What is the Actual Effect of Islamic Finance Development on the Environment? A Meta-Analysis

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Over the last three decades, Islamic finance has overgrown in global financial markets. However, several previous studies have found that economic improvement and rapid growth of the financial sector will negatively impact environmental quality. The impact of Islamic finance on the environment based on the existing literature shows varying results. Even though much research discusses the influence of Islamic finance developments on the environment, existing studies still need to be developed to obtain relevant policy recommendations. Therefore, this research was done to analyze the relationship between the development of Islamic finance and environmental aspects from various previous studies. This study uses the meta-analysis method, a statistical approach to combine evidence from different studies (heterogeneity) quantitatively. This study uses data derived from 9 previous studies. To get a depth view of the studies from multiple databases used as observations in this research. Based on the results of a meta-analysis on CO2 emissions, it can be seen that there are indications of an association between the development of Islamic finance and carbon emissions, although not significant. this study concludes that Islamic finance can reduce environmental problems, including in Indonesia. This study recommends several recommendations, including unify standards and reporting, spur innovation, and reduce barriers and costs for issuers while increasing transparency and awareness for investors of Islamic financial instruments, such as green sukuk.

Keywords: Environment; Islamic Finance; Meta-Analysis

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INTRODUCTION

Over the last three decades, Islamic finance has overgrown in global financial markets. This rapid development originates from the significant Islamic financial assets in Organization of Islamic Cooperation (OIC) member countries, with an asset growth percentage of 11.4 percent year on year (COMCEC, 2020). This has positively impacted increasing infrastructure development and welfare in OIC countries, including Indonesia (IFSB Report, 2021). However, several previous studies have found that economic improvement and rapid growth of the financial sector will negatively impact environmental quality (Al-Silefanee et al., 2022; Khan et al., 2022; Zhao et al., 2020).

The impact of Islamic finance on the environment based on the existing literature shows varying results. Iskandar et al. (2020), in their research on the development of Islamic finance and economic growth in Indonesia on CO2 emissions using the Environmental Kuznets Curve (EKC), found that there is no significant short-term dynamic relationship between growth, development of Islamic finance, and CO2 emissions, however, in the short term length indicates that there is a significant relationship related to facilities that generate emissions with the development of Islamic finance in Indonesia. Then, research by Setiawati and Salsabila, (2023) regarding the impact of the development of the Islamic finance sector on carbon emissions in 12 OIC countries found that the negative effect of the Islamic finance aspect is represented by sukuk issuance and total sharia compliance on carbon emissions. On the other hand, Fatoni et al. (2021) found a negative but insignificant relationship between Islamic banking financing and air quality in Indonesia. Even though much research discusses the influence of Islamic finance developments on the environment, existing studies still need to be developed to obtain relevant policy recommendations. This is important because Islamic finance has a function to support efforts to achieve sustainability through financial stability that reduces economic vulnerability and encourages activities that build the environment and society through infrastructure financing (Hashem, 2019).

Islamic finance is frequently portrayed as inherently supportive of environmental sustainability due to its ethical foundations, asset-backed nature, and alignment with maqāṣid al-sharīʿah. However, empirical evidence reveals that the environmental impact of Islamic finance development is neither automatic nor uniformly positive. This article critically examines the actual effects of Islamic finance on environmental outcomes by integrating theoretical perspectives, causal mechanisms, and empirical findings from cross-country and country-specific studies. The analysis demonstrates that Islamic finance influences the environment indirectly through scale, composition, technique, and governance effects. While Islamic finance has the normative and institutional potential to support green transitions, its real-world environmental performance largely depends on governance quality, regulatory frameworks, and the explicit integration of environmental objectives. Without these conditions, Islamic finance tends to replicate the environmental footprint of conventional finance.

The global escalation of climate change, biodiversity loss, and environmental degradation has intensified scholarly interest in the relationship between financial systems and environmental sustainability. In this context, Islamic finance has attracted particular attention due to its ethical orientation, prohibition of harmful activities, and emphasis on real-sector linkages. Proponents argue that Islamic finance, grounded in principles such as stewardship (khilāfah), social justice, and harm prevention (lā ḍarar), should naturally contribute to environmental protection.

Despite these normative claims, the rapid growth of Islamic finance—now operating in more than 80 countries—raises a critical empirical question: does Islamic finance development actually improve environmental outcomes? Existing evidence suggests that the answer is complex. While Islamic finance has the potential to support sustainable development, its observed environmental effects are mixed, conditional, and highly dependent on institutional contexts.

Therefore, this research was done to analyze the relationship between the development of Islamic finance and environmental aspects from various previous studies. This study uses the meta-analysis method, a statistical approach to combine evidence from different studies (heterogeneity) quantitatively. This research seeks to answer whether the development of Islamic finance can be a catalyst for improving environmental quality amid the many impacts of investment on assets and portfolios and developments in the financial sector that exacerbate the impact of climate change. This research is expected to provide better policy directions from the nexus between Islamic finance and the environment by considering the results of previous studies, which tend to be heterogeneous.

RESEARCH METHODOLOGY

Data

This study uses data derived from 9 previous studies. To get a depth view of the studies from multiple databases used as observations in this research. The databases used are Google Scholar and Scopus. Both databases are recognized as frequently cited databases in the peer-reviewed literature and are multidisciplinary and comprehensive. A database search was conducted for 2018 – 2023 with inclusion and boolean (AND/OR) criteria for titles, abstracts, and keywords. To improve the quality of the review process, selecting was done to overcome irrelevant manuscripts, saving time and ensuring more precise results. The successive filter process carried out can be seen in table 1.

Table 1 Search for Articles in Databases

Criteria	Filters	Scopus	Google Scholar
Keyword	"Islamic Finance" OR "Islamic Economics," OR "Islamic Banking" OR "Islamic Bank," "Sharia Finance" OR "Sharia Banking" OR "Sharia Economics" AND "Environment" OR "CO2 Emissions" OR "Emissions" OR "Energy"	156	184
Restriction	Title, Abstract, Keywords		
	Selection of Articles		
Language	English	156	
Document Type	Article	141	72
Source Type	Journals	140	
Subject Area	Economics, Econometrics, and Finance	18	20

Based on the results of the successive filtering that has been carried out, of the entire documents, 138 documents are not used according to Scopus, and 112 from Google Scholar, leaving 38 documents as valid sources of research perspectives for this study. However, out of the 38 documents, it turned out that only 9 could be used in this study because the approach used in this study required research with specific quantitative methods (econometrics). The studies used as observations for this paper can be seen in the following table.

Table 2 The Studies Used

Location	Period	Islamic Financial Aspects	Environmental Aspects
30 countries	2021	Islamic Financial Asset	Energy intensity
OIC countries	2018	ROE	CO2 emissions
OIC countries	2018	ROA	CO2 emissions
36 countries	2013-2018	Financial Institution Development	CO2 emissions
36 countries	2013-2018	Financial Institution Development	Energy consumption
OIC countries	2013-2018	Sukuk issuance	CO2 emissions
OIC countries	2013-2018	Islamic funding and compliance	Energy consumption
6 world's top Islamic finance countries	2013-2018	Islamic funding	CO2 emissions
6 world's top Islamic finance countries	2013-2018	Islamic financial access	CO2 emissions
Malaysia	2009-2015	Islamic bank financing	Environmental quality index
Indonesia	2017-2019	Islamic bank financing	CO2 emissions

Meta-Analysis

In statistics, a meta-analysis combines the results of several studies that address a related set of research hypotheses to make a more accurate estimate. Pooled OR (Odd Ratio) is calculated using a fixed effect model (inverse variance method), where the estimated OR is the weighted average of individual study scores. The weight used in the calculation is the inverse variance of the studies used as observations in this study. The Standard Error (SE) of pooled OR is the inverse of the square root of the weight.

RESULTS AND DISCUSSION

By carrying out successive filters from various sources to obtain in-depth literature, this study collected 9 studies that met the criteria. This study uses the mean difference as an abstract value to calculate the effect size. The meta-summary of the observations can be seen in table 3.

Table 3 Meta Summary

Studies	Islamic Financial Aspects	Environmental Aspects	Effect Size
Ibrahim et al., 2021	Islamic Financial Asset	Energy intensity	0.047
mahmood & masih, 2018	ROE	CO2 emissions	0.062
mahmood & masih, 2018	ROA	CO2 emissions	0.005
al-silefanee et al., 2022	Financial Institution Development	CO2 emissions	0.059
al-silefanee et al., 2022	Financial Institution Development	Energy consumption	0.407
setiawati & salsabila, 2023	Sukuk issuance	CO2 emissions	0.347
setiawati & salsabila, 2023	Islamic funding and compliance	Energy consumption	0.017
Abduh et al., 2022	Islamic funding	CO2 emissions	0.037
Abduh et al., 2022	Islamic financial access	CO2 emissions	0.894
Solarin, 2016	Islamic bank financing	Environmental quality index	0.911
Fatoni, 2021	Islamic bank financing	CO2 emissions	0.975
Total Effect			0.254
Test of Theta = 0: z = 25.25			0.000
Test of homogeneity: Q = chi2(9) = 82.34			0.000

Source: author's processing

The summary effect value obtained was 0.074 (p-value < 0.05) from all observations indicating that the development of Islamic finance is a factor that influences environmental aspects, namely carbon emissions. The results of the summary effect can be interpreted that if in a region or country, there is an increase in Islamic finance, then the environment in that scope will be 0.074 times better compared to other scopes that do not experience an increase in Islamic finance. Furthermore, a meta-analysis was carried out using a forest plot to see the effect size of the studies used in this study. The forest plot is shown in the following figure.

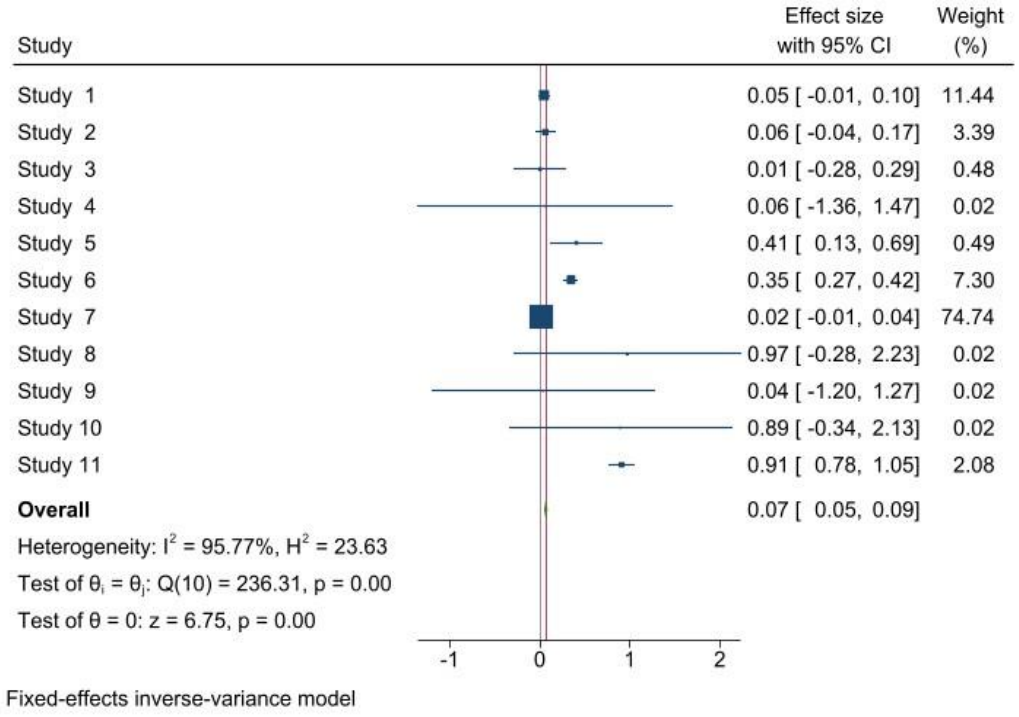

Figure 1 Forest Plot

Source: Author's processing

The Overall Effect of the study conducted from 9 studies showed significant results, which means that the development of Islamic finance impacts the environment proxied by carbon emissions. This is indicated by the mean differences = 0.07; 95% CI: 0.05 – 0.09. More specifically, a discussion of forest plots can be seen in table 4 below.

Table 4 Result Selected for the Meta-Analysis

Environmental issues	OR (95% CI)	Period	Study Area
CO2 Emissions	0.06 (-0.04, 0.17)	2018	OIC countries
	0.01 (-0.28, 0.29)	2018	OIC countries
	0.06 (-1.36, 1.47)	2013 – 2018	36 countries
	0.35 (0.27, 0.42)	2013 – 2018	OIC countries
	0.97 (-0.28, 2.23)	2013 – 2018	6 world's top Islamic finance countries
	0.04 (-1.20, 1.27)	2013 – 2018	6 world's top Islamic finance countries
	0.91 (0.78, 1.05)	2017 – 2019	Indonesia
Energy Consumption	0.41 (0.13, 0.69)	2013 – 2018	OIC countries
	0.02 (-0.01, 0.04)	2013 – 2018	36 countries
Energy Intensity	0.05 (-0.01, 0.10)	2021	30 countries
Environmental Quality Index	0.89 (-0.34, 2.13)	2009 – 2015	Malaysia

Source: Author's processing

Based on the results of a meta-analysis on CO2 emissions, it can be seen that there are indications of an association between the development of Islamic finance and carbon emissions, although not significant. This can be interpreted as a country that has Islamic finance development that has a 1-time chance (0.01 – 0.97) smaller to have a lower level of carbon emissions (by the hypothesis from previous studies used in this paper, namely Islamic finance has a positive effect on air quality and harmful to carbon emissions). These results align

with consumption, energy intensity, and the environmental quality index, where the effect is insignificant.

Islamic finance, which positively influences the environment, is influenced by several things. First, the Islamic financial system has basic principles similar to sustainable finance, such as financial stability and economic growth, poverty alleviation and distribution of wealth, financial and social inclusion, and environmental preservation (Piratti & Cattelan, 2020). In addition, the moral ethics that underlie Islamic finance, namely Maqashid Syariah, which aims to maintain human welfare through the protection of faith (din), soul (nafs), reason ('aql), offspring (nasl), and wealth, encourages a financial system that prioritizes community benefit and environmental sustainability. In addition, these results align with the research of Abduh et al. (2022), which states that, theoretically, Islamic finance should have a significant and positive relationship to environmental quality compared to conventional finance. Refer to sharia goals, Islamic financial institutions are prohibited from financing projects that can harm or cause damage to the environment, either physically, such as illegally cutting trees or in protected forests, mining exploration and using machines that can pollute the air, and morally or socially, such as concerts and other inappropriate events.

Recent developments indicate growing recognition of the need to align Islamic finance with environmental objectives. Green sukuk, sustainability-linked Islamic instruments, and maqāṣid-based performance metrics represent promising innovations. Additionally, redistributive instruments such as waqf and zakat offer unique mechanisms for financing climate adaptation and ecosystem preservation. However, these initiatives remain marginal relative to the overall size of the Islamic finance industry.

CONCLUSION

This research was made to analyze the relationship between the development of Islamic finance and environmental aspects. This study uses the method of meta-analysis and successive filters from various sources to obtain in-depth literature. The results of this study indicate a nexus between Islamic finance and the environment, where the results show that the development of Islamic finance tends to encourage better environmental quality, which is in line with several previous studies. Overall, the 9 studies showed significant results. Islamic finance's development impacts the environment, represented by carbon emissions, consumption, and lower energy intensity.

Based on the results, this study concludes that Islamic finance can reduce environmental problems, including in Indonesia. To realize this study recommends several steps that can be taken. First, increase ongoing collaboration with all stakeholders, including the government and investors, to unify standards and reporting, spur innovation, and reduce barriers and costs for issuers while increasing transparency and awareness for investors. Second, there is a need for multi-pronged long-term innovation to fight climate change and significantly increase the contribution of Islamic finance by providing various financing solutions and leveraging a broader investor base, especially in Indonesia. Finally, there is a need for frameworks and ecosystems that have the potential to become key drivers in bridging Islamic finance and the green industry, seeking a better understanding of the main factors that facilitate the capital market ecosystem for sustainable financing, including the development of sustainable asset classes such as green sukuk.

The limited environmental impact of Islamic finance can be attributed to structural and governance-related factors. First, the dominance of debt-like instruments reduces the scope for long-term environmental innovation. Second, Sharīʿah governance frameworks typically emphasize contractual compliance over environmental outcomes. Third, environmental screening and climate risk assessment are rarely integrated into Islamic finance regulations. Together, these factors weaken the transformative potential of Islamic finance.

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