

Language	Total Publications	Percentage (%)
English	35	100
Total	**35**	**100.00**

Source: Authors

3.4 Subject Area

The publications were further analyzed based on the subject areas covered as per **Table 5.** Financial literacy and Islamic financial literacy are more related to management, business, and finance and that's why the publications identified covered mostly the subject areas of Business, management, and accounting (35.71%), Economics, Econometrics, and finance (19.64%) and social sciences as well (17.85%).

Table 5: Subject area

Subject Area	Total Publications	Percentage (%)
Business, Management and Accounting	20	35.71
Computer Science	4	7.14
Economics, Econometrics and Finance	11	19.64
Decision Sciences	1	1.79
Social Sciences	10	17.85
Engineering	2	3.57
Mathematics	2	3.57
Environmental Science	2	3.57
Arts and Humanities	2	3.57
Energy	2	3.57

Source: Authors

3.5 Most Active Source

To help researchers easily identify where to source publications about Islamic financial literacy, we found it ideal to identify the most active title sources in the study analysis as results are presented in **Table 6** below.

Table 6: Most active source

Source Title	Total Publications	Percentage (%)
Journal of Islamic Accounting and Business Research	5	14.29
International Journal of Emerging Markets	2	5.71
Isra International Journal of Islamic Finance	2	5.71
Journal of Islamic Marketing	2	5.71
Quality Access to Success	2	5.71
Transition Studies Review	2	5.71
Sustainability Switzerland	1	2.86
Sage Open	1	2.86
Pertanika Journal of Social Sciences and Humanities	1	2.86
Malaysian Journal of Consumer and Family Economics	1	2.86
Lecture Notes in Networks and Systems	1	2.86
Journal on Mathematics Education	1	2.86
Journal of Public Affairs	1	2.86

Source Title	Total Publications	Percentage (%)
Journal of King AbdulAziz University Islamic Economics	1	2.86
Journal of Islamic Monetary Economics and Finance	1	2.86
International Journal of Islamic and Middle Eastern Finance and Management	1	2.86
International Journal of Entrepreneurial Venturing	1	2.86
2022 International Conference on Information Technology Systems	1	2.86
International Journal of Entrepreneurship	1	2.86
Academy of Strategic Management Journal	1	2.86
Accounting	1	2.86
Advanced Science Letters	1	2.86
Cogent Economics and Finance	1	2.86
International Journal of Bank Marketing	1	2.86
International Journal of Business and Society	1	2.86
International Journal of Economics and Financial Issues	1	2.86

Source: Authors

3.6 Distribution of Publications by Countries

This further made an evaluative analysis based on the number of publications by countries reflective of the affiliation institution of the author. Overall, the most influential countries are Indonesia with 17 publications (36.96%), Malaysia with 13 publications (28.26%), Turkey with 3 documents (6.52%), and then Jordan, Saudi Arabia and the UAE all with 2 documents (4.35%) respectively. The results revealed that highly advanced countries in Islamic banking research have taken the lead in publishing literature about Islamic financial literacy followed by Muslim-dominated countries like Jordan, Saudi Arabia, and the UAE, although the latter's publications are currently limited, and their productivity is at a very low rate.

Table 7: Most active countries contributing to publication

Country	Total Publications	Percentage (%)
Indonesia	17	36.96
Malaysia	13	28.26
Turkey	3	6.52
Jordan	2	4.35
Saudi Arabia	2	4.35
United Arab Emirates	2	4.35
Canada	1	2.17
Finland	1	2.17
Kenya	1	2.17
New Zealand	1	2.17
Pakistan	1	2.17
United Kingdom	1	2.17
Yemen	1	2.17

Source: Authors

3.7 Most Active Institutions

Institutional participation in research is vital for boosting a field of study. This is because it fosters collaboration among scholars within the institution (Ahmi & Nasir, 2019). Therefore, in this study, the institutions' contribution towards Islamic financial literacy enhancement was considered as summarised in **Table 8.** Results from the analysis showed that Universiti Teknologi MARA with 5 publications (21.74%) was the most influential, followed by Universiti Utara Malaysia and Universitas Padjadjaran with 3 publications (13.04%) each respectively.

Table 8: Most active Institutions

Affiliation	Total Publication	Percentage
Universiti Teknologi MARA	5	21.74
Universiti Utara Malaysia	3	13.04
Universitas Padjadjaran	3	13.04
Universiti Malaysia Sabah	2	8.70
Universitas Airlangga	2	8.70
University of Sharjah	2	8.70
Universiti Malaysia Kelantan	2	8.70
Universitas Negeri Jakarta	2	8.70
Lebanese International University	1	4.35
Sekolah Tinggi Ilmu Ekonomi Bank BPD Jateng	1	4.35

Source: Authors

3.8 Authorship Analysis

This study's analysis also presents the most active authors who contributed to Islamic financial literacy publications. **Table 9** fully represents this information and the most active authors identified included, Antara. P.M, Anwar. M, Hassan. F, Musa. R, and Widyastuti. U all with 2 documents each.

Table 9: Most productive authors

Authors	Number of Documents	Percentage (%)
Antara, P.M.	2	5.71
Anwar, M.	2	5.71
Hassan, F.	2	5.71
Musa, R.	2	5.71
Widyastuti, U.	2	5.71
Aamer, A.M.	1	2.86
Abdullah, A.	1	2.86
Abdullah, H.	1	2.86
Abdullah, M.A.	1	2.86
Abdullah, M.F.	1	2.86

Source: Authors

Besides**,** there are a total of 35 documents in the analysis. **Table 10** represents the number of publications based on the number of authors for each publication. The table results reflected that 5.71% of all documents were single-authored and the rest co-authored. The highest number of authors for a single publication is 7 authors (2.86%).

Table 10: Number of authors per document

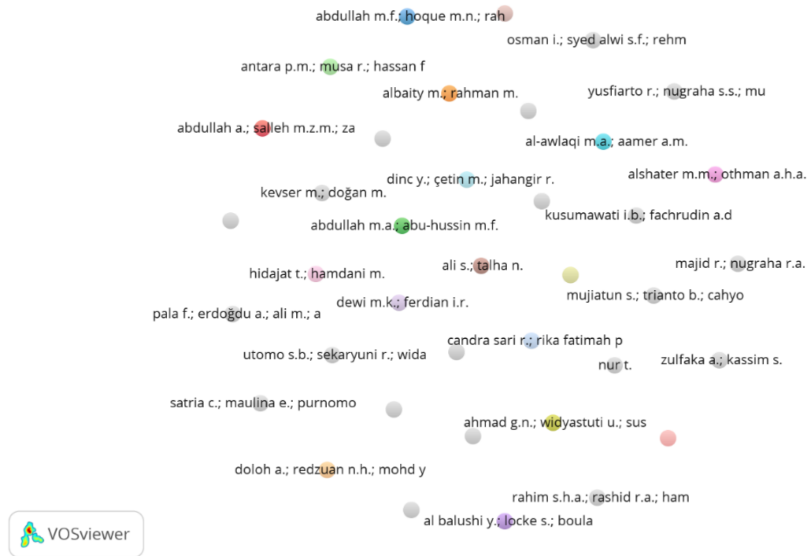
Author Count	Total Publications	Percentage (%)
1	2	5.71
2	11	31.43
3	6	17.14
4	10	28.57
5	2	5.71
6	3	8.57
7	1	2.86
	35	**100.00**

Source: Authors

i. Co-Authorship Analysis

Authorship of respective publication is good in understanding the number of publications an author has contributed to the field as shown in the preceding analysis but does not fully elaborate on how knowledge is spread across these authors in the field of Islamic financial literacy. So, to understand the structural mapping of knowledge across different authors, further analysis was done using the VOS Viewer software not only to further explore the impact of the authors but also to ascertain their social interaction and affiliations on the development of Islamic financial literacy discipline. The analysis was done using units of Authors and Countries as shown in **Figures 3 & 4** below.

Figure 3: Network visualisation map of co-authorship based on authors



Source: Authors

In the event of using the VOS Viewer software for analysis as in **Figure 3** above, the color size, circle size, font size, and thickness of connecting lines indicate the strength of the relationship between items being studied. So, in the co-authorship analysis that was run using the full counting method to ascertain the collaboration of authors relating to the development of Islamic financial literacy, the results of the 35 items analyzed showed that there was no collaboration among the authors to publish literature on Islamic financial literacy as shown in **Figure 3** above. Therefore, the coordination among authors to structure Islamic financial literacy knowledge is still lacking.

Figure 4: Visualisation map of co-authorship based on countries

Source: Authors

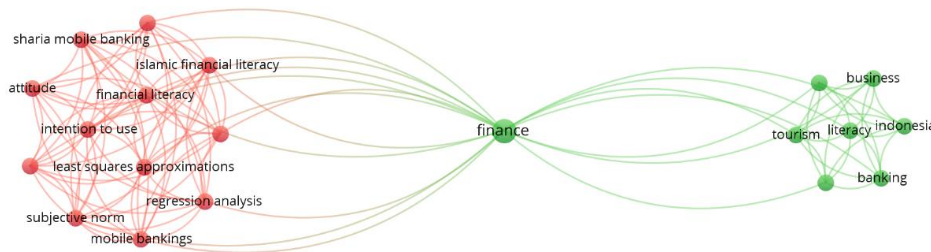
In the above analysis, using the full counting method, 13 countries were selected and 11 met the threshold. However, out of the 11 items in the network, only 9 connected, and thus they were the only ones considered in running the analysis. Therefore, results shown in **Figure 4** indicated that Malaysia worked closely with Jordan, Turkey with Saudi Arabia, and Indonesia had limited collaboration with other countries despite having more

publications. However, given that Indonesia gained structural momentum in publication and research about Islamic financial literacy, she might consider expanding it by collaborating more with other countries to enhance this field of research and knowledge.

3.9 Keyword Analysis

To understand the thematic flow of knowledge in the field of Islamic financial literacy, keyword analysis was conducted and helped to better reflect on the research trend in this field. A co-occurrence on the indexed keywords by authors using VOS Viewer version 1.6.19.0 was carried out on the selected 35 publications. 20 keywords were selected and all of them met the threshold as per the following visual mapping. They were clustered into 2, where cluster 1 had 12 items and the other 8 all shared a total link of 106 links.

Figure 5: Network visualization map of the authors' keywords



Source: Authors

The visualization map in **Figure 5** above presents a graphic visualization of authors' keywords in which color, circle size, font size, and thickness of connecting lines were used to understand the analysis (Ahmi & Nasir, 2019). The results showed 2 clusters generated. Cluster 1 presented in red color with 12 items is inclusive of keywords – Islamic financial literacy, financial literacy, Sharia mobile banking, attitude, intention to use, least square, subjective norm, regression analysis, mobile banking, and approximations. Cluster 2 is inclusive of finance, business, tourism, literacy, Indonesia, and banking as presented in green color. Finance emerged as the central keyword reference used by authors while studying the thematic structure of Islamic Financial Literacy concerning Islamic banking and finance.

Table 11: Top keywords

Keyword	Total Publications	Percentage (%)
Islamic Financial Literacy	29	17.26
Financial Literacy	6	3.57
Islamic Finance	5	2.98
Intention	3	1.79
Islamic Banking	3	1.79
Demographic Variables	2	1.19
Finance	2	1.19
Halal	2	1.19
Intention To Use	2	1.19
Islamic Banking Services	2	1.19
Religiosity	2	1.19
Subjective Norm	2	1.19
AMOS	1	0.60
Adoption Of Islamic Banking	1	0.60
Attitude	1	0.60
Attitude Awareness	1	0.60

Augmented Reality	1	0.60
Awareness Of Islamic Banking	1	0.60

Source: Authors

The Scopus Refine file of Excel was used to study keywords descriptively as shown in **Table 11** above. Results indicated that Islamic financial literacy was the most used keyword 29 times by different authors, reflecting that most publications were reflective of the thematic knowledge about Islamic financial literacy directly or otherwise. Other keywords that were used included financial literacy, Islamic finance, intention, and Islamic banking among others.

3.10 Citation Analysis

Table 12 summarises the citation metrics for the retrieved documents as of 31st /08 /2023. Results show that there are a total of 152 citations reported in 7 years (2016-2023) of publications about Islamic financial literacy. Besides, the citation metrics were generated by Herzing's Publish or Perish software where an RIS formatted file from the Scopus database was imported into it and presented the raw citation metrics revealed.

Table 12: Citation metrics

Metrics	**Data**
Publication years	2016-2023
Citation years	7(2016-2023)
Papers	35
Citations	152
Citations/year	21.71
Citations/paper	4.34
Citations/author	58.23
Papers/author	13.29
h-index	8
g-index	11

Source: Authors

Besides the citation metrics, the analysis further revealed the most cited publications in the field of Islamic financial literacy based on the number of times the document is being cited as per the Scopus database. The results revealed that the document (Albaity & Rahman, 2019) was the most cited with 36 citations and **Table 13** summarises the analysis.

Table 13: Highly cited articles

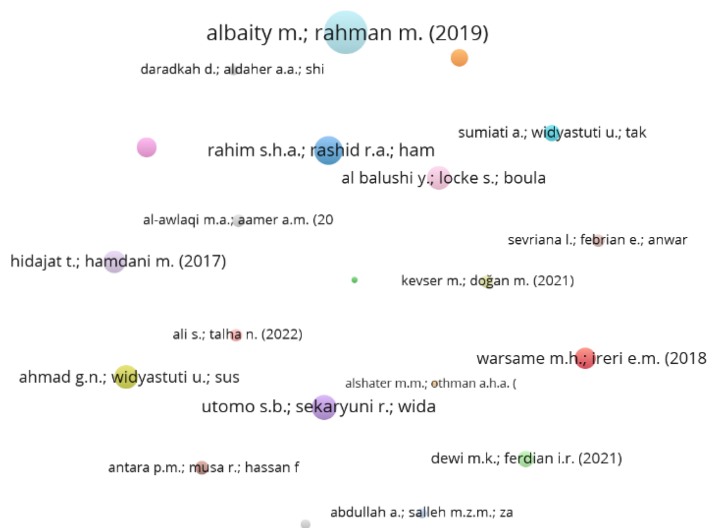
No.	**Authors**	**Title**	**Year**	**Cites**	**Cites per Year**
1	M. Albaity, M. Rahman	The intention to use Islamic Banking: An Exploratory study to measure Islamic Financial Literacy.	2019	36	9.00
2	S.H. A Rahman, R. A Rashid, A.B. Hamed	Islamic financial literacy among university students: An exploratory factor analysis	2016	15	2.14
3	S.B. Utomo, R. Sekaryuni, A. Widarjono, A.Tohirini.	Promoting Islamic financial ecosystem to improve halal performance in Indonesia: a demand and supply analysis	2020	12	4.00
4	G.N Ahmad, U. Widyastuti, S. Susanti, H. Mukhibab.	Determinants of Islamic financial literacy	2020	11	3.67
5	Y. Al Balushi, S. Locke, Z. Boulanouar.	Determinants of the decision to adopt Islamic finance: evidence from Oman.	2019	11	2.75
6	T. Hidajat, M. Hamdani.	Measuring Islamic financial literacy	2017	10	1.67

7	M.H. Warsame, E.M. Ireri	Moderation effect on Islamic banking preferences in UAE	2018	9	1.80
8	R. Setiawati, S.R. Nidar, M. Aniwar, D. Masyita.	Islamic financial literacy: construct process and validity.	2018	8	1.60
9	R. Candara Sari, P.L. Rikah Fatimah, S. Ilyana, H. D. Hermawan.	Augmented Reality (AR) – based Sharia financial system (AR-SFLS): a new approach to Sharia financial socialization for young learners.	2022	6	6.00
10	A. Sumiati, U. Widyasituti, E. Takidah.	The Millennials' generation to invest: A modified model of the theory of reasoned action.	2021	5	2.50
11	P.M. Antara, R. Musa, F. Hassan.	Conceptualization and operationalization of Islamic financial literacy scale.	2017	4	0.67

Source: Developed by Authors.

However, the visualization map of the bibliometric analysis of citation by document was generated to ascertain the most cited articles whereas, well graphically, a total of 21 out of 35 documents were run in the analysis. The thickness of the circle and the font size reflect the impact of the document. The results revealed that the most cited articles as visualized were (Albaity & Rahman, 2019) based on the circle and font size thickness and followed by (Rahim et al., 2016) as shown in **Figure 6**. The document (Albaity & Rahman, 2019) aimed to measure the level of Islamic financial literacy and then examine the direct & indirect effects of Islamic financial literacy, awareness, cost & benefit, reputation, and attitude towards Islamic banking on the intention of potential customers to use Islamic banking in the UAE. The results manifested high Islamic financial literacy levels among respondents but differed generally based on gender, income levels, and work experience. It was also revealed that Islamic financial literacy, awareness, reputation together with attitude significantly influenced the intention to use Islamic banking. The most influential work identified was (Albaity & Rahman, 2019) and the authors were, Albaity. M., Dinc. Y., Antara. P.M., Abdullah. M.A., Abdallah. M.F. and Ahmed. G.N.

Figure 6: Network visualization map of the citation by documents



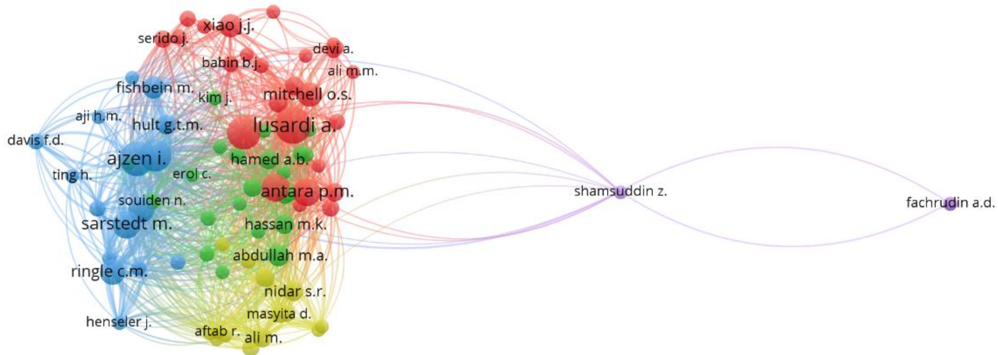
Source: Developed by Authors

i. Co-citation Analysis:

The citation analysis can only reveal the highly cited articles but falls short of helping to determine the most influential publications and authors in respective fields. So, co-citation analysis was done based on the authors' and references' levels to determine the most influential publications reflecting the foundational

themes in Islamic financial literacy and to analyze the relationship as well between the cited publications. This analysis was done using the VOS Viewer software using the full counting method with a minimum of 5 publications per author as shown in **Figures 7 & 8.**

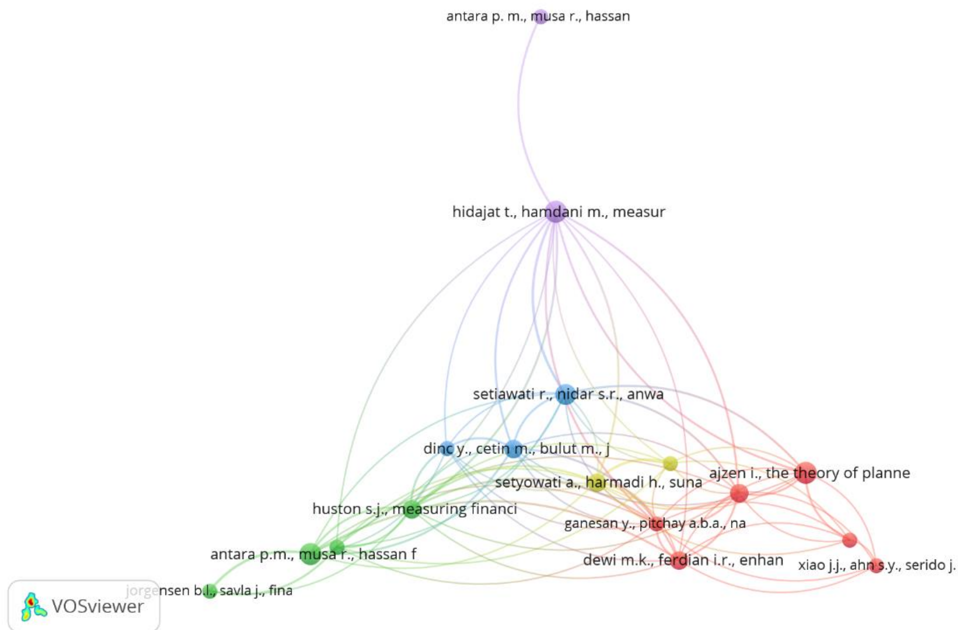
Figure 7: Co-citation analysis at the authors' level



Source: Authors

The visualization map at the authors' level revealed that the most influential authors in the field of Islamic financial literacy were Lursadia. A, Musa. R, Antara. P.M., Ajzen. I, Sarstedt. M, Abdullah. M.A, Hassan. M.K, Hair. J.F, Nidar. S.R., Anwar. M, and Shamsuddin. Z. This is under the consideration of the circle size, font size, color, and thickness of the connecting lines representing the influence of a respective item (Ahmi & Nasir, 2019).

Figure 8: Co-citation analysis at the references level



Source: Authors

In the network visualization map of co-citation analysis at the references level, it was revealed that the following documents were the most influential in Islamic financial literacy. They were (Ajzen, 1991),

(Albaity & Rahman, 2019), (Antara et al., 2017), (Huston, 2010), (Setiawati et al., 2018), (Dinc et al., 2021), (Norafifah & Haron, 2002), and (Hidajat & Hamdani, 2017).

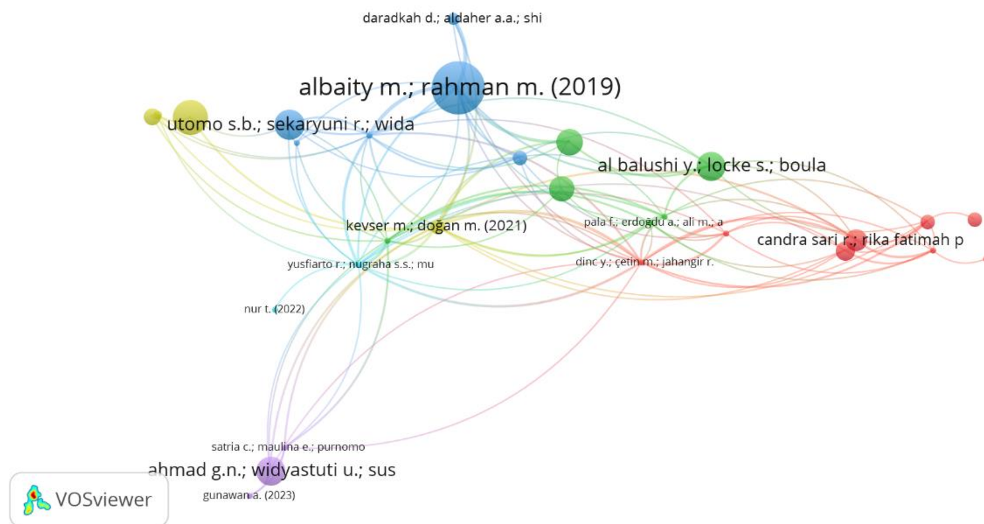
4. Discussion

The objective of this study is to identify the dynamics of research literature production in the field of Islamic financial literacy. It was executed by identifying the most influential authors and publications in the field, analyzing the trends in literature, and identifying the major themes and underlying topics in this field. This was realized using further bibliometric analysis methods of bibliographic coupling as in **Figure 9**, as citation analysis could not capture the niche and new publications in the field - to explicitly achieve this objective.

This helped in analyzing how the general themes in this field are represented, progressing, and ascertaining the trend of progression of knowledge in the field of Islamic financial literacy - since bibliographic coupling helps in analysing the relationship among citing publications giving an insight in understanding the periodical and present developmental trends and themes in a respective field. Besides, the two articles are bibliographically coupled when they refer to a common third work in their respective list of references (Abdullah & Naved Khan, 2021). Thus, the increase in the number of references the two articles refer to in their reference list increases the strength of bibliographic coupling. The analysis was done with documents as the unit of analysis and using the full counting method.

Results revealed that 29 out of the 35 documents connected with each and they were considered subjects for the analysis. Indeed, 6 clusters were generated which were studied carefully and revealed to be representing four major themes covered in the Islamic financial literacy field. Cluster 1 covered basic concepts of Islamic financial literacy, Cluster 2 addressed Islamic financial literacy as a determinant of the adoption of Islamic banking, Cluster 3 addressed measuring the level of Islamic financial literacy, and Cluster 4 covered the determinants of Islamic financial literacy.

Figure 9: Network visualization map of bibliographic coupling at the documents level



Source: Authors

4.1 Basic concepts in measuring Islamic financial literacy

Based on the results, it was identified that Islamic financial literacy scale development takes a pivotal position in the Islamic financial literacy literature that was analyzed. It was realized that the Islamic financial literacy original scale has four dimensions used in measuring the level of Islamic financial literacy. These were Islamic financial behavior, Islamic financial knowledge, Islamic financial attitude, and Islamic financial awareness (Dinc et al., 2023). According to the research carried out by (Dinc et al., 2023) in trying to establish the universality of these dimensions, it was found that this measuring scale has a good fit for its original, valid for different cultures, countries, and individuals either having conventional or Islamic financial institutions

preferences.

It was also found that funds management was the basic component of Islamic financial behavior and could enable business actors to make an effective financial judgment (Mujiatun et al., 2023) and eventually aid in reducing bankruptcy in society at large (Abdullah et al., 2022). Financial management is inclusive of earning money, balanced spending, borrowing, saving, investment, and payment methods (Candra et al., 2022). The basic concept of financial knowledge was the prohibition of interest, and this was the unique feature of Islamic financial literacy (Abdullah et al., 2022). With avoidance of interest, individuals in society can be saved from incurring unsustainable debts, save for the future, and could be able to eventually achieve wealth purification.

4.2 Islamic financial literacy as a determinant of adoption of Islamic banking

The analysis further revealed that in studies where the level of Islamic financial literacy had been measured, it was found that knowing the purpose of Islamic banking and financial institutions had a positive effect on the acceptance of Islamic banking. So, the higher the level of Islamic financial literacy of customers, the more likely they are to adopt Islamic banking services and products (Pala et al., 2023).

Furthermore, it was revealed that Islamic financial literacy also influenced SME managers' intention to make informed decisions to adopt Islamic financing based on their knowledge compared to those who were not aware. This implied that Islamic financial literacy could aid in improving Islamic financial decision-making - especially knowledge of profit and loss sharing (Al Balushi et al., 2019). Indeed, studies revealed that Islamic financial literacy was a key determinant in the adoption of Islamic banking products and services. For example, it was found that Islamic financial literacy only ranked second to bank reputation in the study carried out in the UAE to assess the moderating effect of demographic and socio-economic factors in the adoption of Islamic banking products (Warsame & Ireri, 2018). However, it was also reported that for the Millennials, Islamic financial literacy had an insignificant effect on their intention to invest in Sharia equity mutual funds (Sumiati, 2021).

4.3 Measuring the level of Islamic financial literacy

In the varied studies conducted on Islamic financial literacy, results showed that it was vital for stakeholders to ascertain the effect of Islamic financial literacy on the adoption/selection of Islamic banking, revealing the importance of measuring its levels among potential customers (Albaity & Rahman, 2019). Indeed, bank managers and other financial entities should focus their policies on enriching the public knowledge of the public towards Islamic banks' products and services as Islamic financial literacy enhancement is crucial for potential Islamic bank customers. However, results revealed that this could effectively be achieved by such entities if they considered measuring the level of Islamic financial literacy among potential customers in public. The rationale was that Islamic financial literacy was composed of different elements such as Islamic financial knowledge (IFK), financial skill (FS), and self-efficacy (SE) that reflect differently on the adoption and selection mentality of respective Islamic banking products and services among potential customers (Osman et al., 2023).

In the same way, the effect of Islamic financial literacy across different demographic variables is reflected differently (Daradkah et al., 2020) and thus it is crucial to ascertain its level given the different variables. Studies reflected that for the stakeholders and institutions managers, such a reflection across the various demographic categories (Kevser & Dogan, 2021) could aid the effective direction of their awareness efforts relating to which categories needed to be addressed first and more intensively than the rest. For example, individuals with higher levels of education/qualification especially from Humanities and Social sciences possessed high levels of Islamic financial literacy compared to others (Daradkah et al., 2020) - and the same applied to individuals residing in specific areas of given countries like urban centres as compared to other regions. So, measuring Islamic financial literacy as several studies indicated (Kevser & Dogan, 2021), should be given priority as it was found to be key in effectively directing the awareness efforts. And only then, Islamic financial literacy could become a potential and central factor in determining the adoption of Islamic banking. Besides, key studies on Islamic financial literacy indicated that it was highly related to attitude (Albaity & Rahman, 2019; Osman et al., 2023). So, it was deemed crucial that for stakeholders to foster the adoption of Islamic banking through Islamic financial literacy, working on customers' attitudes was key in influencing them towards adoption of respective Islamic banking products and services as well, preferably to happen at the same time.

4.4 Determinants of Islamic Financial Literacy

Another aspect covered in the several studies on Islamic financial literacy was the determinants/factors that affect Islamic financial literacy and its levels. It was found that demographic variables such as gender, age, profession, marital status, and being a customer of Islamic banks affected the level of Islamic financial literacy (Kevser & Dogan, 2021). Indeed, it was shown that married people had higher levels of Islamic financial literacy than singles and thus marital status significantly affected the financial literacy levels. This was attributed to the fact that married people engaged in managing family budgets and resources to sustain their families as opposed to single individuals (Kevser & Dogan, 2021).

In another aspect, having an account in an Islamic bank relates highly and positively to the levels of Islamic financial literacy – more so for the customers who held accounts in Islamic banks for a longer time. This was so because the more clients engaged in Islamic transactions, the more exposure they got concerning Islamic banking. Besides demographic variables, hopelessness, religiosity, and financial satisfaction were identified as key determinants of Islamic financial literacy especially among young people (Rahim et al., 2016). The environment and interaction of people also affected the level of Islamic financial literacy. For example, in the study carried out in Jordan to test the differences in Islamic financial literacy among the different categories of demographic variables, individuals from northern and central Jordan possessed a higher level of Islamic financial literacy compared to the rest of the country (Daradkah et al.,2020).

It was also found that having knowledge about Islamic banking products, services, and finance determines Islamic financial literacy. Indeed, knowledge of Islamic finance principles and Islamic finance methods were key factors in determining Islamic financial literacy (Kevser & Dogan, 2021). In another study to determine the dimensions of Islamic financial literacy among Sharia mutual funds' individual investors, it was identified as subjective knowledge of Sharia compliance and knowledge about Riba and profit-sharing as key dimensions in determining the level of Islamic financial literacy (Ahmad et al., 2020). Results further revealed that education levels also affected the level of Islamic financial literacy (Kevser & Dogan, 2021) - as was the experience of the business actors (Satria et al., 2023). Results showed that the higher the level of experience of the business actor because of Islamic financial knowledge, the more the influence on the growth of SMEs.

4.5 Research Gaps in the Current Research and direction for future research

After an exhaustive analysis and review of the literature, we identified that there has been tremendous progress in the body of literature on Islamic financial literacy since 2016. However, there are a couple of gaps detected and would be hampering the research as identified.

4.5.1 Limited publications in the least dominated Islamic banking jurisdictions

Most of the research work is mainly from countries that are Muslim dominated, highly advanced in the aspect of Islamic banking and finance or originate from the same region. There is limited work on Western countries like the UK which also embraced Islamic banking and other economies in Africa like Uganda that have recently adopted Islamic banking and finance. For example, out of the 35 articles considered, Indonesia shares 17, Malaysia shares 13 and both are from the same region of the world and considerably advanced in the industry whereas Turkey shares 3 of these publications. Jordan, Saudi Arabia, and the UAE all have 2 publications each out of the 35, and these are mainly Muslim countries. The rest of the countries across the world that contributed to the body Islamic financial literacy have a publication each.

So, more effort should be put into studying Islamic financial literacy in other countries where the industry is still in its initial stages and where the economies are least advanced to broaden the perspective of Islamic financial literacy literature from the lenses of secular-dominated jurisdictions.

4.5.2 Limited Publication of Islamic Financial Literacy through the Lens of Maqasid al-Sharia

It's known that most of the ideas developed in Islamic banking and fiance are rooted in Sharia and most cases have frameworks developed based on the concept of Maqasid al-Sharia. However, Islamic financial literacy has limited referenced publications dedicated to how the concept is founded within the realms of Sharia. There has not been a structure developed or devised to prove how Islamic financial literacy is derived from the concept of Maqasid. So, Sharia scholars should be engaged in this perspective to fill this literature gap, and then Islamic financial literacy like many other concepts in Islamic banking and finance will have a firm basis reflected in the general context of Sharia.

4.5.3 Limited Islamic Financial Literacy studies investigating its moderating and mediating effect
Moreover, of the 35 publications considered, there was only one that addressed the moderating effect (Warsame & Ireri, 2018). This study aimed to examine the moderation effect of demographics and social factors on the adoption of Islamic banking in the UAE. Except for (Pala et al., 2023) suggesting that studies on Islamic Financial literacy be done where Islamic financial literacy is the mediator or moderator, there has not been such kind of studies done yet. Therefore, future studies should be conducted relating to Islamic financial literacy as the mediating or moderating factor/determinant of other factors of the adoption of Islamic banking in different jurisdictions.

4.5.4 Dominance of Quantitative Research
The growing body of literature on Islamic financial literacy has majorly studied it as a determinant of the adoption of Islamic banking using quantitative data and surveys. In many studies, researchers have contributed more towards empirical papers by analyzing Islamic financial literacy variable alongside others like attitude, and religiosity among others, and how they impact the adoption of Islamic banking and fiancé.

The Quantitative methodologies were highly adopted by researchers especially when examining the level of Islamic financial literacy (Kevser & Dogan, 2021), establishing the measuring scale of Islamic financial literacy (Antara et al., 2017), and studying Islamic financial literacy as a determinant of adoption of Islamic banking alongside other determinants (Albaity & Rahman, 2019). In such studies, analysis techniques for primary data that have been used are Exploratory Factor Analysis (Rahim et al., 2016; Ahmad et al., 2020; Kevser & Dogan, 2021), Confirmatory Factor Analysis (Dinc et al., 2023), and Structural Equation Modelling in most publications mainly using PLS-SEM (Gunawan, 2023; Lajuni et al., 2020; Utomo et al., 2021; Nur, 2022; Majid & Nugraha, 2020; Pala et al., 2023; Ali & Talha, 2023; Yeni et al., 2023) to mention but a few. Besides, very few studies were identified as having been based on Qualitative approaches (Abdullah et al., 2022).

Therefore, future studies on Islamic financial literacy should consider studying the concept using the qualitative approach to understand better the lived experiences and perceptions of different stakeholders in the field of Islamic banking and finance about the concept of Islamic financial literacy, such studies also explore more advanced analysis techniques that can better explore the Islamic financial literacy concept.

5. Conclusion and Recommendations

The results of our study showed that research in the field of Islamic financial literacy has been on an upward trajectory and researchers across different countries in the field are publishing in peer-reviewed journals of Scopus database. The analysis of the country-wise scientific production of literature on Islamic financial literacy showed that research works from Malaysia were seminal work, more influential in terms of citations but slightly affected in periodic publications as countries like Indonesia & Turkey have the most recent publications on Islamic financial literacy. Besides, Indonesia has the most publications, seconded by Malaysia, Turkey and then a couple of publications from countries like the UAE, Jordan, and Saudi Arabia among others – although the most cited publication was from the UAE (Albaity & Rahman, 2019), which was aimed at measuring the level of Islamic financial literacy among the conventional customers in the UAE and then analyzing its effect on the intentions to use Islamic banking. The other influential documents based on citation analysis included, (Al-Balushi et al., 2019; Utomo et al., 2021; and Rahim et al., 2016). The others based on co-citation analysis using the references level included, (Ajzen, 1991), (Albaity & Rahman, 2019), (Antara et al., 2017), (Huston, 2010), (Setiawati et al., 2018), and (Dinc et al., 2021). However, the bibliometric analysis through co-authorship at the authors' level showed that structural collaborations for the enhancement of research on Islamic financial literacy among different authors were still weak. Besides, results showed that there was a promising linkage between countries that are mainly dominant in publishing Islamic financial literacy.

To the best of our knowledge, our study is to be influential in the enhancement of review works publications in the field of Islamic financial literacy. Besides, the study has fully highlighted the general literature gaps in this field, a clear signal for researchers to redirect efforts to such areas. The study also provides a profound benefit to the body of Islamic financial literacy literature that would benefit academicians and practitioners.

The present study was limited by several factors which included the literature being restricted to only the Scopus database and excluding other editorials, and book chapters among others, for further review. Secondly,

the review addressed Islamic financial literacy as a concept, yet Islamic financial literacy has other basic elements that are key in understanding it in general and are worthy of consideration as particular respective concepts. These are Islamic financial knowledge (IFK), Financial skills (FS), and Self-Efficacy (SE). This research has only relied on Herzing's Publish or Perish, MS Excel, and VOS viewer software as the main tools to carry out different forms of analysis at the expense of other robust software that can be used to generate a deeper analysis of the Islamic financial literacy concept.

Future research should consider expanding the scope of the present study by accessing several different databases such as Web of Science, Google Scholar, ProQuest, and IEEE Explore among others. Secondly, future research on Islamic financial literacy should try to break it down by addressing the respective diversified elements that form the basis of Islamic financial literacy to enable a deeper understanding of each of them regarding Islamic financial literacy. Besides, researchers later should consider studying Islamic financial literacy by utilizing other bibliometric analysis tools such as Bib Excel, Histcite, and Gephi among others for better visualization and comprehensive review.

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Digitalisation Impact on Indonesia Labour Market: SWOT-TOWS Analysis with Islamic Economic Principles

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Abstract

This study examines the impact of digitalisation on the Indonesian labour market using a SWOT-TOWS analysis framework and alignment with Islamic economic principles. The study aims to identify the strengths, weaknesses, opportunities, and threats of digitalisation for the labour market, as well as to formulate strategies and recommendations based on the SWOT-TOWS matrix. The study also explores whether the results of the SWOT-TOWS analysis can be aligned with Islamic economic principles, which emphasise social justice, equality, and welfare. The study uses a qualitative method with a critical literature review approach to collect and analyse data from various sources. The study finds that digitalisation has both positive and negative implications for the labour market, such as increased efficiency, innovation, and access to information, as well as job displacement, skill shortages, and inequality. The study also suggests some possible ways for academics, it improves understanding and directs future study. For industry, it enhances workforce management and ethical business practices. Policymakers may use it to assist in developing regulations for social security, job creation, and workforce development that are in line with Islamic principles. The study concludes that digitalisation can be a catalyst for economic development and social welfare if it is guided by Islamic values and principles.

Keywords: Digitalisation, labour, SWOT-TOWS, Islamic economic

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1. Introduction

Modern technology is leading us into a digital age, where processes are becoming faster and more efficient. Everything is becoming connected digitally, and this trend is impacting Indonesia. The way people live, work, and interact is changing due to the ongoing digital revolution worldwide. Digitalisation, powered by automation and artificial intelligence, is transforming the job market, reshaping various industries and requiring new skills from the workforce. This shift has raised concerns about the future of employment.

These technological advancements are not only affecting how we work but also how we relate to one another in all aspects of social life, including security, social interactions, economics, law, and politics. Many jobs, especially in sectors like manufacturing, retail, and transportation, have been automated due to digitalisation. In which according to Arsyad et al. (2023) stated that it important to take into account the possible drawbacks of technology, such as the displacement of jobs due to automation or robots.

This rapid technological progress influences the industry's capacity to employ workers, contributing to rising unemployment. By 2025, a new generation of smart machines will likely replace over 85 million workers as they take over more and more job responsibilities; additionally, 43% of firms claim that they plan to reduce staff because of the adoption of new technology (Salam & Suadamara, 2021).

Many fear that further technological advancement might worsen unemployment rates. Consequently, there have been job losses and a change in the types of skills demanded in the workforce. Indonesia is predicted to lose 23 million jobs by 2030 but acquire 27 to 46 million new ones, mostly in the manufacturing, retail,

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construction, and health sectors, with 10 million of those positions being completely new job kinds (Rahmatutik & Laksmono, 2023). To support this study, according to Das et al. (2019) explains that jobs will change significantly as machines progressively complement human labour, affecting more occupations than job losses, this led for workers' skills and occupations must evolve to keep up with increasingly advancing machines. Digitalisation has also created new employment opportunities in sectors such as software development, digital marketing, and data analysis.

Therefore, Indonesia must adapt to global technological changes. The government is pushing for digital advancements in various areas, but this shift poses challenges for the country's workforce. In 2022, Indonesia's labour force participation rate increased to 69.06% from 68.08% in 2021, involving around 144 million people (Statista Research Department, 2023). This workforce includes individuals aged 15 and above, encompassing both employed and unemployed individuals actively seeking jobs (Trading Economics, n.d.). The growth in the labour force presents a challenge: how to integrate technology and automation without leaving behind skilled workers. Technology's impact on emerging nations like Indonesia raises concerns about labour productivity, job transitions, creation and destruction, education inadequacy, and macroeconomic effects. These issues affect the labour market, wages, social inequality, and the nature of employment (Wijayanti & Turgel, 2021). The digital era demands new skills, making it crucial to invest in education and training. Workers need to adapt to the digital economy's demands, as those with necessary skills will be in demand, while others might struggle to find employment, leading to increased inequality. This situation necessitates a shift in mindset among both employees and employers, emphasising the urgency of supporting education and training programmes.

The rise in inequality and unemployment due to digitalisation affects employment rates both positively and negatively. Islamic economics stresses social justice, equality, and investment in ventures creating jobs. Yet, it's uncertain how Islamic economic principles can address the transformed labour market brought on by digitalisation. To tackle this, conducting a SWOT analysis and using the TOWS matrix is essential. By reducing risks and using opportunities, particularly related to digitalisation's impact on the labour market, Indonesia can assess and enhance its strategy. The results can help determine if the strategy aligns with Islamic economic principles or not. Since several studies have investigated how digitalisation affects the labour market in Indonesia. Few of these studies, nonetheless, specifically take Islamic economic principles into account. By adding knowledge from Islamic economics to labour market research, this study seeks to close that gap.

The main objective of this study is to investigate the impact of digitalisation towards labour market in Indonesia using SWOT analysis. To formulate effective strategies for the Indonesian labour market by integrating SWOT analysis results into the TOWS matrix approach. To evaluate the alignment of the outcomes derived from the SWOT-TOWS analysis with the principles of Islamic economics principles, concerning the impact of digitalisation on Indonesia's labour market.

The study concentrates on Indonesia's overall labour market. The methodology employs qualitative research, utilising a critical review of literature approach that incorporates journal articles, websites, and books, focusing on digitalisation and its impact on the labour market. As a result, public opinions are not included in this study. Additionally, there is a scarcity of available data specifically linking digitalisation's impact on Indonesia's labour market with Islamic economic principles, posing a challenge in drawing comprehensive conclusions in this regard.

This research aims to explore the effects of digitalisation on Indonesia's labour market. The findings from this study can benefit both academic scholars and practitioners. By using SWOT-TOWS analysis in conjunction with Islamic economic principles, this research intends to shed light on digitalisation's impact on unemployment, changes in work roles, the need for new skills, and working conditions in Indonesia. The study also seeks to offer suggestions and recommendations for addressing these challenges. The research findings can provide valuable insights for policymakers and the government, prompting awareness of these issues and leading to the development of policies and laws that enhance Indonesia's labour market, ensuring its efficiency, effectiveness, and respect for human rights.

The paper is organised as follows: Section 2, the definition, rules and regulations towards labour market, impact of digitalisation on the labour market and the influence of Islamic economic principles on digitalisation in the labour market are thoroughly reviewed. In Section 3, the study's methodology is detailed. Section 4 presents the findings and discusses them in relation to the research questions and objectives. Finally, the study concludes with Section 5, summarising key points and offering suggestions for future research.

2. Literature Review

2.1 Definition of Digitalisation

Digitalisation refers to the socio-technical conditions underlying the adoption and utilisation of digital technology, including its influence on society, organisations, and individuals (Frenzel et al., 2021). Similarly, according to Parviainen et al. (2017) the term "digitalisation" or "digital transformation" describes the changes that are that occur using digital technology in every sector of human society. To support the study in relation to labour market, according to Vasilescu et al. (2020) explains that digital technologies transform economic processes by improving production flexibility, improving information availability, providing demand-side economies of scale through network effects, and giving zero marginal costs due to the non-rival and continually expandable nature of digital goods. This requires skill development and careful job design are required for the interaction between human workers and machines, which means that developing the right balance between automation and human expertise is important for an easy transition. this study will provide practical recommendations for improving Indonesia's labour market adaptability in the context of digitalisation.

2.2 Rules and regulations towards labour market

Indonesia's active labour market policies, such as vocational training, job search aid, entrepreneurial support, and labour inspection, have not been as effective as they should be, to improve, certain actions must be implemented to strengthen the Labour Market Information System (Rahmatutik & Laksmono, 2023). To support this study, further regulations have been proven to be ineffective, as stated by Ramadhan et al. (2021) that the Manpower Act provides detailed regulations for labour' entitlements, justice, and legal protection, however its implementation is insufficient, while labour complete their responsibilities to get benefits and protection, the government should put their rights and wellbeing first, making sure that appropriate laws are properly enforced. From this perspective, the previous study concentrated on current labour market rules and regulations, but their effectiveness fell short of expectations. However, it did not thoroughly examine the impact of digitalization on the labor market, particularly concerning specific rules and regulations as there are not much of study focusing in this area. The purpose of this study is to close this gap and help decision-makers recognise important challenges. Using SWOT-TOWS analysis, to provide practical suggestions for improving policy.

2.3 Background of Theory

Walwei (2016) find that Digitalization improves labour productivity and technological equipment, which promotes economic growth. Innovations in processes and products may result from it, bringing new goods to market. Lower pricing may result from this improved productivity, enhancing innovators' competitiveness and weakening rivals' market positions. This technical advancement can increase production with more input or decrease output with less input. Whereas, according to Piroșcă et al. (2021) stated that while new technologies bring new employment prospects, digitalization may result in improved labour productivity and increased products and services, but it also increases the possibility of technological unemployment and lower salaries. This shows that due to greater productivity and automation, technological developments might cause loss of jobs in some industries, but they can also open up new job possibilities in developing industries. Making sure that the workforce has the skills needed to move into these new professions is the problem, in which this involves in need for education and retraining programmes. Therefore, this study is to investigate how digitalisation serves as a major explanatory component to understand its consequences on the labour market. By looking at how labour factors, job prospects, and job opportunities are affected by digitalisation

2.4 Previous Studies

2.4.1 Digitalisation on labour market

Gayatri et al. (2022) highlighted that Indonesia is a growing nation with enormous online economic potential. The country's digital economy is expected to have the greatest GMV value in Southeast Asia by 2030, with a value of USD 146 billion by 2025 and USD 330 billion by 2030. The government has suggested a national acceleration programme for digital transformation, which focuses on the following five priorities: Building digital and internet infrastructure is the first step. Building a digital transformation roadmap for strategic industries like public services, social services, education, health, business, and broadcasting is the second. Building a national data centre is the third step. Building digitally skilled human resources is the fourth step.

Building digital regulations and funding schemes is the fifth step.

While Vasilescu et al. (2020) emphasised the pervasive influence of digitalisation across all sectors of society. Technological advancements continue to bolster each other, significantly impacting the job market and people's lives. This technological revolution is reshaping various industries, leading to changes in the occupational landscape. The trend suggests a growing disparity, with high-skill, high-paying jobs on the rise, while low- and medium-paying occupations face increasing challenges and fall further behind.

Similarly, Mönnig et al. (2019) stated that the salary and employment growth of medium-skilled people perform behind that of low- and high-skilled people as non-routine jobs are increasingly replaced by robots. The pay gap will expand as a result of digital transformation, which will particularly discriminate against workers with less education and income. Due to this, middle-class demand declines as a result of digital transformation, while higher and lower income groups gain disproportionately. This led to wage disparity issues rising.

Hence, this study can be supported by Sinha et al. (2023) mentioned that labour is decreased by the growth in productivity and efficiency brought about by digitalization, while the demand for advanced products and services is increased by the advancement of efficient technology and resulting decrease in costs and prices. Due to this, there will be a greater need for highly skilled labour. This implies that while the demand for low-skilled labour may decline as a result of digitalization, the demand for complex goods and services as well as high-skilled labour may rise. This change reflects the opportunities and problems that come with going digital. As it shows how that people and communities adjust to these changes, for instance by receiving education and training, so they can take advantage of the opportunities that digitalization brings.

Moreover, the impact of digitalisation on Indonesia's labour market can be significant, and it has a greater impact on lowering labour productivity there, where the digital infrastructure, adoption of technology, skills mismatch, consumer behaviour, and economic inequality are some of the difficulties Indonesia's digital economy has in achieving sustainable growth (Wijayanti & Turgel, 2021).

However, according to Abbas & Rahmawati (2020), with the total support of President Jokowi, Indonesia is right now concentrating on using the increasingly quick-moving technology advancements, notably in the usage of the digital economy. Although, because there are new problems relating to unclear regulations controlling the internet economy, Indonesia is still seen as not being ready to face it. The advancement of digital technology may also have unintended consequences for the Indonesian economy. Labor-intensive sectors have dominated Indonesian industry.

Hence, this seems that different studies gave similar opinion towards the digitalisation on the labour market itself where the impact of digitalisation can heavily bring impact, especially in terms of the low skilled and high skilled labour, it brings an effect towards the amount of wage that they received although there may be benefits that digitalisation brought to the society. Thus, this study would like to address the SWOT-TOWS analysis that could help in identifying its strength, weakness, opportunities, and threats that are being impacted by the digitalisation towards the labour market in Indonesia.

2.4.2 Islamic economic principles on digitalisation towards labour market

Islam places a strong emphasis on the role of commerce in providing for basic needs. Every person is said to consider the world as a place of worship where they should practise righteousness and labour to conduct their lives in accordance with religious teachings, bringing benefits and pleasure to themselves throughout their lifetime (Aristoni, et al., 2021). Rosadi (2007) highlights the clear issue of labour challenges, suggesting that understanding the primary causes is crucial for addressing these challenges within an Islamic framework.

In Indonesia, where the majority of the population is Muslim, various issues, including a large labour force with limited job opportunities, poor labour quality, uneven distribution of work, low earnings, difficulty in accessing job information, outsourcing, and unemployment, persist (Rosyada et al., 2018). Kusumaningtyas et al. (2022) affirm that Islam plays a central role in addressing economic challenges. The Islamic economic system encourages Muslims to focus on facilities and infrastructure that promote economic prosperity, with Allah guiding people's participation in the economy through both direct and indirect means.

This dynamic economic system in Islam ensures fair distribution of wealth, granting each individual the opportunity for a good life and honour in both this world and the hereafter through its actions and rituals.

3. Methodology

In this study, qualitative research will be conducted using secondary data. The approach involves a critical review of literature, where existing research findings are explored, assessed, and summarised. This method helps in creating a current evidence summary supported by reliable data (Khan et al., 2003). The data sources include journal articles, government documents, websites, and books, focusing on digitalisation and the labour market. Through this information, a SWOT-TOWS analysis will be performed. This analytical approach is essential for addressing the research question and achieving the study's goals. The SWOT analysis methodically assesses internal and external aspects, scanning both supply (internal) and demand (external) sides and TOWS matrix integrates internal strengths and weaknesses with external opportunities and threats to generate successful plans (Ravanavar & Charantimath, 2012). It ensures that existing studies are pertinent to the topic, enabling a more profound research output.

4. Results and analysis

4.1 The SWOT analysis on the impact of digitalisation towards labour market in Indonesia

SWOT analysis is used to draw conclusions about the impact of digitalisation towards Indonesia's labour market in terms of its internal and external environments. This is used to investigate the primary themes by organising the available information on the strengths and weaknesses, as well as potential possibilities and threats from the external environment.

4.1.1 Strengths

4.1.1.1. (S1) Technological advancements and increased efficiency

First of all, the technological advancements that are currently spreading all spheres of society are extremely beneficial. The amount of imported machines used to support human labour can make things of comparable quality than those made manually by people. Production is also more productive when machines are used (Sumanto et al., 2020). This leads to increased efficiency is one of the key advantages of digitalisation for the job market. Rezqianita (2020) agrees, pointing out that Industry 4.0 technology increases productivity and efficiency by eliminating errors, lead time, cycle time, downtime, and improving data transparency. Which led to the fact that with the use of the digitalisation process, many operations may be automated, which eliminates the need for physical labour. The time and money needed for various operations may be decreased by using technology, which can produce quicker and more accurate outcomes.

Moreover, these are reflected in shifts in work techniques from face-to-face meetings to ICT-based meetings, shifts to more flexible, efficient, and speedier work hours; and shifts to settings that may be selected anywhere or in a single site with multiple activities (Rachmawati et al., 2021). The labour market can experience better easier access and being able to work anywhere.

4.1.1.2. (S2) Better access to information on job seeking

Secondly, having more information available may also make it easier for those seeking employment to identify positions that fit their qualifications and skill set. For instance, using technology for hiring may speed up the hiring process and lower the time and expense needed to identify qualified individuals. Based on Xiang et al. (2023) mentioned that the data from Indonesian organisations is consistent, since the introduction of artificial intelligence-based systems and digital technology has altered the HR process, including recruiting and selection. The influence of digital technology has been shown to be favourable in terms of assisting firms in speeding up the HRM process by lowering costs and time, as well as hiring potentially talented people from across the world. As a result of the utilisation of digital systems, job searchers no longer need to physically travel to view recruitment advertisements.

4.1.1.3. (S3) Improve on accessing to information and communication

The digital economy has an opportunity to expand and offer a fair playing field for everybody. Also, the digital economy encourages accessibility by allowing people to obtain services without having to meet in person. This leads to the labour market's communication is also improved by digitalisation. Employers can communicate with their staff more effectively by using digital platforms, which eliminates the need for in-person meetings. Workers may also be able to provide employees with feedback through enhanced communication, which will result in better work.

4.1.1.4. (S4) More innovation: new goods and services

The labour market experiences more innovation because of digitalisation. Utilising digital platforms, workers may produce new goods and services, increasing competitiveness. This improved innovation may lead to increased economic growth, along with the formation of new industries and enterprises. The entrepreneurs that support the formation of new business ventures and digital start-ups have access to unprecedented prospects because of digitalisation. The use of digital platforms by MSMEs in Indonesia has increased significantly. It is estimated that there are already 10.25 million MSMEs actors connected to digital platforms, with 16 percent, or around 10.25, tied to the digital ecosystem. Following the digitalisation of MSMEs, Indonesia's digital economy will be the largest in Southeast Asia by 2025.

As a result, digital MSMEs must increasingly address production quality, production capacity, and digital literacy for firms operating in the digital domain to compete and develop. Which indeed shows how much of an impact that is being caused by digitalisation as it brings jobs and improvement towards the economy. Thus, the public's innovation for micro and small businesses has to be supported by the government in order to enhance product quality, scale up operations, and create new market networks. Additionally, it consists of technological advances and certifications for micro and small businesses in order to provide legal protection and foster economic collaboration (Muftiadi, n.d.).

4.1.2 Weaknesses

4.1.2.1. (W1) New jobs and job displacement: shortage of skills

Both new jobs and job displacement have been brought about by the digitalisation of the labour market. Technology has resulted in the loss of certain employment, but it has also led to the creation of new ones in sectors like software development, data analysis, and digital marketing. There is a shortage of skills that must be changed since the new jobs demand different talents than the ones that they have. However, based on Gayatri et al. (2022) mentioned that the shortage of graduates in STEM (Science, Technology, Engineering and Math) or other related fields alone is not the cause of the absence of a digitally proficient workforce. On the other hand, the disparity also exists when considering the number of graduates perhaps exceeding the number of available jobs. In comparison to other countries, Indonesia has a very low STEM graduation rate, with just 0.8 STEM graduates per 100 graduates.

A decline in the total number of employees required due to machine replacement, a rise in workers' mental stress levels as individuals with poor talents are no longer required, and a large disparity in the proportion of people employed in the informal labour market, digitalisation therefore creates a security concern for these unprotected informal labourers. According to this study, the existence of e-commerce enables shrinking of the workforce. There will be problems if the person could not handle learning new skills or being unable to get job opportunities it will cause them to face mental health issues. Especially, older women and women with less education were prone to experience mental health issues (other research have suggested that persons with more education are more likely to experience these diseases), additionally, poor coping mechanisms and a lack of social or family assistance might deteriorate mental health (Miranti et al., 2022).

4.1.2.2. (W2) Mismatch of work and advantages towards the high skilled employees

The mismatch between the requirements of the workforce and the qualities of job seekers leads to contributing to unemployment. Technological advancement has recently resulted in capital-intensive processes where it uses less labour to be involved (Susanto, 2021). Because the newest machines replace labour, this strategy has a short-term negative impact on employment. In which these results on the new machines often demand more money and use less labour. Workers with the necessary knowledge and skills are needed for capital-intensive technologies. Therefore, only highly skilled employees are eligible for employment chances. The new machines that replace labour which leads to increasing unemployment.

Jamil (2022) explains that the income growth in the digital economy favours high-skilled employees over low-skilled workers. The current position remains generally untouched in the digital era because of the industry's lack of opportunity for newcomers. The participants can adapt to the progress of digitalisation as the income stays concentrated in the same hands. The effects of digitalisation on wages have been conflicting. While some employees in the digital economy have received pay rises, others have witnessed constant or even declining pay. As a result, there have become worries about economic disparity

and the requirement for legislation to address the problem.

4.1.2.3. (W3) Digital-skilled workforce gap

Moreover, there is a "digital-skilled workforce gap" when a sector cannot employ all the graduates who have certain digital abilities. This can be brought on by a lack of competent employees in a firm or a lack of employees with the necessary skills for a particular activity or function that is needed in a company, which is known as a skill deficiency or skill mismatch, this shortcoming eventually can affect how well the business performs (Gayatri et al., 2022).

Since, due to technology advancements, there is a rising need for highly skilled, educated, and creative people in new, top-level jobs. The change in employee skill is due to the need for individuals who can handle difficult problems and come up with fresh solutions in order for businesses to survive over the long term (Wijayanti & Turgel, 2021). The skills needed in the job market have changed as a result of the economy's digitalisation. Skills in analysing the data, computer programming, and digital advertising have all grown more crucial as well as having a strong grasp of digital literacy.

4.1.2.4. (W4) High unemployment

Furthermore, there is still an increase of high unemployment due to digitalisation. This can lead to poverty, violence, and other sociopolitical issues are also getting worse because of high unemployment, both directly and indirectly, labour issues become extremely significant and complex and those job seekers who had recently graduated, but it also happened to older employees who lost their positions as a result of the closure of their offices and factories. Numerous kids who started hanging out on the streets are signs of societal issues. They turn into sellers, thieves, and buskers. They are the generation that was denied the chance to receive a quality education and training (Sumanto et al., 2020). This is due to a lack of employees with the requisite abilities to fill open positions, there is a skills gap because of the need for these abilities. This leads to the requirement for some traditional skills, including physical labour and office work, has also decreased because of the use of digital technology. Concerns about the future of work and the demand for workers to adjust to shifting skill requirements have resulted from this.

4.1.3 Opportunities

4.1.3.1. (O1) Increased digital education

Firstly, due to the rise of digitalisation it has given opportunities for the people to learn and to have digital skills to survive in this era. The Ministry of Communications and Informatics in partnership with Siberkreasi and Katadata, Indonesia's digital literacy score was 3.47 on a scale of 1 to 4. It means that the Indonesian people's digital literacy level is below average as a result, the Ministry of Communications and Informatics, in collaboration with Siberkreasi, Facebook, WhatsApp, and ICT Watch, will continue the digital literacy roadshow programme in 2021.

This activity is intended to result in further collaboration between various parties and cross-stakeholders in the future to promote public awareness and digital skills through various innovative efforts. This will create a betterment for the citizens as they are given a chance to learn it. This can help in improving the digital literacy of Indonesia in which this will help the people to be able to adapt to the technology advancement that is happening in the society.

According to Marsela & Limbongan (2021), higher education is associated with greater technological adaptability among workers. Higher education in Indonesia is a level of instruction following secondary education that consists of diploma, bachelor, master's, and specialised postgraduate programmes, as well as doctorate programmes offered by higher education institutions, which are governed by Act No. 20 of 2003, Article 19, Paragraph 1. Since it will improve their capacity to learn new information, develop new skills, and engage in ongoing learning, better educated people can adapt to the digital transition more easily.

4.1.3.2. (O2) Increased job opportunities

Similarly, Suharso Monoarfa, Indonesia's Minister of National Development Planning and Head of the National Planning and Development Agency (Bappenas), claims that digital technology has the potential to generate 20–45 million new employment in Indonesia. Speaking at the Statistical Society Forum,

Monoarfa noted that Indonesia had undergone digitalisation, which is expected to result in the creation of new job categories to fill 20–45 million openings (Aisyah, 2022). For instance, the growth of the freelance economy has given rise to new categories of employment, such freelance and immediate labour. Standard methods of employment have been questioned by these new types of labour, as have the rights and safeguards offered to workers.

4.1.3.3. (O3) Increased in the E-commerce enterprises

Many Indonesian digital platforms that are growing provide various technologies that enable various activities from online transportation, travel, to e-commerce enterprises, the digital economy in Indonesia has also been encouraged. Digital platforms enable Indonesian creative products to compete on a national and worldwide scale. The usage of digital platforms is regarded as critical for business actors to continue innovating and developing.

The good influence of digital platforms on entrepreneurship may be seen in the promotion of innovation, the creation of job possibilities, and the increase of productivity both socially and economically. This can include the Data analysts, software consultants, digital marketers, influencers, and other new positions at the top of the scale. At the bottom of the scale are Gojek, Uber, Grab drivers and services, as well as becoming a YouTuber (Wijayanti & Turgel, 2021).

4.1.4 Threats

4.1.4.1. (T1) Displacement of employees: automation and other types of digitalisation

First of all, the industrial revolution process might become a danger in Indonesia, with robots taking over occupations and completely using the digitalisation process until 2030. Indonesia has a vast labour force, but it additionally has a high unemployment rate. Understanding the technology world has transformed into a necessity to prepare for it, and practically all current occupations are either negatively or positively affected (Jihan, 2023). On the one hand, more employment opportunities have resulted from the growth of new jobs in the digital economy. On the other side, job losses have occurred in several industries as a result of the displacement of employees brought on by automation and other types of digitalisation.

4.1.4.2. (T2) Absence of social protection, job stability and access to chances for training and growth and uncertainty on job opportunities

In Indonesia, new types of labour have also emerged as a result of economic digitalisation. The growth of freelance work, platform employment, and other non-standard labour has given employees new options, but it has also presented them with new difficulties. The absence of social protection, job stability, and access to chances for training and growth are some of the difficulties encountered by Indonesian employees. To support the development of the digital economy while also protecting employees and ensuring their access to social security, policymakers must strike a balance (Asian Development Bank, 2019).

Thus, the creation of skilled positions does not ensure that all employees will be productive and uphold their legal obligations. This claim is reinforced by BPS, which claims that losing a job encourages employees to work frugally by engaging in various types of unsuitable employment. According to the ILO's definition of "decent work," "improper work" is work that does not ensure the equality, freedom, security, and dignity of its employees as people. This leads to the fact that even if the labour were trained for a skilled labour position, there seems to be no guarantee that they have a sense of job security which will lead to a high unemployment rate as they will still not be given any job opportunity. The digital economy is thought to have a detrimental influence on bad working conditions.

4.1.4.3. (T3) Not paying taxes: rely on informal jobs

Secondly, this could be due to the rise of e-commerce and people started to do entrepreneurship which can cause a threat to the Indonesia economy as they are doing it independently, without paying the tax or those informal workers that do not pay taxes to the government. Indonesians rely on informal jobs to sustain themselves and their family rather than seeking out official employment. Hence, informal employees are those who earn money that is accountable to income tax but do not pay taxes to the government, in the end, the government's options for promoting growth are limited (Abbas & Rahmawati, 2020). This can be

seen that Indonesia experiences tax loss due to the growth of e-commerce and can lead to negative impact towards the development and economy of the country.

4.1.4.4. (T4) Less job opportunities: digital system and population

Workers who will lose their employment owing to digital systems need to be transferred to duties that are not at risk of being automated, such as occupations that need high tech and social intelligence, by the time technology advances and automation becomes more practical to replace human labour (Samboteng, 2020). The use of digital technology has also changed many of the current employment. Examples of regular jobs that have been replaced by automation include data input and assembly line labour. This has given rise to worries about the necessity for further education and training as well as the potential for job displacement.

According to Gayatri et al. (2022) it shows that even though there are graduates with an automotive degree, who totalled 246,091 and 373,444 graduates, respectively, the vocational graduates with a computer and informatics major are the second largest unemployed category, the shortage of graduates in STEM (Science, Technology, Engineering and Math) or other related fields alone is not the cause of the absence of a digitally proficient workforce. On the other hand, the gap might also exist when there are more graduates than there are open positions. However, it is typical for most of the graduates' competence to fail to meet the standard that is required by the sector. This shows that even though they have the skills, there are less job opportunities for them, and this could be due to an increase in the population of Indonesia, which needed for people to have skills that could be distinct from others so they could get the job.

Table 1: The SWOT analysis results on the impact of digitalisation towards labour market in Indonesia

Internal	**4.1.1 Strengths**	**4.1.2 Weaknesses**
	(S1): Technological advancements and increased efficiency. **(S2):** Better access to information on job seeking. **(S3):** Improve on accessing to information and communication. **(S4):** More innovation**:** new goods and services	**(W1):** New jobs and job displacement: Shortage of skills **(W2):** Mismatch of work and advantages towards the high skilled employees **(W3):** Digital-skilled workforce gap **(W4):** High unemployment
External	**4.1.3 Opportunities**	**4.1.3 Threats**
	(O1): Increase digital education. **(O2):** Increase job opportunities. **(O3):** Increase in the E-commerce enterprises.	**(T1):** Displacement of employees brought on by automation and other types of digitalisation. **(T2):** Absence of social protection, job stability, and access to chances for training and growth and uncertainty on job opportunities **(T3):** Not paying taxes: rely on informal jobs. **(T4):** Lose employment: digital system and population.

4.2 TOWS Matrix

The TOWS matrix gives a way to create strategies that properly pair elements related to internal strengths (or weaknesses) with elements related to opportunities (or dangers) from external factors (Ravanavar & Charantimath, 2012). In which this means that in TOWS matrix matches the S and W with the O and T, revealing the Strength-Opportunities (SO), Weaknesses-Opportunities (WO), Strength-Threats (ST), and Weaknesses (WT) strategies.

Based on Maity et al. (2023), there are four types of TOWS strategies whereby SO strategy is by using internal strength to take advantage of external opportunities, WO strategy it seeks to fill internal gaps by seizing the possibilities from external opportunities, ST strategies it makes use of the strength to cut off or lessen the impact from the external threats and lastly, WT tactics use defensive techniques to reduce internal faults and avoid external threats.

Table 2: TOWS matrix

TOWS Matrix	**External Opportunities**	**External Threats**
Internal Strengths	Strength Opportunities (SO)	Strength-Threats (ST)
Internal Weaknesses (W)	Weakness-Opportunities (WO)	Weakness Threats (WT)

Source: Maity et al. (2023)

In relation to TOWS matrix applying to the SWOT analysis results on the Impact of Digitalisation towards Labour Market in Indonesia is that:

Table 3: SWOT-TOWS matrix

	Internal strength (S) **S1:** Technological advancements and increase efficiency. **S2:** Better access to information on job seeking. **S3:** Improve on accessing to information and communication. **S4:** More innovation: new goods and services	**Internal Weakness (W)** **W1:** New jobs and job displacement: Shortage of skills **W2:** Mismatch of work and advantages towards the high skilled employees **W3:** Digital-skilled workforce gap W4: High unemployment
External Opportunities **O1:** Increase digital education. **O2:** Increase job opportunities. **O3:** Increase in the E-commerce enterprises.	**SO Strategies** **S1,O1,O2** Utilise and optimise the technology so this improves its efficiency to benefit from greater opportunities for employment and online businesses. **S2, S3, O1, O2** Improving utilisation of information and communication, assuring fair opportunity for digital skills training, and fostering digital literacy, boosting communication and information accessibility in job opportunities **S3, S4, O3** Maximising the use of technology in both marketing and manufacturing processes helps in boosting business income in which this will help in improving economic growth of the country. **S4, O3** Optimising and enhancing on the standard of the service in which this could help in fulfilling the needs of society and raise the service standards	**WO Strategies** **W1, W2,W3, O1, O3** Providing workers with digital education and training, businesses can address the skills gap and the mismatch between their capabilities and available job opportunities. **W4, O2** By focusing on adaptable reskilling and upskilling, which would reduce inequality and improve social stability
External Threats **T1:** Displacement of employees brought on by automation and other types of digitalisation. **T2:** Absence of social protection, job stability,	**ST Strategies** **S1, T1** Using advances in technology and improved productivity to lessen the risks of job displacement brought on by automation as well as other kinds of digitalisation.	**WT Strategies** **W1, W3, W4, T1, T2, T4** By offering enough and accessible compensation for unemployment, enacting employment protection laws, and implementing labour market

and access to chances for training and growth and uncertainty on job opportunities **T3:** Not paying taxes: rely on informal jobs. **T4:** Lose employment: digital system and population.	**S2, S3, T2** utilising technological developments to reduce the number of jobs lost and the number of people jobless **S4, T3, T4** Employing in enhancing on the skills development and training that might aid in facing new technologies	initiatives that assist people in adjusting to job loss and obtaining new employment. **W1, W4, T1, T3,T4** By increase in digital entrepreneurship as they could not find any jobs, this will increase on the e-commerce, helping to reduce the level of unemployment as they could hire workers with their money income. **W4, T2, T4** Government to offer employees protection and assist them with the latest technology and developments.

4.2.1. Strengths-Opportunities Strategies

Indonesia could make use of its own technological advancement as they utilise and optimise the technology, so this improves its efficiency to benefit from greater opportunities for employment and online businesses. Take use of advances in technology could help in to boosting the production and efficiency in the digital economy. By offering frequent training and programme opportunities. In which Indonesia could create national certification programme based on digital education so that ICT industry could have a clear criterion on creating human resources for current and future employees to improve their digital skills as this could help in preparing for the future workers for industrial employment. From this, technology can assist in improving performance and ensuring that the labour market produces the most efficient and effective goods and services possible, since the digital economy in Indonesia is anticipated to create 3.7 million new employments by 2025 (Muftiadi, n.d.). As it has been demonstrated that digital technology plays a crucial role in delivering products and services in an approach that is practical, efficient, quicker, cheaper, and labour-intensive. Take use of advances in technology could help in to boosting the production and efficiency in the digital economy.

Moreover, more employers are looking for workers with intermediate or advanced digital capabilities than those with merely basic ones. As a result, by ensuring that businesses can offer digital education, so to improve people's digital literacy while also ensuring that those who lack the necessary skills may acquire them. With maximising the use of Technology in both marketing and manufacturing processes helps in boosting business income in which this will help in improving economic growth of the country. This could be done by providing alternative educational models, such as in promoting digital literacy and education within the workforce through improving utilisation of information and communication, assuring fair opportunity for digital skills training, and fostering digital literacy, boosting communication and information accessibility in job opportunities can help in aiding in increasing digital education to support on the labour market.

Furthermore, in order to create more innovation it is by increasing, utilising and improving on the e-commerce enterprises during this digitalisation era, as with their growth it can help in optimising and enhancing on the standard of the service in which this could help in fulfilling the needs of society and raise the service standards, which led for the e-commerce has significant potential to support economic growth for the country. Thus, the government should create and support a platform for new innovations for the products and services as this might help in maintaining competitiveness between the e-commerce enterprises and making sure that it is accessible and mobile friendly to be used for a wide range of users.

Especially it is a platform that is needed for the MSME’s to be able to grow and in fact MSMEs (Micro, Small, and Medium-Sized Enterprises) are essential for a country's economic development. One of the expressions of the Indonesian people's economy that needs to grow is MSMEs. It is projected that this sector of the economy will contribute to a rise in income which will help individuals to satisfy their basic necessities

since it will provide job possibilities that are capable of accommodating a large workforce (Achmad, 2023). This will help in reducing the unemployment in Indonesia.

4.2.2 Weaknesses-Opportunities Strategies

Due to the significant changes in the workplace have been brought about by the introduction of technology and digitalisation. Although these developments have enhanced production and efficiency, they have additionally created questions about job security because some positions may possibly be automated or eliminated. Thus, by providing workers with digital education and training, businesses can address the skills gap and the mismatch between their capabilities and available job opportunities. Since there are still a lot of people lacking in certain skills, which contributed to the lack of a skilled workforce in the digital age, we can achieve this by expanding digital educational programmes, which may eventually lead to job opportunities for those who already have the necessary skills.

Moreover, workers may provide their workers with the modern skills which are needed in the digital age by offering training programmes. This might include both hard skills like problem-solving and adaptation in addition to soft skills like programming or data analysis. Hence, people would be fully prepared to engage in economic development by focusing on adaptable reskilling and upskilling, which would reduce inequality and improve social stability. Based on Li (2022) stated that to prepared for the future workforce will continually upskill and reskill as they develop in their careers and find jobs in order to improve their work abilities. Workers that are upskilled acquire new abilities to support their present responsibilities. Retraining, on the opposite hand, requires for employees to acquire the information and skills necessary to fill completely new or different tasks.

Furthermore, there is still a need for increased participation from other stakeholders, more investment in digital infrastructure, regulations to protect small and local businesses, an improvement in digital literacy, and a decrease in the digital divide between urban and rural areas (Anshari & Almunawar, 2021). In which with fulfilling this will ensure on having a balanced and fair distribution of income with every demographic group.

4.2.3 Strengths-Threats Strategies

Using advances in technology and improved productivity to lessen the risks of job displacement brought on by automation as well as other kinds of digitalisation. Even though automation and technology can result in some job displacement, they likewise open up more possibilities and areas, perhaps resulting in positive growth in employment over the long run. This might help Indonesia increase its output or job productivity. Ensuring that employees have the knowledge and training they need to adjust with these developments is important, so that utilising technological developments to reduce the number of jobs lost and the number of people jobless as a result of the growth of technology and automation.

Moreover, it is crucial that the government offer this developing group of employees suitable and long-lasting social protection, not only for the sake of those who work themselves but also to protect and promote the effectiveness of the labour market through equal competition (Schulte & Howard, 2019). Thus, with continuous improvement in learning and skill development may be supported by technology as well, this may help the people to stay current in the labour market that is changing quickly due to digitalisation.

This could also be done by employing in enhancing on the skills development and training that might aid in facing new technologies, in which opportunities in this development are available towards all demographic groups. The government must enact labour laws that could potentially help citizens in adapting to and reflecting the developments in the nature of work brought about by digitalisation. These laws should protect workers' rights and ensure that they get fair treatment at work and social security.

4.2.4 Weaknesses-Threats Strategies

Almost all significant economic sectors have been affected by digitalisation, which has also altered the job market's composition. Digitalisation has changed the way individuals conduct their jobs and how work is conceptualised, although there is a lack of digitally trained people and an increasing number of skill mismatches, labour markets need individuals with better digital abilities (Charles et al., 2022). In which workers may avoid job losses brought on by technology and digitalisation by enhancing workers' capabilities and abilities.

This can be accomplished by offering enough and accessible compensation for unemployment, enacting employment protection laws, and implementing labour market initiatives that assist people in adjusting to job loss and obtaining new employment (Menéndez-Espina et al., 2019). In which people may avoid the lack of social protection, job stability, and accessibility to possibilities for growth and training is by giving the workers enough direction. Promote social interaction and both employer and worker involvement in the development and enforcement of social protection policies and programmes. This can serve to increase the trustworthiness and value of social protection while also ensuring that it responds to the evolving demands and preferences of both employees and employers.

Hence, to guarantee that highly trained people who already possess digital skills receive fair treatment and equal rights given to traditional workers, the government must offer employees protection and assist them with the latest technology and developments in order to ensure that they would not fall behind as it is necessary to improve the digital skills of workers.

By increase in digital entrepreneurship as they could not find any jobs, this will increase on the e-commerce, although with this platform sellers are not paying tax but with their diversifying, promoting, and producing more goods and services with added value, businesses and organisations may help in preventing job losses brought on by digital systems and expanding populations. As they make money from the sales of their products or services, businesses may use that money to hire unemployed individuals, so this led in helping to reduce the level of unemployment.

4.3 The results from the SWOT-TOWS analysis on the Impact of Digitalisation towards Labour Market Align with Islamic Economic Principles

The definition of Islamic economics is the study and implementation of Shari'ah laws and regulations that forbid injustice in the acquisition and use of material resources in order to provide people happiness and make it possible for them to fulfil their social and religious duties to Allah (Arif, 1985). This shows that Islamic economic principles' goal is to satisfy people and provide them with the ability to fulfil their duties to society and Allah s.w.t.

In which the results coming from the SWOT-TOWS analysis, there are some advantages and disadvantages that are affected due to digitalisation. This section will focus on two parts: the first part will be based on the strength, opportunities, weaknesses and threats to see whether it is aligned with the Islamic Economic principles. For the section of 4.3 it will focus on the TOWS matrix. As a result of all of this, it can be aligned with the Islamic economic principles.

4.3.1 Strength and opportunities

Islamic economic principles aim for economic and social equality, communal harmony, fair wealth distribution, and personal freedom (Imamuddin & Arain, 2016). These principles, rooted in the Qur'an and Sunnah, align with digitalisation, offering increased job opportunities, particularly through the growth of e-commerce ventures, enabling unemployed individuals to find work.Technological advancements enhance society's effectiveness and efficiency. Islamic economic principles, specifically the concept of At-Taysir (ease), emphasise simplifying regulations to facilitate their implementation (Nurhadi, 2021). This approach recognises human nature, ensuring that individuals can carry out tasks without excessive burdens, fostering independence.

Individuals are encouraged to act charitably and to the best of their abilities, as stated in Surah al Isra verse 84. Islamic obligation involves wholehearted adherence to Allah SWT's directives. Islamic economics strives for both material and spiritual gain, focusing on socio-economic justice, business operations, and social welfare. Entrepreneurship in e-commerce must adhere to Islamic law, the Qur'an, and Hadith. Fundamental business ethics, including honesty, reliability, sincerity, and morality, are vital. These ethics guide entrepreneurs, ensuring their actions align with Allah's guidance and enabling them to assist those without employment opportunities.

4.3.2 Weaknesses and Threats

The SWOT analysis reveals challenges regarding the alignment of Islamic economic principles. Workers face displacement due to technology, necessitating new skills for employment. Digital skills command higher wages, creating disparities in the workforce. Challenges include a large labour force with limited

opportunities, uneven work distribution, low earnings due to skill gaps, digital literacy issues, and unemployment. Lack of social protection and job stability prompts individuals to turn to entrepreneurship, leading to a rise in informal jobs.

Addressing wage concerns, Azid et al. (2013) advocate applying Islamic teachings from the Qur'an and Hadith. Employers and employees should view each other as brothers, fostering fair and respectful interactions. Employers must offer just wages, recognising the value of labour in their output. Injustice can lead to unrest and strikes, emphasising the importance of fairness in labour relations.

Regarding government interventions, a Muslim's life goal is falah, achieved through responsible resource management as Allah's earthly representative (Arif, 1985). Success lies in balancing personal needs with community welfare, following Allah's teachings. Managing resources with moderation and benefiting society aligns with the path set by Allah s.w.t.'s teachings.

4.4 TOWS matrix with Islamic economic principles

4.4.1 Strength-Opportunity strategies:

Indonesia stands to benefit significantly from enhanced digital education, increased job opportunities, and the growth of e-commerce ventures. These advancements align with fundamental principles such as *tawhid* (oneness and sovereignty of God), *khalifah* (vicegerent), *ihsan*, and *maslahah* (society's welfare and benefit). These principles highlight Allah's s.w.t. power and wisdom in creating the universe and empowering humans. Emphasising economic improvement and societal welfare underscores the responsible stewardship of Earth's resources, showcasing Indonesia's commitment to these principles.

4.4.2 Strengths-Threats strategies:

To address job losses due to automation and digitalisation, Indonesia can leverage its improved access to job information and enhanced communication. This approach aligns with the *adl* and *maslahah* principles, which safeguard society's welfare by reducing vulnerability, instability, reliance, and corruption. These principles also ensure fairness and equity in the treatment of employees, regardless of their skill level. Even workers lacking digital skills should be treated justly, acknowledging their rights. This approach promotes social stability and fairness in the face of technological changes.

4.4.3 Weaknesses-Opportunities strategies:

By embracing advancements in digital education, job markets, and e-commerce, Indonesia can address challenges tied to new jobs, job displacement, skill shortages, mismatched work, digital skills gaps, high unemployment, and disparities favouring highly skilled employees. This aligns with the principles of *maslahah* and *ihsan*, supporting charitable initiatives, social responsibility, people's development, job creation, and social services. Upholding people's rights and striving for the fulfillment of *Maqasid Al-Shariah* aims to establish a fair and just society, emphasising the importance of equity in Indonesia's socio-economic landscape.

4.4.4 Weaknesses-Threats strategies:

To mitigate the risks of employee displacement due to automation and digitalisation and to address the lack of social protection, Indonesia could reduce high unemployment, job displacement, skill shortages, work mismatches, and the digital skills gap. This approach aligns with the *adl* and *maslahah* principles, preventing inequality in opportunity and financial distribution among different societal groups. Implementing programmes to counter the effects of digitalisation on workers can enhance societal welfare. By ensuring job stability and offering opportunities for training and skill development, Indonesia can empower its workforce to adapt and thrive in the digital era.

5. Conclusion and Recommendation

In summary, digitalisation has significantly affected Indonesia's job market. While it has created opportunities, challenges remain. Technological progress through digitalisation boosts the economy by enhancing productivity. However, this shift poses a threat to job markets in emerging nations, seen through SWOT-TOWS analysis. The consequence is job displacement, requiring skilled workers. Thus, these nations must invest in education to meet new demands.

This paper examined the impact of digitalisation on the Indonesian labour market using a SWOT-TOWS analysis framework and Islamic economic principles. The paper identified the strengths, weaknesses, opportunities, and threats of digitalisation for the labour market, as well as to formulate strategies and align them with Islamic values. The paper used a qualitative method based on a critical literature review approach.

The paper finds that digitalisation has brought both benefits and challenges for the Indonesian labour market. Some of the benefits include technological advancements, increased efficiency, better access to information, more innovation, new job opportunities, and e-commerce enterprises. Some of the challenges include job displacement, skill shortage, mismatch of work, wage inequality, high unemployment, lack of social protection, and job stability.

The SWOT-TOWS analysis revealed four types of strategies that could be implemented to address the impact of digitalisation on the labour market: SO strategies that utilise the strengths and opportunities, WO strategies that overcome the weaknesses and exploit the opportunities, ST strategies that leverage the strengths and avoid the threats, and WT strategies that minimise the weaknesses and reduce the threats.

The paper also finds that the Islamic economic principles that could be aligned with the SWOT-TOWS analysis are *tawhid* (oneness and sovereignty of God), *adl* (justice), *maslahah* (public interest), *ihsan* (benevolence), *at-taysir* (ease), and *Maqasid Al-Shariah* (objectives of Islamic law). These principles could guide the formulation and implementation of the strategies to ensure that they are in accordance with the Islamic values of social justice, equality, welfare, and human dignity.

In terms of Islamic economic principles, digitalisation offers benefits like job opportunities and skill enhancement, promoting fairness and justice. However, challenges such as job insecurity and wage disparities persist, contradicting fairness. To align with Islamic principles, Indonesia must focus on social justice and citizens' protection, ensuring equal opportunities and individual satisfaction, as an obligation of an Islamic state.

Indonesia can harness the advantages of digitalisation and pave the way for a better future by investing in digital skills training. The government and industry sectors should fund these initiatives. This can be achieved through free or affordable training programmes, collaborating with academic institutions for digital courses, and encouraging businesses to train their staff.

Additionally, promoting entrepreneurship is crucial. Small businesses can easily expand through e-commerce and digital marketing. To support entrepreneurs, the public and private sectors can provide funding, tax incentives, and mentorship programmes. By fostering entrepreneurship, Indonesia can enhance economic growth and create new job opportunities.

Moreover, bridging the digital gap is crucial. Despite the advantages of digital technology, it has created disparities between those with access and those without. Rural areas, in particular, face limited internet access. To address this issue, both the public and commercial sectors need to invest in making digital technology accessible in rural regions. This can be achieved through initiatives such as expanding internet infrastructure, offering subsidies for electronic devices, and providing training courses to help rural communities acquire digital skills.

The paper contributes to the literature on digitalisation and labour market by providing a comprehensive and critical analysis using a SWOT-TOWS framework and an Islamic perspective. The paper also provides practical implications for academics, industry, government and policymakers to cope with the challenges and opportunities of digitalisation in a way that is consistent with Islamic teachings. In terms for academics, this study helps to improve knowledge of labour markets, digitalisation, and Islamic economics while providing context for Indonesia and recommendations that will guide future research and policy. Whereas, in terms for industry, this will help to improve workforce management, job search strategies, and skill development. It can also help employees adjust to changes in the market and help employers improve their business strategies in accordance with ethical Islamic principles. Lastly, for government and policymakers to assist in guiding to make rules and regulations that focused on morally appropriate strategies for social security, job creation, and workforce development that comply to Islamic economic principles.

The paper suggests some limitations and recommendations for future research, such as conducting empirical studies to test the validity of the SWOT-TOWS analysis results, exploring other dimensions of digitalisation such as its impact on environment and culture, and comparing the Indonesian case with other countries.

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Exploring the Influence of Bank Traits and Economic Factors on the Profitability of Indonesian Islamic Commercial Banks

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Abstract

The present research aims to investigate the impact of banks' characteristics and macroeconomic factors on the profitability of Islamic commercial banks in Indonesia. This study utilizes a quantitative research technique that involves the application of numerical measurements and analysis to investigate the factors that influence the profitability of Islamic commercial banks. This study investigates the influence of internal factors, including equity financing, bank size, and debt financing, as well as external factors, such as the GDP growth rate and interest rate, on the profitability of Islamic banks in Indonesia. This study utilizes panel data, also known as longitudinal data. The dataset comprises a panel of 11 Islamic commercial banks located in Indonesia. The data were obtained from the DataStream Database and the balance sheet for the period between 2012 and 2022, yielding a total of 121 observations. The results suggest that equity financing, bank size, interest rate, and GDP growth rate significantly influence the profitability of Islamic commercial banks in Indonesia. These characteristics are critical in ensuring the success, profitability, and overall performance enhancement of Islamic commercial banks. However, the internal factor of debt financing does not exert a substantial influence on the profitability of Islamic commercial banks in Indonesia. The study suggests that Islamic banks, especially in Indonesia, should strengthen profit-and-loss sharing instruments in order to reduce inequalities and promote economic growth.

Keywords: Islamic banks, profitability, GDP growth rate, panel data, Indonesia

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1. Introduction

Islamic banking, which adheres to Sharia principles, has become an integral part of the global financial system. Unlike conventional banks, Islamic banks operate on principles such as profit-and-loss sharing, asset-backed financing, and the prohibition of interest (*riba*). These distinctive features present unique challenges and opportunities for measuring and enhancing their profitability. As Islamic banking continues to grow, particularly in countries with significant Muslim populations, understanding the factors that influence their profitability becomes crucial (Muhammad & Al-Shaghdari, 2024). This study focuses on the Indonesian Islamic banking sector, exploring how specific bank traits and broader economic factors affect their financial outcomes. Profitability of banks plays a crucial role in the general economy of a country, as highlighted by Samail et al. (2018). Profitability, encompasses executing financial activities, achieving financial objectives, and measuring the outcomes of policies and operations of firms in monetary terms (Abubakar & Aduda, 2017). It also includes assessing a firm's overall financial health over a specific period and allows for comparisons between similar firms in the same industry and across different sectors. Accurate predictions and guidelines for profitability can boost investor confidence. As reported by Javaid and Alalawi (2018), Profitability measurement in the banking sector is vital due to its significant contribution to economic development and sustainability. In Indonesia, Islamic Finance News in the Annual Report 2016 demonstrated the country's substantial efforts in establishing its Islamic banking industry amidst numerous regulations, including those on

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Islamic hedging transactions and the Islamic capital market during 2015-2016. These regulations, launched by the Indonesia Financial Services Authority (OJK) since its establishment in 2013, aimed to improve Islamic banking in the country. Before OJK, the central bank supervised the financial industry. According to Rusydiana and Sanrego (2018), the market share of Islamic banking in Indonesia was roughly 5% of total bank assets, and customers were less than 10 million, indicating low awareness of Sharia-compliant products and services. This lack of awareness has kept Islamic banks' size significantly smaller compared to conventional banks (Abubakar & Aduda, 2017; Muhammad et al., 2023). Many misconceptions persist, such as the belief that Islamic banking is unprofitable due to the absence of interest charges. Greater awareness is needed to demonstrate that Islamic banking is a viable alternative with unique value propositions. Despite Indonesia being home to one of the largest Muslim communities globally, awareness about Sharia-compliant products remains low (Sukmana & Febriyati, 2016). As noted by Chowdhury (2013) and Saleh et al. (2021), in a country with 195 million Muslims, only 1.2% of total banking assets are under Islamic finance.

This study aims to identify internal and external indicators that impact the profitability of Islamic commercial banks in Indonesia. By identifying key determinants, the research provides valuable insights for bank managers to optimize operational strategies and improve profitability. Policymakers can leverage these findings to create a more robust regulatory framework that supports the growth of Islamic banking. Additionally, investors can make informed decisions based on a deeper understanding of profitability drivers within this sector. Ultimately, the research contributes to the sustainable development of Islamic banking in Indonesia, fostering economic stability and growth. Additionally, this study will bridge the knowledge gap by analyzing these variables to provide a comprehensive understanding of what drives profitability in Indonesian Islamic commercial banks. By doing so, it seeks to offer actionable insights for bank managers, policymakers, and investors to enhance the sector's growth and stability. The research is structured as follows: Section 2 provides a concise overview of the prior literature on Islamic bank profitability. Section 3 focuses on the research methodology, including research design, sample selection, variables operationalization’s, data collection, and data analysis procedures. Section 4 presents the results derived from the statistical analysis. Section 5 offers an overview of the implications, limitations of the current study, and proposes potential avenues for future research.

2. Literature Review

Islamic banking, based on Sharia principles, has been well recognised worldwide for its ethical approach to money, which focuses on profit-sharing and transactions supported by assets (Megat et al., 2024; Iqbal & Molyneux, 2016). The Islamic banking industry in Indonesia has experienced substantial growth, providing financial goods and services that adhere to Sharia principles and meet the ethical and religious requirements of a large Muslim population (Kassim & Majid, 2010). Equity financing and bank size are crucial internal elements that significantly influence the profitability of Islamic banks (Al-Shaghdari & Bardai, 2020). Equity financing, a fundamental aspect of Islamic finance principles, is the sharing of risks between the bank and its stakeholders. This has the potential to decrease financial difficulties and improve long-term viability (Ariss, 2010). Research suggests that Islamic banks with higher equity ratios tend to have higher profitability. This is because higher equity ratios reduce debt and ensure that stakeholders' interests are in line with the bank's profitability (Sufian et al., 2012). Bank size, as determined by the total value of assets, is an important internal component that has a significant impact on profitability. Big banks gain advantages from economies of size and breadth, which allows them to distribute operational expenses more effectively and expand revenue sources by offering a wider variety of financial products (Akhtar et al., 2011). Furthermore, larger banks frequently benefit from increased market exposure and client confidence, resulting in higher profit margins as compared to smaller institutions (Kahf, 2006). The profitability of Islamic banks is substantially influenced by external macroeconomic factors. The GDP growth rate functions as an indicator of economic activity, impacting the lending portfolios of banks and investment prospects (Khan & Bhatti, 2008). An impressive GDP growth rate boosts the need for credit and financial services, resulting in banks benefiting from greater loan volumes and increased fee income (Haron & Wan Azmi, 2008). On the other hand, economic downturns or slow growth can limit the demand for loans and negatively affect the profitability of banks. Islamic banks are impacted differently than conventional banks by interest rates, which are a crucial macroeconomic factor, because Islamic banks are prohibited from engaging in transactions that involve interest. Fluctuations in interest rates have an effect on the expenses of banks and their methods of obtaining funds, which in turn affects their

profitability margins and tactics for setting prices (Beck et al., 2013; Al-Shaghdari & Adeyemi, 2020). Islamic banks primarily depend on profit-sharing agreements and funding based on assets, which makes them susceptible to changes in monetary policy and market interest rates. This research utilises panel data analysis to examine the factors that influence the profitability of Islamic banks, as commonly done in empirical studies. Panel data approaches enable researchers to examine differences in both cross-sectional and time-series data across a sample of banks. This approach yields substantial insights into the dynamic links between internal features, macroeconomic factors, and profitability (Hassan & Bashir, 2003). Panel data analysis improves the validity and dependability of findings in studies on the profitability of Islamic banking by accounting for bank-specific effects and considering the influence of external economic variables. Ultimately, the research emphasizes the complex relationship between internal bank attributes, such as equity financing, debt financing and bank size, and external macroeconomic factors, such as GDP growth and interest rates, in influencing the profitability of Islamic commercial banks in Indonesia. Improving the comprehension of these elements not only fosters the financial stability and durability of Islamic banks but also bolsters wider economic expansion and development objectives in Indonesia's financial sector.

3. Research Methodology

The data used in this study is referred to as Panel data, which is also known as longitudinal data or cross-sectional time-series data. Panel data provides more informative and varied data, with reduced collinearity between variables, and greater degrees of freedom (Park, 2011). Utilizing panel data leads to a higher number of degrees of freedom, hence enhancing the efficiency of estimate (Brooks, 2019). Furthermore, the data for this study is obtained from the DataStream Database and Balance sheets. The dataset consists of a panel of 11 Islamic commercial banks that are based in Indonesia. The study period spans eleven years, from 2012 to 2022. In total, there are 121 observations (where nT is the total number of observations). The study examines the influence of banks' features and macroeconomic variables on the profitability of Islamic commercial banks in Indonesia. It considers both internal factors, such as equity financing, debt financing and banks size, and external factors, such as macroeconomic indicators, such as intertest rate and GDP growth rate. An analysis was conducted on data obtained from banks that provide Islamic banking products and services as part of the Islamic Banking Scheme. The period from 2012 to 2022 has been chosen to obtain the most recent data to evaluate the profitability of Islamic banks in Indonesia. Given that the study centers on the profitability of Islamic commercial banking in Indonesia, secondary data is employed as the method for data collecting. The extraction of secondary data was conducted from the DataStream Database and Balance sheet. In their study on contemporary research methodologies, Creswell and Clark (2018) identified several benefits of using secondary data utilization. One notable advantage is the high level of quality assurance, as the data is consistently verified and updated. The profitability of Islamic commercial banks in Indonesia was assessed via using the Return on Assets (ROA) as proxy to measure the profitability. Return on Assets (ROA) measures the bank management's efficiency in converting assets into net profit.

Figure1: Research framework

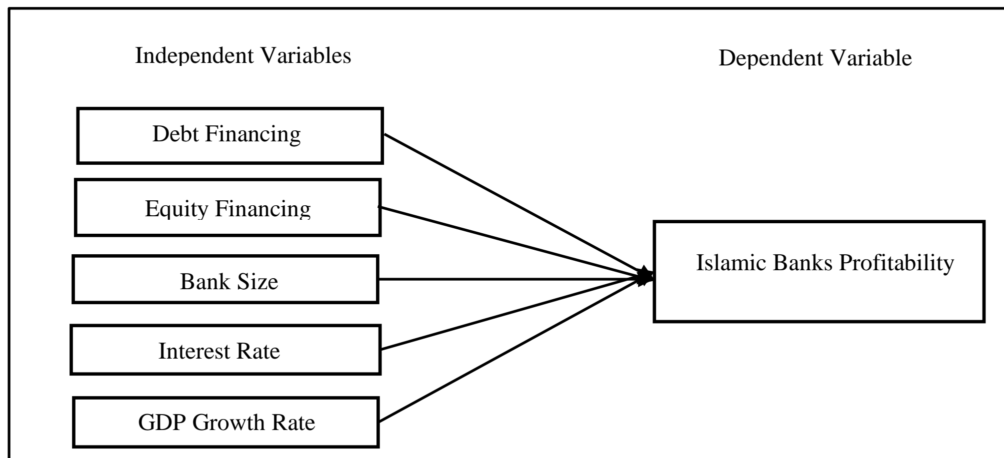

Table 1 below presents the measurements that were used to operationalize the study variables.

Table 1: The measurements of variables applied in this study

Variable	Measurement	References
Profitability	ROA= Net Income/ Total Assets	Riaz & Mehar (2013); Hassan &Bashir (2003)
Debt Financing	NPLSF = (Debt Funding contracts / Total financing)	Abusharbeh (2014); Al-Shaghdari et al. (2021)
Equity Financing	PLSF = (Equity Funding contracts/ Total financing)	Rahayu & Septiarini (2019); Abusharbeh (2014); Al-Shaghdari & Bardai (2020)
Bank Size	The Size is measured as the natural logarithms of total assets.	Noman (2015); Rashid & Jabeen (2016); Asadullah (2017); Suppia & Arshad (2019)
Interest Rate (IR)	Lending Interest Rate (%)	Rashid & Jabeen (2016); Amzal (2016)
GDP Growth Rate	Annual real Gross Domestic Product, growth rate (%)	Amzal (2016); Hamid & Mir (2017); Nagaraju & Boateng (2018)

The current study employed an econometric model and executed the analytic procedure utilizing random effects models with GLS regression via Stata software. The variables used in the analysis were specified in Table 1. Using the given data set, all data is collected and transferred to a data sheet using the software programs SPSS version 28 and Stata for analysis.

4. Results Analysis and Discussion

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Year	121	2022.5	3.871504	2012	2022
Code	121	11	5.444978	11	11
Name	0				
ROA	121	.5974615	.3360765	-.85	2.71
Bank Size	121	66.42158	14.89644	36.89	87.7
Debt Financing	121	2.114625	.8771563	.29	5.3
Equity Financing	121	21.46528	2.282411	14.22	21.601
Interest Rate	121	7.162422	4.668731	10.2	121.5
GDP Growth Rate	121	6.049	4.461984	6.33	8.21

Sources: STATA result (2024)

The analysis reveals that the average Return on Assets (ROA) for the eleven Indonesian Islamic banks is 0.59 percent, with a standard deviation of 0.336. The maximum recorded return on assets (ROA) is 2.71 percent, and the minimum is -0.85 percent. The mean bank size is 66.42%, with a standard deviation of 14.90. The greatest bank size is 87.70%, while the minimum bank size is 36.89%. The average interest rate for debt financing is 2.11%, with a standard deviation of 0.87. The highest interest rate seen is 5.3%, while the lowest is 0.22%. Equity finance exhibits a mean of 21.46%, a standard deviation of 2.28, a maximum value of 21.60%, and a minimum value of 14.22%. The research variables in Table 2 demonstrate a significant variation, which can be attributed to the inclusion of banks of different sizes in the sample, ranging from recently established institutions to well-established ones. Table 3 displays the correlation matrix used to assess multicollinearity, with the correlation coefficient between independent variables serving as an indicator. Multicollinearity is present when the partial correlation value between independent variables is greater than 0.85 (Gujarati & Porter, 2010; Sutikno et al., 2022). The correlation matrix in Table 3 indicates that there is no strong correlation among the variables (all values are below 0.7). This suggests that there is no issue of multicollinearity among the variables included in this research. In Table 3, the correlation matrix for ROA shows that there is no multicollinearity if the Variance Inflation Factor (VIF) is greater than 1. There is no strong link between any

of the variables, as shown by the VIF values in the correlation matrix (all VIF values are above 1). These findings indicate that the presence of multicollinearity does not pose a substantial problem in this analysis (Hair et al., 2019).

Table 3: Correlation matrix

Indictors	VIF	1/VIF
Equity Financing	9.43	0.096
Debt Financing	5.33	0.1670
Bank Size	3.99	0.21350
Interest Rate	2.47	0.54156
GDP Growth Rate	1.28	0.94356
Mean VIF	**4.50**	

Table 4: Regression results based on random effect model

Random-effects GLS regression	Number of obs=121
Group Variable: Code	Number of groups=11
R-sq:	
Within= 0.5407	Obs per group:
Between= 0.5684	Min= 9
Overall= 0.5586	Avg= 9.8
	Max= 11
Corr (u_i, x)= 0 (assumed)	Wald chi2 (7) = 61.89
	Prob > chi2= 0.005

ROA	Coef.	Std. Err.	z	p> |z|	[95% conf. interval]
Equity Financing	.00770	.0032517	3.51	0.008	.03518
Debt Financing	-.04025	.0269413	-2.13	0.284	.01264
Bank Size	5.4205	4.04e-06	2.17	0.031	.00016
Interest Rate	-.0609	.0047488	3.70	0.008	.01415
GDP Growth Rate	.45972	.1506772	3.66	0.002	.72654
Sigma_u	.405642				
Sigma_e	.515604	(Fraction of variance due to u_i)			
rho	.774514				

Sources: STATA result (2024)

Table 4 displays the regression outcomes for panel data utilizing random effect models and the Generalized Least Squares (GLS) regression model. The model was built using static panel models, which are the standard approaches for modelling panel data. A Chi-square statistical probability of less than 0.005 suggests that the model is typically satisfactory. Moreover, the independent factors in the model accounted for 55.86% of the variance observed in the dependent variables. The remaining 44.14% of the variability could not be explained by the provided criteria, suggesting that other significant factors were not taken into account. The factors of equity financing, bank size, interest rate, and GDP growth rate exhibited statistical significance at a significance level of 0.05 when calculating profitability (ROA). Nevertheless, the metric for debt financing did not yield any noteworthy findings. The main findings of this investigation are summarized in Table 5.

Table 5: Summary of hypothesis testing

Hypothesis of the Study	**P Values**	**Decision**
Equity Financing -> Profitability	0.008	Supported
Debt Financing -> Profitability	0.284	Not Supported
Bank Size -> Profitability	0.031	Supported

Interest Rate -> Profitability	0.008	Supported
GDP Growth Rate -> Profitability	0.002	Supported

4.1 Results Discussion

The findings indicated a statistically significant positive association between the Equity Financing parameter and the profitability with (p-value = 0.007). This finding is consistent with the findings of earlier studies, as reported by Kuppusamy and Samudhram (2010), Mawardi et al. (2012), and Zulfiqar et al. (2016). The aforementioned results can be explained by the substantial influence of equity financing (PLS) on the performance of Islamic commercial banks in Indonesia. This is because Islamic commercial banks in Indonesia continue to employ equity financing profit-sharing arrangements, with the proportion of Mudarabah and Masyarakat funding increasing annually. Consequently, this has led to a rise in the profitability of Islamic commercial banks in Indonesia. In addition, Debt financing, the outcome for this variable is negative and lacks statistical significance with (p-value of 0.284). The stated outcome can be explained by the fact that Islamic commercial banks in Indonesia have extensively utilized equity-based financing, particularly in recent years. Another valid rationale is that Debt funding is perceived as analogous to Interest-based funding, and the majority of scholars consider debt financing to be contrary to the fundamental tenets of Islamic principles. Besides, Bank Size is positive and statistically significant, as indicated by with (p-value of 0.031) . This discovery is consistent with the findings of earlier studies, as reported by Petria et al. (2015) and Waemustafa & Sukri (2015). The results can be explained by the substantial influence of Bank Size on the profitability of Islamic commercial banks in Indonesia, which is attributed to superior cost management. Additionally, the study aimed to analyse the influence of external factors, such as interest rate and GDP growth rate, on the profitability of Islamic commercial banks in Indonesia. The impact of GDP growth rate on the profitability of Islamic commercial banks is evident, as indicated by the parameter estimate with a substantial positive effect (p-value = 0.002). This study aligns with the conclusions of Zarrouk et al. (2016) and Amzal (2016), who found that Islamic banks have higher performance in economies characterised by high levels of gross domestic product and investment. Gross Domestic Product (GDP) growth is a measure of the total economic activity in a country. When GDP growth rates are higher, it can stimulate the demand for bank products, resulting in increased profitability and improved financial performance. Furthermore, the suggested model hypothesised that interest rates would have a positive impact on the profitability of Islamic banks, as evidenced it was a statistically significant with (p-value of 0.008). Anbar and Alper (2011) and Al-Shaghdari et al. (2021) have discovered comparable results, suggesting a positive correlation between interest rates and the profitability of Islamic banks. Islamic banks utilise interest rates as a reference point to determine the amount they would charge borrowers and the rewards they will provide to savers. Hassan and Bashir (2003) have highlighted that an elevated real interest rate will lead to a rise in loan interest rates, hence enhancing the profitability of banks.

5. Conclusion and Recommendation

As stated above, the current study intended to investigate the impact of banks' characteristics and macroeconomic variables on the profitability of Islamic commercial banks in Indonesia. The research used a model that includes five variables, both internal and external, impacting the profitability of these banks. Notably, the empirical analyses have presented fresh relevant findings towards the significance of the Islamic banking industry on Islamic banks' profitability in Indonesia. The internal factors (i.e., Equity Financing and Bank Size) are significant determinants of Islamic commercial banks' profitability, ensuring the success and increase in the profitability of these banks. On the other hand, Debt Financing did not show a significant effect on profitability. Additionally, GDP growth rate and interest rate emerged as key external factors influencing the profitability of Islamic commercial banks in Indonesia. The findings of this study have several important implications for policymakers, bank managers, and investors. Policymakers can use these insights to create a supportive regulatory environment that enhances the stability and growth of the Islamic banking sector. For bank managers, understanding the significant internal and external factors can aid in developing strategies to optimize operational efficiency and profitability. Investors can benefit from this research by making informed decisions based on a clearer understanding of the profitability drivers within the Islamic banking sector. Future research could expand on this study by incorporating additional variables that may influence the profitability of Islamic banks, such as technological advancements, customer satisfaction, and service quality. Longitudinal studies could provide deeper insights into how these factors impact profitability over time. Comparative studies

between Islamic and conventional banks within the same economic context would also be valuable, offering a more nuanced understanding of the unique challenges and advantages faced by Islamic banks. This study is not without its limitations. Firstly, it focuses solely on Islamic commercial banks in Indonesia, which may limit the generalizability of the findings to other countries or regions. Secondly, the study uses a specific set of internal and external variables, which, while comprehensive, may not capture all the factors affecting profitability. Lastly, the reliance on available data may not fully reflect the dynamic and evolving nature of the banking sector. In conclusion, this study provides significant insights into the factors influencing the profitability of Indonesian Islamic commercial banks. By addressing the identified gaps and considering the implications, future research can further contribute to the sustainable development of Islamic finance in Indonesia, fostering economic stability and growth.

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