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INTERNET USERS AND MACROECONOMIC FACTORS' IMPACT ON INDONESIA-MALAYSIA ISLAMIC FINANCE INDEX

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ABSTRACT

Introduction: The rise of the internet has revolutionized the way businesses operate and people interact globally, without exception, including Islamic finance. This paper aims to investigate whether or not the level of internet users, economic growth, exchange rate, labor force, and poverty are the determinants of the increase of the Islamic Finance Index (IFI) in Indonesia and Malaysia.

Methods: This study employs quantitative methodologies, specifically utilizing panel data regression techniques. Due to limitations in the availability of certain variables, an unbalanced panel regression is conducted, encompassing quarterly data from 2013 to 2022.

Results: Empirical evidence indicates a significant relationship between internet users and other macroeconomic variables concerning IFI. Specifically, internet users contribute to the progress of IFI, while labor force and poverty also notably influence IFI. However, the remaining macroeconomic variables do not demonstrate significance in this context.

Conclusion and suggestion: By analyzing and delving into the link between internet users, macroeconomic factors, and Islamic finance, this study fills the literature gap which will be a guide for both policymakers and academics to grasp what dominant variables to prioritize for the acceleration of Islamic finance rectification in both Indonesia and Malaysia, aligned with the increasing rate and impact of internet users.

INTRODUCTION

Emerging countries like Indonesia and Malaysia can be categorized as having the most considerable number of internet users. Out of its total population (277.7 million), Indonesia's internet users were 204,7 million in January 2022, with the rate of internet penetration at 73.7% at the beginning of the year, summarizing that only 26.3% or 73,05 million people in Indonesia experienced no use of the internet. On the other hand, with a slightly bigger internet penetration (89.6%) than Indonesia, only 3.43 out of 29.55 million Malaysians have not optimally used the interne (Kemp, 2022).The successful augmentation of the internet of things (IoT), automation, digitalization, and artificial intelligence will accelerate a country's economic growth, specifically in Islamic financing (He, 2019; Rahim et al., 2018). Hence, internet users play a crucial role and become key enablers on Islamic finance index since it is their market in which Islamic financing services, products, and policies are served and provided.

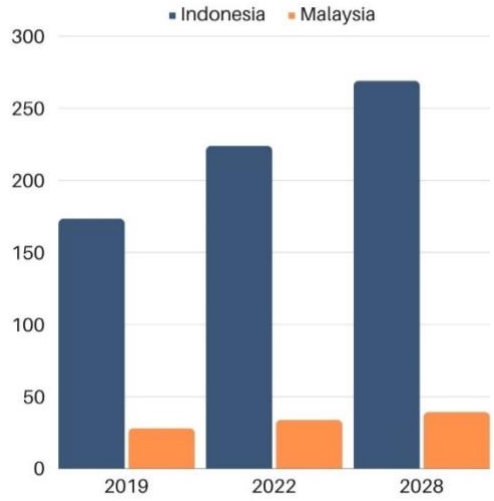

Figure 1. Trend comparison of internet users between Indonesia and Malaysia
Source: Statista, Datareportal (2023)

Figure 1 displays that trendwise, Indonesia has a steady and significant growth with double-digit increases in some years, rising from 173,45 million users in 2019 to an estimated 269.09 million in 2028. This is attributed to factors like affordable mobile data, increasing smartphone penetration, and government initiatives (Kemp, 2022). Despite having slower but consistent growth compared to Indonesia, Malaysia has a higher GDP per capita, affordability, and infrastructure limitations that might be playing a role.

The massive growth of internet users in both Malaysia and Indonesia has had a significant impact on production (Lubis and Febrianty, 2018; Narayanasamy et al., 2011). For instance, the rise of online marketplaces like Lazada and Shopee has facilitated businesses of all sizes to reach wider audiences, sell directly to consumers, and participate in global

trade. In addition, businesses are increasingly using cloud services, online collaboration tools, and digital marketing to improve efficiency, innovation, and communication. The growth of remote work opportunities creates flexibility for businesses and employees, potentially impacting production patterns and increasing labor mobility (Choudhury et al., 2019).

Concerning consumption, the internet, through e-commerce platforms, has expanded consumer choices, made shopping more convenient, and potentially increased overall consumption. Furthermore, the growth of digital wallets and online payment systems simplifies transactions, encourages cashless spending, and potentially increases consumption frequency (Rathore, 2016). Not limited to production and consumption, distribution has benefited from the internet by how it leverages social media platforms to reach targeted audiences, personalize marketing campaigns, and potentially improve distribution effectiveness(Bhoopathy and Kanagaraj, 2023). Logistics companies and delivery networks have been significantly boosted, creating new jobs and improving product distribution efficiency.

The significant growth of internet users in Indonesia and Malaysia is expected to impact the Indonesia-Malaysia Islamic Finance Index (IM-IFI). There may be a greater internet penetration that can improve awareness and understanding of Islamic financial products and services among broader populations. Meanwhile, online platforms and fintech solutions can make accessing and managing Islamic financial products more convenient and accessible, especially for unbanked populations. Additionally, social media and digital marketing can effectively reach younger generations and engage customers with Shariah-compliant financial products and services. Nevertheless, the challenges related to regulatory, cybersecurity and financial literacy gap may persistently remain (Uddin et al., 2020).

Other than internal bank factors, macroeconomic variables, like gross domestic product (GDP), labor force, poverty, and exchange rate, are perceived to affect the Islamic finance index (IFI) since they can stimulate development and services supply-demand changes (Mensi et al., 2020). Additionally, it could be the critical determinant of countries' economic growth, financial stability, the industrial scope of expansion, and cash injection (Zahid and Basit, 2017). With the fast pace of technological advancement, spurring the revolution industry to 4.0 and social capital to 5.0, it is paramount to consider the augmentation of the internet to almost all industries, either government or private.

Despite the burgeoning interest in the intersection of internet usage and Islamic finance, authors believe that there remains a paucity of empirical studies specifically investigating the determinants of the Islamic Finance Index (IFI) in Indonesia and Malaysia. While aiming to shed light on revealing the linkage and significance of internet users, and macroeconomic variables on the Islamic finance index which barely exists in the related research fields as most existing research tends to focus on traditional macroeconomic variables such as GDP growth (Zahid and Basit, 2018), interest rates (Dewi, 2022; Mushtaq

and Siddiqui, 2016), and inflation (Budiandru and Yuniarti, 2020), often overlooking the potential impact of digitalization and internet penetration on the Islamic finance sector, this paper provides the analysis where research on Islamic finance often overlooks in terms of research territories as they tend to focus on Middle Eastern countries or South Asia like Pakistan (Nawaz et al., 2019; Naz and Gulzar, 2023) or generalizes findings across Muslim-majority nations (Butt et al., 2023;Batorshyna et al., 2021)with insufficient attention given to Southeast Asian contexts like Indonesia and Malaysia, which have unique economic and digital landscapes.

This study fills the literature gap of how both poverty and internet users are determinants rare to be employed in probing the Islamic financial index. Islamic bank development, instead, tends to be used as a parameter to gauge countries economic growth (Boukhatem and Moussa, 2018; Hachicha and Amar, 2015; Mensi et al., 2020). Furthermore, many studies overlook critical socio-economic determinants such as labor force dynamics and poverty levels which can significantly influence financial inclusion and the development of Islamic finance yet have not been adequately explored. This study aims to fill this gap by providing a comprehensive analysis that incorporates both digital and macroeconomic variables to understand their collective influence on IFI.

Following the introduction are the literature review in section 2, methodology in section 3, result and analysis in section 4, and conclusion along with policy recommendation in the last section, section 5.

LITERATURE REVIEW

Background Theory

Islamic finance index in this study is defined as the return on assets (ROA) and the total of liabilities owned by Islamic banks, commonly used to gauge the profitability of related entities, not referring to the stock index. Islamic finance index, in other words, is the ratio of profitability used to probe the betterment of bank management and their overall performance in generating income while intensively increasing the level of trust of society to save or invest their money or use their financing services (Intan and Alam, 2019).

Moreover, internet users are a prominent determinant in almost all of today's businesses since industrial structures are undergoing a massive shift toward IT-related mechanisms. Internet use is expected to provide economic growth, which is more efficient and eco-friendlier, thanks to its diminishing demand for energy. With pervasive ICT development, providers and users of digital-based information services have mushroomed in diverse industries like e-commerce, e-government, e-payment, e-health, etc. (Mangku et al., 2021).

Gross domestic product (GDP) is the value of whole finished products and services in monetary terms generated in a particular country within a certain period. Other than the fact that it is a glimpse of economic portrayal employed to gauge the rate of economic growth, it can be known by examining the income, production, and expenditures, accepting changes as the change of inflation and population rate. GDP becomes a primary parameter for those who set policies, invest and do business to design relevant decisions. Despite the changeable causal relationship between GDP and inflation (Nisa', 2022), the rise of the price inclines to change a country's GDP, not necessarily going with the quality change of the products and services. Hence, analyzing GDP is imposing since determining the real antecedent is also in need of micro-depth evaluation (Fernando, 2022).

Besides, exchange rate is crucial factors in financial sectors. Financial institutions often adjust interest rates in response to fluctuations in exchange rates, aiming to achieve monetary policy objectives. These currency fluctuations also expose them to currency risk in international transactions (Chen, 2022). To mitigate this risk and maintain profitability, banks, investment firms, and multinational corporations employ various hedging instruments and risk management strategies. Additionally, monitoring exchange rate movements is crucial for banks to ensure price stability and control inflation (Sihotang and Hasanah, 2022), which are essential for financial sector stability and overall economic growth.

Not only might poverty be defined as unfair equality of freedom and opportunity, but also it is massively caused by significantly decreasing concerns put toward growth and fair income distribution. A higher income distribution gap will lead to a soaring poverty rate regardless of the economic growth rate. This issue should be countered with holistic, long-term strategies to enforce the life quality and well-being of the poor (Parewangi et al., 2020).

The labor force is another term reflecting the quality of human resources, which can also be defined as the human development index (HDI) or human capital. It is a ratio measuring the expectancy of line, education level, and income per capita. Imply summarized, the higher this ratio, the higher the labor force quality in one country, the more profound workforce owned and equipped as a fundamental element in any process related to manufacturing or providing service (Wang et al., 2019).

Previous Study and Hypothesis

In previous related-research illustrated in Table 1, unlike Nastiti and Kasri (2019) 's findings that the exchange rate was negative and insignificant, Sitompul (2021) and Tumewang et al. (2019) found that both had no significance in their partial linkage with Islamic finance in a partial manner, while the results were contradictory in simultaneous relation. This phenomenon might happen due to the smaller market share. Islamic banks have been compared to conventional ones concerning the exchange rate. Another analysis

would be since export was done by business partners of Islamic banks, in which the majority are SMEs, more often than import. Furthermore, Erdoğan et al. (2020) added that the insignificance of the exchange rate to the Islamic market happens inasmuch as Islamic stock markets have more stability and put in their screening which could only be vulnerable if manipulative attacks from external sources existed. Testing the same variables, Abidin and Haseeb (2018) revealed that both may influence Islamic finance in negative and significant ways.

GDP is proven to have a significant and positive impact on Islamic banks (Athari and Bahreini, 2021) because not only does it establish the trade pattern (Abidin and Haseeb, 2018), assist economic diversification (Ali et al., 2018), stimulate saving intention of people (Istan and Fahlevi, 2020), but also nourish R&D investment (Juhro et al., 2020). Interestingly, GDP might be an influencing determinant depending on the regime type. A robust regime, with a higher risk-sharing possibility leading to less productive investments, could negatively impact the linkage of GDP with Islamic banks. In Bahrain, albeit significant, GDP is negatively related to the profitability of Islamic banks, caused by the country's preference for economic strategy, alternatives designed for excessive fund deposits, and less general fair information on changes in the country's economic direction (Elseoud et al., 2020). This result is in line with what was found by Rofiqo and Afrianti (2019) when testing 12 Syariah commercial banks in Indonesia, which prioritize money velocity to manifest the flow of money supply and demand, pursuing more expected benefits. Remaining a mere possible determinant for Islamic banks' profitability is when GDP encounters a structural crisis break (Cham, 2018) and simply when there is no relationship between both (Al Fathan and Arundina, 2019).

With respect to internet users, it may be elaborated more specifically as tech-related consumers' behavior toward Islamic fintech, identifying its paramount role in broadening the chances of Islamic banks to their competitive survival and digitalization development (Rahim et al., 2022). Internet connectivity exposes broader populations to Islamic financial products through online platforms, educational resources, and targeted marketing. To exemplify, online portals showcase Shariah-compliant products and social media campaigns explain Islamic finance principles. Due to this, the understanding of the population gets better, leading to informed decisions and greater demand for Islamic financial services, boosting performance. Another rationality of how internet may increase the significance of Islamic finance performance is by how fintech solutions like micro-financing platforms and crowdfunding reach traditionally underserved populations. This expands the customer base, boosts deposits, and promotes financial inclusion, contributing to positive performance. For example, shariah-compliant crowdfunding

platforms for small businesses, and online micro-loan applications for underbanked populations.

Several research done in Malaysia proves the significant importance internet has toward Islamic banks' growth (Oseni et al., 2018; Thaker et al., 2022) since its existence improves the ease of banks' customers' transactions and support the switch of customers' preference and inclination toward digital platforms. Nevertheless, while internet access increases, financial literacy and understanding of Islamic finance might not follow suit. Consequently, this can lead to exploitation or misunderstanding of products, potentially harming customer relationships and impacting performance.

Table 1
Previous Studies Related with The Connection and Impact of Internet User, Labor Force and Macroeconomic Variables toward Islamic Financing Index

Authors	Countries or Regions	Period of Study	Methods
(Abidin & Haseeb, 2018)	Malaysia and GCC countries	1990-2017	Gravity model approach
(Erdoğan et al., 2020)	India, Malaysia, and Turkey	2013-2019	Causality-in-variance test
(Nastiti & Kasri, 2019)	12 Islamic commercial banks in Indonesia	2015-2017	Generalized least square estimation
(Elseoud et al., 2020)	Islamic retail banks in Bahrain	2013-2019	REM and FEM
(Athari & Bahreini, 2021)	Islamic banks operating in the Arab markets	2003-2017	The panel data approach
(Thaker et al., 2022)	Malaysia	2019	Partial Least Square (PLS) and UTAUT 2 analysis
(Oseni et al., 2018)	Malaysia	2014	Multiple regression and UTAUT analysis
(Cham, 2018)	MENA region and Brunei, Bangladesh, Malaysia, and Pakistan.	2000-2013	Generalized linear model
(Ali et al., 2018)	Bank Islam Brunei Darussalam	2012-2016	Fixed effects panel regression
(Rahim et al., 2022)	Malaysia	2018	Structural equation model (SEM)
(Juhro et al., 2020)	Indonesia	1968-2018	Dynamic least squares (DOLS) and Ordinary least square (OLS)
(Istan & Fahlevi, 2020)	Sharia commercial banks in Indonesia	Q12013-Q32017	Multiple linear regression

(Ali et al., 2020)	Indonesia	2019	Analytic network process (ANP) approach
(Rofiqo & Afrianti, 2019)	12 Sharia commercial banks in Indonesia	2010-2017	Multiple regression analysis

Source: Author's collection

The performance of Islamic banks could be influenced by labor force, highlighting the necessity of having qualified people with digital to theoretical capabilities, ensuring the Islamic financing served customers running efficiently. Ali et al. (2020) explored their linkage and found it positively significant, backed up by another finding by Khana et al. (2020). The level of education, exposure, and experience are vital attributes of reliable human resources for Islamic financing services. In contrast, significant negative findings witnessed what Cham (2018) was observed. He reasoned that the labor force, albeit skillful, might still hamper the efficiency of the services that Islamic banks expect to provide.

RESEARCH METHODS

This study does not attempt to include all factors influencing the growth of Islamic finance and internet components. Instead, it investigates the nature of the relationship between macroeconomic variables in Malaysia and Indonesia, internet users, and Islamic financial indicators. It seeks to find whether internet users and macroeconomic variables in both nations are related to the Islamic Finance Index.

The present study employed quarterly data on the Islamic finance index, internet users, gross domestic product (GDP), labor force, exchange rate, and poverty. Based on data availability, the study period was from 2013 to 2022. Islamic finance index (IFI) data is used to develop Islamic finance, which is a combination of total funding/liabilities, equities, and total revenue. Islamic finance index data was obtained from the Islamic Financial Services Board.

The highlighted internet user variables are included to quantify the impact of consumer behavior that they were already tech-savvy in accessing digital Islamic finance services, which ultimately affects IFI. Additionally, the utilization of internet users serves as a proxy for individuals' engagement with financial services. Given the extensive use of the internet in online education, market activities, and financial technology (fintech), the substantial presence of internet users may be closely linked to the advancement and expansion of the Islamic finance ecosystem's productivity and development.

Moreover, this study integrates poverty as Islamic finance frequently intersects with social welfare initiatives aimed at supporting disadvantaged or economically

vulnerable groups. Consequently, the research seeks to elucidate the association between poverty and Islamic finance. Additionally, the workforce is employed to evaluate the proficiency of human capital in Indonesia and Malaysia, which could potentially influence the performance of Islamic finance in these countries. Given the close relationship between Islamic finance and financial performance, the study also examines GDP and exchange rates to assess the potential shocks these factors might induce on the Islamic finance index.

Furthermore, the data on internet users, GDP, labor, and exchange rate were provided by the World Development Indicators (WDI), while the poverty rate was obtained from Our World in Data. All data are transformed to logarithms before analysis, standardizing the data distribution to make it shock-resistant. The summary of variables used in this study, along with descriptions and descriptive statistics, are detailed in Table 2 and 3.

Prior research, such as Rahim et al. (2022) and Cham (2018), has identified a causal relationship between internet-related factors and macroeconomic variables. However, there remains a gap in the literature that our study aims to address. This is particularly pertinent because the advancement of the internet is closely intertwined with macroeconomic factors and is integral to the ongoing evolution of Islamic finance.

Table 2
Summary of Variables

Variable	Description	Units	Sources
LIFI	Islamic Finance Index	USD	Islamic Financial Services Board
LINU	Internet user	Share of population	WDI
LGDPC	GDP per capita	USD	WDI
EXR	Exchange rate	USD	WDI
LLBR	Labor force	Share of population	WDI
POV	Poverty	Share of population	Our World in Data

Source: Author's Collection

Table 3
Descriptive Statistic

	LIFI	LINU	LGDP	LEXR	LLBR	LPOV
Mean	3.294	2.116	2.116	3.086	2.116	2.178
Std. Deviation	0.927	0.797	0.791	1.160	0.796	0.732
Maximum	4.304	2.995	2.997	4.219	2.993	2.973
Minimum	0	0	0	0	0	0

Source: Author's Collection

The study utilizes unbalanced panel regression, and the final results of the model analysis hinge on the outcomes of various panel regression tests like the Lagrange multiplier, Chow test, or Hausman test. Classical assumptions are also employed to

validate the model for analysis and minimize potential biases. By adhering to these assumptions, the study aims to bolster the validity of the findings and mitigate any distortions that may occur during the analysis process. Below is the model utilized in the study.

$$LIFI_{it} = \alpha + \beta_1 LINU_{it} + \beta_2 LGDP_{it} + \beta_3 LEXR_{it} + \beta_4 LLBR_{it} + \beta_5 POV_{it} + \varepsilon_{it} \quad (1)$$

The variables i and t represent country and time variables, respectively, with LIFI denoting the Islamic Finance Index and LINU, LGDP, LEXR, LLBR, and LPOV representing internet users, economic growth, exchange rate, labor, and poverty, respectively.

RESULT AND ANALYSIS

Result

This section presents the study's regression findings, emphasizing the role of internet users and macroeconomic factors in boosting the Islamic financial index in Indonesia and Malaysia. The statistical relationships were analyzed using unbalanced panel regression. Following several tests on the panel data model, the analysis indicates a preference for the random effect model. The Lagrange Multiplier test yielded a p-value below the alpha level, allowing rejection of the null hypothesis and validating the suitability of the random effect model for analysis.

Table 4
The Correlation Matrix of The Variables

	LIFI	LINU	LGDP	LEXR	LLBR	LPOV
LIFI	1					
LINU	-0.290	1				
LGDP	-0.281	0.495	1			
LEXR	0.444	-0.331	-0.194	1		
LLBR	0.634	-0.258	-0.268	0.136	1	
LPOV	-0.138	-0.354	-0.046	0.379	-0.655	1

Source: Author's calculation

The study gradually incorporates additional variables into the model to ensure data sufficiency and evaluate the consistency of results. Findings indicate that most variables maintain consistency, although there is some inconsistency in the sign of the coefficient for internet users. However, this inconsistency can be rationalized by the overall high R-squared value, indicating the model's effectiveness for analysis.

Moreover, the study employs a random effect approach, eliminating the need for robustness tests such as multicollinearity, autocorrelation, and heteroscedasticity.

Nevertheless, the study provides the correlation matrix of variables (Table 4) to know the relation between independent and other dependent variables is not linked to each other (below 0.80). The conclusive findings regarding the relationship between internet users and macroeconomic factors influencing the Islamic financial index (IFI) are summarized in Table 5.

Table 5
Estimation Result

	Random Effect		
	(1)	(2)	(3)
Internet User (LINU)	-0.3380***	-0.0935	0.3453**
	(0.1260)	(0.1391)	(0.1434)
Economic Growth (LGDP)		-0.1934	-0.0980
		(0.1338)	(0.1005)
Exchange Rate(LEXR)		0.3085***	0.1262
		(0.0846)	(0.0790)
Labor (LLBR)			1.2339***
			(0.1919)
Poverty (LPOV)			0.6865***
			(0.2060)
Constanta	4.0097***	2.9489***	-1.6842*
	(0.2849)	(0.4626)	(0.9379)
R-squared	0.1017	0.2785	0.7259
Countries	2	2	2

***, **, * represent 1%, 5% and 10% significance levels, respectively.
Source: Author's Calculation

From the table it is noticeable that while Economic Growth (LGDP)and Exchange Rate (LEXR) have no significant impact on IFI, Internet User (LINU), Labor (LLBR) and Poverty (LPOV) demonstrate the opposite results.

Analysis

Analysis of the Link of Internet Users to the Islamic Finance Index

With regard to Internet User (LINU), it is evident that in in Model (3), the coefficient becomes statistically significant at the 5% level (0.3453**), with the positive direction of the relationship. This indicates that in this model specification, an increase in internet users is associated with an increase in the IFI. Each one percent rise in internet users causes the Islamic finance index to increase by approximately 0.34 percent. This

relationship can be described through the influence of internet users who contribute to accessing digital Islamic finance services. The intensity of these makes current financial transactions increase, ultimately affecting Islamic finance's expansion.

Both Indonesia and Malaysia have large and increasingly tech-savvy populations, particularly among the younger demographic (Tjiptono et al., 2020). These internet-savvy users are more likely to adopt digital financial services (Chadha et al., 2022) and explore innovative fintech solutions, including those that adhere to Islamic finance principles (Hanif, 2018). Malaysia and Indonesia have become the largest nations offering Islamic financing per the majority Muslim population in those two countries. In addition, based on Islamic Finance Development (2021) report, Malaysia and Indonesia are ranked top and second in the world market for the development of Islamic finance, respectively. It was also validated by a McKinsey report that internet access in Malaysia and Indonesia was considerably superior (Das et al., 2016).

In addition to that, the proliferation of online investment platforms and fintech companies in Indonesia and Malaysia provides internet users with convenient access to Sharia-compliant investment opportunities (Susilawati et al., 2021; Yahya, 2021). According to Johar and Suhartanto (2019), as internet users become more familiar with these platforms and their offerings, they may be more inclined to invest in Islamic financial products such as sukuk, Islamic mutual funds, and Islamic equity investments.

Thaker et al. (2022) argued that Islamic fintech might explore new markets. They can comprehend how users adapt to technological developments by using digital finance. By doing this, Islamic finance can structure its marketing plans to take market share in the digital economy. This fact was confirmed by Oseni et al. (2018) and Rahim et al. (2022) in their study, which also supports the idea that the aid of digital appliances, particularly in the financing sector, significantly contributes as a task enabler. Clients have undoubtedly sped up and eased numerous transactions, such as deposits and investment financing facilities, with the accessibility of online financial services within Islamic finance.

Furthermore, according to the State of the Global Islamic Economy Report (2020), fintech is propelling Islamic finance forward. Recent growth predominantly relies on traditional banking services and products, evidenced by a significant 24.7% increase in net profits for CIMB Malaysia. Additionally, the younger generation now frequently engages in transactions like "Buy Now, Pay Later" and loan applications through digital marketplaces, suggesting a potential for increased profits in Islamic finance through collaboration with online market platforms.

Roubaud et al. (2022) also mentioned in their study that banks hesitate to allocate substantial resources in a competitive and volatile arena, such as fintech. Recent studies indicate that Islamic banks tend to collaborate with emerging fintech companies and

startups rather than making direct investments in fintech. This preference stems from the perception that young fintech firms and startups are safer options for collaboration or acquisition, especially when they demonstrate success. This approach enhances the potential profitability of implementing fintech solutions for Islamic banks and fosters a supportive environment for Islamic fintech companies and startups.

The rise in internet users can lead to improvements in digital financial literacy as stated by Shen et al. (2020). In Indonesia and Malaysia, Rahmanto et al. (2023) argue where there is a strong Islamic finance industry, individuals with access to the internet can easily access educational resources, tutorials, and online courses related to Islamic finance. This improved financial literacy can foster a greater understanding and appreciation of Islamic finance principles, leading to increased participation in Islamic financial activities and investments, thereby boosting the IFI.

Analysis of the Macroeconomics Variables to the Islamic Finance Index

Analysis of the Link of Economic Growth to the Islamic Finance Index

Regarding Economic Growth (LGDP), albeit negatively impacting on IFI as shown that each percentage increase in economic growth corresponds to a decrease of around 0.09 percent in the Islamic finance index, it displays that the coefficient is not statistically significant in any of the models, suggesting that there is no significant relationship between economic growth and the IFI in this analysis. The primary reason of this might be that Indonesia and Malaysia have diverse economies with various sectors contributing to economic growth. While Islamic finance is an important component of the financial sector, its contribution to overall economic growth may not be substantial enough to exert a significant impact on the IFI. Economic growth in these countries may be driven by other sectors such as manufacturing, agriculture, and services (Ahmad, 1989; Tatli et al., 2017), which have different dynamics and drivers compared to Islamic finance.

In the other side, economic growth in Indonesia and Malaysia can also be influenced by external factors such as global economic conditions, trade dynamics, and commodity prices. These factors may not necessarily align with the performance of the Islamic finance industry, leading to a lack of significant correlation between economic growth and the IFI. Additionally, fluctuations in international markets and global economic trends may overshadow the impact of economic growth on the IFI. Nevertheless, this finding contradicts what Tabash and Dhankar (2014) found Islamic banks' financing positively correlates with economic growth in Qatar, Bahrain, and UAE, with a bi-directional relationship in Bahrain and Qatar and a one-way relationship in UAE.

Analysis on the Link of Exchange Rate to the Islamic Finance Index

For Exchange Rate (LEXR), the coefficient, albeit positive, is not statistically significant, revealing each percentage increase in the exchange rate results in an approximately 0.12 percent increase in the Islamic finance index. Real exchange rates among nations dictate trade patterns. Hence, an increase or decrease in trade income will impact Islamic finance thereby plausible if the impact of the exchange rate was substantial.

The finding of this study, however, is in line with what found by Sitompul and Nasution (2019), who convinced that the expansion of Islamic banks' assets was generally unaffected by rising exchange rates. Most Islamic banks store currency in dollars instead of foreign exchange, limiting the impact of exchange rate movements on their assets since Islamic finance still has a small market share compared to conventional finance. Therefore, it can be concluded that the market share in Indonesia and Malaysia is already significant, thus contradicting the supposed substantial impact of the exchange rate on IFI.

Additionally, when the exchange rate of the Indonesian Rupiah (IDR) and Malaysian Ringgit (MYR) appreciate against other currencies, especially the US Dollar (USD) (Ali et al., 2015; Khairulanam et al., 2021; Tho'in and Prastiwi, 2019), it makes foreign investment in Islamic financial instruments in these countries more attractive. This is because investors can purchase these instruments with fewer USD, effectively increasing their purchasing power. The IFI typically tracks the performance of Shariah-compliant stocks and Sukuk (Islamic bonds). An influx of foreign investment due to a stronger currency can drive up the prices of these instruments, leading to a rise in the IFI.

Analysis of the Link of Labor to the Islamic Finance Index

The coefficient of Labor (LLBR) is statistically significant at the 1% level (1.2339***), indicating a positive relationship between labor and the IFI meaning an increase of one percent in labor leads to a rise of roughly 1.23 percent in the Islamic finance index. This suggests that an increase in labor is associated with an increase in the IFI. A notable uptick in labor force participation can indicate economic growth (Bloom and Freeman, 1986; Roa et al., 2011), while also decreasing the unemployment rate (Sunni et al., 2024).

The higher employment rates imply increased production, consumption, and overall economic activity within the Islamic financing industries of these nations. Moreover, expanding companies may require additional capital for their growth initiatives (Fidiantowi and Sukarno, 2023; Ilić et al., 2022), potentially leading to heightened Sukuk (Islamic bond) issuance. This increased issuance of Sukuk can positively impact the IFI. However, it is essential to note that merely having a larger workforce does not guarantee economic growth; the quality and skill level of the labor force are also critical factors.

Nevertheless, this finding underscores the significant role of a skilled Islamic finance-literate workforce in supporting the growth and performance of the Islamic finance industry in both countries.

Analysis of the Link of Poverty to the Islamic Finance Index

The Poverty (LPOV)'s coefficient is statistically significant at the 1% level (0.6865***), indicating a positive relationship between poverty and the IFI. In other words, a one percent increase in poverty is associated with an increase of about 0.68 percent in the Islamic finance index. This suggests that an increase in poverty is associated with an increase in the IFI. This finding may be attributed to Indonesia and Malaysia's status as not only countries with the largest Muslim populations (Hidayat and Darmadi, 2019), with Indonesia being recognized as the world's most generous country for six consecutive years (Muhtianingsih and Amanah, 2023).

The increase in poverty, with the impact of Islamic teachings, may foster greater awareness, willingness, and inclination among citizens to contribute to charitable causes (Nasrat et al., 2023; Riwanda and Wafa, 2023), engage in fundraising activities, and utilize financial products, particularly those labeled as Islamic. This stems from the understanding that Islamic-labeled financing products adhere to Sharia principles throughout the entire process, including input, processing, and output (Adhitama et al., 2022; Muthi'ah and Jannah, 2022), with a focus on poverty reduction through equitable profit distribution (Maulida and Purnomo, 2022; Othman et al., 2021). Recognizing this trend may influence individuals' preferences to invest more in Islamic financial instruments or utilize Islamic financial products, thereby potentially contributing to an increase in the Islamic Finance Index (IFI).

CONCLUSION AND RECOMMENDADTION

Conclusion

This study employs a Random Effects Model (REM) to examine the factors influencing Islamic Financial Intermediation (IFI) in Indonesia and Malaysia. Interestingly, the results reveal a positive and statistically significant relationship between IFI and internet users, labor force size, and poverty rates, while economic growth and exchange rate do not appear to have a significant impact. The positive association with internet users suggests that increased internet penetration facilitates access to information and financial services, potentially driving the demand for Islamic financial products. Similarly, a larger labor force may indicate a growing pool of potential clients for Islamic financing institutions.

However, the positive association with poverty rates warrants further investigation. This finding could imply that Islamic financing institutions need to refine their offerings to better serve low-income populations. By tailoring financial models to address the specific needs and challenges faced by this segment, Islamic finance can potentially contribute to poverty reduction in a more sustainable and impactful manner. Finally, the highest positive coefficient associated with the labor variable may indicate a growing awareness and understanding of Islamic finance among the workforce in both countries. Nevertheless, it is still imperative to innovate more efficient and effective Islamic financing products and services to make more contribution to the countries economic growth in all possible sectors.

While this study effectively supports its primary purpose, it acknowledges limitations that could be addressed to further strengthen the findings. Specifically, including demographic data on internet users, such as age, occupation, income, and education level, would allow for more precise prediction and nuanced understanding of who utilizes digital Islamic finance services most. Additionally, a causal analysis could be conducted to explore whether these variables have a reciprocal impact. Furthermore, the authors highlight a gap in the existing literature. Most related studies tend to examine the influence of internet access and macroeconomic factors on Islamic finance in isolation. This study, to the best of our knowledge, is the first to bridge this gap by analyzing the combined effects.

Recommendation

Islamic financing services in banks or non-bank institutions should increase outreach and financial literacy through digital platforms to capitalize on the positive correlation between internet users and IFI. This, further, could be additionaly done by developing user-friendly mobile applications and online banking services to cater to the growing internet-savvy population. For broader economic impact, it is crucial for Islamic financing institutions with collaborations with government, especially state-owned enterprises to develop innovative Sharia-compliant financial instruments that can contribute to economic growth across various sectors in both Indonesia and Malaysia. This could involve financing for small and medium-sized enterprises (SMEs), infrastructure projects, and sustainable development initiatives. Governments or policy makers for Islamic Financing in both countries should strike a balance between innovation and regulatory adaptability which is crucial for sustainable Islamic financing growth.

For more specific scope, Indonesia and Malaysia Islamic financing insitutions may design Sharia-compliant financial products that cater to the specific needs and challenges of low-income populations, for instance microfinancing options, financial education programs, and income-generating investment opportunities. To even elevate the quality

of the human resources in this industry, capitalizing on this trend by investing in financial literacy programs targeted towards working professionals, and partnering with educational institutions and workplaces to raise awareness about Islamic financial products and services might be relevant measures.

For further research in this topic, we suggest to expand and extend the data entry or scope by deploying GMM to produce more specific findings while avoiding less wanted and necessary assumptions. To also expand the number of Islamic countries while classifying them based on how developed they are can also be an alternative to ensure a more diverse representation of economic, social, and cultural contexts. This diversity can lead to a richer understanding of how different levels of development influence the impact of the internet on Islamic Finance Institutions (IFIs). By categorizing countries based on their development, the study can have a comparative analysis to identify patterns and trends. This approach enables a nuanced exploration of how varying economic and technological landscapes affect the growth and sustainability of IFIs in different contexts.

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