

ASSESSING SUSTAINABILITY OF ISLAMIC BANKING AND ITS IMPACT ON FINANCIAL PERFORMANCE: EVIDENCE FROM INDONESIA AND MALAYSIA USING THE QUADRUPLE BOTTOM LINE FRAMEWORK

A Thesis

**Submitted to the Master's Study Program of Economics at the Faculty of
Economics and Business in partial fulfillment of the requirements for the
degree of**

Master of Arts (M.A.)



by:

Jajang

03212310004

UNIVERSITAS ISLAM INTERNASIONAL INDONESIA

DEPOK

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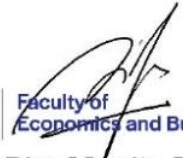
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ABSTRACT

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Grounded in the regulatory landscape requiring Islamic banks in Indonesia and Malaysia to publish sustainability reports, this study aims to re-evaluate their level of sustainability performance and explores its influence on financial performance. Employing the Quadruple Bottom Line (QBL) framework, which expands the traditional sustainability model by incorporating a spiritual dimension (Prophet), the study applies content analysis to obtain QBL score and ranks the bank based on Reactive, Defensive, Accommodative, and Proactive (RDAP) scale. Furthermore, this study employs panel data regression by selecting the appropriate model among common effect model, fixed effect model, and random effect model. The data used is obtained from annual report, sustainability report, and/ or official website of 24 Islamic banks in Indonesia and Malaysia over the period 2019–2023. The research findings reveal a significant shift where most banks have realized sustainability performance. In addition, each dimension of sustainability has shown to have varying impacts on financial performance, which in this study is measured by Return on Assets (ROA). The results of this research emphasize the need for banks to improve their social performance due to its positive influence on financial performance, even in conditions of economic downturn.

Keywords: *Sustainability, Islamic Banking, Quadruple Bottom Line, Indonesia, Malaysia*

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ABREVIATION DIRECTORY

3Ps	: Profit, People, and Planet
4Ps	: Prosperity, People, Planet, and Prophet
ACE	: Access, Certainty, and Efficiency
ARC	: Annual Report Competition
BA	: Bank Age
BLUE	: Best Linear Unbiased Estimator
BPRS	: Islamic Rural Banks
BSI	: Bank Syariah Indonesia
BUKU	: Commercial Banks Group of Business Activities
BUS	: Islamic Commercial Banks
CATPCA	: Categorical Principal Component Analysis
CEM	: Common Effect Model
CEO	: Chief Executive Officer
CFO	: Chief Financial Officer
CLRM	: Classical Linear Regression Model
COVID-19	: Coronavirus Disease 2019
CSR	: Corporate Social Responsibility
CSR	: Corporate Social Responsibility
DPS	: Shariah Supervisory Board
ECM	: Error Component Model
EPS	: Earning per Shares
ESG	: Environmental, Social, and Governance
FEM	: Fixed Effect Model
GDP	: Gross Domestic Product
GLS	: Generalized Least Square
GMM	: Generalized Method of Moment
GRI	: Global Reporting Initiative
H1	: Hypothesis 1
ISR	: Islamic Social Reporting
KPMG	: Klynveld Peat Marwick Goerdeler
LM	: Lagrange Multiplier
LM	: Lagrange Multiplier

LSDV	: Least Squares Dummy Variable approach
NPF	: Non-Performing Financing
OJK	: Financial Services Authority
OLS	: Ordinary Least Squares
PLS	: Partial Least Squares
POJK	: Financial Services Authority Regulation
QBL	: Quadruple Bottom Line
RDAP	: Reactive, Defensive, Accommodative, and Proactive
REM	: Random Effect Model
ROA	: Return on Assets
ROE	: Return in Equity
RQ	: Research Questions
RT	: Robustness Test
SDGs	: Sustainable Development Goals
SRF	: Sustainability Reporting Framework
TBL	: Triple Bottom Line
UUS	: Islamic Business Unit

CHAPTER I

INTRODUCTION

This chapter begins by presenting the background of the research, highlighting the underlying issues, theoretical foundations, and the relevance of the study within its broader academic and practical context. It then formulates the key research questions that the study seeks to address. Following this, the chapter outlines the specific research objectives that guide the direction and scope of the study. Finally, it presents the anticipated benefits of the research, including its potential contributions to the existing body of knowledge and implications for the practical fields.

1.1 Research Background

Sustainability has become an unavoidable concern for the business world today. Within the sustainability framework, businesses are expected to consider not only financial profits but also their contribution to the social and environment (Elkington, 1997). The widespread usage of global-scale sustainable reporting frameworks, such the Global Reporting Initiative (GRI), demonstrates the significance of sustainability frameworks (Prayoga & Siswanto, 2020). Furthermore, Survey of Klynveld Peat Marwick Goerdeler (KPMG) 2024 also found several striking facts regarding the adoption of sustainability report by the big companies in the world.

Table 1.1 Key Findings of Survey of Sustainability Reporting 2024

Items	World's Largest 250 Companies	All 5,800 Companies in the Research
Report on Sustainability	96%	79%
Publish a Carbon Target	95%	80%
Have a Sustainability Leader	56%	46%
Consider Sustainability in Leadership Pay	41%	30%

Source: KPMG, 2024

Table 1.1 shows the key findings of KPMG sustainability survey on 58000 companies, including world's largest 250 companies within. Based on the KPMG Survey, 96% of the 250 largest companies and 79% of 5.800 business worldwide have released sustainability reports. Furthermore, the companies have also taken into consideration the carbon target at least by 95% of the 250 largest companies and 80% of 5.800 companies in

the world. In addition, the companies also have taken into account the sustainability leader and consider sustainability in leadership pay. According to the survey, KPMG (2024) discovered some significant trends, such as the fact that setting carbon targets and including sustainability reporting have become standard practices. In preparation for the shift to mandatory sustainability reporting under the EU's Corporate Sustainability Reporting Directive (CSRD), a number of businesses have already modified their procedures. Voluntary standards and guidelines are still frequently used despite efforts to make reporting mandatory.

Islamic banking industry is not exempt from the spotlight on sustainability. Under the concept of sustainability, banks, as financial intermediaries, are expected not only to achieve financial targets, but also to exercise prudence in channeling funds to businesses that do not harm the environment, while continuing to contribute to social well-being. Moreover, Islamic banking is often seen as more socially valuable compared to conventional banks due to the religious values embedded within it. According to Haniffa and Hudaib (2007) and Asutay and Harningtyas (2015), Islamic banking is typically seen as being more focused on society than traditional banks, with the frequently cited goal of fostering a just, equitable, as well as balanced the society.

Sustainability research in Islamic banking has been extensively conducted by researchers. However, unfortunately, the notion that Islamic banking is more socially valuable has not been proven in several studies. In fact, there has always been criticism of Islamic banking for exhibiting "social failure" due to its negligible positive influence on desired social outcomes in the areas where it is used (Asutay, 2007; Nor et al., 2016).

The "social failure" was found by Hamidi and Worthington (2021) who studied the social consequences of three different categories of Islamic banks in Indonesia; the seven largest Islamic rural banks (BPRS), the seven Islamic business units (UUS), and all twelve Islamic commercial banks (BUS), in 2015–2016. The study demonstrates that social failure occurs in every BPRS. As a general rule, the BUS outperforms the BPRS, and the UUS outperforms the BUS. Nonetheless, it seems that none of Indonesia's Islamic banks give any thought to the environment or the advantages of its clients. The low attention of environmental dimension is also align with the study of Asutay and Harningtyas (2015) and Mallin et al. (2014).

Meutia and Febrianti (2017) measured social responsibility reporting at 141 Islamic banks in Indonesia and Malaysia using Islamic Social Reporting (ISR). The study found that there are no Islamic banks in either Indonesia or Malaysia that fully use the ISR index to carry out their Corporate Social Responsibility (CSR) activities. The Empirical

assessments indicate that the majority of Islamic banks in Malaysia and Indonesia do not prioritize CSR issues. Nobanee and Ellili (2016) found that in contrast to conventional banks, Islamic banks in the United Arab Emirates disclosed relatively low sustainability performance. According to Mallin et al. (2014) who studied 91 Islamic banks across 13 countries, Islamic banks in those nations gave sustainability disclosures and practices less consideration. Research by Demircuc-Kunt and Huizinga (2000) found that 14 Islamic banks from 14 different countries have ineffective sustainability and disclosure standards. Furthermore, the findings of the study of Hassan and Harahap (2010) in sustainability reporting and practices of Islamic banks in seven Muslim countries, show that sustainability issues were not the primary concerns of Islamic banks in those countries.

The failure of sustainability performance was even conveyed by John Elkington, the originator of the triple bottom line concept. In his article titled *25 Years Ago I Coined the Phrase “Triple Bottom Line.” Here’s Why It’s Time to Rethink It* released in 2018, he expressed the following statement.

“Fundamentally, we have a hard-wired cultural problem in business, finance and markets. Whereas CEOs, CFOs, and other corporate leaders move heaven and earth to ensure that they hit their profit targets, the same is very rarely true of their people and planet targets. Clearly, the Triple Bottom Line has failed to bury the single bottom line paradigm” (Elkington, 2018).

Several studies indicate that Islamic banks have yet to place substantial emphasis on sustainability practices. In response to this issue and the growing importance of sustainability, several countries have mandated the disclosure of sustainability reports by financial institutions. Indonesia and Malaysia are among the countries that have taken proactive steps by mandating sustainability disclosures within their financial sectors. Indonesia mandates the disclosure of sustainability reports through Financial Services Authority Regulation (POJK) No. 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies, whereas Malaysia enforces similar requirements through the Sustainability Reporting Framework (SRF) issued by Bursa Malaysia. In light of the implementation of these regulatory frameworks, it becomes pertinent to re-evaluate the current state of sustainability reporting practices in Indonesia and Malaysia.

Hartanto et al. (2024), using bibliometric analysis, explained that Islamic banking sustainability measurements has been the subject of investigation by Islamic scholars. The developed measurements include the ethics index, Islamic Social Reporting (ISR) index, Corporate Social Responsibility (CSR) index and *maqashid al shariah* index. The measurement strategy combines qualitative and quantitative techniques. Dimensions and

indicators are derived from literature reviews, discussions and the Delphi methodology. In addition, the content analysis method is frequently employed in measurement. Based on the double materiality concept, statistical techniques like the Generalized Method of Moment (GMM), Ordinary Least Squares (OLS), and Partial Least Squares (PLS) are used to quantify the impact of sustainable activities. A conceptual effect of the *maqashid al shariah* approach is seen in the framework for developing dimensions and evaluating indicators.

In determining sustainability measurements, it certainly needs to be based on supporting theories. Currently, there are several sustainability theories in Islamic banking that have been developed. Hartanto et al. (2024) have summarized the theoretical approaches include conceptual model for Islamic microfinance banks (Aliyu, 2017), sustainable financing (Bidabad & Sherafati, 2017; Kunhibava et al., 2018), Islamic banking system (Lodhi & Kalim, 2005; Mohamad & Saravanamuttu, 2015; Alhabshi, 2017), social banking (Mohd Nor et al., 2016; Malik, 2018; Hamidi & Worthington, 2021) and Quadruple Bottom Line (QBL) (Hamidi & Worthington, 2021a, 2021b).

This research will use the QBL concept as its measurement basis. QBL is a concept that adds another dimension to the 3Ps (Profit, People, Planet) concept, which is the prophet dimension. Hamidi & Worthington (2021a), the proponents of this concept, explained that to some extent, the Triple Bottom Line (TBL) concept is already in line with shariah principles. For instance, Islamic banks generally support social objectives, work toward a fair and balanced society, and encourage wealth for all. This notion is well illustrated by certain Islamic bank products, such as cash *qardh al-hasan* (benevolent loans) and waqf (charitable gifts). As part of its environmental objectives, *maqashid al shariah* also advocates for the preservation and conservation of nature. However, existing TBL principles are limited in any explicit practical guidance that aligns with Islamic values. For example, every product in an Islamic bank must avoid practices of *riba*, *gharar*, and *maysir*. Therefore, QBL is proposed to cover that gap and can be used to measure sustainability in Islamic banks according to its character.

This research will re-evaluate each performance of dimension of the sustainability level in Indonesian and Malaysian Islamic banks and examine its impact on financial performance. Indonesia and Malaysia are selected as the focus of this study due to their strong regulatory commitment to sustainability, particularly within the Islamic banking sector. Similar research to this study was previously conducted by Hamidi & Worthington (2021b), which measuring the sustainability level of Islamic banks in Indonesia using the QBL framework. In addition, Jan, Marimuthu, and Pisol (2019) also examined the nexus

between sustainability practices and financial performance of Islamic banking in Malaysia. Zyadat (2016) assessed how the economic, environmental, and social dimensions of sustainability affected the financial performance of Jordanian Islamic banks. Prayoga and Siswantoro (2020) measured the degree of economic, environmental, and social sustainability practices and examined its influence on financial performance of Islamic banks in Indonesia. In contrast to prior research, as previously mentioned that this research combines both concepts of measuring the level of sustainability performance of Islamic banks and examining the impact of that sustainability on financial performance. Additionally, this research will be conducted at Islamic Commercial Banks in Indonesia and Malaysia during the period of 2019 to 2023. In measuring the level of sustainability, this research will use the quadruple bottom line framework which looks into four dimensions, namely prosperity, people, planet, and prophet.

1.2 Research Problems

Regarding the issuance of OJK Regulation No. 51 of 2017 by Financial Services Authority (OJK) in Indonesia and Sustainability Reporting Framework (SRF) issued by Bursa Malaysia that requires Islamic banks to release sustainability report annually, this research will re-evaluate the level of sustainability of Islamic banks and determine whether the sustainability practices undertaken by Islamic banks will affect their financial performance. In measuring the level of sustainability, this research will use the QBL framework as a concept specifically designed to measure sustainability in Islamic banks.

In previous research, Hamidi and Worthington (2021b) who first proposed the 4Ps model, also has measured the sustainability level of Islamic banks in Indonesia using the 4Ps (quadruple bottom line) framework. As a test use of the generated QBL index, the sustainability of 10 Islamic banks from ten countries is then assessed using Categorical Principal Component Analysis (CATPCA). According to the findings, two banks are accommodating (doing everything that is necessary) and three are proactive (doing more than is necessary), meaning that half of the banks are sufficiently sustainable. The remaining five banks are unsustainable; three of them are reactive (doing less than is necessary), and two are defensive (doing the bare minimum). The majority of banks perform better on the "prosperity" (53%) and "prophet" (63%) dimensions, but comparatively poorly on the "planet" (38%) and "people" (41%).

Jan, Marimuthu, and Pisol (2019) investigated the relationship between financial performance and sustainability initiatives from the standpoint of Islamic banking. This study suggested a framework for measuring sustainability in Islamic banks. A weighted

content analysis technique was used to gather sustainability statistics from the annual reports for the years 2008–2017. The findings of the statistical technique known as the Generalized Method of Moments (GMM) demonstrated a strong positive correlation between sustainability practices and the financial performance metrics of Islamic banks that reflect management and shareholder sentiment. It was determined that there was no discernible effect of sustainability policies on the Islamic banks' financial performance as evaluated by the market. A thorough investigation showed that, aside from their economic sustainability initiatives, banks' expenditures for environmental and social sustainability are of no relevance to the market. The findings indicated that there is a noteworthy positive correlation between sustainability practices and the Islamic financial index, which is based on the market financial performance indicators, management, and shareholders.

The following are the Research Questions (RQ) for this study, which are developed in light of the background and prior research.

RQ1 : How sustainable are Islamic banks in Indonesian and Malaysia?

RQ2 : Does sustainability impact the financial performance of Islamic banks in Indonesia and Malaysia?

1.3 Research Objectives

There are two main objectives of this study, which are based on the developed research questions. The first objective is to determine how sustainable Islamic banks in Indonesian and Malaysia are. The first research question (*RQ1*) relates to this objective. To answer the question and achieve this objective, this study employs content analysis to produce the Quadruple Bottom Line (QBL) index and rank the sustainability performance of each Islamic banks. In addition, Reactive, Defensive, Accommodative, and Proactive (RDAP) scale is used to categorize and determine if the banks are sustainable or unsustainable.

The second objective is to determine the impact of sustainability on the financial performance of Islamic banks in Indonesia and Malaysia. The second research question (*RQ2*) connects to this objective. To answer the question and achieve this objective, this study employs panel data regression by selecting the best model among the common effect model, fixed effect model, and random effect model. Furthermore, this study measures the impact of sustainability that is conceptualized into four dimensions, namely prosperity, people, planet, and prophet, as well as bank age and Non-Performing Financing (NPF) on financial performance that proxied by Return on Assets (ROA). The data used is obtained

from the sustainability report, annual report, and/ or official websites of each selected Islamic bank during 2019 to 2023.

1.4 Benefits Of Research

This research offers meaningful contributions from both theoretical and practical perspectives. From a theoretical standpoint, the study aims to enrich the growing body of literature related to the implementation of sustainability in Islamic banking. By adopting the Quadruple Bottom Line (QBL) framework, that integrates economic, social, environmental, and spiritual dimensions, this research introduces a unique conceptual approach that is particularly aligned with the ethical and faith-based principles of Islamic finance. The study adds value by offering factual data on the reporting and execution of sustainability measures by Islamic banks in Malaysia and Indonesia, thus filling a gap in the literature, especially in the context of emerging economies with dual banking systems. Furthermore, this research can serve as a useful reference for academics and researchers in developing future studies that explore sustainability performance, disclosure practices, or governance mechanisms in Islamic financial institutions, either by adopting alternative frameworks or by expanding the geographic and institutional scope.

From a practical perspective, this research provides insights that are valuable to various stakeholders. For Islamic banks, the study serves as a source of reflection and benchmarking for improving sustainability strategies and reporting practices. The findings can be used by managers and decision-makers to gain a deeper comprehension of the importance of sustainability disclosures and how they are linked to financial performance and stakeholder trust. Moreover, the study may act as a call to action for Islamic financial institutions to strengthen their commitment to environmental and social responsibilities, especially in alignment with shariah principles.

For regulators and policymakers, this research offers evidence-based input that can support the formulation or refinement of regulations concerning sustainability disclosures, green financing, and integrated reporting standards in Islamic banking. The study's results highlight the importance of regulatory guidance in shaping sustainability behavior among financial institutions.

Additionally, for consumers, investors, and other users of Islamic financial services, this research provides a reliable source of information regarding the sustainability practices of Islamic banks. The assessment of sustainability performance across institutions enables stakeholders to make more informed decisions about which banks align more closely with their values, particularly in terms of environmental concern, ethical finance,

and social impact. In the broader context, such transparency can promote healthy competition and elevate sustainability standards across the Islamic finance industry.

In sum, this research not only contributes academically to the sustainability discourse in Islamic banking but also offers practical benefits that can influence policy, guide business practices, and empower stakeholders.

CHAPTER II

LITERATURE REVIEW

This chapter provides clear definitions of the key concepts used in this study, particularly sustainability and financial performance, to ensure conceptual clarity and consistency throughout the study. In addition, this chapter develops research hypotheses based on theoretical foundations and relevant literature. This chapter also presents a research framework that visually illustrates the steps of the study to be undertaken. Furthermore, this chapter includes a comprehensive review of previous research to identify research gaps and position the current study within the existing body of knowledge.

2.1 Sustainability Based on Quadruple Bottom Line

The most popular sustainability framework is the *triple bottom line* (TBL) framework introduced by Elkington (1997) in his book “*Cannibals with Forks: The Triple Bottom Line of 21st Century Business*”. Sustainability, as described by Elkington (1997) is the idea that current activities should not restrict the economic, social, and environmental choices available to future generations. In his concept, Elkington (1997) explained that a company is not sustainable if it does not pay attention to three dimensions, namely the economic dimension (profit), the social dimension (people), and the environmental dimension (planet). This concept is frequently known as the 3Ps concept (*profit, people, planet*).

Another popular sustainability framework is Environmental, Social, and Governance (ESG), which stands for Environmental, Social, and Governance. ESG is commonly used by investors as a criterion and method to evaluate a company's behavior and potential for financial success (Li et al., 2021). Since the three core ESG factors serve as a framework for evaluating the sustainable growth of companies, they are the most crucial factors to consider when doing investment analysis and making decisions. Moreover, ESG considerations help to assess the social effect and sustainability of corporate operations (EBA, 2021).

From an Islamic perspective, Islamic banks should provide performance evaluation in accordance with *maqashid al shariah*, or the fundamental objectives of Islamic law, since it is inextricably linked to Islamic law (Hamidi & Worthington, 2021a). Considering that the 3Ps and ESG cannot encompass the shariah dimension that must exist in Islamic

banks, therefore, this research uses a more suitable framework, namely the *quadruple bottom line* (QBL).

Hamidi and Worthington (2021a) developed the QBL by incorporating the spiritual dimension into the conventional TBL, which is illustrated with the prophet dimension. This concept can also be referred to as the 4P concept as an extension of the 3Ps concept; prosperity, people, planet, prophet. In this framework, the word "*prosperity*" is used to replace the word "*profit*". The rationale is that "*prosperity*" has greater meaning than "*profit*" since it can advance the company's financial gains and improve the socioeconomic standing of its employees and communities (Hammer & Pivo, 2017; Hamidi & Worthington, 2021b).

Hamidi et al. (2024) explained that, in Islam, the TBL paradigm is not a novel idea. In reality, it was first mentioned fourteen centuries ago in the Quran, which asserts that the 3Ps (profit, people, and planet) are essential for achieving happiness in the hereafter (Qur'an 28:77), hence guidance from the Prophet is a must (Qur'an 3:31; 53:2–4).

But seek, with what Allah has given you, the Home of the Hereafter [PROPHET], and do not neglect your share of this world [PROSPERITY]. And be charitable, as Allah has been charitable to you [PEOPLE]. And do not seek corruption in the land. Allah does not like the seekers of corruption [PLANET]. (Quran 28:77).

QBL was developed by Hamidi & Worthington (2021a) by aligning it with the objectives of shariah, commonly referred to as *maqashid al shariah*. *Maqashid al shariah* refers to the fundamental purpose of Islamic law. Al-Ghazali, a Persian theologian from the eleventh century, classified *maqashid al shariah* into five groups (Auda, 2008):

- (1) preservation of faith (din);
- (2) protecting soul (nafs);
- (3) protecting mind ('aql);
- (4) protecting offspring (nasl); and
- (5) protecting wealth (mal).

The Islamic banking industry is expected to adopt *maqashid al shariah* to ensure Islamic objectives are attainable (Hamidi et al., 2024).

In this concept, the four dimensions of sustainability can be explained as follows.

Prosperity. As was mentioned, prosperity is a more inclusive phrase than profit or economic growth as these may indicate a benefit for the company and its shareholders but no direct benefit for workers or their communities (Hammer & Pivo, 2017). Prosperity is explained by two *maqashid al shariah*, namely self (*nafs*) and wealth (*mal*) (Hamidi & Worthington, 2021a).

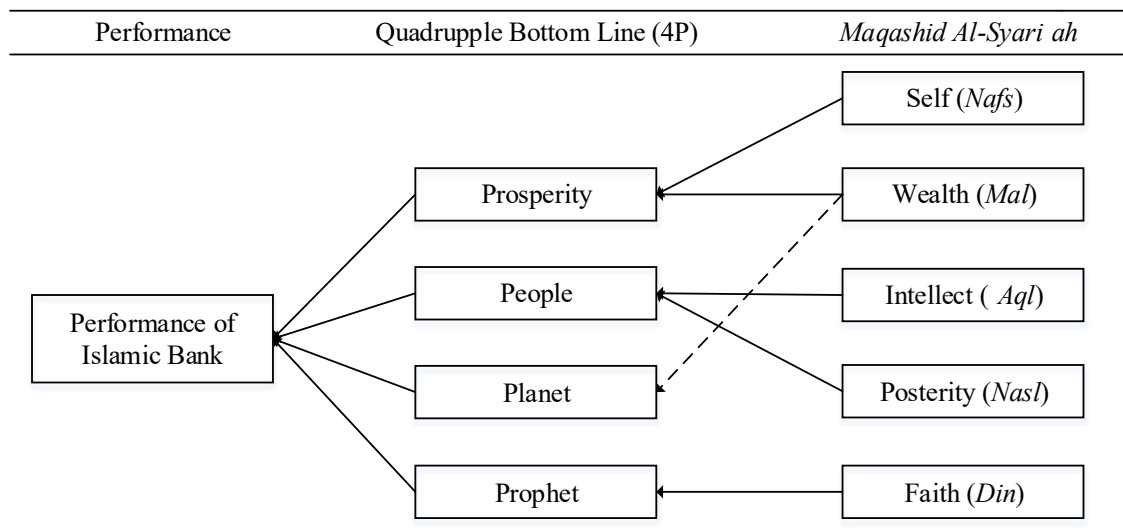
People. This dimension indicates how businesses generate advantages and other benefits that are enjoyed by their employees and the communities where these businesses operate (Hamidi & Worthington, 2021a). This dimension is reflected by two pillars of maqashid, namely intellect (*'aql*) and posterity (*nasl*) (Hamidi & Worthington, 2021a).

Planet. The Qur'an in several verses (30:41–42, 7:56–58, 38:27–28) mentions the need for environmental preservation (Hamidi & Worthington, 2021a). Furthermore, Hamidi and Worthington (2021a) the Planet dimension to the theory proposed by An-Najjar (2008) and its relationship to wealth (*mal*).

Prophet. This dimension reflects the norms and values of the Prophet Muhammad as an ethical guidance for running business (Hamidi & Worthington, 2021a). Prophet represents the safeguarding of faith (*din*) (Hamidi & Worthington, 2021a). According to religious standards, a higher degree of religiosity is linked to a lower chance of falsifying financial records, better coping mechanisms, longer lifespans, and higher life satisfaction ratings (Dyrenge et al., 2012).

Figure 2.1 below illustrates the relationship between QBL and *maqashid al shariah*.

Figure 2. 1 The Relations between QBL and *maqashid al shariah*



Source: Hamidi & Worthington (2021a)

2.2 Financial Performance

According to Nugroho and Arjowo (2014), financial performance is the outcome of decisions made by parties associated with the company based on its assessment of liquidity, activity, solvency, and profitability. The company's basic performance, as determined by data taken from financial reports, is reflected in its financial performance. Measurement of financial performance can be done by assessing financial ratio analysis.

Different financial ratios can be used to measure financial success in the business sector, each of which represents a unique business perspective (Jan, Marimuthu, & Pisol, 2019). Such as the financial ratio of Return on Assets (ROA) can be used to assess financial performance from a management perspective (Platonova et al., 2018). Return in Equity (ROE) ratio can be used for measuring financial performance indicating shareholders perspective (Mollah & Zaman, 2015). While Tobin's-Q ratio can be used to assess financial performance indicating the market perspective (Naushad & Malik, 2015).

In the research examining the impact of sustainability reports on financial performance, ROA is the most frequently used ratio (Alshehhi et al., 2018). ROA is a key financial ratio used to assess a bank's profitability (Ongore & Kusa, 2013). It represents the ratio between a bank's net income and its total assets (Khrawish, 2011), indicating how effectively management utilizes the assets of the banks to generate earnings. In essence, ROA reflects the degree of efficiency with which an institution employs its resources to produce profit. A higher ROA suggests that the institution is more efficient in resource utilization and income generation.

Mathematically, ROA is obtained from the following formula (Khrawish, 2011).

$$\text{ROA (\%)} = \frac{\text{Net Income}}{\text{Total Assets}}$$

2.3 Development of Hypotheses

The sustainability practices carried out by the bank are recorded in the annual report and/ or the sustainability report. Both reports serve as signals to stakeholders that the company has fulfilled its social responsibilities and maintained public trust. The trust given by the community is essential as the sustainability of the company is related to social perception. When the organization's activities do not respect moral values, the company receives severe sanctions from the community, which can even lead to the company's failure.

Sustainability reports also become one of the ways for companies to reach stakeholders and gain their trust to engage in cooperation or investment. Ernst and Young (2013) in their study explained that investors will prefer to invest in companies that have transparency regarding accuracy, forecasting, and analysis, as well as lower information asymmetry. The disclosure of sustainability is partly aimed at attracting investors to buy the company's shares (Sejati & Prastiwi, 2015).

In previous research, Jan, Marimuthu, and Pisol (2019) found that sustainability practices have a significant impact on the financial performance of the Islamic banking industry in Malaysia measured through the management, shareholder, and market perspective. Another study, by Zyadat (2016), found that there is a statistically significant positive impact on the financial performance measured by ROA in Jordanian Islamic banks. It means that the increasing sustainability performance in banks will enhance financial performance of the banks. In line with that, Anantadjaya et al. (2024) also found a positive relationship between the sustainability of banks and stock prices as well as earnings per share.

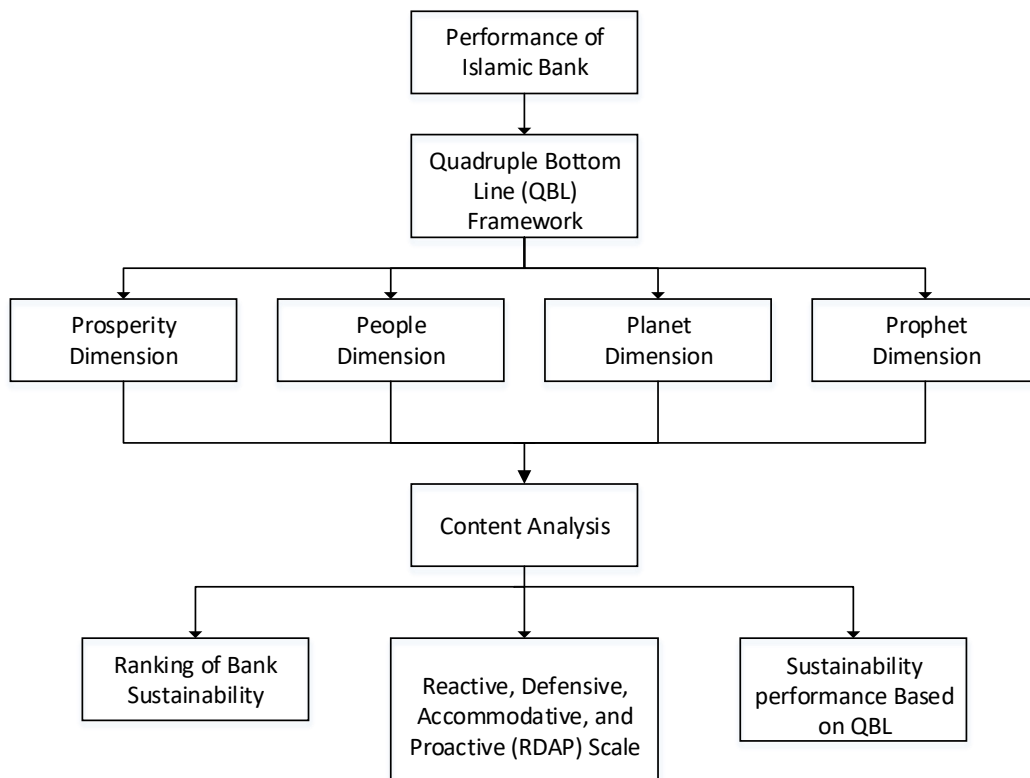
Based on the background that has been explained, the hypothesis in this research is as follows.

H1: Sustainability impacts the Islamic bank financial performance

2.4 Conceptual Framework

To answer the research questions, the framework of this research is formulated as follows.

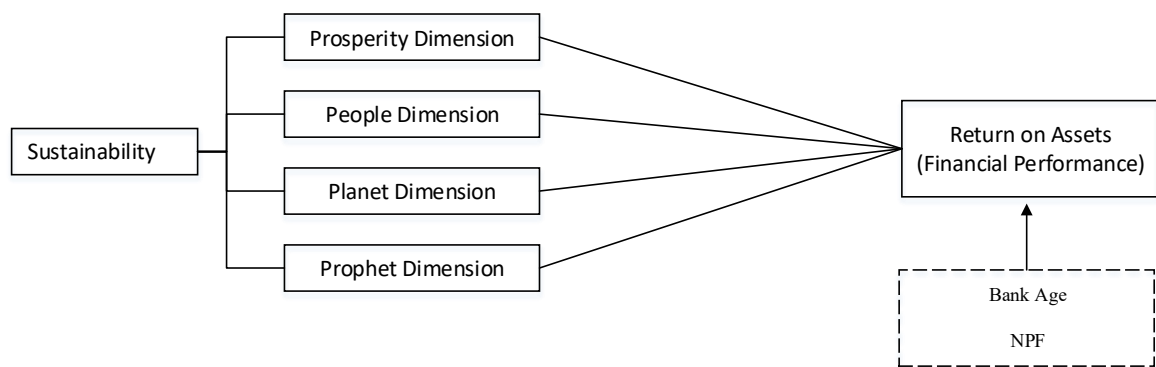
Figure 2.2 The First Research Model Framework



Source: Development by author based on Hamidi & Worthington (2021b)

Figure 2.2 describes the framework of the first research model. In this model, the research will be conducted by performing a content analysis on the performance of Islamic banks. Based on the Quadruple Bottom Line (QBL) framework, the performance will be divided into 4 dimensions, namely the prophet dimension, people, planet, and prophet dimension. From the content analysis results, a ranking for Islamic banks can be created, an RDAP scale can be developed, as well as the sustainability performance of the Islamic banks can be explained based on QBL.

Figure 2.3 The Second Research Model Framework



Source: Hamidi and Worthington (2021b), Jan et al. (2019), Kusumastuti and Alam (2019)

Figure 2.3 describes the framework of second research model. In this model, the research examines the influence of sustainability, viewed from four dimensions; prosperity, people, planet, and prophet, on financial performance measured by the Return on Assets (ROA). In addition, bank age and Non-Performing Financing (NPF) are also employed in this model acted as the control variable.

2.5 Previous Research

Research on sustainability reports in banking has been conducted by researchers, including the following.

Hamidi and Worthington (2021a) conducted the research to extend the existing triple bottom line framework (Profit, People and Planet [so-called 3Ps]) with a new dimension, namely, Prophet, to reflect Islamic values (the now 4Ps) for banks seeking compliance with Islamic religious principles. This study uses regression analysis to examine the applicability of the 4Ps after surveying 504 Islamic bank stakeholders in six Indonesian provinces. Their use in two sizable Islamic banks in Malaysia and Indonesia is further examined in this research. This research found that each model in the research is

extremely important and accurately captures the viewpoint of many stakeholders on bank performance. Prosperity is ranked highest by stakeholders among the four aspects, followed by Prophet and Planet, according to the survey.

Hamidi and Worthington (2021b) also has measured the sustainability level of Islamic banks in Indonesia using the 4Ps (quadruple bottom line) framework. As a test use of the generated QBL index, categorical principal component analysis (CATPCA) then determines the sustainability of 10 Islamic banks from ten countries. According to the findings, two banks are accommodating (doing everything that is necessary) and three are proactive (doing more than is necessary), meaning that half of the banks are sufficiently sustainable. The remaining five banks are unsustainable; three of them are reactive (doing less than is necessary), and two are defensive (doing the bare minimum). The majority of banks perform better on the "prosperity" (53%) and "prophet" (63%) dimensions, but comparatively poorly on the "planet" (38%) and "people" (41%).

Hamidi et al. (2024) explores the role of the spiritual dimension (Prophet) by adopting various theoretical perspectives and methodological approaches. Utilizing the Quadruple Bottom Line (QBL) framework which includes prosperity, people, planet, and prophet, the research applies structural equation modeling alongside artificial neural network analysis. Primary data were collected through a survey conducted across six provinces in Indonesia, yielding 506 valid responses. The results indicate that the Prophet dimension is perceived as more important than the prosperity (profit) dimension.

Jan, Marimuthu, and Pisol (2019) examined the nexus between sustainability practices and financial performance from the Islamic banking perspective. This study suggested a framework for measuring sustainability in Islamic banks. A weighted content analysis technique was used to gather sustainability statistics from the annual reports for the years 2008–2017. The findings of the statistical technique known as the Generalized Method of Moments (GMM) demonstrated a strong positive correlation between sustainability practices and the financial performance metrics of Islamic banks that reflect management and shareholder sentiment. It was determined that there was no discernible effect of sustainability policies on the Islamic banks' financial performance as evaluated by the market. A thorough investigation showed that, aside from their economic sustainability initiatives, banks' expenditures for environmental and social sustainability are of no relevance to the market. The findings indicated that there is a noteworthy positive correlation between sustainability practices and the Islamic financial index, which is based on the market financial performance indicators, management, and shareholders.

Another study conducted by Zyadat (2016) which examined how the economic, environmental, and social dimensions of sustainability affected the financial performance of Jordanian Islamic banks as measured by return on equity, return on assets, and earnings per share over the 2008–2014 timeframe. The two primary Islamic banks in Jordan, Jordan Islamic Bank and Arab Islamic Bank, were included in the study sample. The necessary information was gathered from the Jordanian Islamic banks' 2008–2014 annual reports, financial statements, sustainability reports, and social responsibility reports. By examining the content of these reports (content analysis) and the financial performance indicators that were taken from the financial statements of the banks that were surveyed, items for the sustainability dimensions were identified, and their degree of exercise was assessed. The study's findings indicate that the sustainability characteristics have a statistically significant impact on the financial performance of Jordanian Islamic banks as determined by Return on Assets (ROA) and Earning per Shares (EPS). However, the sustainability features had no statistically significant impact on those institutions' financial performance as determined by Return on Equity (ROE).

Prayoga and Siswanto (2020) examined the degree of economic, environmental, and social sustainability practices using Global Reporting Initiative (GRI) items that have been modified using *maqashid al shariah* theory. It also looks into how these practices relate to financial performance. Based on annual and sustainability reports pertaining to 11 Indonesian Islamic banks from 2014 to 2018, weighted content analysis techniques were employed. The average percentage of sustainability practices in Indonesian Islamic banks is a relatively low 23.33%, according to the data. Although there has been an upward trend in sustainability from 2014 to 2018, there is no correlation between these activities and financial success.

Shodiq (2021) investigated how Islamic banking is distinct in enhancing financial performance by means of creative sustainability reports that are based on the GRI Index. Using size as a demographic variable, the study was carried out on a sample of 12 Indonesian Islamic banks during the 2017–2019 observation period. According to the findings of the hypothesis test, the sustainability report improves banking performance. Other findings indicate that a sustainability report's breadth increases with its size. Size, however, has been shown to have no bearing on banking performance. The sustainability report is a solely intervening variable for the relationship between size and bank performance, according to the results of this hypothesis test.

The research regarding sustainability in Islamic bank also conducted by Jajang et al. (2023) which measured the level of sustainability disclosures (economic, social, and

environmental) based on OJK (Financial Services Authority) Regulation No. 51/2017 and investigates its impact on the financial performance of Islamic banks in Indonesia. The study was carried out in Islamic banks between 2018 and 2020, using purposive selection to select a total of 12 banks. The findings indicate that ROA is not significantly impacted by the sustainability disclosure factors. Conversely, the sustainability disclosure characteristics have a major impact on ROE and EPS.

Similar to the studies that have been discussed previously, this research is also conducted to measure and delve into the impact of sustainability practices in the banking industry. However, there are several differences in terms of the novelty of the data, the theoretical framework used to measure sustainability levels, and also the testing models employed. This research will be conducted at Islamic Commercial Banks in Indonesia and Malaysia during the period of 2019 to 2023. In measuring the level of sustainability, this research uses the quadruple bottom line framework which looks into four dimensions; prosperity, people, planet, and prophet. Through content analysis, this research will evaluate the level of sustainability performance of Islamic banks. In addition, this research will also conduct the test to measure the influence of prosperity, people, planet, and prophet on financial performance using panel data regression.

CHAPTER III

RESEACH METHODOLOGY

This chapter outlines the research methodology used in this study by detailing the type of research adopted, the population and sample selected, the nature of the data and its sources, and explains the procedures used for data collection. In addition, this chapter provides operational definitions for each variable involved in the study, thus allowing a clear understanding of how they are measured. Finally, this chapter explains the data analysis techniques applied to process and analyze the data.

3.1 Type of Research

This research uses mixed method approach. According to Sugiyono (2013), the mixed method research is a research method that combines or integrates quantitative and qualitative research methods in a single research activity. The goal is to obtain more comprehensive, valid, reliable, and objective data, so that the understanding of a research phenomenon becomes deeper. In addition, this research is also a causal associative study. Sugiyono (2013) explained that associative research aims to determine the influence between two or more variables, while causal refers to a cause-and-effect relationship.

3.2 Population and Sample

Population is an object that possesses certain qualities and characteristics determined by the researcher, while the sample is a part of the quantity and characteristics possessed by the population (Sugiyono, 2013). Population of this study is Islamic Commercial Banks (BUS) in Indonesia as well as Islamic banks in Malaysia. Furthermore, this research employed purposive sampling to determine the research sample. Purposive sampling is a sampling technique with specific considerations (Sugiyono, 2013).

The sampling in this study is determined by the following sample criteria.

1. The banks are Islamic Commercial Banks in Indonesia or Islamic banks listed in Bank Negara Malaysia
2. Islamic banks issue sustainability report and/or annual report that provides the necessary research data for the period 2019-2023 and can be accessed through the company's website or the internet.

Based on the established criteria, the sample determination process is as follows.

Table 3.1 Sample Collection Process

Criteria	Sample Size
Islamic banks in Indonesia and Malaysia	30
Islamic banks issue sustainability report and/or annual report that provides the necessary data for the period 2019-2023 and can be accessed through the company's website or the internet.	24
Islamic banks used as research sample	24
Total sample over five years of observation	120

Based on the purposive sampling showed in Table 3.1, the sample banks used in this research are 120 banks calculated from 24 Islamic banks of Indonesia and Malaysia for five years observation, namely 2019 to 2023. In addition, Bank Syariah Indonesia (BSI), which is the largest Islamic bank in Indonesia (IDN Times, 2025), is not included as one of the samples. This is because BSI started operating on February 1, 2021 (BSI, 2023), while the data needed for the research is from 2019.

3.3 Data and Data Source

The type of data used in this research is secondary data. According to Sugiyono (2013), secondary data is a source that does not directly provide data to the data collector, for example, through other people or through documents. In this study, data was obtained through annual reports and/or sustainability reports published by Islamic Commercial Banks and parent company of the Islamic Business Units on their official websites or from other accountable sources. The following below is a list of websites for each of the banks.

Table 3.2 List of Sample Banks and Its Websites

No.	Bank Name	Code	Website Links
1	PT. Bank Aceh Syariah	BAS	https://bankaceh.co.id
2	PT BPD Nusa Tenggara Barat Syariah	NTBS	https://bankntbsyariah.co.id
3	PT. Bank Muamalat Indonesia	BMI	https://bankmuamalat.co.id
4	PT. Bank Victoria Syariah	BVS	https://bankvictoriasyariah.co.id
5	PT. Bank Jabar Banten Syariah	BJBS	https://bjbsyariah.co.id
6	PT. Bank Mega Syariah	BMS	https://megasyariah.co.id

No.	Bank Name	Code	Website Links
7	PT. Bank Panin Dubai Syariah, Tbk	BPDS	https://pdsb.co.id
8	PT. Bank KB Bukopin Syariah	KBBS	https://kbbanksyariah.co.id
9	PT. BCA Syariah	BCAS	https://bcasyariah.co.id
10	PT. Bank BTPN Syariah Tbk	BTPNS	https://www.btpnsyariah.com/
11	PT. Bank Aladin Syariah, Tbk	BA	https://aladinbank.id
12	Alliance Islamic Bank Berhad	AIB	www.allianceislamicbank.com.my
13	AmBank Islamic Berhad	AI	www.amislamicbank.com.my
14	Bank Islam Malaysia Berhad	BIM	www.bankislam.com
15	Bank Muamalat Malaysia Berhad	BMM	www.muamalat.com.my
16	CIMB Islamic Bank Berhad	CIMBI	https://cimb.com.my
17	HSBC Amanah Malaysia Berhad	HSBCA	www.hsbcamanah.com.my
18	Kuwait Finance House Berhad	KFH	www.kfh.com.my
19	Maybank Islamic Berhad	MI	https://www.maybank.com/islamic/en/index.page
20	MBSB Bank Berhad	MBSB	www.mbsbbank.com
21	OCBC Al-Amin Bank Berhad	OCBCA	www.ocbc.com.my/ocbc_amin
22	Public Islamic Bank Berhad	PIB	www.publicislamicbank.com.my
23	RHBI Islamic Bank Berhad	RHBI	www.rhbislamicbank.com.my
24	Standard Chartered Saadiq Berhad	SCS	www.sc.com/my

Source: Data processed (2024)

3.4 Data Collection Methods

Data collection was conducted using documentation techniques. Documentation in this study was carried out by collecting annual reports and/or sustainability reports of Islamic Commercial Banks in Indonesia from 2021-2023. These reports were downloaded from the official company website or the internet.

In addition, content analysis will be conducted on the selected bank reports that are chosen as samples. Content analysis is a method of data collection through observation and analysis of the content or message of a document (Indriantoro & Supomo, 1999). In this study, content analysis is conducted to determine the sustainable index of each dimension in the sustainability report. Furthermore, three levels of scoring, namely 2, 1, and 0, will be used in this study, as employed by Jan, Marimuthu, and Pisol (2019). The sustainability performance will be scored by 2 if the banks fully disclosed with implementation details, scored 1 if the banks stated the commitment without implementation details, and will be scored by 0 if the banks do not disclose.

3.5 Operational Definition of Variables

This research analyzes the influence of independent variables on the dependent variable. The independent variable is the variable that influences or causes the change or emergence of the dependent variable (Sugiyono, 2013). Meanwhile, the dependent variable is the variable that is influenced or becomes the result due to the presence of the independent variable (Sugiyono, 2013). In addition, this study also uses control variables. The control variable is the variable that is controlled or kept constant so that the relationship between the independent variable and the dependent variable is not influenced by external factors that are not being studied.

The independent variable is sustainability performance that consists of prosperity dimension, people, planet, and prophet dimension. While the dependent variable in this study is financial performance measured through Return on Assets (ROA). ROA is selected because of its representativeness and most frequently used by previous researchers in the field of sustainability (Alshehhi et al., 2018). The control variables are bank age and Non-Performing Financing (NPF).

Bank age is one of the most commonly utilized controlled variables to illustrate the relationship between the bank's financial performance and sustainability practices (Jan, Marimuthu, & Pisol, 2019). The reason behind this is that banks with a higher age are considered large in size and considered to be more profitable (Jan, Marimuthu, Shad et al., 2019). Older banks receive more attention from the public groups, media groups, and the policy makers. Therefore, banks with high political visibility are more likely to face criticism from interest groups that advocate for environmental sustainability and social welfare policies (Jan, Marimuthu, & Pisol, 2019). Consequently, more profitable banks tend to provide greater disclosures regarding their environmental and social responsibility to address the concerns of various pressure groups (Naser et al., 2006). These enhanced disclosures, in turn, contribute to an increase in the bank's financial value (Jan, Marimuthu, & Pisol, 2019).

While the NPF is selected because it reflects the level of financing risk faced by a bank. The lower of NPF indicates the lower of financing risk borne by the banks (Kusumastuti & Alam, 2019). As financing is one of the main business activities of the bank, then the NPF will affect directly the level of the earnings gain by the bank. The detail of the operational definition of variables used in this research is demonstrated in Table 3.3.

Table 3.3 Operational Definition of Variables

Variables		Symbols	Units	Measurements	Data Sources	References
Independent	Prosperity Dimension	Prosperity	Index 0-1	$\text{Prosperity} = \frac{\text{Number of Items (dj)}}{\text{The Expected Number of Items (N)}}$	Annual report, sustainability report, official website	(Hamidi & Worthington, 2021a; Jan et al. 2019; Jajang et al., 2023)
	People Dimension	People	Index 0-1	$\text{People} = \frac{\text{Number of Items (dj)}}{\text{The Expected Number of Items (N)}}$	Annual report, sustainability report, official website	(Hamidi & Worthington, 2021a; Jan et al. 2019; Jajang et al., 2023)
	Planet Dimension	Planet	Index 0-1	$\text{Planet} = \frac{\text{Number of Items (dj)}}{\text{The Expected Number of Items (N)}}$	Annual report, sustainability report, official website	(Hamidi & Worthington, 2021a; Jan et al. 2019; Jajang et al., 2023)
	Prophet Dimension	Prophet	Index 0-1	$\text{Prophet} = \frac{\text{Number of Items (dj)}}{\text{The Expected Number of Items (N)}}$	Annual report, sustainability	(Hamidi & Worthington,

Variables	Symbols	Units	Measurements	Data Sources	References
				report, official website	2021a; Jan et al. 2019; Jajang et al., 2023)
Dependent	Return on Assets	ROA	Percentage	Annual report, financial statement	(Khrawish, 2011)
			$ROA (\%) = \frac{\text{Net Income}}{\text{Total Assets}}$		
Control	Bank Age	BA	Number	Annual report, official website	(Jan, Marimuthu, & Pisol, 2019)
	Non-Performing Financing	NPF	Percentage	Annual report, financial statement	(Kusumastuti & Alam, 2019)
			$NPF (\%) = \frac{\text{Non-Performing Financing}}{\text{Total Financing}}$		

3.6 Data Analysis Techniques

3.6.1 Content Analysis

As part of the methodological approach in this study, content analysis will be employed to examine the sustainability disclosures of selected Islamic banks in Indonesia and Malaysia. Content analysis is a data collection technique that involves a systematic examination of textual information to identify the presence of specific content, patterns, or themes (Indriantoro & Supomo, 1999). In the context of this research, content analysis is utilized to evaluate the extent to which Islamic banks disclose information related to sustainability practices, as outlined in the Quadruple Bottom Line (QBL) framework, comprising the dimensions of Prosperity (economic), People (social), Planet (environmental), and Prophet (ethical/spiritual). The main purpose of this analysis is to construct a sustainability disclosure index for each bank by systematically scoring the content of their reports according to a set of predefined items. The items explored based on QBL are shown in Table 3.4.

Table 3.4 Dimension of QBL and the Items

Code	Corollaries	Items (Constructs)
Prosperity		
WE7	Optimum rate of development	Islamic Banks' network currently reach rural areas
WE8	Employment and selfemployment opportunities	Islamic Banks open wider job opportunities
People		
IN14	Library and research facilities	Islamic Banks help to educate communities (i.e., providing scholarship and other educational facilities)
IN15	Reward for creative work	Islamic Banks should reward or give formal appreciation for creative work.
PO16	Need fulfilment	Islamic Banks provide financing to otherwise excluded minority groups (i.e. women, illiterate individuals, workers with insecure status)
Planet		
EN20	Environmental policy	Islamic banks should have a formal policy on environmental responsibility

Code	Corollaries	Items (Constructs)
EN21	Ecological footprint	Islamic banks should actively involve in reducing their ecological footprint (e.g. reduction in energy consumption, water, waste, etc.)
EN22	Green financing	Islamic bank should provide a provision of financing to promote the development of environment-friendly activities
EN23	Environmental Non-financial services	Islamic banks should raise client's awareness of environmental risks
EN24	Environmental Risk	Islamic banks should use specific toolkits to evaluate the environmental risks of clients' activities
Prophet		
PR26	Enabling environment for righteousness	Islamic banks provide proper place for the employees and clients to worship (praying) and encourage religion activities;
PR27	Family and social solidarity	The Islamic Bank encourages religious and social activities (such as Quranic recitation, Religious studies [taklim], Dhuha prayer, distributing alms etc.)
PR31	Good governance	Islamic banks' products and services are under the supervision of the Shariah Supervisory Board

Source: Hamidi and Worthington (2021a)

The scoring process follows a three-point scale to reflect the quality and depth of disclosure as employed by Jan, Marimuthu, and Pisol (2019). A score of 2 is assigned if a bank provides full disclosure along with implementation details, such as specific programs, targets achieved, or quantitative performance indicators related to the sustainability dimension being assessed. A score of 1 is given if the bank merely states a general commitment or policy toward sustainability but does not provide concrete information regarding its implementation or outcomes. Finally, a score of 0 is applied if the bank does not disclose any relevant information pertaining to the dimension in question.

3.6.1.1 Quadruple Bottom Line Index

After assigning scores to each sustainability disclosure item through content analysis, the next step in this study is to construct a Quadruple Bottom Line (QBL) index. This index quantifies the extent of disclosure by transforming qualitative content into measurable indicators, allowing for a comparative and statistical analysis of sustainability practices across banks. The index is calculated for each item of dimensions within the QBL framework. The formulation of the index in this research uses the approach developed by Haniffa and Hudaib (2007) and Hamidi and Worthington (2021b).

$$QBL_j = \sum_{t=2}^{n_j} \frac{x_{ij}}{n_j}$$

Where:

QBL_j : QBL index

N_j : Total number of items found in sustainability report, annual report, and/ or official website of j th bank

X_{ij} : 2 if the items disclosed with implementation details, 1 if commitment stated without implementation details, and 0 if the items are not disclosed

This approach ensures that the index reflects not only the presence of disclosure but also its depth and completeness. A higher index value indicates more comprehensive and detailed sustainability reporting. The resulting indices serve as key variables in further regression analysis, helping to assess the relationship between sustainability performance and financial outcomes in Islamic banks.

3.6.1.2 Reactive, Defensive, Accommodative, and Proactive Scale

After the Quadruple Bottom Line (QBL) index score is obtained, the bank's sustainability performance can be ranked by differentiating each performance on different scales. Ali (2018) developed a modified Reactive, Defensive, Accommodative, and Proactive (RDAP) scale to more precisely characterize the range of organizational reactions to concerns raised by stakeholders. The RDAP scale has been used to assess how organizations are responding to social and environmental challenges in a variety of academic settings (Hamidi et al., 2025). For instance, Morais and Barbieri (2022) used RDAP scale to measure how supply chains' focal enterprises responded to social challenges in supply chains. Hamidi and Worthington (2021b) also applied the RDAP scale to assess the sustainability practices of Islamic banks. This research will rank the banks using the RDAP scale developed by Hamidi et al. (2025).

Table 3.5 RDAP Scale

Achievement	Rating	Posture or Strategy	Performance
0 – 40%	Reactive	Deny responsibility	Doing less than required
41 – 60%	Defensive	Admit responsibility but fight it	Doing the least that is required
61 – 80%	Accommodative	Accept responsibility	Doing all that is required
81 – 100%	Proactive	Anticipate responsibility	Doing more than is required

Source: Hamidi et al. (2025)

Table 3.5 shows the RDAP scale to rank the sustainability of the bank. A bank with the score in the range of 0 – 40% will be ranked as “Reactive” indicating the bank doing the sustainability performance less than required. A bank with the score in the range of 41 – 60% will be ranked as “Defensive” indicating that the bank doing the sustainability performance at the least that required. Bank that scored in the range of 61 – 80% will be ranked as “Accommodative” indicating that the bank doing all of the sustainability performance that is required. Lastly, the bank that scored in the range of 81 – 100% will be ranked as “Proactive” indicating that the bank doing the sustainability performance more than is required.

3.6.2 Panel Data Regression

3.6.2.1 Descriptive Statistic

According to Sugiyono (2013), descriptive statistics are statistical methods used to analyze and present data by describing or summarizing the characteristics of the collected dataset without attempting to draw conclusions that extend beyond the data itself. In other words, descriptive statistics do not aim to test hypotheses or infer population parameters, but rather provide a clear and concise summary of the sample data under investigation.

In the context of this study, descriptive statistical analysis is applied to examine the distribution and central tendency of the variables used, including sustainability disclosure indices and relevant financial and macroeconomic indicators. The analysis focuses on several key measures such as the mean, which represents the average value of a variable and provides insight into the general level of the data; the standard deviation, which

indicates the dispersion or variability of the data around the mean and shows how spread out the values are; and the minimum and maximum values, which display the range within which the data falls and help identify the lowest and highest observations in the dataset. These measures allow researchers to obtain an initial understanding of the dataset's structure and behavior before proceeding to more advanced analyses, such as regression modeling.

3.6.2.2 Panel Data Regression Model

To achieve the desired objectives, this study uses panel data regression analysis to determine the impact of sustainability that conceptualized into four dimensions, namely prosperity, people, planet, and prophet, on bank financial performance. Gujarati and Porter (2009) claims that panel data surveys the same cross-sectional unit throughout time, such as a family, business, or state. In summary, panel data comprises both space and spatial time dimensions. Unlike other types of data, panel data offers several advantages. Baltagi (2005) explained several advantages of using panel data as follows.

1. Controlling for individual differences. According to panel statistics, people, businesses, states, and nations are diverse. By accounting for subject-specific characteristics, panel data estimation approaches can explicitly account for such heterogeneity.
2. When cross-section observations' time series are combined, panel data provides “more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency.”
3. Panel data makes it simpler to analyze the dynamics of adjustment. Spells of unemployment, job turnover, and labor mobility are better studied with panel data.
4. Panel data are more adept at identifying and measuring effects that are just not visible in cross-sectional or pure time-series data. For instance, if we incorporate repeated waves of minimum wage hikes in the federal and/or state minimum wages, it will be easier to study how minimum wage laws affect employment and incomes.
5. We can investigate more complex behavioral models with panel data. For instance, panels are a superior way to study and demonstrate technical efficiency.
6. By offering data for thousands of units, panel data helps mitigate the bias that may result from putting individuals or companies into broad aggregates.

Based on the literature review and the proposed research design, the regression equation models in this study are as follows.

$$ROA_{it} = \beta_0 + \beta_1 Prosperity_{it} + \beta_2 People_{it} + \beta_3 Planet_{it} + \beta_4 Prophet_{it} + \beta_5 BA_{it} + \beta_6 NPF_{it} + \varepsilon_{it}$$

Where:

<i>ROA</i>	: Return on Asstes
<i>Prosperity</i>	: Prosperity dimension
<i>People</i>	: People dimension
<i>Planet</i>	: Planet dimension
<i>Prophet</i>	: Prophet dimension
<i>BA</i>	: Bank age
<i>NPF</i>	: Non-performing financing
β_0	: Constant
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$	: Coefficient of the independent variable
ε	: Error coefficient
<i>i</i>	: Unit cross section
<i>t</i>	: Time period

3.6.2.3 Estimation Techniques

Widarjono (2007) explains that panel data analysis has the advantage of incorporating both cross-sectional and time-series aspects, allowing for more comprehensive and insightful results than those derived from purely cross-sectional or time-series data alone. When estimating regression parameters using panel data, researchers typically employ one of three main approaches—each based on different assumptions and methodological characteristics. These approaches include the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM).

3.6.2.3.1 Common Effect Model

A common effect model is a method that integrates cross-sectional and time series data. The combined data is handled as a single unit of observation when using the Ordinary Least Square (OLS) method. The common effect model implies that the data behaves similarly across time and among individuals, ignoring individual traits and temporal variance. Combined OLS estimation is also known as the constant coefficient model because it assumes that the coefficients over time and cross-section remain the same or constant (Gujarati, 2015).

3.6.2.3.2 Fixed Effect Model

According to the fixed effect model, each individual's intercept is unique since individual-specific effects are assumed to be time-invariant and correlated with the independent variables. Even though the slope between people is fixed, the fixed effect model, often referred to as the Least Squares Dummy Variable approach (LSDV), needs a dummy variable to distinguish one object from another. In conclusion, fixed effect model just considers individual-specific effects and makes the assumption that there is no time effect

3.6.2.3.3 Random Effect Model

The random effect model makes the assumption that while individual-specific effects are uncorrelated with the independent variables, they are time-invariant. Every group is assumed to have a distinct intercept, a variable that is random or susceptible to chance, by the random effect model. This method is particularly advantageous when the individuals selected as samples are both random and representative of the population. Additionally, this method considers the possibility of error connection between various components and time periods. Mitigation of heteroscedasticity is one of the benefits of the random effect model. The Generalized Least Square (GLS) technique or the Error Component Model (ECM) are other names for this methodology.

3.6.2.4 Panel Data Regression Model Selection Method

In estimating the parameters of a regression model using panel data, researchers typically utilize one of three fundamental estimation techniques, each with distinct assumptions and methodological considerations. these include the common effect model, the fixed effect model, and the random effect model. Choosing the most suitable model among these depends on the characteristics of the data and the validity of key assumptions. Diagnostic tests such as the Chow Test, Hausman Test, and Lagrange Multiplier (Breusch-Pagan) Test are commonly employed to guide the selection process. A thoughtful application of the appropriate panel data model will ensure the credibility and robustness of the empirical findings.

3.6.2.4.1 Chow Test

The Chow test is a statistical test used to determine whether the coefficients in two linear regressions on different data sets are equal. It is extended to the case of (n) linear

regressions. The test is used to check the pool ability of data across regions by testing the hypothesis that the coefficients are the same across different groups (Baltagi, 2005).

The Chow test is conducted to determine the better model between common effect model and fixed effect model. The Chow test hypothesis is as follows.

H_0 : Common Effect Model ($p > 0.05$)

H_1 : Fixed Effect Model ($p < 0.05$)

If the probability value $< \alpha 0.05$, then H_0 is rejected, meaning the more appropriate panel data regression model to use is fixed effect model, and conversely, if H_0 is accepted, then the model used is common effect model.

3.6.2.4.2 Hausman Test

The Hausman test is a statistical test that assesses the consistency of an estimator by comparing it to a less efficient estimator that is known to be consistent. Panel data analysis frequently employs this method to determine the appropriate model choice between fixed effects and random effects models (Baltagi, 2005).

The Hausman test hypothesis is as follows.

H_0 : Random Effect Model ($p > 0.05$)

H_1 : Fixed Effect Model ($p < 0.05$)

If the probability value $< \alpha 0.05$, then H_0 is rejected, which means that the more appropriate panel data regression model to use is fixed effect model. Conversely, if H_0 is accepted, then the more appropriate panel data regression model is random effect model.

3.6.2.4.3 Lagrange Multiplier Test

Lagrange Multiplier (LM) test is a statistical test used to detect the presence of random group effects in panel data models (Baltagi, 2005). This test determines if the random effect model performs better than the common effect model technique.

The LM test hypothesis is as follows.

H_0 : Common Effect Model ($p > 0.05$)

H_1 : Random Effect Model ($p < 0.05$)

If the cross-section value $< \alpha 0.05$, then H_0 is rejected, meaning the more appropriate panel data regression model to use is random effect model. Conversely, if H_0 is accepted, then the more appropriate panel data regression model is common effect model.

3.6.2.5 Classical Assumption Test

In producing an unbiased linear estimate, the model must pass several assumption tests, such as the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. Gujarati (2003) explained that to obtain the Best Linear Unbiased Estimator (BLUE) or to ensure that there are no fundamental assumptions violated, the OLS estimation method must satisfy the assumptions underlying the Classical Linear Regression Model (CLRM).

According to Gujarati and Porter (2009), common effect model and fixed effect model use the Ordinary Least Square (OLS) method. Meanwhile, the random effect model uses the Generalized Least Square method (GLS). Regarding the two approaches, Basuki (2016) explained that OLS and GLS have different classical assumption tests. Furthermore, Basuki (2016) also explained the following matters related to classical assumption testing.

1. Since it is expected that the model is linear, linearity tests are rarely performed on all linear regression models, even if they are necessary only to determine the degree of linearity.
2. In essence, the normality test is not a BLUE (Best Linear Unbias Estimator) criteria, therefore some people do not believe that this requirement needs to be met.
3. Multicollinearity is required when multiple independent variables are used in linear regression. Multicollinearity cannot occur when there is just one independent variable.
4. Cross section data typically exhibits heteroscedasticity, with panel data more closely resembling cross section data characteristics than time series.
5. Time series data are the only ones that exhibit autocorrelation. It will be pointless or nonsensical to test autocorrelation on data that is not time series (cross section or panel).

Basuki (2016) concluded that if the chosen model is common effect model and fixed effect model, then classical assumption tests such as multicollinearity and heteroscedasticity tests need to be conducted. While, if the chosen model is random effect model, then classical assumption tests are not necessary.

3.6.2.5.1 Multicollinearity Test

Multicollinearity refers to a significant correlation between independent variables. The correlation coefficient measures the relationship between two variables in the model, which has the strength of a straight line or linear relationship. Correlation occurs in time

series or panel data models, and analysis of correlation is necessary to avoid double counting and bias in regression results.

In this research, the detection of multicollinearity was conducted by examining the correlation matrix among the independent variables. This method involves calculating Pearson correlation coefficients to identify the degree of linear association between each correlation of independent variables. If the correlation coefficient between two independent variables exceed a certain threshold, namely 0.80 or 0.90, it may indicate the presence of multicollinearity issue. The rationale behind this approach lies in the assumption that when two or more independent variables are highly correlated, they may carry redundant information, leading to instability in the estimation of regression coefficients. High multicollinearity can inflate the standard errors of the coefficients, resulting in less reliable statistical inference and possibly misleading conclusions.

3.6.2.5.2 Heteroscedasticity Test

The heteroskedasticity test is an essential diagnostic tool in regression analysis, particularly when using the Ordinary Least Squares (OLS) method. One of the fundamental tenets of OLS is that the variance of the residuals, or error terms, is constant at all levels of the independent variables. This assumption is known as homoskedasticity. When this assumption is violated, and the residuals exhibit unequal variances across observations, the condition is referred to as heteroskedasticity. The presence of heteroskedasticity can lead to inefficient estimates and biased standard errors, which in turn may result in misleading statistical inferences, such as incorrect conclusions about the significance of predictor variables.

To detect the presence of heteroskedasticity, several formal tests have been developed, one of which is the Glejser test, as described by (Gujarati, 2003). In this test, one or more independent variables are regressed on the absolute value of the residuals derived from the initial regression model. The underlying rationale of the Glejser test is that if the absolute residuals are significantly related to any of the independent variables, it indicates a systematic pattern in the variance of the errors, thus suggesting the presence of heteroskedasticity. The decision rule for interpreting the Glejser test is based on the significance level of the regression coefficients in this auxiliary regression. If the p-value (probability value) associated with the independent variable is higher than the significance level (commonly set at $\alpha = 0.05$ or 5%), the null hypothesis of homoskedasticity cannot be rejected. In this case, it can be concluded that the model does not suffer from heteroskedasticity. Conversely, if the p-value is less than 0.05, it implies that the

independent variable significantly explains the variation in the residuals, thus providing evidence of heteroskedasticity in the model.

3.6.2.6 Robustness Test

In econometrics, a robustness test is used to examine the reliability and stability of the results of a regression model. It examines the validity of the results under different assumptions, guidelines or sampling conditions (Gujarati & Porter, 2009). For example, robustness testing may involve the use of different techniques for estimating standard errors, such as White standard errors, in the context of panel data sets to decide whether the results are consistent across these different methods (Petersen, 2001). Robustness testing may also involve adjusting for additional factors to determine whether the primary results still hold (Acemoglu et al., 2001). Robustness tests are sometimes used to confirm the stability of results under different circumstances (Brunnschweiler, 2008).

3.6.2.7 Significance Test

The purpose of this step is to evaluate the statistical significance of the impact that the independent variables in the regression model have on the dependent variable. The significance testing process is a crucial part of regression analysis, as it determines whether the observed relationships are meaningful and not merely the result of random variation in the sample data. The significance test consists of F-test, t-test, and coefficient of determination (R^2).

3.6.2.7.1 t Test (Partial)

The purpose of the t-test is to ascertain whether the independent variable significantly affects the dependent variable to some extent (Ghozali, 2011). The t-test is conducted by examining the significance value of 0.05 and/or comparing the t-calculated value with the t-table value. The hypothesis in the t-test is as follows.

- $H_0: \beta = 0$; There is no significant partial effect between the independent variables and the dependent variable.
- $H_1: \beta \neq 0$; There is a significant partial effect between the independent variables and the dependent variable.

Decision-making rules:

- If the probability $< \text{Sig} (\alpha = 0.05)$ or the t-calculated value $> \text{t-table value}$, then H_0 is rejected and H_1 is accepted, which means there is a significant partial effect.

- If the probability $> \text{Sig } (\alpha = 0.05)$ or the t-calculated value $< \text{t-table value}$, then H_0 is accepted and H_1 is rejected, which means there is no significant partial effect.

3.6.2.7.2 F Test (Simultaneous)

The F test aims to determine whether all independent variables collectively have an effect on the dependent variable (Ghozali, 2011). The F test is conducted by examining the significance value of 0.05 and/or comparing the F-calculated value with the F-table value. The hypothesis in the F-test is as follows.

- $H_0: \beta = 0$; There is no significant simultaneous effect between the independent variables and the dependent variable.
- $H_1: \beta \neq 0$; There is a significant simultaneous effect between the independent variables and the dependent variable.

Decision-making rules:

- If the probability $< \text{Sig } (\alpha = 0.05)$ or the F-calculated value $> \text{F-table value}$, then H_0 is rejected and H_1 is accepted, which means there is a significant simultaneous effect.
- If the probability $> \text{Sig } (\alpha = 0.05)$ or the F-calculated value $< \text{F-table value}$, then H_0 is accepted and H_1 is rejected, which means there is no significant simultaneous effect.

3.6.2.7.3 Coefficient of Determination

The coefficient of determination (R^2) serves to measure how well the independent variables explain the variation in the dependent variable. Its value ranges from 0 to 1. A low R^2 indicates that the independent variables have a limited capacity to account for changes in the dependent variable. Conversely, an R^2 value approaching 1 suggests that the independent variables provide substantial explanatory power, capturing most of the variability observed in the dependent variable. (Ghozali, 2011).

CHAPTER IV

RESEARCH FINDINGS

This chapter presents and discusses the empirical findings of the study. It includes the analysis conducted using content analysis and panel data regression techniques. The results are interpreted in light of the research objectives to determine the extent to which they have been achieved. Furthermore, the findings are compared and contrasted with those from previous studies to highlight their relevance, significance, and contribution to the existing body of knowledge.

4.1 Results f Content Analysis

This research conducts a content analysis on 14 Islamic banks in Indonesia and Malaysia using the QBL framework developed by Hamidi and Worthington (2021b). Content analysis is conducted by assessing the disclosure of each item in the sustainability dimension on the sustainability report, annual report, and/or the bank's official website. After calculating the scores for each item, the overall score for each bank was derived by averaging the values over a five-year period (2019–2023). In addition, scores for each construct and each dimension were also computed accordingly. The results of the content analysis are shown in Table 4.1.

Overall across two countries, BTPNS is the best performer with a score of 98%, followed by NTBS with 88% and MI with 83%, while the lowest goes to BVS with the score of 47%. From a country-level perspective, in Indonesia, BTPNS continues to demonstrate the highest performance with a score of 98%, followed by NTBS with 88%, BMI with 82%, and the lowest still goes to BVS with the score of 47%. In Malaysia, the best performance is achieved by MI with a score of 83%, followed by MBSB with a score of 73%, and RHBI with a score of 72%. The lowest performance is recorded by AIB with a score of 52%. The ranking of all banks, both the overall level across the two countries and the individual country level, are presented in Table 4.1.

Table 4.1 Content Analysis Results

Dimensions	Constructs	INDONESIA																			
		BAS					NTBS					BMI					BVS				
		2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Prosperity	WE7	0	0	0	0	1	1	2	2	2	2	0	0	2	2	2	0	0	0	0	0
	WE8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
People	IN14	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0
	IN15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PO16	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	0	0	0	0	0
Planet	EN20	2	2	2	2	2	2	2	2	2	2	0	0	2	2	2	0	2	2	2	2
	EN21	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2
	EN22	1	1	2	2	2	1	2	2	2	2	1	1	2	2	2	0	1	1	1	1
	EN23	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	2
	EN24	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	2
Prophet	PR26	0	0	0	2	2	2	2	2	2	2	2	0	2	2	2	0	0	0	0	0
	PR27	0	0	0	0	0	0	2	2	2	2	2	2	1	1	2	2	0	2	0	0
	PR31	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Achievement		15	15	16	18	19	18	24	24	24	24	19	17	23	23	24	7	13	15	13	13
Total Point		26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Score		58%	58%	62%	69%	73%	69%	92%	92%	92%	92%	73%	65%	88%	88%	92%	27%	50%	58%	50%	50%
Average		64%					88%					82%					47%				
Ranking for Each Country		8					2					3					9				
Overall Ranking		11					2					4					17				

INDONESIA																								
BJBS					BMS					BPDS					KBBS					BCAS				
2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
0	0	2	2	2	0	1	2	2	2	0	2	2	2	2	0	1	2	2	2	2	2	2	2	2
0	1	2	2	2	0	2	2	2	2	0	2	2	2	2	0	2	2	2	2	2	2	2	2	2
0	1	2	2	2	0	2	2	2	2	0	2	2	2	2	0	2	2	2	2	2	2	2	2	2
0	2	2	2	2	0	0	2	0	2	0	0	0	0	0	0	0	2	2	2	0	0	0	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10	18	22	22	21	12	17	20	18	20	12	18	18	18	18	12	17	20	20	20	18	18	18	20	20
26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
38%	69%	85%	85%	81%	46%	65%	77%	69%	77%	46%	69%	69%	69%	69%	46%	65%	77%	77%	77%	69%	69%	69%	77%	77%
72%					67%					65%					68%					72%				
4					6					7					5					4				
6					9					10					8					6				

INDONESIA										MALAYSIA														
BTPNS					AS					AIB					AI					BIM				
2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
2	2	2	2	2	1	1	1	1	1	0	0	0	0	1	0	1	0	1	1	1	1	1	1	2
1	2	2	1	2	1	2	2	2	2	2	0	0	0	2	0	0	0	0	0	0	0	0	1	0
1	2	2	2	2	2	2	0	2	2	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	0	0	0	0	0	2	2	0	2	2	0	0	0	0	0	0	0	0	0	0
2	2	2	2	2	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	0	2	2	2
2	2	2	2	2	0	2	2	2	1	0	0	0	2	2	1	2	1	2	2	2	2	2	2	2
2	2	2	2	2	2	1	2	2	2	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	1	2	2	2	0	0	0	2	2	2	2	2	2	2	1	0	2	2	2
2	2	2	2	2	1	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
2	2	2	2	2	0	0	0	0	2	2	0	0	0	2	2	1	1	1	0	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
24	26	26	25	26	14	15	15	19	20	12	8	9	16	23	16	16	14	16	15	17	15	19	20	20
26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
92%	100%	100%	96%	100%	54%	58%	58%	73%	77%	46%	31%	35%	62%	88%	62%	62%	54%	62%	58%	65%	58%	73%	77%	77%
98%					64%					52%					59%					70%				
1					8					10					8					4				
1					11					16					14					7				

MALAYSIA																								
BMM					CIMBI					HSBCA					KFH					MI				
2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
2	2	2	2	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	2
0	0	0	2	0	2	2	0	1	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0	1	1	0	0	2	2	0	2	2	0	0	0	0	0	0	0	0	1	1	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2
2	0	2	2	2	2	2	2	2	2	0	2	2	2	2	0	0	2	2	2	2	2	2	2	2
2	2	1	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	2	2	2	2	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	0
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
18	17	18	20	18	20	21	14	20	18	13	16	16	16	16	12	14	18	19	19	22	22	22	20	22
26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
69%	65%	69%	77%	69%	77%	81%	54%	77%	69%	50%	62%	62%	62%	62%	46%	54%	69%	73%	73%	85%	85%	85%	77%	85%
70%					72%					59%					63%					83%				
4					3					8					6					1				
7					6					14					12					3				

MALAYSIA																			
MBSB					OCBCA					PIB					RHBI				
2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2	0	2	2	2	2	2	0	0	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2
2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
1	2	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	0	2	1	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	2	2	0	2	0	0	0	0	0	0	0	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21	18	19	19	18	16	18	14	12	15	14	15	17	16	18	18	18	20	20	18
26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
81%	69%	73%	73%	69%	62%	69%	54%	46%	58%	54%	58%	65%	62%	69%	69%	69%	77%	77%	69%
73%					58%					62%					72%				
2					9					7					3				
5					15					13					6				

MALAYSIA					Achievement of each construct	Total Point	Score of each construct	Score of each dimension
SCS								
2019	2020	2021	2022	2023				
0	0	0	0	0	62	240	26%	53%
2	2	2	2	2	193	240	80%	
2	2	2	2	2	211	240	88%	45%
0	0	0	0	0	32	240	13%	
0	0	0	2	2	82	240	34%	
2	2	2	2	2	227	240	95%	91%
2	2	2	2	2	234	240	98%	
2	2	2	2	2	204	240	85%	
2	2	2	2	2	211	240	88%	
2	2	2	2	2	215	240	90%	
0	0	0	0	0	64	240	27%	65%
0	0	0	0	0	161	240	67%	
2	2	2	2	2	240	240	100%	
16	16	16	18	18				
26	26	26	26	26				
62%	62%	62%	69%	69%				
65%								
5								
10								

A higher score attained by the bank indicates a greater effectiveness in fulfilling each dimension of the Quadruple Bottom Line (QBL) framework. Furthermore, it suggests that the bank has implemented the constructs associated with each dimension and has transparently disclosed these practices through its sustainability reports, annual reports, and/ or official website. In this research, BTPNS (*Bank Tabungan Pensiunan Nasional Syariah*) obtained the highest score in Indonesia. Bank NTBS has implemented more sustainability practices and disclosed them in the company report. As a result, BTPNS received Gold Awards for Sustainability Report in Annual Report Competition (ARC) Awards International XXXVII organized by MerComm, Inc 2022.

In Malaysia MI (Maybank Islamic) obtained the highest score. In the field of sustainability, MI also received the Global Financial Awards 2023 as Best Bank for Sustainable Finance in Malaysia and Outstanding Leadership in Sustainability Transparency in Asia Pacific organized by Global Finance Magazine.

4.1.1 Ranking of Bank Sustainability

Based on the obtained sustainability index, the banks can be classified using the RDAP (Reactive, Defensive, Accommodative, and Proactive) Scale as shown in Figure 4.1. The RDAP scale in this study follows the developed scale by Hamidi et al. (2025).

Base on Figure 4.1, BTPNS, NTBS, MI, and BMI have scores in the range of 81% - 100%, thus they can be categorized as proactive. MBSB, BCAS, RHBI, BJBS, CIMBI, BIM, BMM, KBBS, BMS, BPDS, SCS, BAS, AS, KFH, and PIB have score in the range 60% - 80%, thus they can be categorized as accommodative. AI, HSBCA, OCBCA, AIB, and BVS have scores in the range 41% - 60%, thus they can be categorized as defensive.

Figure 4.1 RDAP Scale

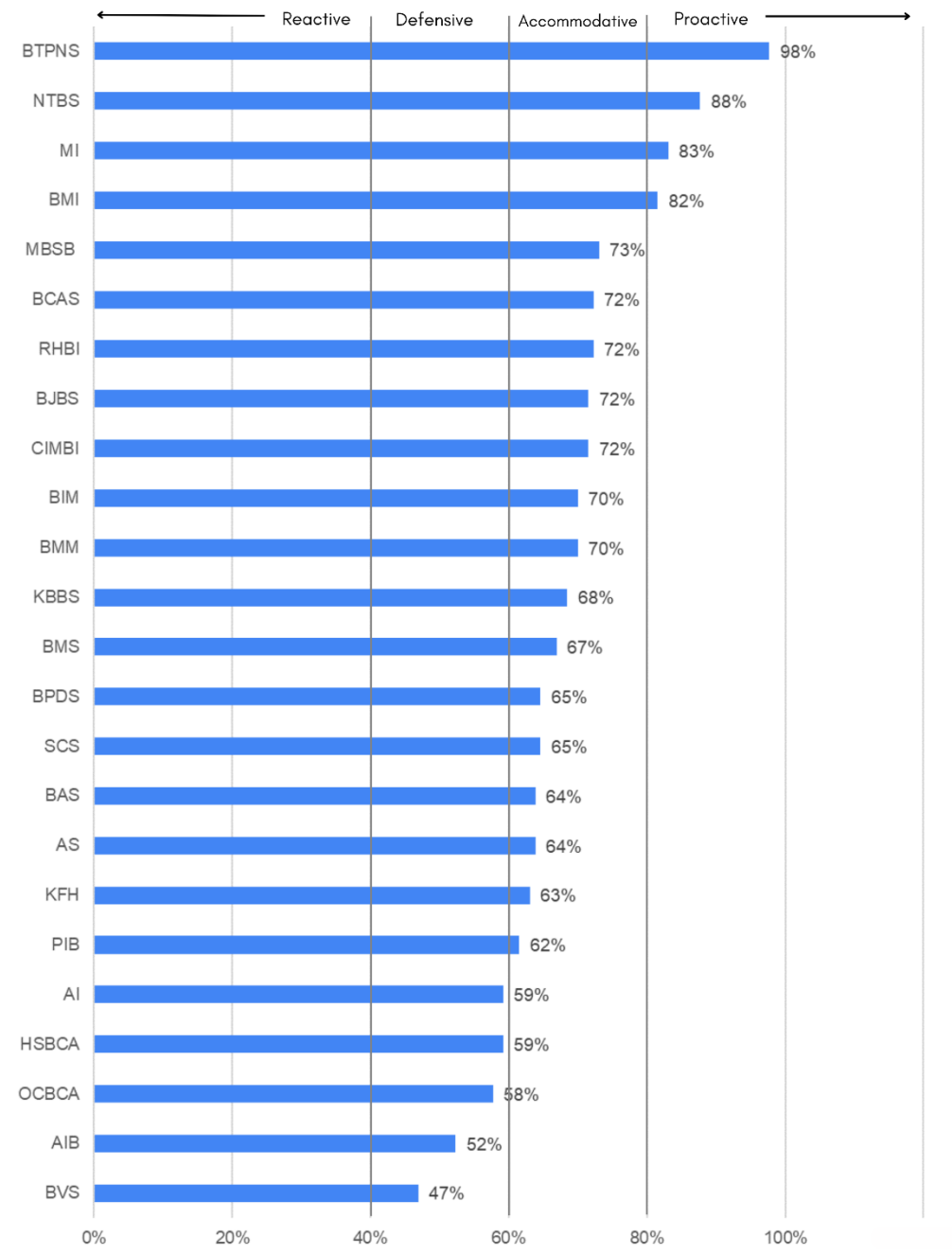


Table 4.2 shows a summary of the ranking of Islamic bank sustainability based on the RDAP Scale both in Indonesia and Malaysia. In Indonesia, 1 bank (9%) are categorized as unsustainable and 10 banks (91%) are categorized as sustainable. In Malaysia, 4 banks (31%) are categorized as unsustainable and 9 banks (69%) are categorized as sustainable. Overall across two countries, as many as 5 banks (21%) are categorized as unsustainable and the majority of the bank, namely 19 banks (79%), are categorized as sustainable.

Table 4.2 Ranking of Bank Sustainability Based on RDAP Scale

	Reactive (0-40%)	Defensive (41-60%)	Accommodative (61-80%)	Proactive (81-100%)	Total
Indonesia	0	1	7	3	11
Unsustainable (Reactive + Defensive)	9%				
Sustainable (Accommodative + Proactive)	91%				
Malaysia	0	4	8	1	13
Unsustainable (Reactive + Defensive	31%				
Sustainable (Accommodative + Proactive)	69%				
Overall 2 Countries					
Total	0	5	15	4	24
Unsustainable (Reactive + Defensive	21%				
Sustainable (Accommodative + Proactive)	79%				

Both in Indonesia and Malaysia, most of the banks have implemented sustainability practices and are categorized as sustainable. This indicates that the bank has supported economic activities, generated social impact, demonstrated environmental concern, and incorporated spiritual values into its operations. These four elements are essential for ensuring the bank's sustainability based on QBL theory.

In addition, the results also show a significant change compared to previous research which found that the sustainability scores in Indonesia and Malaysia are relatively low. For example, Meutia and Febrianti (2017), found that in 2014, the average number of ISR index score for Indonesian Islamic banks only reached 58% and Malaysian Islamic banks only reached 40% from total of 7 banks from each country. Prayoga and Siswantoro (2020), who conducted research on 11 Islamic banks in Indonesia, found that the average sustainability score from 2014 to 2018 only reached 23.33%. Hamidi and Worthington (2021b), the proponent of the Quadruple Bottom Line (QBL) framework, assessed QBL performance across 10 Islamic banks from 10 different countries during the period 2015–2017. The findings revealed that only three banks qualified as proactive (with scores ranging from 61% to 100%), and two were classified as accommodative (with scores between 51% and 60%).

The significant progress in disclosing sustainability performance among Islamic banks in Indonesia and Malaysia could be driven by the regulations that require the issuance of sustainability reports by Islamic banks. In Indonesia, based on POJK No. 51/POJK.03/2017, Islamic banks are required to record their sustainability performance in a report. This regulation will gradually come into effect from 2019 to 2025, depending on the type and category of the bank's capital. The obligation to issue sustainability report is

first required from January 1 to December 31, 2019, for financial services institutions (including Islamic commercial Bank) in the form of Commercial Banks Group of Business Activities (BUKU) 3, BUKU 4, and foreign banks, as well as from January 1 to December 31, 2020, for financial services institutions in the form of BUKU 1 and BUKU 2. Therefore, at the very least, Islamic banks have fulfilled the obligation to publish sustainability reports since 2020. When the content analysis was conducted, since 2020 each bank has launched sustainability reports that are even separate from the annual reports, thereby the explanations are likely more detailed.

In Malaysia, Bursa Malaysia Securities Berhad introduced the Sustainability Reporting Framework (SRF) in 2015. This framework requires issuers and listed companies to include a sustainability statement in their annual reports, which addresses material economic, social, and environmental risks and opportunities. The Sustainability Reporting Framework (SRF) was also revised in September 2022 with the introduction of the Enhanced Sustainability Framework, which further refines and strengthens the sustainability reporting requirements and practices outlined in Main Market and Access, Certainty, and Efficiency (ACE) Market Listing Requirements. Listed companies are required to comply with the revised framework for financial years ending on or after December 31, 2024 (Misman & Adnan, 2023). The *Bursa Malaysia Securities Berhad* is paying attention to sustainability and gradually improving their sustainability framework. When the content analysis was conducted, all Islamic banks in Malaysia had implemented sustainability practices. However, in most cases, the sustainability disclosures are issued by their respective parent companies and incorporated within integrated annual reports.

4.1.2 Sustainability Performance

Based on the content analysis conducted on 24 banks over a five-year conservative period, the scores for each dimension were also derived, as illustrated in Figure 4.2. Across both countries, the People dimension registered the lowest score at 45%, followed by Prosperity at 53% and Prophet at 65%, whereas the Planet dimension attained the highest score at 91%. With regard to country-specific scores, as illustrated in Figure 4.3 and Figure 4.4, Indonesia recorded its lowest score in the People dimension at 44%, followed by Prosperity at 67%, Prophet at 78%, and the highest in the Planet dimension at 89%. In Malaysia, the lowest score was observed in the Prosperity dimension at 43%, followed by People at 46%, Prophet at 58%, and the highest in the Planet dimension at 93%.

Figure 4.2 QBL Score by Dimension

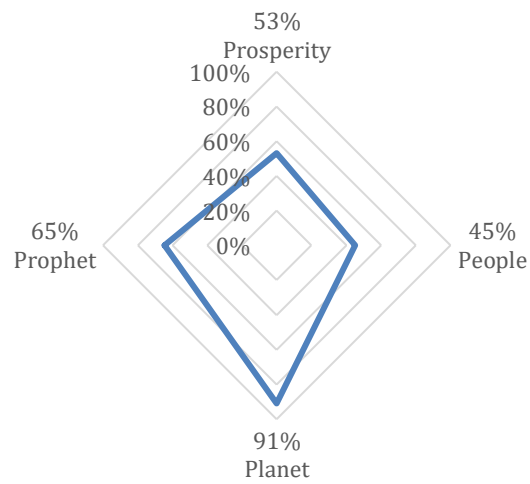


Figure 4.3 QBL Score by Dimension of Indonesian Islamic Banks

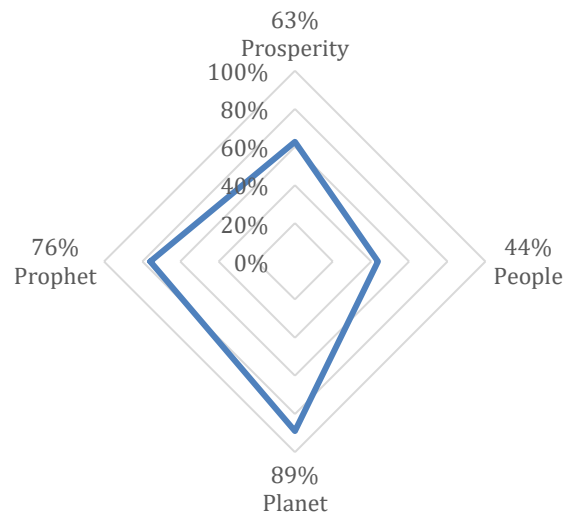
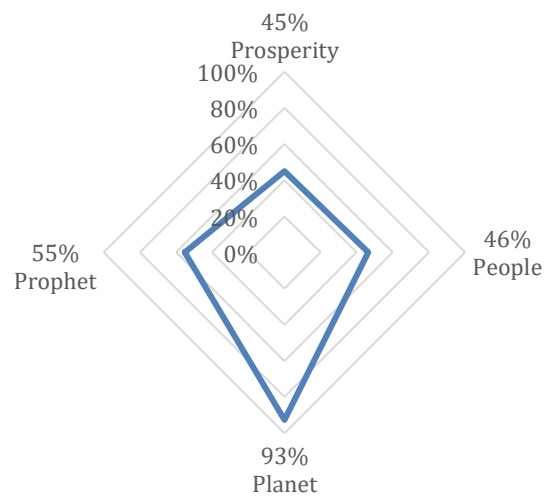


Figure 4.4 QBL Score by Dimension of Malaysian Islamic Banks



The planet dimension recorded the highest score, both in the overall analysis across two countries and in the individual assessments of Indonesia and Malaysia. A higher score indicates a greater extent to which a bank fulfills the requirements of that particular dimension. This dimension reveals the existence of environmental policies, ecological footprint, green financing, environmental non-financial services, and also the existence of a set of tools to manage environmental risks. The fulfillment of the Planet dimension indicates that the banks have adhered to Islamic values that motivate people to protect and coexist peacefully with their environment (Abdelzaher et al., 2019). Several verses in the *Qur'an*, such as 30:41–42, 7:56–58, 38:27–28, mentions the need for environmental preservation (Hamidi & Worthington, 2021a). The existence of those verses in the *Qur'an*, which is the primary source of law for Muslims, shows the importance of protecting the environment. When the content analysis was conducted, in 2023, it was found that each bank had established its own sustainability framework, undertaken efforts to reduce energy consumption, initiated programs to promote environmental awareness, and implemented tools for environmental risk management. However, with regard to green financing, several banks were found to merely express their commitment without detailing concrete implementation.

This research found that the dimension of the planet scored the highest. This finding stands in contrast to research by Hamidi and Worthington (2021b), which identified the Planet dimension as having the lowest score. Mallin et al. (2014b) also found that the environment generally scored the lowest in his research. He argued that Islamic banks focus very little on Corporate Social Responsibility (CSR) activities relating to the environment. In addition, Aribi and Arun (2015) also found inadequate disclosure in the context of the environment dimension in CSR of Islamic Financial Institutions (IFIs). This significant shift can happen due to regulatory push in both Indonesia and Malaysia that has been previously discussed. Additionally, this can happen because the items requested in the QBL planet dimension are the same or similar to the items requested in other standards such as POJK. For example, the items referred to in the dimension of the planet consisting of "Ecological footprint," "Green financing," and "Environmental risk" are similar to or the same as the items "Amount and intensity of energy used," "Comparison of portfolio targets and performance, financing targets, or investments in sustainable finance instruments or projects," and "Risk assessment of sustainable finance implementation" in POJK No. 51 of 2017. Most banks have implemented energy efficiency measures, contributed to green financing, and also developed a tool to manage environmental risks. Even within the conventional framework of TBL concept, the fulfillment of the Planet dimension indicates

that the banks have adhered to Islamic values that motivate people to protect and coexist peacefully with their environment (Abdelzaher et al., 2019).

The next dimension is the Prophet with the score of 67%. Both the overall review and country-specific observations indicate that the Prophet dimension has the second-highest score after the Planet dimension. This dimension embodies the ethical principles and values of Prophet Muhammad as a moral compass for conducting business (Hamidi & Worthington, 2021a). The presence of facilities for worship and encouragement to engage in spiritual activities, as well as caution in adhering to shariah are distinguishing factors between the TBL concept and the QBL concept. This dimension constitutes an integral part of Islamic banking and should not be treated as separate from its core principles.

The prophet dimension of Indonesia Islamic banks has a score of 78% as shown by Figure 4.3. Most banks in Indonesia have reported spiritual encouragement such as the availability of worship facilities, conducting Islamic studies, and distributing alms during Ramadan. Malaysian Islamic banks achieved a score of only 58%, as illustrated in Figure 4.4. The content analysis revealed that relatively few banks disclosed the provision of worship facilities as shown in Figure 4.7, only 12%. Meanwhile, the point "Family and social solidarity" scored 61%. Nonetheless, Bank Islam Malaysia Berhad emerged as a notable exemplar in terms of spiritual practices. The bank explicitly reported initiatives such as the "Ramadan Webinar Series", the "Islamic Educational and Spiritual Development Series", and the regular "Morning Doa Recitation". An example of this can be found in the following statement.

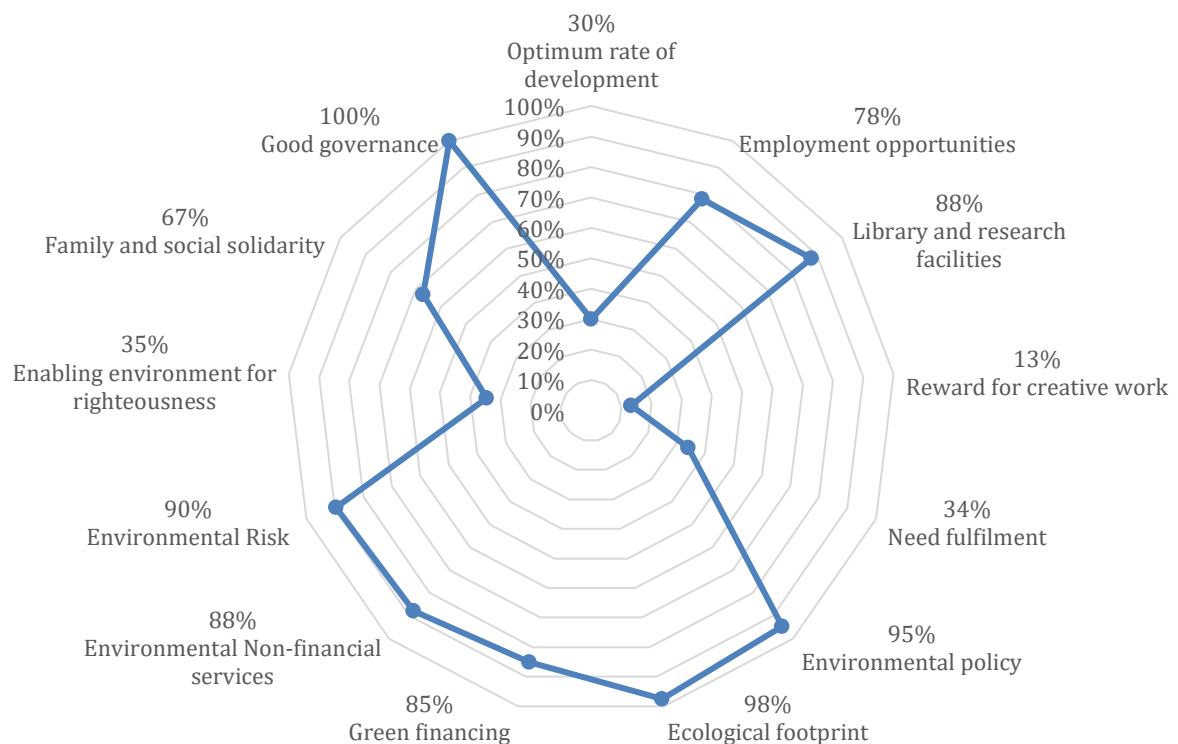
"We implemented a daily morning doa recitation, featuring the recitation of prayers or supplications through the bank's Public Address (PA) system. This practice is intended to commence each working day with mindfulness and purpose, in line with our organisation's core values of "Think Customer, Act with Integrity, Advance Beyond, and Take Charge" (TAAT). It serves as a daily reminder of our spiritual aspirations, reinforcing our commitment to these values and enhancing the overall well-being of our employees." (Bank Islam Malaysia Berhad, 2023).

Subsequently, in this dimension, the "Good governance" item has been fulfilled by all banks. It means that all of the banks have been supervised by the Shariah Supervisory Board. Therefore, both in Indonesia and Malaysia achieving a score of 100%, as seen in Figure 4.5, Figure 4.6, and Figure 4.7. It indicates that there have been efforts for every product and service of Islamic banks to be under the supervision of the Shariah Supervisory Board. In the case of Malaysian banks, information regarding the existence of the Shariah Supervisory Board is not consistently disclosed in the reports of their respective parent companies, such as HSBC Amanah Malaysia, Maybank Islamic, OCBC Al-Amin Bank,

and Standard Chartered Saadiq. Instead, such information was obtained from the official websites of the respective institutions.

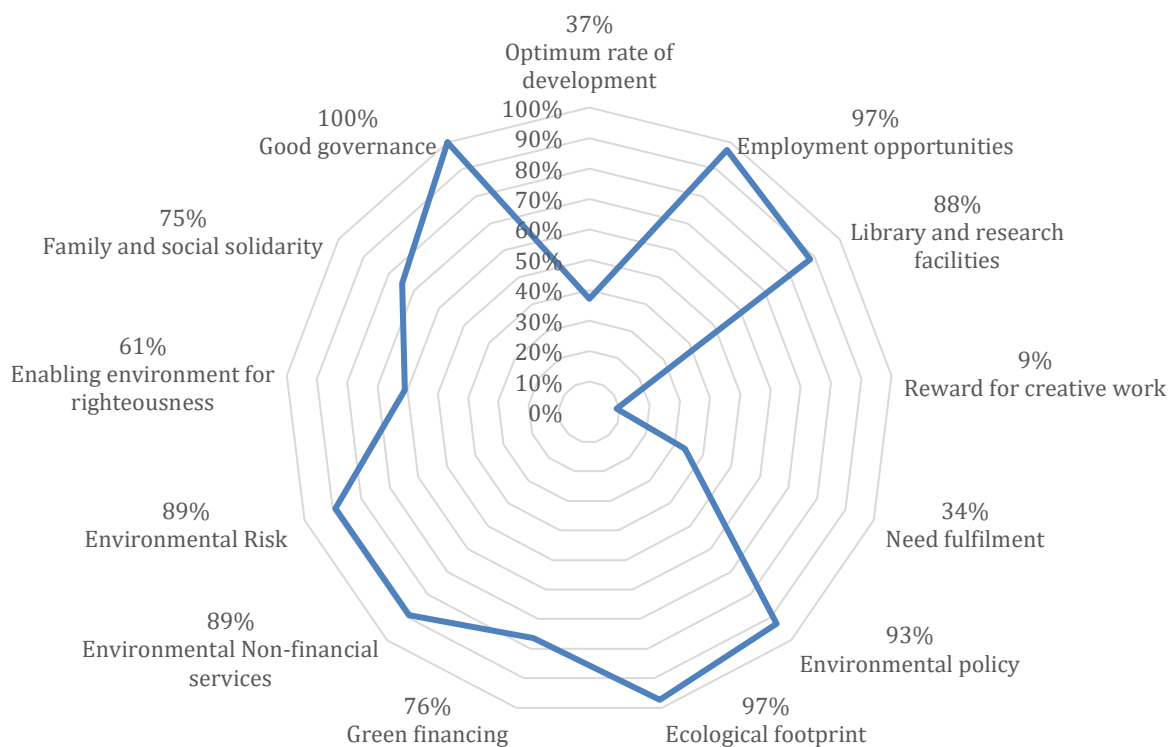
In the study of Hamidi and Worthington (2021a), the Prophet dimension recorded as the highest score. In addition to differences in research objects, this outcome may also be attributed to the limited encouragement for disclosing information related to the Planet dimension, as previously discussed. Ultimately, this finding aligns with Hamidi’s research, as both studies identified the Prophet dimension as receiving a relative high score. In addition to this finding, only a small number of earlier researchers have examined the prophetic dimension from the standpoint of Islamic banking sustainability using a distinct theoretical and methodological standpoint. Previous studies mostly have focused on general Sustainable Development Goals (SDGs) that encompass prosperity, people, and planet (Hamidi et al., 2024).

Figure 4.5 QBL Score by Item



Overall in both countries, the Prosperity received a score only of 54%. In Indonesia, this dimension scored 67%, whereas in Malaysia, Prosperity recorded as the lowest dimension that scored at 43%. Banks, as part of the financial industry, undoubtedly pursue their own profit objectives. However, within the QBL framework, the concept of prosperity extends beyond mere financial gain. In the QBL, this dimension requires the expansion of the bank's network and facilities in rural areas as well as the bank creating job opportunities. Islamic banks are supposed to fulfill their obligation to redistribute wealth to carefully chosen ventures that advance societal well-being. (Farook, 2008).

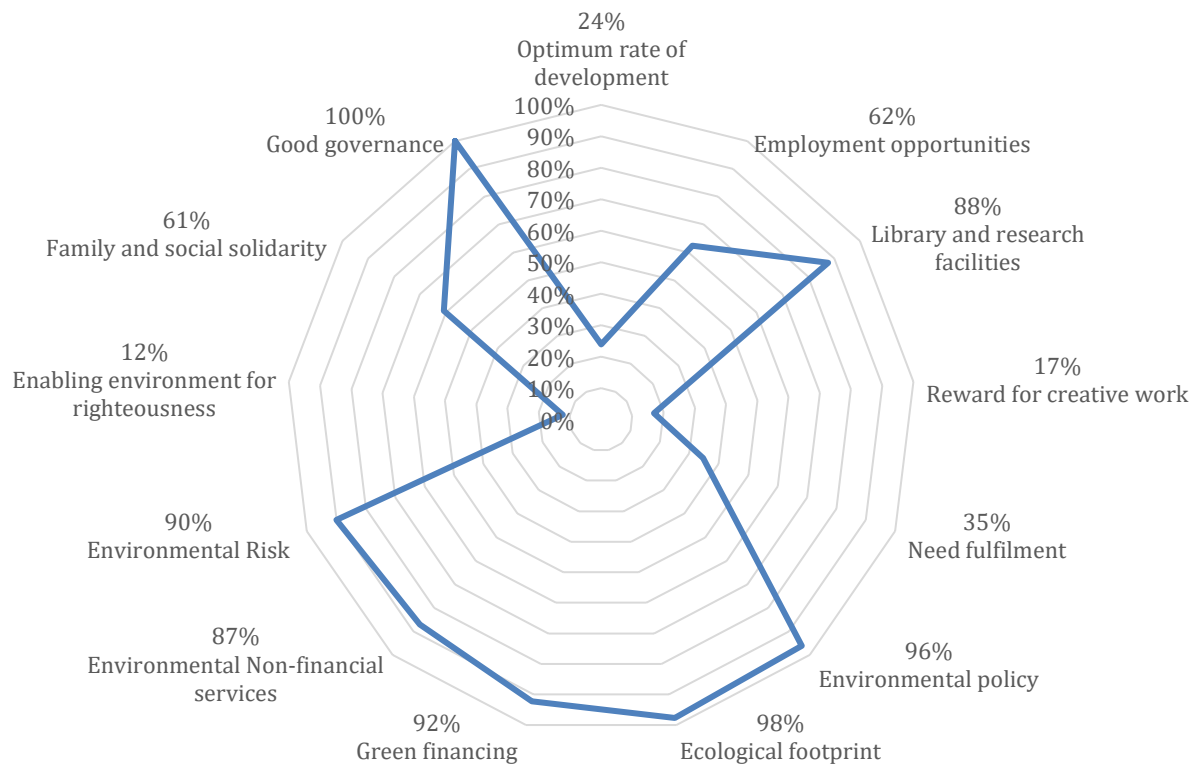
Figure 4.6 QBL Score by Item of Indonesian Islamic Banks



As shown in Figure 4.5, the "Employment opportunities" is scored by 78%, while "Optimum rate of development" is only scored by 30%. When the content analysis was conducted, some banks had revealed the existence of their networks and facilities in rural areas, while most had only expressed their commitment to providing broader services and had not disclosed further details. Notable example for the point "Optimum rate of development" or network expansion to rural areas is demonstrated by NTBS (Bank Nusa Tenggara Barat Syariah). NTBS even provides a special subheading in its report discussing the availability of services in rural areas, namely "Availability of Services in 3T Areas," which means *Availability of Services in 3T Areas*. 3T 3T stands for *Terdepan, Terluar*, and

Tertinggal which respectively mean *Frontline*, *Outermost*, and *Left Behind*. NTBS provides services in rural areas by offering *Mobil Layanan Kas* (Cash Service Vehicles) and implementing the *Laku Pandai* (*Layanan Keuangan Tanpa Kantor dalam Rangka Keuangan Inklusif*) or Branchless Banking for Inclusive Finance program. In addition, NTBS also positions ATMs in strategic locations to ensure they are easily accessible to rural communities. Regarding the point that the bank has opened job opportunities, it is acknowledged by the disclosure that the bank has recruited employees.

Figure 4.7 QBL Score by Item of Malaysian Islamic Banks



This relatively low prosperity dimension aligns with the study of Hamidi & Worthington (2021b), even being at the same figure, namely 53%. In this study case, the low score of prosperity dimension may be attributed to the rapid pace of digitalization. As most banks have already developed internet-based services or mobile applications, they are able to reach customers regardless of geographic location. For example, BCAS has a mobile banking application called BCA Syariah Mobile, BMI has Muamalat DIN, BIM has GO by Bank Islam, PIB has PB engage MY, and MI has MAE by Maybank2u. The situational needs of the community where Islamic banks operate must be first to be solved (Haniffa & Hudaib, 2007). Furthermore, Haniffa and Hudaib (2007) argued that Islamic banks should participate in government social activities, assist organizations that serve

society, sponsor Islamic educational and social events, and create job opportunities as ways to show their dedication to the community.

One of the other ways to address this issue is by raising awareness that not everyone can adapt to digital changes. Furthermore, not all bank services can be transferred online or through the internet, so they still require in-person service. The presence of bank service facilities in rural areas provides convenience for the community to resolve financial issues.

The next lowest dimension is people, with a score of 45% across the two countries. In Indonesia, the score was 44%, while in Malaysia it reached 46%. This dimension captures how businesses contribute to the well-being of their workforce and the local communities through the advantages and support they provide (Hamidi & Worthington, 2021a). More specifically, within this dimension, the focus includes educational support, recognition of external individuals for their achievements, and the provision of financial assistance to marginalized groups, such as the illiterate and women.

When the content analysis was conducted, most banks had provided educational assistance, resulting in a score of 88% (Library and research facilities) as shown in Figure 4.5. However, only a small number of banks provided assistance to minority groups (Need fulfillment) (34%) and offered appreciation for creative work (Reward for creative work) (13%). In relation to the 'Need Fulfilment' aspect, NTBS once again serves as an outstanding example through its Mawar Emas program (Melawan Rentenir Berbasis Masjid/ Against Mosque-Based Moneylenders). This initiative offers financial assistance to women engaged in small-scale businesses, enabling them to avoid reliance on predatory lenders.

“Bank NTB Syariah continues to strive to improve the welfare of the grass root community through a mosque-based economic empowerment program, namely the Mawar Emas (Against Mosque-Based Moneylenders) program. In 2022, the funds channeled through this program amounted to Rp1.365 billion and facilitated 1,328 customers, especially businesswomen, fostered by the Islamic Economic Community (MES). In addition, Ultra Microfinancing was also provided to 31 ex-Ampenan Beach street vendor customers with a nominal value of Rp62 million.” (Bank NTB Syariah, 2022).

An appreciation for a creative work is demonstrated by MBSB (Malaysia Building Society Berhad Bank), which gives recognition to employees' children who excelled in their national exams.

The low score of this dimension is consistent with the findings of Hamidi and Worthington (2021b) which also identified the people dimension as the lowest-performing among the four dimensions. Haniffa and Hudaib (2007) argued that since Islam places a strong emphasis on social justice, Islamic banks are said to be more socially conscious than

traditional banks. This result stands in contrast to the prevailing view that Islamic banks are generally more socially oriented than their conventional counterparts, as they are frequently associated with the purpose of promoting a just, equitable, and balanced society (Asutay & Harningtyas, 2015; Haniffa & Hudaib, 2007). One of the possible ways to address this issue is through the development of financing products that target marginalized groups, as exemplified by NTBS and several other banks. In doing so, Islamic banks are able to generate tangible social impact for communities that are most in need.

4.2 Panel Data Regression

In addition to employing content analysis, this study also investigates the impact of sustainability on financial performance through panel data regression analysis.

4.2.1 Descriptive Statistics

In this section, the regression will be conducted to see the influence of Prosperity, People, Planet, and Prophet on financial performance as measured by Return on Assets (ROA). In addition, this research also incorporates control variables in the form of Bank Age (BA) and Non-Performing Financing (NPF). The data analysis employed for the regression is presented in Table 4.3.

The ROA has an average value of 0.94 with the standard deviation value of 2.98. The maximum ROA value is 13.58 which is achieved by NTBS in 2023. Meanwhile, the lowest ROA value is -10.85, achieved by BA in 2022. The average value for the Prosperity dimension is 0.53 with the standard deviation value of 0.24. The highest possible value of 1.00 was achieved by several banks, including NTBS in 2020 till 2023, BMI in 2021 till 2023, BTPNS in 2020, 2021, and 2023, BMM in 2022, and MI in 2019 till 2021 and 2023. Conversely, the lowest value in this dimension, which is 0.00, was recorded by AIB in 2020 till 2022, AI in 2021, CIMBI in 2021 and 2023, MBSB in 2020, and OCBCA in 2021 till 2022. The People has an average value of 0.91 with the standard deviation value of 0.23. The maximum value is 1.00 which is performed by BTPNS in 2020 to 2023 and AIB in 2023. The lowest value of People is 0.00 which is performed by several banks including BVS in 2019 till 2023, BA in 2021, and HSBCA in 2020 till 2023.

Table 4.3 Descriptive Analysis

	ROA	Prosperity	People	Planet	Prophet	BA	NPF
Mean	0.94	0.53	0.42	0.91	0.65	15.21	2.37
Median	0.73	0.50	0.33	1.00	0.67	14.00	1.71
Maximum	13.58	1.00	1.00	1.00	1.00	40.00	9.54

	ROA	Prosperity	People	Planet	Prophet	BA	NPF
Minimum	-10.85	0.00	0.00	0.00	0.33	1.00	0.00
Std. Dev.	2.96	0.24	0.23	0.19	0.23	7.71	1.99
Observations	120	120	120	120	120	120	120

The next dimension is Planet with the average value of 0.91 and standard deviation value of 0.19. The maximum is 1.00 which is performed by most of the banks including BAS in 2021 till 2023, NTBS in 2020 till 2023, BMI in 2021 till 2023, BJBS in 2021 till 2023, BMS in 2021 till 2023, BPDS in 2020 in 2023, KBBS in 2021 till 2023, BCAS in 2019 till 2023, BTPNS 2019 TILL 2023, BA 2021 till 2022, AIB till 2022 till 2023, AI in 2020 and 2022 till 2023, BIM 2021 till 2023, BMM in 2019 and 2022 till 2023, CIMBI in 2019 till 2023, HCBCA in 2020 till 2023, KFH in 2021 till 2023, MI in 2019 till 2023, MBSB in 2019 till 2023, OCBCA in 2019 till 2021 and 2023, PIB in 2021 till 2023, RHBI in 2019 till 2023, and SCS in 2019 till 2023. The lowest value is 0.00 performed by BJBS in 2019.

The last dimension is Prophet which has average value of 0.65 and standard deviation value of 0.23. The maximum value of this dimension is 1.00 which is performed by several banks including NTBS in 2020 till 2023, BMI in 2019 and 2023, BJBS in 2020 till 2023, BMS in 2021 and 2023, KBBS in 2021 till 2023, BCAS in 2022 till 2023, BTPNS in 2019 till 2023, BA in 2023, and AB in 2019. Meanwhile the lowest value is 0.033 which is also performed by several banks including BAS in 2019 till 2021, BVS in 2020, 2022, and 2023, BA in 2019 till 2021, AIB in 2020 till 2022, AI in 2023, CIMBI in 2021, MI in 2019 and 2023, MBSB in 2020 till 2021, OCBCA in 2019, 2021 till 2023, PIB in 2019 till 2022, and SCS in 2019 till 2023.

The next variable is BA with the average value of 15.21 and standard deviation value of 7.71. The oldest bank is 40 years which is BIM in 2023 and the newest bank is 1 year, NTBS in 2019. The NPF has the average value of 2.37 with the standard deviation value of 1.99. The maximum value is 9.54 which is performed by BVS in 2021 and the lowest value is 0.00 performed by BA in 2019 till 2023. The number of observations is 120 banks obtained from 24 banks in Indonesia and Malaysia over five years (2019-2023).

4.2.2 Panel Data Regression Model

4.2.2.1 Estimation Techniques

In conducting panel data regression analysis, three estimation models are initially considered, from which the most appropriate model will be selected in the study. These

three models include the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM). The regression results of the three models are presented in the Table 4.4.

Variable	CEM	FEM	REM
C	0.688574 (0.6506)	4.904221 (0.0445)	2.229300 (0.1581)
Prosperity	-0.058675 (0.9625)	-1.155589 (0.4590)	-0.631955 (0.6359)
People	5.431830 (0.0000)***	3.431446 (0.1237)	5.072615 (0.0010)***
Planet	0.142620 (0.9142)	0.085187 (0.9547)	-0.335817 (0.7862)
Prophet	-0.555091 (0.6668)	-2.452177 (0.1431)	-1.405135 (0.3110)
BA	-0.104710 (0.0033)***	-0.225988 (0.2155)	-0.117243 (0.0227)**
NPF	-0.075573 0.5737	0.065601 (0.7435)	-0.037014 (0.8112)
R-Squared	0.208416	0.550254	0.118277
Prob(F-statistic)	0.000153***	0.000001***	0.024788**

Note: *, **, *** suggesting a significant level of 10%, 5%, and 1% respectively

Table 4.4 shows a comparison of regression results between the common effect model, fixed effect model, and the random effect model. The regression results indicate the value and direction of the coefficients of each independent variable towards the dependent variable. Additionally, the regression results also show the R-square value and the F-Statistic probability value, which indicate the influence of all independent variables together on the dependent variable.

As shown in Table 4.4, in common effect model, Prosperity has the coefficient value of -0.059 and probability value of 0.96. People has the coefficient value of 5.432 and probability value of 0.000. Planet has the coefficient value of 0.143 and probability value of 0.914. Prophet has the coefficient value of -0.555 and probability value of 0.667. Bank age has the coefficient value of -0.105 and probability value of 0.00. Lastly, the NPF has

the coefficient value of -0.076 and probability value of 0.574. R-Squared is scored by 0.208 and F-Statistic is scored by 0.000.

In fixed effect model, Prosperity has the coefficient value of -1.156 and probability value of 0.459. People has the coefficient value of 3.431 and probability value of 0.124. Planet has the coefficient value of 0.085 and probability value of 0.955. Prophet has the coefficient value of -2.452 and probability value of 0.143. Bank age has the coefficient value of -0.226 and probability value of 0.216. Lastly, the NPF has the coefficient value of 0.066 and probability value of 0.744. R-Squared is scored by 0.550 and F-Statistic is scored by 0.000.

In random effect model, Prosperity has the coefficient value of -0.632 and probability value of 0.636. People has the coefficient value of 5.073 and probability value of 0.001. Planet has the coefficient value of -0.336 and probability value of 0.786. Prophet has the coefficient value of -1.405 and probability value of 0.311. Bank age has the coefficient value of -0.117 and probability value of 0.811. Lastly, the NPF has the coefficient value of -0.037 and probability value of 0.744. R-Squared is scored by 0.118 and F-Statistic is scored by 0.025.

Several independent variables in the models have a significant impact on the dependent variable at both 1% (0.00) and 5% (0.05) significance levels. However, the regression results cannot be interpreted yet because the best model selection process must be conducted first through the Chow test, Lagrange Multiplier (LM) test, and Hausman test.

4.2.2.2 Model Selection Method

In selecting the best model, the selection method such as Chow test, LM test, and Hausman test must be employed. The results of Chow test are presented in Table 4.5.

Table 4.5 Chow Test

Effects Test	Statistic	d.f.	Prob.
F	4.832185	(23,90)	0.0000
Chi-square	96.503138	23	0.0000

The Chow test is conducted to find the best model between common effect model and fixed effect model. Based on the results presented in Table 4.5, the calculated value for the probability Chi-square is 0.000, which is considered significant as it is less than significance value of 0.05. The result suggests to reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1). Therefore, the appropriate estimation model based on these

results is the fixed effect model. Given that the fixed effect model has been identified as the preferred model, conducting the LM test is deemed unnecessary.

The next test to be conducted is the Hausman test, which is used to determine the most appropriate model between the fixed effect model and the random effect model. The results of Hausman test are presented in Table 4.6.

Table 4.6 Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.431874	6	0.7530

Based on the results presented in Table 4.6, the probability value of cross-section random is 0.753, more than the significance value of 0.05. The result suggests to accept the null hypothesis (H_0) and reject the alternative hypothesis (H_1). Therefore, the appropriate estimation model based on these results is the random effect model.

Following the model selection process, the random effect model is identified as the most appropriate model for this study. Based on the regression results presented in Table 4.4, the estimated model equation is as follows.

$$ROA_{it} = 2.229 - 0.631Prosperity_{it} + 5.073People_{it} - 0.336Planet_{it} - 1.405Prophet_{it} - 0.117BA_{it} - 0.037NPF_{it} + \varepsilon_{it}$$

Based on the model, the constant value of 2.229 indicates that if the independent variable in observation i period t is constant, then the ROA value is 2.229. The coefficient value of Prosperity is -0.631 indicating that if the Prosperity value in observation i period t increases by 1 point, then the ROA value will decrease by 0.632%. The People coefficient value is 5.073 indicating that if the People value in observation i period t increases by 1 point, the ROA value will increase by 5.073%. The Planet coefficient value is -0.336 indicating that if the Planet value in observation i period t increases by 1 point, the ROA value will decrease by 0.336%. The Prophet has coefficient value of -1.405. It indicates that if the Prophet value in observation i period t increases by 1 point, then the ROA value will decrease by 1.405. The coefficient value of BA is -0.117. It indicates that if the BA value in observation i period t increases by 1 year, the ROA value will decrease by 0.117%. The NPF coefficient value is -0.037 indicating that if the NPF value in observation i period t increases by 1 percent then the ROA value will decrease by 0.037.

4.2.3 Classical Assumption Test

Classic assumption tests are still conducted to ensure, to verify the statistical soundness of the model, and to avoid biased or inconsistent estimations. In this research, multicollinearity and heteroscedasticity test is employed. Multicollinearity test in this research is conducted by using correlation matrix. The results of multicollinearity test are presented in Table 4.7.

Table 4.7 Multicollinearity Test

	Prosperity	People	Planet	Prophet	BA	NPF
Prosperity	1	0.24314	0.05110	0.39100	-0.26219	-0.19016
People	0.24314	1	-0.00792	0.38338	0.16977	-0.17494
Planet	0.05110	-0.00792	1	0.02620	0.06750	-0.08765
Prophet	0.39100	0.38338	0.02620	1	0.01322	0.09663
BA	-0.26219	0.16977	0.06750	0.01322	1	-0.08565
NPF	-0.19016	-0.17494	-0.08765	0.09663	-0.08565	1

Multicollinearity refers to a significant correlation between independent variables. Therefore, it is important to ensure that there is no significant correlation in the data used. Base on the multicollinearity test results presented in Table 4.7, the correlation between independent variables are less than 0.80. For example, the correlation value between Prosperity and People is 0.243, Prosperity and Planet is 0.051, Prosperity and Prophet is 0.391, Prosperity and BA is -0.262, the last, correlation value between Prosperity and NPF is -0.190. The results indicate that multicollinearity is not present in the model.

The heteroscedasticity test is also conducted to avoid biased regression results. The heteroscedasticity test in this study was conducted using the Glejser test. The test results are presented in Table 4.8.

Table 4. 8 Heteroscedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.048049	0.629039	1.666111	0.0985
PROSPERITY	-0.40893	0.520357	-0.78587	0.4336
PEOPLE	-0.36491	0.626419	-0.58253	0.5614
PLANET	0.742817	0.468287	1.586242	0.1555
PROPHET	0.208565	0.542082	0.384748	0.7011
BA	-0.0274	0.02377	-1.15252	0.2515
NPF	-0.08914	0.062378	-1.4291	0.1557

The heteroskedasticity test is conducted to determine whether the regression model used has unequal variances of residuals from one observation to another. Based on the testing results in Table 4.8, the probability for all variables are greater than the significance level of 0.05, it indicates that the data is not containing heteroskedasticity issue.

4.2.4 Robustness Test

A robustness test is a crucial step in empirical research, particularly in regression analysis, to ensure that the findings are not sensitive to specific model specifications or estimation techniques. It is used to assess the stability, consistency, and reliability of the estimated relationships between variables. By conducting robustness checks, researchers can verify whether the results hold under alternative scenarios, thereby enhancing the credibility and generalizability of the findings. In this study, two types of robustness tests are performed to confirm the validity of the main model and to mitigate the risk of omitted variable bias or methodological limitations.

The first robustness test (RT 1) involves modifying the baseline model by including additional control variables, specifically macroeconomic indicators such as Gross Domestic Product (GDP) growth and inflation rate. Ongore and Kusa (2013) used these variables as the external factors that expected to influence the banking performances. The data of GDP growth and inflation rate were obtained from the World Bank. By incorporating these controls, the model accounts for external economic factors that might otherwise distort the results. The aim of RT 1 is to determine whether the inclusion of macroeconomic variables significantly alters the coefficients or significance levels of the main explanatory variables.

The second robustness test (RT 2) is conducted by re-estimating the main model using an alternative estimation technique, namely the standard Ordinary Least Squares (OLS) method. While the primary analysis may have employed more advanced panel estimation techniques to address issues like heterogeneity or endogeneity, re-estimating the model using OLS provides a benchmark for comparison. This approach tests whether the results are heavily dependent on the choice of estimation method.

Table 4.9 shows the results of the robustness test. Both RT 1 and RT 2 indicate that the coefficients generally remain consistent with the main model, except People that shifted the direction from negative to positive in robustness tests 1 and 2. People and BA continue to be statistically significant across different robustness checks, indicating their stable and strong influence. In addition, the robustness test shows that the macroeconomics factors such as GDP Growth and Inflation do not influence the dependent variable in this model.

Table 4.9 Robustness Test

Variable	Main Model	RT 1	RT 2
C	2.229300 (0.1581)	2.14052 (0.1785)	0.688574 (0.6506)
Prosperity	-0.631955 (0.6359)	-0.88115 (0.5134)	-0.058675 (0.9625)
People	5.072615 (0.0010)***	5.179942 (0.0009)***	5.43183 (0.0000)***
Planet	-0.335817 (0.7862)	0.081037 (0.9494)	0.14262 (0.9142)
Prophet	-1.405135 (0.3110)	-1.43768 (0.3033)	-0.555091 (0.6668)
BA	-0.117243 (0.0227)**	-0.12598 (0.0177)**	-0.10471 (0.0033)***
NPF	-0.037014 (0.8112)	-0.02037 (0.8963)	-0.075573 (0.5737)
GDP Growth		0.06144 (0.3385)	
Inflation		-0.10422 (0.1496)	
R-Squared	0.118277	0.132002	0.208416

Note: *, **, *** suggesting a significant level of 10%, 5%, and 1% respectively

Table 4.9 presents the results of the robustness tests conducted to assess the stability and reliability of the estimated model. The findings from both RT 1, which incorporates additional macroeconomic control variables (GDP growth and inflation rate), and Robustness RT 2, which applies an alternative estimation method (standard OLS), demonstrate a high degree of consistency with the original model. Most of the key independent variables retain their direction, magnitude, and level of statistical significance, thereby reinforcing the credibility of the primary results. However, a notable exception is the People variable, which exhibits a shift in coefficient direction, from negative in the main model to positive in both robustness tests. Despite this directional change, People remains statistically significant across both robustness checks, suggesting that its influence on the dependent variable, while sensitive in direction, is nonetheless consistently strong.

Additionally, the BA variable also maintains its statistical significance across both RT 1 and RT 2, further emphasizing its robust and stable role in influencing the outcome variable. The persistence of significance across different model specifications and estimation methods provides strong empirical support for the reliability of these two variables in the model. On the other hand, the macroeconomic control variables introduced in RT 1, GDP growth and inflation rate, do not exhibit a statistically significant relationship with the dependent variable. This indicates that, within the context of this model and dataset, broader economic conditions as measured by these indicators do not play a substantial role in explaining the variance in the outcome variable. The findings from the robustness tests, therefore, lend further confidence to the validity of the model and the strength of its key explanatory variables, while also highlighting that certain contextual factors may have limited influence in this specific analytical framework.

4.2.5 Significance Test

In this section, the t-test (partial), F-test (simultaneous), and the coefficient of determination test will be discussed. The t-test is conducted to observe the individual effects of the independent variable on the dependent variable. Based on the selected model, namely the random effect model (REM) in Table 4.4, several conclusions can be drawn as follows.

1. Prosperity has the coefficient value of -0.632 and probability value of 0.636. It indicates that prosperity dimension has no significant impact on financial performance measured by ROA.
2. People has the coefficient value of 5.073 and probability value of 0.001 indicating that the people dimension has significant positive impact on financial performance measured by ROA.
3. Planet has the coefficient value of -0.336 and probability value of 0.786. It indicates that the planet dimension has no significant impact on financial performance measured by ROA.
4. Prophet scored -1.405 for the coefficient value and 0.311 for the probability value. The results indicate that the prophet dimension has no significant value on financial performance measured by ROA.
5. Bank age scored -0.117 for the coefficient value and 0.022 for the probability value indicating that the bank age has significant negative impact on financial performance measured by ROA.

6. NPF scored -0.037 for the coefficient value and 0.811 for the probability value. The results indicate that the NPF has no significant impact on financial performance by ROA.

The F-test is used to determine whether the independent variables influence the dependent variable collectively. Based on the selected model shown in Table 4.4, the F-statistic value is 0.025 which is less than the significance value of 0.05. The results show that Prosperity, People, Planet, Prophet, Bank Age, and NPF together have significant impact on financial performance of the Islamic banks measured by ROA.

The coefficient of determination, commonly denoted as R^2 , is a key statistical measure used to evaluate the explanatory power of a regression model. It represents the proportion of the variance in the dependent variable that can be accounted for by the independent variables collectively included in the model. A higher R^2 value suggests that the model provides a better fit to the data, indicating a stronger relationship between the predictors and the outcome variable. Based on the results of the Random Effect Model (REM) estimation, as presented in Table 4.4, the R^2 value obtained is 0.118. This figure implies that approximately 11.83% (rounded to 12%) of the variation in the dependent variable can be explained by the set of independent variables used in the model. The remaining 88.17% of the variance is attributable to other factors not included in the current research model. Ozili (2023) explained that an R-squared between 0.10 and 0.50 (or between 10 percent and 50 percent when expressed as a percentage) is acceptable in social science research if some or most of the explanatory variables are statistically significant. A model with an R-squared between 0.10 and 0.50 should be rejected if all the explanatory variables in the model are statistically insignificant.

4.2.6 The Impact of Sustainability Performance on Financial Performance

Based on the selected model, namely the random effect model, it can be determined that People have a significant positive impact on financial performance, Bank Age has a significant negative impact on financial performance, meanwhile, Prosperity, Planet, Prophet, and NPF do not have a significant impact on financial performance.

As previously presented, Prosperity has the coefficient value of -0.632 and probability value of 0.636. It indicates that People dimension has no significant effect on financial performance that measured by ROA. In the QBL, Prosperity does not discuss the probability indicators of the banks such as production performance, portfolio, financing or investment targets, income and profit and loss. However, it refers to optimum rate of development which is acknowledged if Islamic banks' network reach rural areas, and

employment opportunities which is acknowledged if Islamic banks open wider job opportunities. Therefore, the concept of Prosperity in the QBL framework does not solely pertain to the welfare of banks and investors, but also encompasses the well-being of the broader society. In fact, this is actually in accordance with stakeholder theory, which broadens the scope of an organization's responsibilities beyond investors or owners to encompass all stakeholders, including employees, the surrounding community, external organizations, the government, and even the international environment (Donaldson & Preston, 1995). However, unfortunately, in this case, social concern is no longer a driving factor for financial gain. This could be due to market conditions or economic conditions. According to Enciso-Alfaro and Garcia-Sanchez (2024) this relationship is significantly shaped by market conditions. Businesses that make investments in Economic Social Governance (ESG) might benefit from periods of market expansion since investors and consumers place a higher value on sustainability. On the other hand, ESG projects can be dismissed as irrelevant during recessions, which would result in less funding.

Cardillo and Basso (2025) argued that in times of economic stability, implementing ESG practices can boost financial performance by strengthening a company's reputation and lowering operational risks. Conversely, in periods of economic decline, the financial advantages of ESG initiatives may weaken, as companies prioritize immediate survival over long-term sustainability objectives. This research was conducted using a data range from 2019 to 2023. On March 11, 2020, the Coronavirus Disease 2019 (COVID-19) was officially declared a pandemic (WHO, 2020) and ended on May 5, 2023 (WHO, 2023). The COVID-19 pandemic caused a very severe, rapid, and globally synchronized recession (Breitenlechner et al., 2024). Broad lockdowns and supply chain interruptions negatively impacted overall supply (Bonadio et al., 2021). At the same time, lockdowns reduced chances for consuming and caused income shortages, which weakened aggregate demand. (Kapetanios et al., 2022). Additionally, due to its unprecedented nature, the pandemic heightened uncertainty, which might have caused firms and consumers to postpone investments and purchases. (Altig et al., 2020). The economic downturns may lead the Prosperity dimension to exhibit an insignificant or even negative effect, as banks are still required to pay employee salaries and maintain infrastructure in rural areas despite declining economic conditions. This finding is in accordance with the study of McWilliams and Siegel (2000) as well as Prayoga and Siswantoro (2020) which found that sustainability does not impact ROA.

People has the coefficient value of 5.073 and probability value of 0.001 indicating people dimension has significant positive impact on financial performance. This indicates

that when a company excels in the People dimension, it tends to experience a corresponding increase in financial performance. This positive relationship can be interpreted through the lens of signaling theory. The signaling theory developed by Ross (1977) explained that company leaders will be more inclined to share their improved knowledge of their own operations with prospective investors in an effort to boost stock prices. From a business perspective, insiders of the company such as executives, directors, or managers act as signalers, while the signals are the flow of information such as stock price news, dividends, environmental financing, and Corporate Social Responsibility (CSR). The recipients of the signals are outsiders who do not have insider information (individuals, investors, employees) (Taj, 2016). In the QBL, People dimension is reflected through several indicators, including the provision of libraries and research facilities, which are recognized when Islamic banks contribute to community education, such as through scholarships or other educational support. It also includes recognition for creative contributions, assessed when banks formally acknowledge or reward the innovative work of individuals outside the institution. Additionally, the need fulfilment indicator is evident when Islamic banks extend financing to marginalized or underserved groups, such as women, individuals with limited literacy, or workers in precarious employment conditions. According to signaling theory, these performance indicators act as signals to various stakeholders. In addition to encouraging investors to invest, they may also motivate local communities to open accounts at certain banks. This, in turn, can enhance the bank's financial standing and potentially increase its profitability.

With regard to signaling theory, Cardillo and Basso (2025) added that it implies that businesses that participate in CSR communicate their dedication to moral behavior, which draws in investors. In addition, this finding is in accordance with the study of Jan, Marimuthu, and Pisol (2019) and Zyadat (2016) which found that social dimension has positive significant impact on ROA.

When the content analysis was conducted, People received the lowest score, namely 45%. However, it turns out that this dimension has a significant impact on the bank's financial performance. Therefore, this dimension needs to be addressed and improved.

Planet has the coefficient value of -0.336 and probability value of 0.786. It indicates that the planet dimension has no significant impact on financial performance measured by ROA. In the QBL, planet dimension pertains to a bank's commitment to environmental responsibility. This includes the presence of formal environmental policies, active efforts to minimize the institution's ecological footprint, and the provision of green

financing aimed at supporting environmentally friendly initiatives. Additionally, it involves offering non-financial services that raise clients' awareness of environmental risks, as well as employing specific tools or frameworks to assess the environmental risks associated with clients' business activities. As previously discussed, the impact of sustainability efforts may depend on prevailing economic or market conditions. Ye et al. (2021) also argued that sustainability impact is determined by a complex web of direct and indirect effects moderated by industry, governance, and market-specific factors. Cardillo and Basso (2025) strengthening the argument with explained that in times of economic stability, implementing ESG practices can boost financial performance by strengthening a company's reputation and lowering operational risks. Conversely, in periods of economic decline, the financial advantages of ESG initiatives may weaken, as companies prioritize immediate survival over long-term sustainability objectives. Basically, performing Planet dimension is one of the efforts to strengthen the reputation of the banks. As Fraj-Andrés et al. (2009) argumentation adopting more eco-friendly products, pricing, distribution, and promotion strategies can help businesses gain a better reputation and image with consumers. However, during the period of research, namely 2019 to 2023, more than it half year world experiencing the downturns of economy. The unstable economy may lead in to the absence of significant impact of planet dimension.

Regarding the negative direction can be attributed to the fact that implementing environmental initiatives, particularly within the Quadruple Bottom Line (QBL) framework, requires substantial financial resources, as companies must allocate funds for activities such as green investments and sustainable financing programs. Amid unstable economic conditions, the costs incurred for environmental initiatives have yet to pay off, as the expected benefits have not been realized. This explanation is supported by Leonidou et al. (2013) which argued that the high costs involved in green marketing activities may lead to the absence of significant ROA effects. In addition, this finding is also in line with the study of Jan, Marimuthu, and Pisol (2019) and Zyadat (2016) which found that planet dimension has no significant impact on ROA.

Prophet scored -1.405 for the coefficient value and 0.311 for the probability value. The results indicate that the prophet dimension has no significant value on financial performance measured by ROA. In the QBL, prophet dimension encompasses efforts to foster an environment that supports righteousness. This includes the provision of appropriate facilities for worship, allowing both employees and clients to perform prayers, as well as the encouragement of religious practices. It also involves promoting family and social cohesion through initiatives such as Qur'anic recitation, religious study circles,

Dhuha prayers, and the distribution of alms. Furthermore, this dimension highlights the importance of good governance, whereby Islamic banking products and services are subject to oversight by a Shariah Supervisory Board to ensure compliance with Islamic principles. The foundation of Islamic financial organizations is the prophet dimension, which has its roots in religious or shariah principles (Hamidi et al., 2024). As prophet dimension represents the spirituality, it alludes to having faith in God and leading a moral life (Afiff & Astuti, 2013).

Dyrenge et al. (2012) explained that a higher degree of religiosity is linked to a lower chance of falsifying financial records, better coping mechanisms, longer lifespans, and higher life satisfaction ratings. Hamidi et al. (2024) also revealed that spirituality has significant positive impact on financial performance. However, Djafri and Noordin (2017) criticize Islamic institutions for rarely practicing spirituality in the workplace. Revisiting the content analysis results, although the prophet dimension attained a score of 65%, a closer examination reveals that the point of “Enabling environment for righteousness” received a relatively low score of 35%. This may be attributed either to the bank's lack of implementation of this aspect or the absence of its disclosure in the report. The lack of this implementation may lead into the absence of significant impact on ROA. Besides, the insignificant and negative impact of prophet dimension in this model can be caused by the downturns of economic condition that has been discussed previously. This finding is in contrast with the previous research by Hamidi et al. (2024).

Alshehhi et al. (2018) conducted a review on the impact of sustainability on financial performance through 132 papers from top-tier journals. The review results found that the percentage of articles reporting positive relationships was 78% of the total 132 articles. Articles reporting relationships with no impact were 7%. Articles reporting both positive and negative relationships were 6%, where some of the sustainability practices studied resulted in positive impacts, while others resulted in negative relationships. Negative impacts were reported in 6% of the articles, while articles reporting positive and no impact relationships were 2%. Articles reporting mixed results of positive, negative, and no impact relationships were 2% of the total article population. The findings of this research can be classified into the 2% category where the results show a positive relationship and no impact. Furthermore, Alshehhi et al. (2018) also revealed several reasons that caused the different results. Some of these reasons are the use of different research methodologies and research designs, especially in terms of measuring the dependent variable of the company's financial performance. In addition, the results they obtained represent specific data, industry, company size, or the market they studied. Despite those differences, based

on review results, positive impact of sustainability on corporate financial performance is more probable (Alshehhi et al., 2018).

Moreover, companies are increasingly adopting green finance to comply with regulatory requirements and enhance their competitiveness and resilience in a rapidly changing global environment (Khan et al., 2024). At the same time, sustainable business models enable companies to better adapt to market dynamics and global challenges, offering strategic advantages and driving innovation (Bashir et al., 2022). As sustainability becomes more embedded in core operations, improvements in operational efficiency, risk management and stakeholder relationships drive long-term profitability and growth (Coelho et al., 2023). Therefore, despite some insignificant relationships in this study, Islamic banks are still encouraged to practice sustainable performance.

This study also employs Bank Age and NPF as control variables. Bank age scored -0.117 for the coefficient value and 0.023 for the probability value. It indicates that the bank age has significant negative impact on financial performance measured by ROA. Jan, Marimuthu, and Pisol (2019) explained that older banks receive more attention from the public groups, media groups, and the policy makers. Therefore, banks with high political visibility are more likely to face criticism from interest groups that advocate for environmental sustainability and social welfare policies. This significant impact is line with the research of Jan, Marimuthu, and Pisol (2019), however, in this study, the direction is negative might due to the downturns of economic condition causing by the COVID-19 that happened since early 2020 to 2023. The NPF has coefficient value of -0.037 and probability value of 0.811 indicating that the NPF has no significant impact on financial performance by ROA. NPF reflects the level of financing risk faced by a bank. The lower of NPF indicates the lower of credit risk borne by the banks. This finding is in line with research of Kusumastuti and Alam (2019).

CHAPTER V

CONCLUSION

This chapter provides the conclusion by summarizing the key findings in relation to the research objectives. In addition to the conclusions, this chapter offers several recommendations for relevant stakeholders and future researchers. Finally, the chapter acknowledges the limitations of the research, such as data constraints, methodological boundaries, or contextual factors, which may have influenced the findings.

5.1 Conclusion

A total of 24 Islamic banks are examined, consisting of 11 banks from Indonesia and 13 from Malaysia. The data were collected from sustainability reports, annual reports, and/or official company websites over the period 2019 to 2023. To address the first research question, this study employs a content analysis to obtain the Quadruple Bottom Line (QBL) score of each Islamic bank. In addition, the QBL score is also derived to assess the bank's sustainability performance across each of the four dimensions including prosperity, people, planet, and prophet. Finally, the QBL score is categorized by the RDAP (Reactive, Defensive, Accommodative, and Proactive) scale to determine how many Islamic banks are considered sustainable. Drawing upon the results obtained, in term of sustainability, Islamic banking in Indonesia is slightly better with RDAP score. Only 9% of Islamic banks in Indonesia are categorized as unsustainable, while the remaining 91% are categorized as sustainable. In comparison, 31% of Malaysian Islamic banks are still categorized as unsustainable and the remaining 69% of Islamic banks fall into the sustainable category.

Through a review of the sustainability dimensions across all Islamic banks in Indonesia, this study reveals that the prosperity dimension has the score of 63%, people 44%, planet 89%, while the prophet is scored by 76%. In bank-level observation, the highest score of sustainability performance in Indonesia is achieved by BTPNS (*Bank Tabungan Pensiunan Nasional Syariah*), followed by NTBS (*Nusa Tenggara Barat Syariah*), and BMI (*Bank Muamalat Indonesia*). Meanwhile, the lowest score is achieved by BVS (*Bank Victoria Syariah*). In Malaysia, the prosperity dimension is scored by 45%, people 46%, planet 93%, while the prophet is scored by 55%. In bank-level observation, the highest score of sustainability performance is achieved by MI (*Maybank Islamic*), followed by MBSB (*Malaysia Building Society Berhad*), and RHBI (*Rashid Hussein Bank*

Islamic). Meanwhile, the lowest score of sustainability performance goes to AIB (Alliance Islamic Bank).

Through a review across two countries, 79% of Islamic banks in Indonesia and Malaysia are categorized as sustainable based on RDAP score, while 21% others are categorized as unsustainable. Based on the dimension, the prosperity dimension is scored by 53%, people 45%, planet 91%, and the prophet is scored by 56%. Finally, through a bank-level observation in Indonesia and Malaysia, the highest score of sustainability performance is achieved by BTPNS (*Bank Tabungan Pensiunan Nasional Syariah*), followed by NTBS (*Nusa Tenggara Barat Syariah*), and MI (Maybank Islamic). Meanwhile, the lowest score is achieved by BVS (*Bank Victoria Syariah*).

In answering the second research question, this study employs a panel data regression to examine the impact of the QBL dimensions including prosperity, people, planet, and prophet, as well as Bank Age (BA), and Non-Performing Financing (NPF) against the financial performance of Islamic banks measured by Return on Assets (ROA). Through the selected random effect model, this study finds that the people dimension has significant positive impact on ROA. While prosperity, planet, and prophet have no significant impact on ROA. Bank Age and NPF have significant negative impact and insignificant impact on ROA respectively.

5.2 Recommendation

Based on the research findings, several recommendations can be proposed. The regulation mandating the issuance of sustainability reports for Islamic banks can be considered effective, as most banks included in the study demonstrate sustainable practices. Over time, there is a growing awareness among banks regarding the importance of sustainability reporting, as reflected in the increasing comprehensiveness of their disclosures. In addition, banks have undertaken internal initiatives such as employee awareness campaigns and sustainability training programs. However, one notable gap lies in the limited engagement with external stakeholders, particularly investors and the wider community. Therefore, it is recommended that banks expand their sustainability communication efforts to include these external stakeholders, enabling them to assess the bank's performance not only in terms of profitability, but also with respect to its social, environmental, and spiritual commitments.

Based on the regression results, the people dimension has a positive impact on financial performance. This finding suggests that Islamic banks should strengthen their social initiatives, especially considering that social activities were found to be the least

implemented. Furthermore, the Prophet dimension also requires revitalization, not merely by ensuring the presence of a Shariah Supervisory Board (DPS), but by actively fostering Islamic values and practices within the organization. Similarly, the prosperity and planet dimensions should not be overlooked. As economic conditions improve, performance in these areas may be increasingly recognized and appreciated, contributing to long-term sustainability and financial returns.

Furthermore, the presentation of sustainability reports cannot be underestimated. As a means of conveying information to stakeholders, reports should be made informatively and easily understood by users. Each bank would be better off making its own report with the hope of being clearer and more detailed. In the case of sustainability reports being combined with the parent company report, sometimes there is ambiguity about which subsidiary company is actually executing sustainability performance.

The following section presents recommendations for future research. This study is limited to assessing financial performance using Return on Assets (ROA), a ratio that primarily reflects the management's perspective. Future studies are encouraged to adopt a broader approach by incorporating alternative financial performance indicators. For instance, Return on Equity (ROE) can be used to reflect the shareholders' perspective, while Tobin's Q provides insights from the market valuation standpoint. Employing multiple performance measures may offer a more comprehensive understanding of how sustainability dimensions influence financial outcomes.

5.3 Research Limitations

This study acknowledges several limitations that may affect the generalizability and comprehensiveness of the findings. Firstly, the research is limited to a sample of 24 Islamic banks operating in Indonesia and Malaysia, observed over a five-year period from 2019 to 2023. Although these countries are among the pioneers in Islamic finance and have made regulatory commitments to sustainability, the results may not be representative of Islamic banks in other jurisdictions, particularly those in regions with different regulatory environments, economic conditions, or stages of sustainability integration.

Secondly, the data used in this study are restricted to publicly available sources, including sustainability reports, annual reports, audited financial statements, and official company websites. While these documents provide valuable insights into the banks' sustainability disclosures and financial performance, they are subject to limitations such as selective disclosure, varying levels of transparency, and differences in reporting standards. Banks may also exhibit bias in voluntary reporting, emphasizing favorable information

while omitting less favorable aspects. Consequently, the analysis may not fully capture the internal sustainability practices or strategic considerations that are not publicly disclosed.

Thirdly, the study's conceptual framework is specifically based on the Quadruple Bottom Line (QBL) approach, which emphasizes four interconnected dimensions: Prosperity (economic), People (social), Planet (environmental), and Prophet (spiritual/ethical). While the QBL framework offers a more holistic and faith-based perspective that is particularly relevant to Islamic institutions, it may not encompass all dimensions of sustainability as defined by other frameworks such as the Global Reporting Initiative (GRI), Islamic Social Reporting (ISR) index, Corporate Social Responsibility (CSR) index, *maqashid al shariah* index, or other formulated frameworks. Therefore, comparisons with studies using alternative sustainability frameworks should be made with caution.

Lastly, the quantitative nature of the study, which relies heavily on panel data regression analysis, limits the exploration of qualitative insights such as stakeholder perceptions, managerial motivations, and institutional pressures that may also influence sustainability disclosure and performance. Future research could address these gaps by incorporating case studies, interviews, or mixed-methods approaches to provide a more comprehensive understanding.

Despite these limitations, the findings of this study offer important insights into the sustainability performance of Islamic banks in the selected context and provide a foundation for further research in other regions, sectors, or using broader frameworks.

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APPENDIX

Appendix 1 Descriptive Statistics

	PROSPERITY	PEOPLE	PLANET	PROPHET	BA	NPF
Mean	0.533333	0.421083	0.909167	0.646583	15.20833	2.372833
Median	0.500000	0.330000	1.000000	0.670000	14.00000	1.705000
Maximum	1.000000	1.000000	1.000000	1.000000	40.00000	9.540000
Minimum	0.000000	0.000000	0.000000	0.330000	1.000000	0.000000
Std. Dev.	0.242391	0.230016	0.194459	0.229528	7.713238	1.989238
Skewness	0.064521	0.443071	-2.601386	0.055462	1.217155	1.356495
Kurtosis	3.704410	3.256999	9.614270	2.105073	4.727463	4.905022
Jarque-Bera	2.564227	4.256483	354.0870	4.065995	44.54998	54.94712
Probability	0.277450	0.119046	0.000000	0.130942	0.000000	0.000000
Sum	64.00000	50.53000	109.1000	77.59000	1825.000	284.7400
Sum Sq. Dev.	6.991667	6.295959	4.499917	6.269299	7079.792	470.8912
Observations	120	120	120	120	120	120

Appendix 2 Common Effect Model

Dependent Variable: ROA				
Method: Panel Least Squares				
Date: 06/19/25 Time: 23:20				
Sample: 2019 2023				
Periods included: 5				
Cross-sections included: 24				
Total panel (balanced) observations: 120				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.688574	1.516145	0.454161	0.6506
PROSPERITY	-0.058675	1.246653	-0.047066	0.9625
PEOPLE	5.431830	1.224628	4.435494	0.0000
PLANET	0.142620	1.320299	0.108021	0.9142
PROPHET	-0.555091	1.285963	-0.431654	0.6668
BA	-0.104710	0.034922	-2.998433	0.0033
NPF	-0.075573	0.133921	-0.564309	0.5737
R-squared	0.208416	Mean dependent var		0.943500
Adjusted R-squared	0.166385	S.D. dependent var		2.963620
S.E. of regression	2.705859	Akaike info criterion		4.885279
Sum squared resid	827.3491	Schwarz criterion		5.047882
Log likelihood	-286.1167	Hannan-Quinn criter.		4.951313
F-statistic	4.958635	Durbin-Watson stat		0.903503
Prob(F-statistic)	0.000153			

Appendix 3 Fixed Effect Model

Dependent Variable: ROA				
Method: Panel Least Squares				
Date: 06/19/25 Time: 23:22				
Sample: 2019 2023				
Periods included: 5				
Cross-sections included: 24				
Total panel (balanced) observations: 120				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.904221	2.406968	2.037509	0.0445
PROSPERITY	-1.155589	1.553979	-0.743632	0.4590
PEOPLE	3.431446	2.208061	1.554054	0.1237
PLANET	0.085187	1.495801	0.056951	0.9547
PROPHET	-2.452177	1.659791	-1.477401	0.1431
BA	-0.225988	0.181168	-1.247396	0.2155
NPF	0.065601	0.199884	0.328199	0.7435
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.550254	Mean dependent var	0.943500	
Adjusted R-squared	0.405336	S.D. dependent var	2.963620	
S.E. of regression	2.285380	Akaike info criterion	4.703260	
Sum squared resid	470.0666	Schwarz criterion	5.400133	
Log likelihood	-252.1956	Hannan-Quinn criter.	4.986263	
F-statistic	3.796996	Durbin-Watson stat	1.577825	
Prob(F-statistic)	0.000001			

Appendix 4 Random Effect Model

Dependent Variable: ROA				
Method: Panel EGLS (Cross-section random effects)				
Date: 06/19/25 Time: 23:24				
Sample: 2019 2023				
Periods included: 5				
Cross-sections included: 24				
Total panel (balanced) observations: 120				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.229300	1.568864	1.420965	0.1581
PROSPERITY	-0.631955	1.331051	-0.474779	0.6359
PEOPLE	5.072615	1.503472	3.373935	0.0010
PLANET	-0.335817	1.234942	-0.271929	0.7862
PROPHET	-1.405135	1.380784	-1.017636	0.3110
BA	-0.117243	0.050759	-2.309783	0.0227
NPF	-0.037014	0.154597	-0.239424	0.8112
Effects Specification			S.D.	Rho
Cross-section random			1.568204	0.3201
Idiosyncratic random			2.285380	0.6799
Weighted Statistics				
R-squared	0.118277	Mean dependent var	0.515160	
Adjusted R-squared	0.071460	S.D. dependent var	2.373591	
S.E. of regression	2.287211	Sum squared resid	591.1408	
F-statistic	2.526361	Durbin-Watson stat	1.246308	
Prob(F-statistic)	0.024788			
Unweighted Statistics				
R-squared	0.192471	Mean dependent var	0.943500	
Sum squared resid	844.0150	Durbin-Watson stat	0.872904	

Appendix 5 Chow Test

Redundant Fixed Effects Tests				
Equation: Untitled				
Test cross-section fixed effects				
Effects Test	Statistic	d.f.	Prob.	
Cross-section F	2.974178	(23,90)	0.0001	
Cross-section Chi-square	67.842273	23	0.0000	
Cross-section fixed effects test equation: Dependent Variable: ROA Method: Panel Least Squares Date: 06/19/25 Time: 23:28 Sample: 2019 2023 Periods included: 5 Cross-sections included: 24 Total panel (balanced) observations: 120				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.688574	1.516145	0.454161	0.6506
PROSPERITY	-0.058675	1.246653	-0.047066	0.9625
PEOPLE	5.431830	1.224628	4.435494	0.0000
PLANET	0.142620	1.320299	0.108021	0.9142
PROPHET	-0.555091	1.285963	-0.431654	0.6668
BA	-0.104710	0.034922	-2.998433	0.0033
NPF	-0.075573	0.133921	-0.564309	0.5737
R-squared	0.208416	Mean dependent var	0.943500	
Adjusted R-squared	0.166385	S.D. dependent var	2.963620	
S.E. of regression	2.705859	Akaike info criterion	4.885279	
Sum squared resid	827.3491	Schwarz criterion	5.047882	
Log likelihood	-286.1167	Hannan-Quinn criter.	4.951313	
F-statistic	4.958635	Durbin-Watson stat	0.903503	
Prob(F-statistic)	0.000153			

Appendix 6 Hausman Test

Correlated Random Effects - Hausman Test				
Equation: Untitled				
Test cross-section random effects				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		6.181122	6	0.4032
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
PROSPERITY	-1.155589	-0.631955	0.643153	0.5138
PEOPLE	3.431446	5.072615	2.615106	0.3102
PLANET	0.085187	-0.335817	0.712338	0.6179
PROPHET	-2.452177	-1.405135	0.848342	0.2556
BA	-0.225988	-0.117243	0.030245	0.5318
NPF	0.065601	-0.037014	0.016053	0.4180
Cross-section random effects test equation:				
Dependent Variable: ROA				
Method: Panel Least Squares				
Date: 06/19/25 Time: 23:29				
Sample: 2019 2023				
Periods included: 5				
Cross-sections included: 24				
Total panel (balanced) observations: 120				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.904221	2.406968	2.037509	0.0445
PROSPERITY	-1.155589	1.553979	-0.743632	0.4590
PEOPLE	3.431446	2.208061	1.554054	0.1237
PLANET	0.085187	1.495801	0.056951	0.9547
PROPHET	-2.452177	1.659791	-1.477401	0.1431
BA	-0.225988	0.181168	-1.247396	0.2155
NPF	0.065601	0.199884	0.328199	0.7435
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.550254	Mean dependent var		0.943500
Adjusted R-squared	0.405336	S.D. dependent var		2.963620
S.E. of regression	2.285380	Akaike info criterion		4.703260
Sum squared resid	470.0666	Schwarz criterion		5.400133
Log likelihood	-252.1956	Hannan-Quinn criter.		4.986263
F-statistic	3.796996	Durbin-Watson stat		1.577825
Prob(F-statistic)	0.000001			

Appendix 7 Multicollinearity Test

	PROSPERITY	PEOPLE	PLANET	PROPHET	BA	NPF
PROS...	1.000000	0.243141	0.216315	0.391000	-0.262190	-0.190163
PEOPLE	0.243141	1.000000	0.090895	0.383382	0.169770	-0.174937
PLANET	0.216315	0.090895	1.000000	0.059449	0.046338	-0.141403
PROP...	0.391000	0.383382	0.059449	1.000000	0.013221	0.096626
BA	-0.262190	0.169770	0.046338	0.013221	1.000000	-0.085653
NPF	-0.190163	-0.174937	-0.141403	0.096626	-0.085653	1.000000

Appendix 8 Heteroscedasticity Test

Dependent Variable: ABS RES				
Method: Panel EGLS (Cross-section random effects)				
Date: 06/19/25 Time: 23:52				
Sample: 2019 2023				
Periods included: 5				
Cross-sections included: 24				
Total panel (balanced) observations: 120				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.048049	0.629039	1.666111	0.0985
PROSPERITY	-0.408931	0.520357	-0.785866	0.4336
PEOPLE	-0.364905	0.626419	-0.582526	0.5614
PLANET	0.742817	0.468287	1.586242	0.1155
PROPHET	0.208565	0.542082	0.384748	0.7011
BA	-0.027395	0.023770	-1.152520	0.2515
NPF	-0.089143	0.062378	-1.429096	0.1557
Effects Specification			S.D.	Rho
Cross-section random			0.830720	0.4933
Idiosyncratic random			0.841905	0.5067
Weighted Statistics				
R-squared	0.048768	Mean dependent var	0.354333	
Adjusted R-squared	-0.001740	S.D. dependent var	0.831181	
S.E. of regression	0.831904	Sum squared resid	78.20328	
F-statistic	0.965545	Durbin-Watson stat	2.237471	
Prob(F-statistic)	0.451927			
Unweighted Statistics				
R-squared	0.028566	Mean dependent var	0.858337	
Sum squared resid	146.3381	Durbin-Watson stat	1.195708	

Appendix 9 Robustness Test 1

Dependent Variable: ROA				
Method: Panel EGLS (Cross-section random effects)				
Date: 06/19/25 Time: 23:40				
Sample: 2019 2023				
Periods included: 5				
Cross-sections included: 24				
Total panel (balanced) observations: 120				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.140520	1.580798	1.354075	0.1785
PROSPERITY	-0.881154	1.343923	-0.655658	0.5134
PEOPLE	5.179942	1.524208	3.398448	0.0009
PLANET	0.081037	1.274350	0.063591	0.9494
PROPHET	-1.437677	1.390245	-1.034117	0.3033
BA	-0.125980	0.052308	-2.408431	0.0177
NPF	-0.020372	0.155997	-0.130594	0.8963
GDP_GROWTH	0.061440	0.063911	0.961340	0.3385
INFLATION	-0.104218	0.071831	-1.450877	0.1496
Effects Specification			S.D.	Rho
Cross-section random			1.632240	0.3403
Idiosyncratic random			2.272468	0.6597
Weighted Statistics				
R-squared	0.132002	Mean dependent var	0.498687	
Adjusted R-squared	0.069444	S.D. dependent var	2.355793	
S.E. of regression	2.272523	Sum squared resid	573.2443	
F-statistic	2.110063	Durbin-Watson stat	1.284116	
Prob(F-statistic)	0.040551			
Unweighted Statistics				
R-squared	0.199324	Mean dependent var	0.943500	
Sum squared resid	836.8518	Durbin-Watson stat	0.879620	

Appendix 10 Robustness Test 2

Dependent Variable: ROA				
Method: Panel Least Squares				
Date: 06/19/25 Time: 23:41				
Sample: 2019 2023				
Periods included: 5				
Cross-sections included: 24				
Total panel (balanced) observations: 120				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.688574	1.516145	0.454161	0.6506
PROSPERITY	-0.058675	1.246653	-0.047066	0.9625
PEOPLE	5.431830	1.224628	4.435494	0.0000
PLANET	0.142620	1.320299	0.108021	0.9142
PROPHET	-0.555091	1.285963	-0.431654	0.6668
BA	-0.104710	0.034922	-2.998433	0.0033
NPF	-0.075573	0.133921	-0.564309	0.5737
R-squared	0.208416	Mean dependent var		0.943500
Adjusted R-squared	0.166385	S.D. dependent var		2.963620
S.E. of regression	2.705859	Akaike info criterion		4.885279
Sum squared resid	827.3491	Schwarz criterion		5.047882
Log likelihood	-286.1167	Hannan-Quinn criter.		4.951313
F-statistic	4.958635	Durbin-Watson stat		0.903503
Prob(F-statistic)	0.000153			