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ISTANBUL SABAHATTIN ZAIM UNIVERSITY

GRADUATE EDUCATION INSTITUTE

DEPARTMENT OF ISLAMIC ECONOMICS AND FINANCE

THE NEXUS BETWEEN ISLAMIC FINANCE, VALUE BASED INTERMEDIATION AND CIRCULAR ECONOMY

Ph.D. DISSERTATION

Afaf NASSIRI

Istanbul

January, 2025

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SCIENTIFIC ETHICS STATEMENT

This is to certify that this PhD dissertation titled “The Nexus between Islamic Finance, VBI and Circular Economy” is my own work and I have acted according to scientific ethics and academic rules while producing it. I have collected and used all information and data according to scientific ethics and guidelines on thesis writing of Sabahattin Zaim University. I have fully referenced, in both the text and bibliography, all direct and indirect quotations and all sources I have used in this work.

Signature

Afaf NASSIRI

PREFACE

The road that has led to the completion of my doctoral work has been long and strenuous, and without immense help and companionship from different people, I would never have arrived at this stage. With pleasure, I take this opportunity to thank every person who walked with me during this journey.

Most importantly, I owe a heartfelt thank you to my parents for their love, support, and sacrifices that have made me who I am now. You inspire and nurture me. Your constant belief earned me strength and motivation. Thanks to you, I am here to go after this goal.

To my family, I am grateful for your understanding, patience, and encouragement on days dull and difficult. You have been a solid foundation of unending support, and your belief has encompassed me through unending length. Thank you very much as well for all the love and care you have put into this; it has made a long sustaining difference on this journey.

I also owe plenty of gratitude to my deserving friends, who made their presence felt with warmth, laughter, and distraction altogether during my less-than-joyful days. You showed your understanding, companionship, but also the unwavering confidence in me that kept my spirits high and my head down. You all have given me this whole experience plus much more.

Afaf NASSIRI

ÖZET

İSLAMİ FİNANS, DEĞER BAZLI ARACILIK VE DÖNGÜSEL EKONOMİ ARASINDAKİ BAĞLANTI

Afaf NASSIRI

Doktora: İslam Ekonomisi ve Finans

Tez Danışmanı: Prof. Dr. Metin TOPRAK

Aralık-2024, xiv+223 Sayfa

Günümüzün küresel finans, etik bankacılık uygulamaları ve sürdürülebilir ekonomik kalkınma manzarasında tartışmanın ön saflarında yer almaktadır. Çalışmanın amacı, değere dayalı aracılık (VBI) finansal sektör sorumluluğunu nasıl artırabileceğini ve Dairesel Ekonomi (CE) ile uyumlu sürdürülebilir ekonomik uygulamaları nasıl teşvik edebileceğini daha iyi anlamaktır. Bu çalışmanın amacı VBI ilkeleri ve CE arasındaki karmaşık ilişkiyi araştırmaktır. Çalışmanın temel amacı, VBI ilkelerinin CE'nin felsefesine ve ilkelerine bağlı olan sorumlu bir finansal sistemin geliştirilmesine nasıl yardımcı olabileceğine bakmaktır. VBI konsepti, İslami finans iş modellerini ilkelerine uygun hale getirmek amacıyla 2017 yılında BNM tarafından tanıtıldı. 2021'de COP üyeleri, halka daha ayrıntılı bilgi sağlayarak şeffaflığı ve sorumluluğu artırmak için daha fazla çaba gösterdi. VBI, girişimcilik zihniyeti, toplumun güçlendirilmesi, iyi kendini yönetme ve iş davranışını içeren farklı özelliklerden oluşur. VBI'nın her bir unsurunun farklı CE faktörleri üzerindeki etkisinin kaynak verimliliği, faiz oranları, çevresel ayak izi, atık yönetimi, iş yaratma, geri dönüşüm oranı ve atık kullanımını kontrol etmek çok önemlidir. Çalışma, VBI elemanları ve CE için tanımlayıcı istatistikler ve esneklik hesaplamasını kullanır. Veri analizi için Malezya'daki 15 İslami bankaların verileri, özellikle uygulayıcılar topluluğunun (COP) üyeleri 2018-2021 döneminde analiz edilmiştir. Bu kurumlar arasında bankacılık çözümleri ve dijital teklifler. Bazı bankalar yüksek düzeyde evlat edinme ve yenilik gösterirken, diğerleri geride kalıyor ve iyileştirme için önemli bir yer gösteriyor. Müşteri katılımı, 15 İslami bankalarda güçlü bir alan olarak ortaya çıkıyor ve her kurum müşterisi ile düzenli etkileşim sergiliyor. Bulgular,

Malezya'daki İslami bankaların, bankacılık sisteminin sürdürülebilirliği için etik uygulamaları daha da güçlendirmek için VBI'yı stratejik çerçeveleri olarak kullanabileceğini göstermektedir. Çalışma, VBI'ın finans kurumlarındaki bu dönüştürücü potansiyelinin CE hedeflerine ulaşmak için yerel ve küresel sürdürülebilirlik eğilimlerini hizalayarak rekabet avantajını nasıl artırabileceğini anlamak için politika yapıcılar, paydaşlar ve finans kurumları için değerli bilgiler sunmaktadır.

Anahtar Kelimeler: Değer Temelli Aracılık, Döngüsel Ekonomi, İslami Finans, İslami Banka, Malezya.

ABSTRACT

THE NEXUS BETWEEN ISLAMIC FINANCE, VBI AND CIRCULAR ECONOMY

Afaf NASSIRI

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Supervisor: Prof. Dr. Metin TOPRAK

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In today's contemporary landscape of global finance, ethical banking practices and sustainable economic development are at the forefront of discussion. The study's goal is to gain a better understanding of how value-based Intermediation (VBI) may increase financial sector responsibility and promote circular economy (CE)-compliant sustainable economic practices. The purpose of this study is to investigate the complicated relationship between VBI principles and the CE. The primary goal of the study is to look at how VBI principles can help to develop a responsible financial system that adheres to the CE's philosophy and principles. The VBI concept was introduced by BNM in 2017 with the intention of bringing Islamic finance business models into conformity with its tenets. In 2021, members of the CoP made a greater effort to enhance transparency and responsibility by providing more detailed information to the public. The VBI consists of different characteristics which include, Entrepreneurial Mindset, Community Empowerment, Good self-governance, and Business Conduct. It is very critical to check the impact of each element of VBI on different factors of CE include resource efficiency, interest rates, environmental footprint, waste management, job creation, recycling rate and waste usage.

The study employs the descriptive statistics and elasticity calculation for VBI elements and CE. For data analysis the data of 15 Islamic banks in Malaysia, specifically the members of the Community of Practitioners (CoP) have been analyzed for the period of 2018 to 2021. The findings underscore the varying levels of commitment and integration

of customer engagement strategies, diverse banking solutions, and digital offerings across these institutions. While some banks demonstrate a high level of adoption and innovation, others lag behind, indicating substantial room for improvement. Customer engagement emerges as a strong area across all 15 Islamic banks, with each institution showcasing regular interaction with its clientele. The findings suggest that Islamic banks in Malaysia can use VBI as their strategic framework to further strengthen the ethical practices for the sustainability of the banking system. The study offers valuable insights for policy makers, stakeholders and financial institutions to understand how this transformative potential of VBI in financial institutions can enhance the competitive advantage by aligning the local and global sustainability trends to achieve the CE goals.

Key Words: Value-based Intermediation, Circular Economy, Islamic Finance, Islamic Bank, Malaysia.

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AI: Artificial Intelligence

AIBIM: Association of Islamic Banking and Financial Institutions Malaysia

AML: Anti Money Laundering and

BMMB: Bank Muamalat Malaysia Berhad

BC: Best Conduct

BMT: Baitul Maal wat Tamwil

BNM: Bank Negara Malaysia

CEF: Circle Economy Foundation

CEM: Customer Experience Management

CEM: Community Empowerment

CoPs: Community of Practices

COP: Committee of Practitioners

CSR: Corporate Social Responsibility

CTF: Counter Terrorism Financing

EIB: European Investment Bank

EM: Entrepreneurial Mindset

ESG: Environmental, Social, and Governance

FSB: Financial Stability Board

GABV: Global Alliance for Banking on Values

GCC: Gulf Cooperation Council

GCF: Gross Capital Formation

GDP: Gross Domestic Product

GS: Good self-governance

IBI: Islamic Banking Institutions

IFCI: Islamic Finance Country Index

IFI: Islamic Financial Institutions

IMF: International Monetary Fund

IR: Investor Relations

IRTI: Islamic Research and Training Institute

IsDB: Islamic Development Bank

JIT: Just in Time

KFH: Kuwait Finance House

KPIs: Key Performance Indicators

MDGs: Millennium Development Goals

MOU: Memorandum of Understanding

MSMEs: Micro, Small, and Medium Enterprises

OIC: Organization of Islamic Cooperation

PLS: Profit-and-Loss Sharing

ROI: Return On Investment

SEM: Structural Equation Model

SRI: Socially Responsible Investment

TCFD: Task Force on Climate-related Financial Disclosures

UN's: United Nations

VBB: Value-Based Banking

WTE: Waste To Energy

WDI: World Development Indicators

CHAPTER I

INTRODUCTION

1.1 Overview of the Chapter

This section serves as an introduction to "The Nexus between Islamic Finance, VBI, and Circular Economy," providing a thorough review of the study's context, significance, and breadth. This introduction aims to give readers an outline of the important issues covered in the following sections.

1.2 Background of the Study

The convergence of banking practices with circular economy (CE) principles has become an important field of finance and environmental sustainability study. This study explores the connection between Value-based Intermediation (VBI) and the CE, specifically examining the banking sector in Malaysia. Understanding how financial institutions incorporate and execute value-based approaches in line with CE concepts is crucial due to their significant impact on shaping economic activity. A linear economic paradigm has long governed the prevailing financial system. Consequently, any action or decision to pursue Sustainable Development Goals (SDGs) has been primarily driven by principles prioritizing economic growth, often disregarding other components within the ecosystem. This raises the question of how any actions carried out within the boundaries of such a capitalist society could improve people's welfare. Transitioning to a CE is the starting point for tackling these challenges and creating a value-based financial system. The circular economy is an extremely pertinent and important subject. The circular economy is based on the premise that businesses must respect society's environmental and ecological values and should react to a wide range of stakeholders, not only their closest shareholders. Research on how management might broaden and reconsider the conventional make-use-dispose company paradigm has been spurred by this concept (Geissdoerfer et al., 2020: 5). Although this point of view has been criticized, and there is disagreement over whether it is realistic to expect businesses to consider interests other than shareholders when creating their business models to close resource loops and accomplish full material cycling (Awan and Sroufe, 2022: 1-10; Chamberlin and Boks,

2021: 20). More academics and practitioners are optimistic that this shift can help address what is arguably the biggest issue facing society right now (Murray et al., 2020: 1-10). Conversations concerning the significance of the circular economy have changed recently. These conversations now centre on comprehending more conceptually complex explanations for the financial results of putting circular business models into practice, rather than on oversimplified defenses of the circular economy. This change is significant. To coordinate discussions in the strategy, organisation, and management literature and to delineate and analyse empirical evidence, the fields of business management and the circular economy lack well-accepted theoretical frameworks. One industrial restoration system is the circular economy system. Using the byproducts of the previously operated business, the model aims to reinvent the business model (Carraresi and Bröring, 2021: 9).

A circular economy is a shift in the environment in response to the demand for economic ecology on a worldwide scale. It needs human economic activity that adheres to the three fundamental principles of recycling, reusing, and reducing (Patwa et al., 2021: 3). The system attempts to design waste into a re-optimized product outline for its benefits, much like the fundamental tenets of a circular economy (Wear, 2023: 12-24). One paradigm for economic progress is the existence of the circular economy notion. Additionally, it is a reaction to the unworkable traditional economic model that employs the "take-make-dispose" linear economic system. As a result, the circular economy substitutes the idea with an "end-of-life" business model, which can accomplish the financial objectives of sustainable development and herald the establishment of social equality, environmental quality, and economic prosperity for current as well as future generations (Suárez-Eiroa et al., 2021: 952-961). Because the circular economy notion is based on online articles and textbooks rather than peer-reviewed scientific work (Ghosh, 2021: 63), the academic study of management may not be well integrated with it (Hartley et al., 2020: 6).

Research in industrial ecology, production economics, and operations research has focused primarily on the circular economy (Govindan & Hasanagic, 2020: 278-311). Because of this, the scientific literature on the circular economy has been developed through research outside the traditions of management and organisational theory, with a primary focus on issues like recycling and waste management that have historically been the domain of non-profit organisations. A literature survey indicates that the circular

economy concept has not been widely used by strategy, organisation, or management researchers. These academics have concentrated on outlining various circular business models, advances in circular business models, and specific difficulties and ambiguities that businesses face when they transition to a circular economy (Pieroni et al., 2021: 198-216; Moreno et al., 2021: 11). The implications of the circular economy for business practices have also been covered in research on related ideas such as product-service systems (Tukker, 2021: 76-91), eco-efficient services, and business model sustainability (Centobelli et al., 2020: 1921-1932). However, there appears to be a narrow focus on profitability and competitive advantage because the empirical evidence from studies on the circular economy has not been evaluated or synthesized from an organisational theory viewpoint. To successfully offset the difficulties above and save the Earth's climate from the degradation of the linear economy, it is imperative to implement a circular economic model. The circular economy model will implement a closed-loop approach to manufacturing and consumption through public-private partnerships, environmentally friendly resources, sustainable product designs, productive industrial processes, and efficient waste management systems. We can treat the environment the way it deserves to be treated if we replace the linear economic model with a circular one. We will be able to address the environment in a more sustainable manner by lowering the mass exploitation of the planet's natural resources as well as the production of greenhouse gases and other dangerous elements.

A highly technical and effective strategy will be needed to convert the linear economic model into a circular one. This will help countries prosper in all spheres of their economies, foster the growth of employment and economic development, generate businesses and workforce opportunities, and save billions of dollars in reinvestment costs. The choice to minimize and reuse waste through the sustainable design of materials, products, systems, and business models should take the place of the "end-of-life" concept to introduce and promote a circular economy model and accomplish its fundamental goals. The circular economy concept depends on collaboration across nations and within supply chains and industries in order to fully realize its benefits. However, there is an excessive dependence on funding and investors who understand that the dangers associated with the linear system can open up new opportunities. Providing an efficient and long-lasting

source of funding is essential to meeting the financial requirements of the circular economy's implementation while upholding its principles. This essay will offer guidance on how Islamic finance views the circular economy, create a link between the circular economy, the Sustainable Development Goals (SDGs), and Islamic finance, and assist in the successful conversion of the conventional linear economy into a circular one. The VBI is a theoretical framework that highlights the importance of giving priority to environmental, social, and governance (ESG) aspects in the operations of financial institutions. The VBI strategy paper was initially introduced by Bank Negara Malaysia (BNM) in 2017 and subsequently disclosed in March 2018. The objective of this project is to enhance the engagement and impact of Islamic financing. The strategy document was produced through a cooperative endeavor involving BNM, specialized Islamic banking entities, and other pertinent stakeholders. The concept of VBI emerged from the need to streamline the surveillance of Community of Practices (CoPs) in their dedication to the implementation and performance of Sharia-compliant activities. This surveillance would encompass more than just ensuring compliance with Shariah law. This monitoring is being conducted with the objective of delivering a sustained influence on the economics of consumers, communities, and the environment.

In July 2017, Value-based Intermediation (VBI) Implementation was introduced by Bank Negara Malaysia, the Central Bank of Malaysia, as a strategy paper that gives Islamic banks a chance to go beyond Shariah compliance. By providing banking services that have a positive national impact in addition to being Shariah-compliant, Islamic banking roles and functions can be improved with the implementation of VBI, thereby realizing the intended outcome of Shariah or Maqasid Al-Shariah (Sulaiman et al., 2021: 78–93). Following Bank Negara Malaysia's announcement of the VBI implementation guideline, certain Islamic banks enthusiastically embraced the concept, while others declined to integrate VBI into their banking infrastructure. The Committee of Practitioners (COP), comprised of nine Islamic banking industry participants who expressed a strong commitment to embracing VBI early on, spearheaded its development and execution in 2017 (Ismail et al., 2022: 1-24). The VBI structural study outlined strategies and plans to establish VBI as the industry's strategic direction while restating the objectives of the VBI. BNM was interested in learning people's opinions regarding the suggested initiatives. This

included ideas for further research as well as recommendations for particular issues or areas that required additional attention. To position Islamic banking as a major force for good in the financial system, VBI is crucial. Based on common ideals like integrity, inclusivity, and sustainability, it functions in a network economy. To comply with Maqasid Al-Shariah, the Islamic banking sector needs to use VBI (Ahmed et al., 2023: 102-120). Some believe that since the VBI initiative is similar to the principles of Shariah, Islamic banks should be required to implement it without reservations (Musaeva et al., 2020: 321-337; Dhesi, 2022). The reason for this is that the implementation of the VBI aligns with the principles of Shariah. Regarding this matter, academics hold a variety of perspectives. The SDGs are a set of objectives created by the United Nations to foster global peace and ensure long-term prosperity for present and future generations. The Bank Negara Malaysia has implemented measures to encourage the use of VBI by Islamic financial institutions, which is in line with the objectives of the 2030 Agenda. The implementation of VBI by Malaysia's Islamic banks coincides with the UN's work on the 2030 Agenda, as noted by Ahmed et al. (2023: 102-120) and Ismail et al. (2022: 45-60), for the reason that for VBI implementation to be successful, Bank Negara Malaysia must impose stringent guidelines that are applied consistently across the board, and every Islamic bank must be held accountable.

Leaders in the Islamic banking business should transition their mindset from solely complying with professional regulations to embracing an underlying ethical and moral approach that aligns with their role. The primary objective of this initiative is to convince diverse industry stakeholders to include VBI in their operations. After achieving this crucial milestone, Islamic banking will advance towards sustainability in alignment with the United Nations' 17 SDGs. Adopting this VBI project will facilitate the Islamic finance sector in advancing towards the objective of attaining maqasid al-shariah (Sulaiman et al., 2021: 78-93; Ahmed et al., 2023: 102-120). This perspective is supported by several scientific inquiries, including a study conducted by Ismail et al. (2022: 45-60), which asserts the indispensability of VBI utilisation. The plan necessitates the backing of the Islamic banking community, not only to guarantee the banks' ongoing functioning but also due to its potential to reinstate the fundamental tenets of Islam to Islamic institutions at large. Assistance from the Islamic banking community is necessary. Islamic financing has

the capacity to serve as a significant alternative financial source for firms that prioritise long-term sustainability. It is important to mention, though, that this potential has not been fully achieved. The achievement of the SDGs, namely the Environmental, Social, and Governance (ESG) targets, is dependent on the support of Islamic financing systems. Promoting economic development that yields societal advantages establishes a correlation between societal advancement and economic expansion. VBI possesses the capability to facilitate transformative change by giving importance to enduring value, ethical conduct, and engagement with stakeholders, hence fostering the CE and attaining sustainability. Integration guarantees that economic activity generates both financial gains and actively contributes to the improvement of society and the environment.

The purpose of this method is to evaluate financial performance by combining banking operations with broader socioeconomic and environmental aims. This technique goes beyond established measurements of success assessments. It is the model of the CE that encourages the simultaneous and conscious utilisation of resources, the elimination of waste, and the construction of a closed-loop system that places an emphasis on efficiency and environmental responsibility. Furthermore, the purpose is to achieve equilibrium among economic, social, ecological, and natural systems in order to prevent the depletion of resources and to ensure that sustainability will be maintained over time. It is possible that the implementation of a CE will lead to the emergence of a global market that is characterised by prudence and considerable transformation. It would be possible to secure the creation of value and economic development for all nations if industrial processes were developed and implemented in a way that was both environmentally conscious and sustainable. The CE, which aims to produce zero waste and zero emissions, is a rapidly developing and crucial sector for economies facing extreme shortages and climate change. The CE paradigm has enormous potential to achieve development goals while being sustainable and making effective use of scarce resources. This could have a significant impact on society and the environment. "The detachment of economic growth from extraction and consumption of confined natural resources" is how researchers describe the CE (Lieder et al., 2021: 1953-1970). Ahmed et al. (2023:102-120) claim that the CE paradigm aims to imitate the zero-waste cycle of science and natural laws. Person waste

products, such as carbon dioxide, invariably end up as input for plants, just as the waste product of plants, oxygen, becomes the input for a person.

The objective of the Islamic finance industry is to promote businesses that are part of sectors or industries that contribute value to the actual economy. Preferred stock, bonds, and certain derivatives, including options, are examples of fixed-income financial products that are unsuitable to invest in since they do not grant voting rights and only offer a fixed rate of return. Moreover, shares of businesses whose primary lines of operation include alcohol, gambling, traditional financial services, entertainment, tobacco, and pork-related products cannot be purchased by Islamic investors. Islamic finance, which has its roots in the rise of Islam over 1,400 years ago, is one of the industries in the global financial scene that is expanding the fastest. The establishment of the Mit Ghamr Local Savings Bank in Egypt in the late 1960s marked the beginning of the modern Islamic financial system. Since then, it has developed significantly, moving from serving only as a mainstream financial alternative for Muslims to becoming a very strong system that can assist both Muslims and non-Muslims (Ahmed et al., 2023: 102-120; Ismail et al., 2022: 45-60). The financial industry and its institutions have gained a larger share of a country's wealth in the previous forty years due to the financialisation of international finance, as compared to nonfinancial sectors and entities, especially those that produce commodities (Beeferman & Wain, 2020: 123-135). Without considering their social duties, banks' business models were solely concerned with increasing "shareholder value." Recently, it has become clear that certain social, moral, and ethical functions are necessary for comprehensive growth and sustainability, as evidenced by the failure of the Millennium Development Goals (MDGs) to alleviate most human suffering. The UN's Sustainable Development Goals 2015–30 agenda resulted from this awareness. Islamic finance is based on common principles and the goals of Shariah, which encourages the development of value and guards against harm to people and human society. As a result, Islamic finance is positioned to lead the sustainability agenda (Shamsiah, 2021: 218-222). The precarious state of the global financial markets presents a chance for academics and practitioners of Islamic finance to establish a practical, long-term solution that aligns with the fundamental principles of Islamic economics and finance theory.

Indonesia is home to almost 270 million people and is the fourth most populous nation in the world, with an abundance of both non-renewable and renewable resources. Furthermore, Indonesia, which is one of the world's biggest Muslim nations, nevertheless falls behind Malaysia in terms of the principles of Sharia finance (Hassan et al., 2023: 205-210). With the largest Muslim population in the world, there is a growing opportunity to create Sharia investment alongside the increasing trend of Sharia returns in line with the rising number of requirements and possibilities for investment (Alam & Rizvi, 2021: 215-230). Islam places significant emphasis on the ethical, ecological, and societal aspects. The Qur'an contains numerous verses that define and extol the environment, urging people to preserve it (Yusuf, 2022: 43-58). The notions of Islamic finance and ESG investment are nearly equivalent. Protecting the soul, religion, mind, lineage, and property is the goal of obtaining Maqasid Shariah, which forms the basis for Sharia investment (Sulaiman et al., 2021: 78-93). Some business fields need to be screened, even under the ESG investment concept (Rahman et al., 2022: 1-24). While derivatives are allowed in the ESG investment concept, Sharia investment prioritizes religious considerations in all its activities and forbids investing in companies that do not adhere to Sharia standards (Miah & Shinkafi, 2022: 102-120). Businesses with the greatest ESG scores are prioritized for investment in the conventional system, but Islamic investing provides more restricted but ethically aligned choices (Mahmood et al., 2020: 89-103). Furthermore, the Islamic financial industry may play a big role in implementing ESG guidelines for worldwide sustainability. There is much untapped potential for Islamic finance to be a significant non-conventional source of funding for long-term sustainability (Khan et al., 2021: 339-365). Achieving the SDGs, particularly ESG goals, is impossible without the assistance of Islamic financial tools. These tools promote socially beneficial development and create a connection between social progress and economic expansion (Ahmed et al., 2023: 131-135). From an Islamic finance perspective, integrating the objectives of zero-waste and zero-emissions with the principles of zero-interest and zero-foreclosures may help realize the circular Islamic finance and economy paradigm (Othman et al., 2022: 629-978). To replicate the natural cycle within the commercial realm, practices such as reduction, reuse, recycling, and redesign are employed to circumvent the processes of extraction, production, consumption, and waste that are inherent to the linear paradigm (Hameed et

al., 2023: 89-103). Companies adhering to Maqasid al Shariah, the SDGs, and the CE aim to achieve complete environmental conservation and promote sustainable human development (Zainudin & Hasim, 2023: 77-91).

The 2023 "Circularity Gap" report by the Circle Economy Foundation (CEF) provides compelling evidence that transitioning the global economy away from the current resource utilization model of "take-make-waste" is becoming ever more challenging. The global utilization of non-virgin material has declined from 9.1% in 2018 to 7.2% in 2023 (CEF, 2023). This revelation undermines the goals of proponents of the CE. Organizations such as the MacArthur Foundation and CEF, alongside governments and other entities, have expressed strong support for laws aimed at closing global material loops and fostering resource conservation, reuse, and recycling (MacArthur Foundation, 2023). These governmental efforts seek to enhance material circularity by modifying production-consumption systems (Hidalgo et al., 2023: 134-156). The BNM (2021) emphasizes the significance of the Malaysian Islamic financial industry's role as an intermediary, with the objective of delivering the outcomes intended by Shariah. This is accomplished through the implementation of practices, conduct, and offerings that generate a positive and sustainable impact on the economy, community, and environment, all without compromising the financial returns provided to shareholders (Rosman et al., 2023: 56-67). This is specifically designed to align with the SDGs set by the United Nations (UN) in Rio de Janeiro in 2012 (UNDP, 2020). These objectives were formulated during the United Nations Conference on Sustainable Development. VBI has the potential to play a more central role in pushing positive change within the Islamic financial industry and ushering in the next phase of its development, which will be sustainable and, most importantly, will have a clear value proposition (Nasir et al., 2023: 20-31). It is expected that the governments of Muslim nations and businesses renowned for upholding Islamic principles will sincerely embrace and implement the notion of sustainability. Establishing a healthy economy is largely dependent on Islamic financial institutions. The sustainability of the entire economy would be ensured if these institutions adhered to both sustainability principles in the operations of their clients, whom they fund, and Islamic norms in their own goods and services (Shahzad et al., 2023: 77-91). Businesses wishing to collaborate with the Islamic financial sector would have to adhere to strict guidelines

regarding sustainability in their operations, as well as Shariah compliance and financial ratio compliance (Munir et al., 2023: 1711-1731).

1.3 Problem Statement

In today's contemporary landscape of global finance, ethical banking practices and sustainable economic development are at the forefront of discussion. Although Islamic finance, known for its ethical foundation, and VBI, a transformative approach to banking, have attracted significant interest, a significant gap exists regarding their relationship with the Circular Economy (CE). The main problem is the insufficient comprehension of how the combination of Islamic finance principles, VBI practices, and CE models may together create a more sustainable and ethically aware financial ecosystem (Hameed et al., 2023: 89-103). Financial institutions globally face the challenge of aligning ethical conduct and environmental responsibility. The specific mechanisms through which Islamic finance institutions contribute to the goals of the CE when adopting VBI principles need to be clarified (Nor et al., 2021: 45-67). The Malaysian Islamic finance industry derives substantial advantages from the country's extensive financial system, robust regulatory framework, and engaged market participants. These three characteristics serve as the primary catalysts for the sector's development (Zainol & Rosman, 2022: 1-11). The industry's popularity has been substantiated by the provision of Shariah-compliant financial goods and services in over fifty countries worldwide, catering to enterprises and individuals from diverse backgrounds, including both Muslim and non-Muslim communities (Tlemsani et al., 2023:15-35). To meet the requirements of customers seeking Shariah-compliant financial services, prohibited elements such as usury (riba) and speculation (Maysir) have been eliminated from Islamic financial products and services (Othman et al., 2022: 629-978).

Islamic banking has a long historical background that dates back to the advent of Islam in the 7th century. Islamic finance, based on Shariah principles applicable to various aspects of life, emphasizes proper behavior, risk-sharing, and justice. These principles were actively applied during the Islamic Golden Age, positively impacting the development of Muslim civilizations (Billah, 2020: 56-78). Contemporary Islamic finance emerged in the mid-20th century with the establishment of Mit Ghamr Savings Bank in Egypt in 1963,

recognized as the first modern Islamic bank (Akosile and Sharofiddin, 2020:34-49). In recent decades, Islamic finance has grown significantly, reaching a value of $2.88 trillion globally by 2020 (Nor et al., 2021: 45-67). This growth is fueled by the rising demand for Islamic financial products and services in over 55 countries, catering to both Muslim and non-Muslim communities (Cherqaoui, 2022: 122-140). Value-Based Intermediation (VBI), introduced by Bank Negara Malaysia in 2017, aims to strengthen the ethical framework of Islamic finance by incorporating ESG factors into banking services (Zainudin & Hasan, 2023: 77-91). Organization values such as sustainable development, social responsibility, and ethical business practices align with VBI's goals and global sustainability objectives (Hassan et al., 2021: 45-53). The Circular Economy (CE), defined as an economic model that reduces waste and maximizes resource utilization in closed-loop cycles, stands as a counterpart to the linear economy's "take-make-dispose" model (Bertillo & Bertillo, 2022: 123-140). CE principles are projected to generate $4.5 trillion in value by 2030 (Agustin et al., 2023: 134-150).

Despite these opportunities, practical challenges hinder the integration of Islamic finance, VBI, and CE. A major issue is the lack of research on how Islamic financial institutions can implement CE practices effectively (Islam et al., 2023: 6-9). Moreover, regulatory frameworks currently lack sufficient support for integrating sustainability practices within the Islamic finance domain (Rahman et al., 2022: 76-85). Policymakers must develop green financing policies and encourage investment in sustainable projects to address this gap (Nor et al., 2021: 45-67). Without understanding the intersection of Islamic finance, VBI, and CE, such policies are unlikely to yield impactful results. Financial institutions also face practical challenges in developing and implementing products that comply with both Islamic finance and CE principles. For example, while green sukuk—Islamic bonds that are both Shariah-compliant and environmentally friendly—represent a promising tool, their development remains complex and resource-intensive (Ayub, 2021: 78-92). Despite the growing issuance of green sukuk, they still constitute a small proportion of the total sukuk market (Haneef & Jamaludin, 2021: 73-90). Standardizing best practices and establishing harmonized key performance indicators (KPIs) to measure social and environmental impact remains an urgent need (Rosman et al., 2023: 56-67). Another significant challenge is the perceived high cost of implementing sustainable practices.

Many financial institutions hesitate to fund green technologies and projects due to the assumption of lower returns compared to conventional investments (Fitria et al., 2022: 201-225). Furthermore, stakeholders, including financial institutions, policymakers, and the public, often lack awareness regarding the opportunities of integrating Islamic finance, VBI, and CE (Jan et al., 2021: 89-105). Educational initiatives and public awareness campaigns are essential to address this knowledge gap and build momentum for sustainable finance solutions. Consequently, this study aims to address these critical issues by examining the complex relationship between Islamic finance, VBI, and the CE. The research provides policy implications for financial institutions, governments, and investors, offering strategies to overcome barriers and expand the possibilities of integrating these elements for a responsible and sustainable financial system.

To illustrate the urgency of addressing these gaps, consider the following statistics: The Global Sustainable Investment Alliance reports that sustainable investment assets reached $35.3 trillion globally in the 2020 fiscal year, comprising 36% of all professionally managed assets (Faziya et al., 2023: 34-50). This reflects the growing awareness and demand for sustainable financial products in the market. Similarly, the sukuk market demonstrates significant promise, with over $160 billion issued in 2020, underscoring the potential of the Islamic financial system in advancing sustainable development (Haneef & Jamaludin, 2021: 73-90). However, a study by Bertillo and Bertillo (2022: 123-140) reveals that only a small number of Islamic financial institutions fully implement VBI principles, indicating gaps in their application. Additionally, the Ellen MacArthur Foundation estimates that adopting circular economy (CE) principles could generate economic benefits of up to $4.5 trillion by 2030 (Ercanbrack, 2022: 89-102). To unlock this potential, financial practices must align more effectively with CE principles. In Malaysia, Nor et al. (2021: 45-67) highlighted that incorporating CE practices could reduce resource usage by approximately 30% and cut greenhouse gas emissions by roughly 50%. However, these promising practices are not yet fully adopted within the financial sector, signaling a critical need for further research and policy development.

This research also seeks to identify practical methods for integrating Islamic finance, VBI, and CE principles. According to Mahyudin and Rosman (2022: 45-58), case studies and empirical analyses provide valuable insights into effective implementation. These

findings will be particularly useful for financial institutions seeking to adopt these practices and for policymakers aiming to promote sustainable finance. The integration of Islamic finance, VBI, and CE principles faces persistent challenges, including limited research, regulatory gaps, and stakeholder unawareness. Despite their potential to enhance sustainability, barriers such as perceived high implementation costs, inadequate performance metrics, and low awareness among key stakeholders hinder broader adoption (Hassan et al., 2021: 45-53). This study aims to address these barriers by providing actionable insights and outlining best practices to help create an ethical, sustainable financial ecosystem.

1.4 Research Questions of the Study

The study has the following research questions:

1 How can VBI principles contribute to a more responsible financial system and support the circular economy ideologies and principles?

2 How resilient and more efficient are the financial institutions working by VBI principles?

3 Do the components of VBI have an influence on various aspects of the circular economy?

The study's goal is to gain a better understanding of how VBI may increase financial sector responsibility and promote CE-compliant sustainable economic practices. The purpose of this study is to investigate the complicated relationship between VBI principles and the CE. The primary goal of the study is to look at how VBI principles can help to develop a responsible financial system that adheres to the CE's philosophy and principles. This includes examining how VBI promotes the practice of using resources in a sustainable manner, reducing waste, and increasing economic resilience in financial institutions. Furthermore, the study intends to assess the ability of financial institutions that follow VBI principles to endure and recover from adversities, as well as their effectiveness in reaching intended results. This includes measuring their ability to efficiently manage bank operation, allocate resources optimally, and withstand economic adversity. The thesis investigates how VBI components, such as ethical banking practices, stakeholder wellbeing, and environmental sustainability efforts, affect various aspects of the CE.

1.5 Research Objectives of the Study

The study has the following research objectives:

- To examine principles of VBI that are responsible for a financial system to support the circular economy ideologies and principles.
- To explore the impact of different components of VBI on various aspects of the circular economy.

1.6 The Rationale of the Study

Henry Ford once said, "The reason behind conducting any business is to generate profits, otherwise it will die. However, when anyone tries to conduct a business for the only reason of making profit without thinking of serving the community, then here also the business will die, for it no longer has a reason for existence" (Ford, 1926). This observation highlights the necessity of aligning business operations with community welfare and sustainability to ensure long-term success. Similarly, the Circular Economy (CE) emphasizes that unlimited economic growth contradicts ecological systems. Unless the economic system aligns with natural ecosystems, achieving the Sustainable Development Goals (SDGs) will remain unattainable (Hassan et al., 2021: 45-53). Value-Based Intermediation (VBI) integrates Islamic finance principles with the goals of CE and SDGs. Research confirms that Maqasid Shariah, which emphasizes wealth preservation, human welfare, posterity, and intellect, aligns closely with these objectives (Kassim & Markom, 2020: 729-744). Furthermore, Islamic finance incorporates ecological trust and human stewardship of the Earth, reinforcing sustainability as a central tenet of its philosophy (Rahman et al., 2023: 63-85). As institutions worldwide transition to CE principles, the failure of Islamic banks to lead this movement poses a strategic risk. Conventional banks adopting responsible investment practices could gain a competitive edge unless Islamic banks leverage VBI to distinguish themselves as sustainable finance leaders (Fitria et al., 2022: 201-225). For VBI to be effective, three fundamental pillars are critical: innovation, efficiency, and the establishment of robust ecosystems (Nor et al., 2021: 45-67).

To adopt CE practices effectively, Islamic banks must innovate by offering eco-friendly, long-lasting, and customer-centric products while fostering transparency in their operations. Additionally, it is vital to cultivate a mindset of resource preservation among

stakeholders and employees (Pathan et al., 2022: 193-210). Efficiency in resource utilization, staff performance, and organizational outcomes is equally essential to achieving VBI's goals (Mahyudin & Rosman, 2022: 89-103). Finally, creating an equitable ecosystem that balances financial growth with ecological and social advancement will solidify the alignment of Islamic finance and CE principles (Ellen MacArthur Foundation, 2020). In conclusion, Henry Ford's insights, CE principles, and VBI collectively underscore the importance of community-oriented, sustainable business practices. By adopting VBI, Islamic banks can align Shariah principles with CE objectives, contributing to SDG attainment while establishing themselves as leaders in ethical and sustainable finance.

1.7 The Significance of the Study

The findings of this study are anticipated to significantly influence Malaysia's sustainable economic expansion and its banking industry. It provides a framework for Malaysian banks to adopt and implement sustainable practices within their operations. The study examines the role of Value-Based Intermediation (VBI) in promoting Circular Economy (CE) principles, offering valuable insights into how financial institutions can align with global sustainability trends and contribute effectively to Malaysia's sustainable development policies. The objectives of VBI initiatives are to enhance the understanding of stakeholders and their diverse perspectives. For this purpose, stakeholders are categorized into three distinct groups: local, national, and global. This categorization facilitates a detailed analysis at each level, enabling the development of a unified perspective that aligns local values, national policies, and global objectives, such as the Sustainable Development Goals (SDGs). Alignment across these levels is critical for ensuring the efficient fulfillment of stakeholder requirements.

One of the recurring challenges in several Islamic countries is policy failures caused by inconsistencies among multiple stakeholders, often leading to socio-economic crises. To avoid such disruptions, it is essential to maintain synergy among stakeholders, ensuring financial stability and the uninterrupted functioning of socio-economic systems. It is increasingly acknowledged that long-term growth and development cannot be achieved without linking them to social and ecological objectives. In essence, the success of the

SDGs depends largely on awareness of social foundations and the ecological boundaries of our planet. Islamic financial institutions have a pivotal role in leveraging the full potential of finance to achieve both financial and non-financial growth. A critical factor that can significantly impact Islamic banking institutions is the implementation of VBI. VBI enables them to align their operations with economic, social, ecological, and Shariah objectives, contributing to sustainable development. This study explores the role of VBI in aligning Islamic finance with CE principles to support Malaysia's sustainable development. By emphasizing the alignment of stakeholders across local, national, and global levels, it addresses policy inconsistencies and fosters financial stability, socio-economic growth, and alignment with SDGs through integrated economic, social, and ecological goals.

1.8 Scope of the Study

The findings of this study are expected to have a profound impact on Malaysia's sustainable economic growth and its banking sector. By providing a comprehensive framework, this research guides financial institutions in integrating sustainable practices through Value-Based Intermediation (VBI). VBI aligns with the principles of the Circular Economy (CE), which aims to replace the traditional "take-make-dispose" model with one that emphasizes resource regeneration, reduced waste, and sustainability (Haneef & Jamaludin, 2021: 73-90). Malaysia, a leader in Islamic finance, has pioneered VBI under Bank Negara Malaysia's guidance, demonstrating its potential to bridge Shariah-compliant finance with sustainability objectives (Sawari et al., 2022: 14-31). A significant aim of VBI is to harmonize stakeholder interests across local, national, and global levels, ensuring alignment with the Sustainable Development Goals (SDGs). Categorizing stakeholders into these three levels enables a thorough analysis of varying priorities while creating synergies that foster efficiency in meeting economic, ecological, and social needs (Ali & Jumat, 2021: 34-56). The CE, with its focus on reducing waste and maximizing resource use, complements these objectives by fostering an economic system that supports ecological balance (Smolo et al., 2024: 65-82). Policy inconsistencies, often arising from stakeholder misalignment, remain a critical barrier in several Islamic countries. These inconsistencies hinder financial stability and disrupt socio-economic progress. By adopting VBI, Islamic banks can address such challenges by aligning their operational

goals with CE principles, emphasizing collaboration, and fostering resilience. VBI's emphasis on ethical and sustainable finance ensures that social, environmental, and economic dimensions are equally prioritized (Mulyany & Zuraida, 2023: 126-130).

In practice, integrating CE principles within VBI frameworks requires Islamic banks to adopt innovative products and services, such as green sukuk, that support environmental and societal goals while maintaining financial returns. The success of these initiatives hinges on their ability to balance stakeholder interests, ensure Shariah compliance, and address global sustainability challenges (Razali & Hassan, 2024: 135-143). Furthermore, the CE promotes resource efficiency and waste minimization, which align seamlessly with the Islamic economic principle of moderation (Chea, 2023). This study explores how Islamic finance, through the adoption of VBI and CE principles, can drive Malaysia's sustainable development agenda. By examining case studies and stakeholder analysis, the research highlights actionable insights for financial institutions and policymakers to create an equitable and resilient economic system that adheres to Shariah principles while addressing global sustainability challenges.

1.9 Definitions of Key Terms

1.9.1 Islamic Finance

Islamic finance can be defined as a financial system that operates in accordance with Islamic law, known as Shariah. Unlike conventional finance, Islamic finance prohibits the collection and payment of interest (riba), undue risk and uncertainty (gharar), and speculative practices (maysir). It emphasizes ethical and socially responsible investing, ensuring that all monetary activities are backed by tangible assets or appropriate securities (Iqbal & Mirakhor, 2011: 130-195). These principles aim to create a system that aligns financial practices with the ethical and moral tenets of Islam.

1.9.2 Value-Based Intermediation (VBI)

Value-Based Intermediation (VBI) is a strategic initiative introduced by Bank Negara Malaysia (BNM) in 2017 to enhance the role of Islamic banks in delivering sustainable and impactful financial solutions (Zahra, 2018: 45-67). VBI goes beyond Shariah compliance by incorporating Environmental, Social, and Governance (ESG) standards into banking operations. This approach emphasizes ethical banking practices that align

with the principles of integrity, community upliftment, and sustainable economic development. By adopting VBI, Islamic banks aim to create long-term sustainable value for shareholders, customers, and society (Shafruddin & Shahimi, 2024: 12-29). The VBI framework links Islamic banking operations with the overarching objectives of Shariah, known as Maqasid al-Shariah. These objectives include the protection of religion, life, intellect, lineage, and property, ensuring that financial activities align with ethical and moral guidelines. The framework encourages Islamic banks to prioritize not only profitability but also their impact on societal and environmental well-being, creating a holistic approach to finance that supports sustainable development goals (Haneef & Jamaludin, 2021: 73-90).

1.9.3 Circular Economy (CE)

The Circular Economy (CE) is an economic model designed to reduce waste and optimize resource utilization through circular flows, fostering sustainability and environmental preservation (Rodríguez-Espíndola et al., 2022: 3-12). Unlike the linear economy's "take-make-dispose" model, the CE emphasizes principles of reduction, reuse, recycling, and resource recovery to establish systems that consume fewer resources while minimizing environmental impact. These principles align with global efforts toward sustainable development and climate change mitigation (Velenturf & Purnell, 2021: 1437-1457). The CE operates on three foundational principles: the elimination of waste and pollution, the circulation of products and materials, and the regeneration of natural systems (Velasco-Muñoz et al., 2021: 30-55). By prioritizing these principles, CE models integrate sustainable innovations in product design and business strategies, making sustainability an intrinsic part of production and consumption. The shift to a CE model not only addresses environmental concerns but also unlocks significant economic opportunities. For instance, sustainable production processes utilizing CE principles have been shown to enhance resource efficiency by up to 30%, significantly reducing greenhouse gas emissions (Chen et al., 2020: 65-80). Furthermore, CE strategies in industries like construction and manufacturing contribute to reducing environmental degradation while fostering long-term economic resilience (Lim et al., 2022: 130-144).

1.9.4 Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) represent a set of 17 global objectives established by the United Nations in 2015 under the 2030 Agenda for Sustainable Development. These goals address pressing global issues such as poverty, hunger, health, education, gender equality, access to clean water, and climate change (Allen et al., 2020: 1453-1467). They emphasize interconnectedness, promoting a holistic approach to sustainable development across economic, social, and environmental dimensions (Hák et al., 2020: 565-573). The SDGs provide a universal framework that calls for coordinated efforts by governments, businesses, and civil society to create equitable, inclusive, and sustainable solutions. The SDGs are widely regarded as the most comprehensive global framework for sustainable development, offering a strategic roadmap for addressing humanity's greatest challenges. For this study, the SDGs act as a benchmark for evaluating how Value-Based Intermediation (VBI) and Circular Economy (CE) practices contribute to sustainable development. By integrating VBI and CE principles with the SDGs, financial institutions and stakeholders can track their progress in advancing sustainable economic growth, reducing environmental degradation, and promoting social equity. This alignment ensures that business practices not only support financial goals but also address broader societal and environmental concerns.

1.9.5 Maqasid al-Shariah

The concept of Maqasid al-Shariah, or the objectives of Shariah, is fundamental to the Islamic legal tradition. It establishes a moral and ethical foundation for Islamic practices, aiming to enhance human well-being and alleviate suffering (Harahap et al., 2023: 6-17). Maqasid al-Shariah outlines five primary objectives: safeguarding religion (din), life (nafs), intellect (aql), progeny (nasl), and property (mal). These principles guide the development of Islamic finance, ensuring that economic activities prioritize public welfare while adhering to ethical and moral standards (Muhamad et al., 2022: 123-136). The integration of Maqasid al-Shariah within Islamic finance provides a framework to promote social equity, environmental sustainability, and economic development. Islamic financial institutions are uniquely positioned to align their practices with these objectives, balancing profitability with societal and environmental well-being (Ishak & Nasir, 2021: 108-119).

By emphasizing risk-sharing, fairness, and community welfare, Islamic finance not only upholds its moral responsibilities but also contributes to achieving global sustainability goals. This approach supports the principles of sustainable development, integrating Maqasid al-Shariah with frameworks such as the United Nations Sustainable Development Goals (SDGs). Financial institutions that adopt this model demonstrate their commitment to long-term societal benefits, environmental preservation, and equitable resource distribution. The emphasis on ethical investment and risk-sharing mechanisms positions Islamic finance as a driving force for achieving sustainability (Raimi et al., 2024: 4-12).

1.9.6 Profit-and-Loss Sharing (PLS)

Profit-and-Loss Sharing (PLS) is a cornerstone of Islamic finance, emphasizing a risk-reward partnership between contracting parties. Two key PLS instruments are mudarabah and musharakah. In a mudarabah contract, one party provides capital while the other manages the business, with profits shared in a predetermined ratio and losses borne solely by the capital provider. In contrast, musharakah involves all partners contributing capital and sharing risks and rewards proportionally to their investment (Ratnawati & Sari, 2021: 84-91). PLS is underpinned by principles of equality, cooperation, and ethical behavior, ensuring that financial activities align with the broader goals of fairness and accountability in economic transactions (Widarjono & Mardhiyah, 2022: 1-16). By promoting shared responsibility, PLS mechanisms contribute to a more equitable financial system, fostering trust and cooperation among stakeholders. This model also integrates Islamic ethical principles into modern financial practices, offering a sustainable alternative to interest-based systems (Jais et al., 2020: 107-114). The adoption of PLS in Islamic banking reflects the sector's commitment to fostering economic growth that aligns with ethical and social values. For instance, musharakah financing is increasingly being applied in developmental projects, as it ensures shared accountability while providing avenues for sustainable financial growth (Ibrahim et al., 2022: 123-136). Mudarabah financing, on the other hand, is often used for entrepreneurial ventures, facilitating the growth of small and medium enterprises by sharing risks between financiers and entrepreneurs (Ryandono & Kusuma, 2021: 329-337).

1.9.7 Mudarabah

Mudarabah is a partnership contract central to Islamic finance, involving two parties: the rabb al-mal, who provides the capital, and the mudarib, who manages the investment. The profits from the investment are shared according to a pre-agreed ratio, while any losses are borne solely by the capital provider unless caused by the negligence or misconduct of the mudarib (Jais et al., 2020: 107-114). This arrangement promotes fairness and accountability, ensuring that both parties uphold ethical standards in their financial dealings. Mudarabah plays a crucial role in fostering entrepreneurship and economic growth, especially by providing capital to individuals with viable business ideas but insufficient resources to implement them. By sharing risks and rewards, Mudarabah aligns with the principles of equity and cooperation in economic activity (Abdur-Rauf & Raimi, 2024: 4-12). Additionally, it supports the broader objectives of Islamic finance, such as promoting social welfare and financial inclusion, which are essential for sustainable development. This financing model is especially significant in regions where access to traditional credit facilities is limited, offering an ethical and sustainable alternative for entrepreneurial ventures. For instance, studies have shown that Mudarabah financing facilitates small and medium enterprises (SMEs) in developing countries, contributing to poverty alleviation and economic resilience (Shaarani & Jasin, 2023: 19-40).

1.9.8 Musharakah

Musharakah is a partnership-based financing mechanism in Islamic finance where all partners contribute capital and share profits and losses in proportion to their investment. This model ensures mutual responsibility and equitable financial returns, making it ideal for trade, manufacturing, and real estate businesses (Ishak et al., 2023: 818-822). In a Musharakah contract, partners collaborate on decision-making, risk-sharing, and resource management, promoting fairness and sustainability within the financial system. Musharakah is particularly significant in Islamic finance because it embodies principles of risk-sharing and collaboration. This approach encourages ethical investment practices and fosters trust between financial institutions and clients. For example, Musharakah-based financing has been effectively applied to infrastructure development and small business financing, showcasing its potential for driving economic growth and social equity

(Islam et al., 2022: 1-29). The adaptability of Musharakah contracts to diverse economic activities has made them a cornerstone of Islamic finance. By aligning financial objectives with ethical and social goals, Musharakah contributes to a balanced economic system, supporting sustainable development while adhering to Shariah principles (Saafi, 2021: 14-24).

1.9.9 Ijarah

Ijarah is a leasing contract in Islamic finance, wherein the owner of an asset (the lessor) leases it out to a user (the lessee) in return for rental payments. The ownership of the asset remains with the lessor, while the lessee benefits from its usage. Ijarah contracts can be applied to various properties, including real estate, vehicles, and equipment. At the conclusion of the lease term, the lessee may have the option to purchase the asset at a predetermined price, subject to the terms of the contract (Khalid et al., 2024: 541-549). This contract serves as an ethical alternative to conventional interest-based financing, offering users the ability to access assets without resorting to loans. It aligns with Shariah principles by emphasizing equitable agreements and avoiding elements of riba (interest) and excessive risk (gharar) (Mohamed et al., 2021: 15-28). Ijarah is widely adopted for financing personal and commercial needs, such as vehicle leasing and equipment procurement, thereby promoting accessibility and sustainability within Islamic financial systems (Hestya Budianto et al., 2023). Furthermore, Ijarah contributes to financial inclusivity by enabling underprivileged individuals and small enterprises to benefit from the use of essential assets without needing upfront capital. Its application ensures transparency and fairness, fostering trust between financial institutions and their clients (Rahim et al., 2022: 3833-3837).

1.9.10 Murabaha

Murabaha is a sales contract in Islamic finance where the seller discloses the cost of the asset and adds an agreed profit margin, selling it to the buyer at a higher price. The payment is often made in installments over a specified period. This contract eliminates the use of interest (riba) and ensures transparency, as the buyer is fully aware of the original cost and the profit margin. It is widely used to finance assets such as real estate, vehicles, and commodities (Rahmalan & Ramli, 2022: 107-122). Murabaha aligns with the ethical

principles of Shariah by providing an alternative to conventional interest-based lending. It supports equitable financial transactions and fosters trust between financial institutions and clients. This method has become particularly significant in facilitating access to essential assets for individuals and businesses, particularly in emerging markets (Hossain et al., 2022: 40). By adhering to the principles of risk-sharing and transparency, Murabaha serves as a cornerstone of Islamic finance, ensuring fairness and ethical compliance in economic activities. The flexibility of the contract allows it to be applied to various sectors, making it one of the most utilized financing methods in Islamic banking systems worldwide (Ibrahim & Salam, 2021: 372-401).

1.9.11 Istisna

Istisna is a specialized Islamic finance contract used for manufacturing or construction. It involves an agreement where the buyer requests a manufacturer or contractor to produce an asset according to specified criteria. The manufacturer commits to delivering the asset at a fixed price and within an agreed timeframe. Payments can be made in installments based on the work's progress. Istisna is commonly utilized for financing long-term projects, including infrastructure development, housing, and industrial machinery (Hamdan et al., 2020: 255-262). One key advantage of Istisna is its flexibility in production and payment terms, tailored to suit both the buyer and the manufacturer. This contract is instrumental in supporting large-scale projects without requiring upfront capital, thereby fostering economic growth and infrastructure development (Selim, 2020). Its application in parallel Istisna contracts enhances efficiency by enabling financial institutions to act as intermediaries, facilitating transactions between contractors and end-users (Riwajanti et al., 2022: 118-124). The unique features of Istisna align with Shariah principles, providing an alternative to conventional project financing. It emphasizes transparency, fairness, and mutual consent, ensuring ethical and equitable financial practices (Diallo et al., 2021).

1.9.12 Sukuk

Sukuk, commonly referred to as Islamic bonds, are financial certificates representing ownership in an underlying asset or a portfolio of assets. Unlike conventional bonds, Sukuk does not involve interest payments (riba); instead, investors earn returns generated

from the income of the underlying assets. These returns comply with Shariah principles, making Sukuk an ethical and equitable alternative for both Muslim and non-Muslim investors. Sukuk structures are diverse and include Ijarah (leasing), Mudarabah (profit-sharing), and Musharakah (joint venture), among others (Hamzah et al., 2023: 45-59). Sukuk plays a pivotal role in financing large-scale infrastructure projects, real estate, and renewable energy initiatives. The flexibility of Sukuk structures enables customization to meet diverse financial needs while ensuring compliance with Islamic principles. For example, Ijarah Sukuk is commonly used for real estate leasing projects, while Mudarabah Sukuk facilitates investments in profit-generating ventures (Ibrahim et al., 2022: 123-136). As ethical investment instruments, Sukuk fosters financial inclusivity and sustainability by aligning economic growth with social welfare. By emphasizing asset-backed financing, Sukuk minimizes speculative risks, ensuring greater transparency and stability in financial markets (Sharif et al., 2022: 189-203). These attributes make Sukuk a preferred financing tool for governments and corporations aiming to align their financial strategies with sustainability goals.

1.9.13 Waqf

Waqf is a pivotal instrument in Islamic finance, referring to the dedication of assets or property for charitable or religious purposes as stipulated by the donor. This Islamic endowment ensures that the principal assets remain intact while the generated revenues are utilized for social welfare initiatives such as education, healthcare, and poverty alleviation. Waqf is integral to the Islamic social finance system, aiming to reduce inequality and promote societal well-being. It aligns with the objectives of Shariah (Maqasid al-Shariah) by fostering sustainable development and equitable resource distribution (Eldersevi et al., 2021). In modern applications, Waqf has evolved to include innovative mechanisms such as cash Waqf and Waqf-based Sukuk, which amplify its economic impact by channeling funds into development projects. This not only enhances the efficiency of resource utilization but also addresses contemporary challenges in social finance (Hassan et al., 2023: 88-102). By leveraging Maqasid al-Shariah, Waqf institutions are uniquely positioned to align their operations with the Sustainable Development Goals (SDGs), contributing to both social and economic growth (Kassim & Mohtesham, 2021: 19-39). The integration of Waqf into Islamic finance practices

demonstrates its potential to provide sustainable funding for public goods and services. This approach ensures that Waqf remains a dynamic tool for addressing modern socio-economic challenges while adhering to the principles of equity, justice, and public benefit as prescribed by Islamic law (Khamis et al., 2022: 438-446).

1.9.14 Zakat

Zakat is one of the five pillars of Islam, requiring Muslims to contribute a specific proportion of their wealth to support the underprivileged. Typically set at 2.5% of a Muslim's savings, Zakat plays a significant role in Islamic finance by promoting social justice and economic equality (Gunawan & Rusydiana, 2023: 39-49). It funds initiatives such as poverty alleviation, education, healthcare, and disaster management, aligning with Islamic principles of social welfare (Rejab et al., 2022: 3833-3837). In the context of sustainable development, Zakat serves as a powerful tool for achieving the United Nations Sustainable Development Goals (SDGs). By mobilizing resources for socially beneficial purposes, it addresses critical issues like poverty and inequality. Studies have shown that integrating Zakat with modern financial systems can enhance its effectiveness, enabling systematic contributions to sustainable development (Rosman et al., 2022: 56-67). Furthermore, Zakat institutions are increasingly exploring digital transformation to ensure transparent collection and efficient distribution, optimizing their impact on social welfare (Othman et al., 2021: 67-82). As part of the Islamic finance framework, Zakat operates in harmony with other financial instruments like Waqf, emphasizing equitable wealth distribution and ethical practices. It represents a viable mechanism for achieving financial inclusion, stabilizing economies, and supporting long-term sustainability goals (Huda, 2020: 199-202). The integration of Zakat with Islamic social finance underscores its potential as a sustainable financing model that addresses modern socio-economic challenges while adhering to Shariah principles.

1.9.15 Sadaqah

Sadaqah is a voluntary act of charity in Islam, given at any time and in any amount to support various causes, such as alleviating poverty, education, and healthcare. Unlike Zakat, Sadaqah is not obligatory but emphasizes generosity and compassion among Muslims, fostering community well-being and social solidarity (Ismail et al., 2024: 65-

82). This flexibility allows Sadaqah to play a critical role in addressing immediate and long-term socio-economic challenges. In the context of Islamic finance, Sadaqah is often integrated into Corporate Social Responsibility (CSR) programs. Islamic financial institutions utilize Sadaqah to sponsor development projects, promote education, and provide disaster relief, aligning their operations with both Shariah principles and the broader objectives of sustainable development (Rosman et al., 2022: 56-67). By supporting social causes through Sadaqah, these institutions enhance their ethical positioning and contribute meaningfully to societal welfare (Kunhibava et al., 2024: 89-112). Furthermore, digital platforms and crowdfunding initiatives have enabled the efficient collection and distribution of Sadaqah, maximizing its impact on underprivileged communities. These innovations ensure transparency and accountability, encouraging wider participation and making Sadaqah a vital tool in the Islamic social finance ecosystem (Thaidi et al., 2023: 63-85).

1.9.16 Qard Hasan

Qard Hasan is a type of benevolent loan in Islamic finance, provided without interest or profit, designed to support philanthropic purposes, or assist individuals in financial need. Unlike conventional loans, Qard Hasan ensures that borrowers repay only the principal amount, aligning with Shariah principles that prohibit interest (Rachmawaty & Zaerofi, 2021: 199-211). This practice promotes social equity and strengthens partnerships within communities by fostering financial inclusion without exploiting the needy. In practical applications, Qard Hasan is widely utilized to fund educational programs, healthcare initiatives, and small-scale businesses, contributing significantly to socio-economic development (Thaidi et al., 2023: 63-85). Islamic banks and charitable organizations often integrate Qard Hasan into their Corporate Social Responsibility (CSR) activities, facilitating the achievement of Sustainable Development Goals (SDGs) by addressing poverty and inequality (Mahadi et al., 2024: 31-37). Additionally, digital platforms have enhanced the accessibility and transparency of Qard Hasan, enabling broader outreach and fostering greater trust among stakeholders (Hafifuddin & Ayuniyyah, 2024). As a sustainable financial tool, Qard Hasan embodies the ethical and moral foundations of Islamic finance, emphasizing mutual assistance and community welfare. Its role in economic empowerment, particularly for micro, small, and medium enterprises (MSMEs),

demonstrates its potential to drive inclusive growth and financial stability (Aderemi & Ishak, 2024: 58-75).

1.9.17 Takaful

Takaful is an Islamic insurance system rooted in the principles of mutual assistance (ta'awun) and shared responsibility among participants. Unlike conventional insurance, Takaful aligns with Shariah law, prohibiting elements such as uncertainty (gharar) and interest (riba). Participants contribute to a common pool, and these funds are utilized to provide financial support in times of need, ensuring equitable risk-sharing (Amuda & Alabdulrahman, 2023). This cooperative approach fosters trust and strengthens community bonds. Takaful encompasses various structures, such as family Takaful and general Takaful, covering areas like health, education, and disaster recovery. Its emphasis on ethical practices makes it a viable alternative to conventional insurance systems, which may conflict with Islamic moral and ethical standards. Moreover, Takaful contributes significantly to sustainable development goals by ensuring financial inclusion and protecting vulnerable groups (Hassan et al., 2024: 45-79). In recent years, digital platforms and innovative financial technologies have enhanced the accessibility and transparency of Takaful products. These advancements ensure that Takaful aligns with the broader objectives of Islamic finance, enabling it to adapt to contemporary challenges while preserving its ethical foundation (Ahmed et al., 2023: 102-120).

1.9.18 Maqasid al-Shariah

Maqasid al-Shariah, or the objectives of Shariah, form the ethical and moral backbone of Islamic finance, focusing on safeguarding religion, life, intellect, progeny, and wealth (Harahap & Uula, 2023: 6-17). These objectives ensure that financial transactions and investments prioritize public welfare while aligning with ethical responsibilities. This framework promotes social equity, environmental responsibility, and sustainable economic development, thereby supporting broader Sustainable Development Goals (SDGs) (Harun, 2022: 10-16).

1.9.19 Islamic Social Finance

Islamic social finance refers to a framework combining financial instruments aimed at achieving social objectives and eradicating poverty. It encompasses zakah (alms tax),

sadaqah (voluntary charity), waqf (pious endowment), and qard hasan (interest-free loans) (Raimi et al., 2024: 4-12). These instruments are designed to address social and economic justice challenges, support individuals in need, and contribute to sustainable development. By leveraging these tools, Islamic financial institutions align their operations with the objectives of Maqasid al-Shariah, optimizing their role in fostering societal well-being and promoting inclusive development (Zailani et al., 2022: 47-62).

1.9.20 Ethical Finance

Ethical finance refers to financial practices rooted in ethical and moral principles, aiming to promote corporate governance, socially responsible investments, and avoidance of harmful or unethical activities (Alhammadi, 2022). Ethical finance emphasizes trust, equity, and sustainability in operations, aligning financial activities with broader societal and environmental goals (Harahap et al., 2023: 6-17). A close alignment exists between ethical finance and Islamic finance, as both share fundamental values like fairness, accountability, and mutual benefit. Islamic finance, being Shariah-compliant, operates without interest (riba) and speculative activities (gharar), and integrates ethical considerations into every aspect of financial transactions (Hidayah et al., 2021: 475-494). Ethical finance serves as a platform for financial institutions to enhance market credibility, foster client trust, and contribute to sustainable economic growth. The integration of sustainability into ethical finance practices is critical to addressing contemporary global challenges, including climate change, social inequality, and resource efficiency (Brescia et al., 2021: 45-53). Financial institutions embracing ethical finance not only improve their societal impact but also align with sustainable development goals (SDGs), ensuring long-term profitability and market relevance.

1.9.21 Green Finance

Green finance refers to the use of financial instruments and resources for achieving environmental objectives, including climate finance for renewable energy, energy efficiency, sustainable agriculture, and ecosystem conservation (Berrou et al., 2019: 3-29). It plays a pivotal role in supporting initiatives that reduce environmental degradation and promote sustainable practices. Green finance aligns closely with the principles of the circular economy, ensuring optimal utilization of resources while minimizing negative

environmental impacts (Ozili, 2022: 56-75). Islamic financial institutions can significantly contribute to the achievement of the Sustainable Development Goals (SDGs) through the adoption of green finance. The inherent principles of Islamic finance, such as avoiding harmful activities, emphasizing ethical investments, and promoting risk-sharing, make it uniquely positioned to support sustainability initiatives. By deploying green finance mechanisms like green sukuk and eco-friendly investment products, Islamic financial institutions can drive the transition toward a sustainable economy. Such efforts are consistent with global goals to address climate change, protect natural ecosystems, and foster inclusive growth while adhering to Shariah principles.

1.9.22 Climate Finance

Climate finance refers to the financial resources directed toward addressing the challenges posed by climate change, including renewable energy, energy efficiency, sustainable transport, and infrastructure adaptation. It is a critical component in achieving the objectives of the Paris Agreement, particularly in limiting global temperature rise to below 1.5°C above pre-industrial levels (Alam et al., 2023: 3-22). The effective deployment of climate finance not only mitigates environmental degradation but also promotes resilience in vulnerable communities and ecosystems. Islamic finance offers unique mechanisms that align with climate finance goals. For instance, green sukuk provides Shariah-compliant investment opportunities to fund sustainable projects such as renewable energy and green infrastructure (Musari, 2020: 381-394). These instruments exemplify how Islamic financial institutions can actively contribute to global climate objectives. Furthermore, aligning Islamic finance with climate finance practices presents opportunities for bridging the funding gap in sustainable development while upholding ethical and socially responsible principles. By integrating Islamic finance tools with climate finance initiatives, financial institutions can support the dual objectives of combating climate change and fostering sustainable development. This approach underpins the significant role of Islamic finance in achieving the Sustainable Development Goals (SDGs) and advancing global sustainability efforts.

1.9.23 Circular Business Models

Circular business models align with the principles of a circular economy, emphasizing resource efficiency, waste reduction, and the extension of product lifespan. These models are instrumental in achieving sustainable economic growth with minimal environmental impact. Circular business models include approaches such as product-service systems, which offer services rather than ownership, closed-loop supply chains that enable material reuse, and industrial ecology that fosters symbiotic relationships between industries (Geissdoerfer et al., 2020: 89-105). Through these models, firms can derive value from resources while minimizing waste and enhancing product durability, contributing to sustainable development goals (Nußholz, 2017: 2-14). By adopting circular business models, businesses not only achieve economic benefits but also meet environmental and societal expectations, positioning themselves as leaders in sustainability-driven innovation.

1.9.24 Impact Investing

Impact investment represents an innovative approach to finance, targeting both measurable social and environmental outcomes alongside financial returns. This dual-focus investment strategy has gained momentum in fostering sustainable development, especially in addressing challenges like poverty alleviation, renewable energy adoption, and housing (Barber et al., 2021: 162-185). By combining principles from value-based intermediation and circular economy frameworks, impact investments empower stakeholders to align their financial goals with broader social and environmental objectives. The role of such investments in achieving the UN's Sustainable Development Goals (SDGs) is profound, as they directly contribute to solutions aimed at equity, sustainability, and economic inclusiveness (Secinaro et al., 2020: 330).

1.9.25 Green Bonds

Green bonds represent a financial instrument specifically designed to mobilize capital for environmentally sustainable initiatives, including renewable energy, energy efficiency, green transportation, and climate change mitigation (Baker et al., 2022: 415-437). These bonds play a critical role in financing the transition to a green economy by offering a structured approach to funding projects that align with global sustainability objectives,

such as the UN's Sustainable Development Goals (SDGs). Green bonds align closely with the principles of value-based intermediation (VBI) and the circular economy (CE), providing Islamic investors with an avenue to support projects that fulfill environmental, social, and governance (ESG) criteria (Bhutta et al., 2022: 2-15). For organizations and governments, green bonds are a pivotal tool to finance the shift toward sustainable development while ensuring compliance with ethical and environmental mandates. These bonds not only drive investments in eco-friendly projects but also contribute significantly to addressing global challenges like climate change and environmental degradation.

1.9.26 Sustainable Finance

Sustainable finance integrates environmental, social, and governance (ESG) considerations into financial products, services, and decision-making processes. This approach encompasses creating and managing policies for investments and credits that prioritize ESG factors, as well as financing projects that support green and social initiatives (Shafruddin & Shahimi, 2024: 12-29). Sustainable finance aligns closely with the principles of Value-Based Intermediation (VBI) and the circular economy by directing financial activities toward achieving Sustainable Development Goals (SDGs). By leveraging sustainable finance mechanisms, financial institutions can enhance their operational stability, improve reputations, and create long-lasting value. Moreover, sustainable finance fosters a more inclusive and environmentally conscious financial system, making it an essential driver of global efforts to address climate change, social equity, and economic resilience (Hassan et al., 2023: 148-162).

1.10 Structure of the Thesis

This thesis is structure to offer an in-depth analysis of the relationship between Islamic Finance, Value-Based Intermediation (VBI), and the Circular Economy (CE) with reference to the Malaysian banking sector.

Chapter 1, Introduction, sets the background and context of the research by defining and discussing Islamic finance, VBI, and CE. It emphasizes the importance of applying these concepts to address the challenges of sustainable development. The problem statement, research objectives, research questions, justification of the study, scope and limitations of the study, and an outline of the research method is also provided in this chapter. Thus, the

purpose of the introduction is to give the reader an insight into the significance of the study.

Chapter 2, Literature Review, provides an overview of the literature on Islamic finance, VBI and CE. To that effect, it explores a critical review of literature and establishes the research gaps that this study seeks to fill. The chapter is divided into sections, including an introduction to IF, principles and practices of VBI, principles of CE, and their interaction. Besides, it provides case and empirical studies, critiques, and debates to outline the state of knowledge and its relevance to this research.

Chapter 3, Data and Methodology, It also categorizes the data gathered and reveals findings relevant to the integration of VBI and CE principles in Malaysian Islamic banks and describes the research design and the methods applied in this study. It outlines the method of concurrent mixed-methods, using descriptive statistics and Eslasticities to analyze the relationships between VBI and several aspects of CE. Exploratory methods give an overall view of data distribution and assist in the search for preliminary regularities. The chapter presents data collection from a sample of banks that have adopted both VBI and CE strategies, thus making the study valid and reliable. Issues of ethic and limitation of the methodology are also presented.

Chapter 4 Results and Discussion, the results are analyzed based on the research questions and objectives to derive empirical answers to the application and efficiency of VBI and CE practices'. This chapter also responds to the research questions comprehensively as to how the research findings enrich the knowledge on IF, VBI, and CE. Based on findings from the study, it offers suggestions to financial institutions, policymakers, and other players.

Chapter 5, Conclusion, gives an overview of the findings of the study and the contributions made by the study. It summarizes the importance of implementing VBI and CE principles in Islamic finance and the possibility to contribute to the achievement of sustainable development objectives. This chapter also describes the limitations of the study and future research recommendations. In this sense, the conclusion re-emphasizes the significance of the study and how it can be pursued and used in the future, all within a brief and accurate synthesis.

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

The literature review section of this study functions as a conceptual framework on which the entire study is constructed. It serves as an introduction to the current body of knowledge and provides a critical analysis and synthesis of essential concepts, approaches, and findings related to the research topic.

2.2 Overview of Islamic Finance

As noted by Hasan et al., (2020: 75-94), Islamic finance originates from a long back history right from the emergence of Islam in the 7th century. Based on the precepts of Shariah law under which Muslims are supposed to live, Islamic finance principle encourages ethical and social, and risk-sharing approaches to finance. Islamic finance, therefore, relies on the Prophet Muhammad's trading habits and the principles of finance outlined in the Quran and Hadith. In their paper Hassan et al., (2019: S1-S13) mentioned that the early Islamic societies established several financial instruments and institutions i.e. mudarabah (profit sharing) and musharakah (partnership) for trade and commerce without charging interest or using the term 'riba'. Most of these principles were followed in the Islamic Golden Age and aided the economic growth of Islamic civilizations. From the article by Al Rahahleh et al. (2019: 37), the contemporary advancement of Islamic finance can be traced back to the middle of the 20th Century when the Muslim states aimed at establishing Islamic finance systems. However, Alshater et al. (2021: 339-365) agree to the fact that the modern experiment of Islamic banking was initiated with the establishment of Mit Ghamr Savings Bank in Egypt in 1963. The next was the establishment of the Islamic Development Bank (IDB) in 1975, with objectives of promoting economic development and social well-being of its member countries consistent with Shariah principles (Rabbani et al. 2020: 1230-1234). Since then, the industry has expanded significantly; the Islamic Finance Market size was over $2.88 trillion in 2019, as stated by the Islamic Finance Development Report 2020 (Kuanova et al. 2021: 707-728). The expansion has been attributed to growing appetite for Islamic

financial assets and services in the Muslim world and other parts of the globe with sizeable Muslim population.

Among the principles and practices that make Islamic finance different from conventional finance is the following. As described by Hassan et al., (2022: 7-44), Another fundamental prohibition is charging of interest which is deemed as exploitative and unfair. However, in Islamic finance, risk and reward are shared between the financier and the borrower as much as possible. Mudarabah and musharakah are examples of such arrangements whereby profit and loss are borne in a proportionate ratio in line with mutual contribution. The third principle that Biancone and Radwan stated is the prohibition of gharar which means high level of uncertainty and speculation. The contract price must correspond to real economies and realities, and both partners must have perfect knowledge of the terms of the contract. This principle is designed to ensure that there are no financial manipulations in the financial transactions. Also, Shahariman et al., (2020) alluded that Islamic finance does not allow the financing or investment in haram activities which include alcohol, gambling, pork products as well as conventional financial sector. Rather, it promotes the spending on the halal businesses which are beneficial to the whole society. In their study, Aulia et al. , (2020: 64-75) posited that this ethical investment style is consistent with the objectives of Shariah in terms of pursuing social justice, fair distribution of wealth, and sustainability of the earth. Other principles of Islamic finance include asset-backing whereby every financial transaction must be supported by assets and/or services (Paltrinieri, 2023: 1-16). This helps to minimize the likelihood of financial bubbles and makes financial activities linked with the underlying economy. Conversely, for all these distinctive principles, there are certain similarities between the Islamic finance and the conventional finance. In the article by Alzahrani, (2019: 1-5), both systems are stated to achieve the goals of financial intermediation, mobilisation of funds, and effective capital allocation.

Islamic banks also provide almost all the products and services of a traditional bank, including savings accounts, investment accounts, home financing and insurance (takaful). However, these products are designed to operate within the Shariah guidelines on Islamic banking. For instance, Hassan et al. (2022: 7-44) have explained that to avoid receiving interest on loans, Islamic banks employ techniques like ijara (leasing) and murabaha (cost-

plus financing) where the bank purchases an asset and sells it to customer in instalments. The legal and institutional structures that underpin Islamic finance also mirror those that are seen in conventional finance. As highlighted by Rabbani et al. (2020: 1230-1234), the two systems need effective regulatory mechanisms that will guarantee these important aspects of financial risk regulation. Besides, Islamic financial institutions are under the supervision of Shariah boards that check its activities and products for compliance with Islamic law (Kuanova et al. 2021: 707-728). These boards are comprised of scholars and jurists in Islamic law responsible for monitoring and endorsing financial instruments, agreements, and operations.

Hassan et al. (2019: S1-S13) have noted that one of the most significant distinctions between Islamic finance and conventional finance is in terms of the philosophy and perception of risk management. Islamic finance entails risk sharing, wherein all the stakeholders get to bear the consequences of investment decisions. This is in contrast with conventional finance, where risk transfer is seen as a process through which one party takes the risk in return for a fixed payout, as noted by Kuanova et al. (2021: 707-728). This fundamental difference impacts on the nature and shape of financial products and services in Islamic finance and promotes a fairer society. In addition, Hassan et al. (2022: 7-44) notes that the ethical aspect distinguishes. Islamic finance from conventional finance. Islamic finance focuses on the socio ethical consequences of financial operations. This is evidenced by ban on investing in undesirable industries and encouragement of desirable projects including construction of affordable homes, health and education facilities. Aulia et al. (2020: 64-75) also points out that the Islamic financial institutions are also gradually applying the ESG factors in the investment process, following the global process of applying sustainable finance.

2.3 Value Based Intermediation (VBI)

The VBI idea aims to develop Shariah-compliant practices, operations, and products that contribute positively to the environment, communities, and client economies, and have a lasting impact on these areas (Yusof and Ali, 2021: 129-139). This is accomplished with a primary emphasis on the long-term benefits and enduring profitability for shareholders. Islamic Banks can incorporate the structural principles of Maqasid Shariah into their

banking operations by utilising the VBI idea. BNM introduced the concept of VBI to oversee the implementation of Shariah-compliant practices, offerings, and conduct that have a positive and lasting impact on the financial welfare of clients, local communities, and the environment.

Value-based banking (VBB) prioritizes the betterment of society and, thus, strive to generate profits. They achieve this by executing the suitable tasks in the suitable manner. VBB is an approach that assesses and quantifies the impact of an organization's activities on society, with a focus on sustainability. Ibrahim et al. (2022: 123-136) examine the extent to which the operations of Indonesian Islamic banks align with VBI and the disclosure of information in their annual reports. This is done with the aim of attaining the fundamental objectives of social justice and human-centric economic development. The objective of this study is to perform a content analysis of annual reports published by Indonesian Islamic banks, focusing specifically on the procedures used for reporting in Islamic banking. The study employed a qualitative descriptive methodology to examine the annual reports of fourteen Indonesian Islamic banks spanning the years 2018 to 2020. Content analysis was employed as the methodology. The findings suggest that Islamic banks in Indonesia have yet to fully adopt VBI. Although the projected VBI ratings on the annual reports of Indonesia's Islamic banks show a somewhat good reflection of VBI, there is still a significant deficiency in several aspects, particularly in the realm of social issues. The paper makes a unique contribution by identifying VBI practices and related disclosures in the Islamic finance sector, particularly in the banking sector in Indonesia. This provides essential evidence for the worldwide transition towards VBB, particularly within the Islamic financial industry. The sector is expected to not only comply with Shariah legislation but also fully achieve the objectives of Maqasid Shariah.

Mahyudin et al. (2020: 34-44) argue that the effective administration of companies and their achievements are crucial components of VBI. Kassim and Markom (2020: 729-744) found that value-based legislation is a contributing factor to the sustainability of the Islamic financial system in Malaysia, as determined by their analysis using VBI as a standard. In their study, Faziya et al. (2023: 126-130) investigate the level of implementation of investor relations (IR) by Islamic banks in the top nations listed in the Islamic Finance Country Index (IFCI). In addition, they investigate the relationship

between IR (Information Retrieval) and VBI. A qualitative descriptive technique was utilised between 2019 and 2021 to examine the content of integrated and annual reports from 28 Islamic banks in Malaysia, Saudi Arabia, and Indonesia. They achieved this by performing a comparative examination of the various VBI components and IR content aspects, using relevant academic papers and literature. If Islamic banks acknowledge the concept of Islamic reporting, it is likely that they will integrate it into their reporting methodology. Based on the statistics, it appears that IR content elements and VBI components have a high degree of similarity, as most VBI disclosures include IR content elements.

Ayub (2019: 235-247) states that both traditional and Western institutions are increasingly shifting their attention towards funding that is centred around ethical principles and values. This phenomenon is taking place in both hemispheres. As a result, Islamic banks are increasingly obligated to adopt VBI and prioritise project funding, while also adhering to the higher goals of Islamic principles. An unwavering commitment of this magnitude is crucial for the preservation of Islamic faith. The adoption of VBI necessitates substantial changes in perspective from key stakeholders. This technique requires a substantial duration of time. According to Hassan and Nor (2019: S1-S13), the VBI's actions are carried out in compliance with five Shariah principles. Mahadi et al. (2019: 70-87) suggest conducting research on the operational mechanisms and planned applications of VBI technology.

The VBI enables Islamic banks to provide their customers innovative concepts based on Islamic social financing, as well as services that are relevant to their daily life. A recent study conducted by Yusof and Ali (2021: 129-139) examined the possible impact of the Shariah Committee, management, and board of directors on the performance of VBI. Following a thorough analysis, the authors determined that the successful implementation of VBI requires collaboration and participation from several key stakeholders. All internal stakeholders, including the Shariah Committee, the board, and management, must exhibit unwavering commitment. Both Hadi et al. (2019) and AlAnsari et al. (2020) have determined that environmental, social, and governance (ESG) issues are crucial for the future expansion of the Islamic banking business. This is because it encompasses social inclusion, economic progress, environmental sustainability, and long-term viability. The

aim of this research is to examine the ESG technique and determine its influence on Islamic banking. The objective of this study is to investigate the correlation between ESG (Environmental, Social, and Governance) and VBI (Values-Based Intermediation) principles, emphasising the importance of these rules, and showcasing potential improvements in their implementation within the Islamic banking sector. The ultimate aim of this research is to achieve the fundamental goal of sustainability, which is a universally shared objective among people worldwide.

The idea behind the ESG concept is becoming stronger these days since companies that adopt ESG-related practices are valued higher. Banks that disclose their ESG-related activities are expected to increase transparency by providing non-financial information about the company. This should reduce information asymmetry between the company and its stakeholders, draw in investors and minority shareholders, and increase the value of the bank (Talib et al. 2023: 429-452). Tok, E. and Yesuf, (2022: 3-21) state that a great deal of theoretical and empirical study has been done on the connection between ESG and performance. The trade-off theory, on the other hand, indicates a negative link, contradicting the social effect hypothesis, which reveals a positive association. The trade-off hypothesis, also known as the traditionalist view, contends that investing resources in achieving social and environmental goals will increase costs, lower profitability, and jeopardize a company's competitive advantage. In contrast, the social effect hypothesis suggests that ESG is seen as the source of competitive advantages in helping the firm fulfill its social responsibility while benefiting internal and external stakeholders (Bhandari et al. 2022: 1525-1537). Divergent conclusions were reached by several earlier studies on ESG and performance. While the negative relationship supported the trade-off claim that ESG increases costs (Kandpal et al. 2024: 239-272), the positive association demonstrated that being socially conscious increases profits (Barauskaite and Streimikiene, 2021: 278-287). The neutral connection suggested that social responsibility has no effect on profitability because the positive effects outweighed the negative ones (Khaskheli et al. 2020). The ESG and performance relationship is dependent on the ESG investment level, as this U-shaped or inverted U-shaped relationship illustrates (Shabbir and Wisdom, 2020). ESG engagement initially has a negative effect on performance due

to costs exceeding benefits; but, later on, the relationship reverses and becomes positive (Musleh Alsartawi, 2020: 381-394).

According to Kumar's research from (2022: 78-99), there are seven primary areas of study in sustainable finance: impact investing, carbon finance, socially conscious investing, climate finance, energy financing, and the governance of sustainable investment and financing. There is currently a dearth of study on the greenwashing of corporate events in sustainable finance. Greenwashing is deliberate behavior at business functions. Investor trust in businesses that adhere to ESG principles may decline as a result of this action (Kumajas, et.al., 2022). When considering emerging markets, it is discovered that adding ESG to Malaysian listed companies increases their worth. They concluded that there was a clear correlation between ESG ratings and a company's value, since the market performed better by over 30% and its cost of capital decreased by 1.2%. They continued by saying that as the ESG or SRI agenda boosts a company's profitability, stakeholders gain from it. Eliwa et al., (2019: 34-56) found that this conclusion is equally valid for the European market and that businesses with robust ESG policies typically have lower capital expenses. They contend that stakeholders wishing to influence business decisions appropriately evaluate ESG policies. These studies demonstrate how effective ESG policies can steer a company's entire management quality, leading to improved financial outcomes (Abdul Qoyum, 2020: 65-82).

2.4 Shared Values Between Islamic Finance and ESG

The fundamental tenets of Islamic finance are comparable to those of sustainable finance, including financial stability and economic growth, wealth distribution and poverty alleviation, financial and social inclusion, and environmental preservation. As a result, Islamic finance has been able to take use of these parallels and naturally spread the components of green finance. Islamic finance and ESG investing are complimentary capital-raising and investment approaches with many shared values, such as being good stewards of society and the environment, despite the fact that both approaches emerged in distinct historical times and cultural contexts. Both have robust processes and rules that each may learn from the other, and they both provide goods that cater to both Muslim and non-Muslim investors, with many more parallels than differences. One of the main tenets

of Islamic finance is the ban on investing in some sectors of the economy, including those that deal with alcohol, tobacco, pork, gambling, firearms, human trafficking, and other illegal goods and activities. In a manner similar to ESG investing, shariah compatible products are vetted to avoid these businesses. Investors employing ESG investing strategies refrain from specific activities and products, much like those investing in shariah-compliant goods. This allows their portfolios to reflect the values of their clients and beneficiaries, advance the objective of creating a just and sustainable society, and cause no harm to individuals or the environment.

Environmental, social, and governance (ESG) concerns are valued financially and incorporated into investment analysis, decision-making, and processes through ESG investing methodologies. In order to reduce risks, increase returns, and enhance the ESG performance and disclosure of firms and issuers, active ownership activities, such as voting and company participation, may also be a component of ESG strategies.[1]

2.5 The Role of Islamic Banks in Promoting Sustainability Through Their Financing

Many Islamic banks are supporting sustainability through their financing and efforts as ESG gains importance. As an illustration of financing, consider Al Baraka Banking Group, which was the first bank in West Asia to formally sign the new Principles for Responsible Banking. These principles were created through a creative international collaboration between banks and the UNEP Finance Initiative (UNEP FI). Al Baraka is also the first in the Islamic banking industry to adopt these values. Al Baraka promised to provide $197 million for energy efficiency and renewable energy projects in the nations where the bank operates in 2019 and 2020. Additionally, Bank Islam Malaysia wants to add another RM800 million to its green financing book in 2020. This is because the largest

[1] Orsagh. M, 2019, ESG Integration and Islamic Finance: Complementary Investment Approaches, CFA Institute,

Islamic bank in the nation plans to raise the segment's revenue contribution from 14% to 20% by 2021.[2]

Regarding green sukuk, the Islamic Development Bank (IsDB) became the first AAA-rated organization to issue a green sukuk in November 2019 after successfully finalizing a sustainable finance framework. In order to fortify collaboration, IsDB and the European Investment Bank (EIB) inked a Memorandum of Understanding (MOU) that promised €1 billion in co-financing each until 2024. In addition to issuing green sukuks, Majid Al Futtaim, a developer and shopping center operator based in the United Arab Emirates, has engaged banks to facilitate the possible issuance of "green" sukuk denominated in US dollars. 12 With this, the first-ever benchmark corporate Green Sukuk in the world and the first-ever Green Sukuk issued by a company in the MENA area were listed. With a focus on ESG overall, HSBC Malaysia introduced the first ESG Islamic Structured Product in the Malaysian market, aligning with the VBI strategy of Bank Negara Malaysia. In essence, HSBC Amanah's ESG-related Islamic Structured Product gives clients the chance to make investments in a product that aligns with their social and environmental objectives.3

BNM developed six ways to help VBI practitioners improve the product's profit effect beyond services offered (BNM, 2018). Shafruddin and Shahimi, (2024: 12-29) states that the six tactics together reflect the execution of VBI. The first plan suggests that VBI be used as a standard image in the Islamic finance sector. The second approach entails mutually defining VBI thrusts as a basis for cooperative implementation between IFIs and major industry players. The third tactic is to find and assist "VBI champions" who can inspire other potential VBI practitioners to adopt VBI. BNM urges IFIs to share their VBI results in a performance report as part of the fourth strategy. The fifth technique to gauge the effectiveness of IFIs' VBI implementation includes VBISC. Establishing CoPs'

[2] Hani. A, 2020, Bank Islam aims to boost green fnancing by RM800m, The Malaysian Reserve,

3 HSBC, 2019, HSBC Amanah Introduces First-in-the-Market ESG Islamic Structured Product in Malaysia, https://www.about.hsbc.com.my/-/media/malaysia/en/news-and-media/190610-hsbc amanah-introduces-frst-in-the-market-esg-islamic-structured-product-in-malaysia.

cooperation with the value-based community, important partners, and stakeholders for effective networking expansion is the last, or sixth, method. It is generally expected that the successful implementation of VBI will focus on ownership fortification through wealth distribution, establishing justice in values and norms beyond social responsibility (Hassan & Nor, 2019: S1-S13).

As the VBI adventure reached Year Five, or 2021, the VBI community made considerable progress and kept growing. As of October 2021, there were fifteen members of COP (Cinar, 2022). Five years after the VBI program was introduced in 2017, the majority of COP members are still in the "emerging" phase of implementation, according to a 2021 statement made by Tan Sri Nor Shamsiah Mohd Yunus, the former Governor of Bank Negara Malaysia (Sheila, 2022). The Association of Islamic Banking and Financial Institutions Malaysia (AIBIM) recently verified in 2023 that there are now sixteen (16) members among the COP banks, namely Affin Islamic Bank Berhad, Agrobank, Al Rajhi Banking & Investment Corporation (Malaysia) Berhad, Alliance Islamic Bank Berhad, AmBank Islamic Berhad, Bank Islam Malaysia Berhad, Bank Muamalat Malaysia Berhad, Bank Kerjasama Rakyat Malaysia Berhad, CIMB Islamic Bank Berhad, HSBC Amanah Malaysia Berhad, Maybank Islamic Berhad, MBSB Bank Berhad, OCBC Al-Amin Bank Berhad, Public Islamic Bank Berhad, RHB Islamic Bank Berhad and Standard Chartered Saadiq Berhad (Association of Islamic Banking and Financial Institutions Malaysia, 2023).

The VBI program would be implemented by industry participants in phases, according to the timeliness of each institution. Certain Islamic banks, such as Kuwait Finance House, MBSB Bank Berhad, and Hong Leong Islamic Bank Berhad, declined to become the COP of VBI since the strategies are just optional. Given that VBI is similar to the principles of Shariah and Islamic banks are expected to embrace it without reluctance, there are some views that this initiative should be made mandatory for all Islamic banks (Ahmed et.al., 2023: 102-120). Bank Negara Malaysia acted to encourage VBI among Islamic banks in line with the 2030 Agenda, which is a blueprint for the United Nations Sustainable Development Goals (SDGs) and highlights 17 SDGs for promoting peace on Earth and creating wealth for present and future generations. The deployment of VBI by Malaysia's Islamic banks coincides with UN efforts on the 2030 Agenda (Dhesi, 2022; Ismail et al.,

2022: 76-85). For VBI implementation to be successful, Bank Negara Malaysia must impose stringent guidelines that are applied consistently across the board, and every Islamic bank must be held accountable. The industry leaders of all Islamic banks must shift their mindset from one of compliance to conscience. This is essentially about convincing industry players to adopt VBI. After this is accomplished, Islamic banking will progress toward sustainability as outlined in the 17 SDGs of the United Nations. Above all, the implementation of this VBI project will enable Islamic finance to progress in the direction of attaining maqasid al-shariah (Sulaiman, 2021: 78–93; Khan, 2021: 134-155).

IFIs must make sure that the six VBI strategies are implemented in a way that upholds the four guiding principles of the VBI: best conduct, good self-governance, Entrepreneurial Mindset (EM), and community empowerment (Shafruddin and Shahimi, 2024: 12-29). This study discovered that rigorous measurement is essential to examine the success of VBI adoption by the CoPs. Their findings are in line with a study by Rahman et al. (2020: 3-20), which looked into the adoption of VBI-integrated reporting by two Malaysian Islamic banks. By measuring the long-term value of each CoP's contribution to attaining sustainability, six CoPs released annual reports that analyzed the performance and impact of adopting VBISC.

Although value-based processes are not new, VBI has been inspired by and gained knowledge from the global practices known as Value-based Banking (VBB). Under the direction of the Global Alliance for Banking on Values (GABV), value-based banking was established in 2009. Several nations that are dedicated to bringing about constructive changes in the banking industry have taken part in the GABV. They essentially share the goal of using finance to promote sustainable growth in the social, economic, and environmental spheres while assisting individuals in realizing their full potential and forging better bonds with their communities. Value-based banking (VBB) has been shown to have a positive impact on real economic sectors and improve financial institutions' positions. It has been stated that VBB participants have generated higher financial returns than non-participating institutions (Engku Abdul Rahman et al. 2022: 76-85).

In an effort to achieve its goal of becoming the leader in social responsibility and ethical banking, Bank Muamalat Malaysia Berhad (BMMB), one of Malaysia's Islamic banks,

has just become a member of GABV. Additionally, BMMB is noted as the first Islamic bank to be approved as a GABV member. This demonstrates a constructive trend in the Islamic banking sector that all stakeholders ought to follow. When assessing the sustainability and moral impact of an investment in a firm or corporation, VBI generally resembles concepts from ethical finance, Environmental, Social, and Governance (ESG), and Socially Responsible Investment (SRI). The maqasid al-shariah serves as the primary framework for determining the guiding principles, moral compass, and objectives in Islamic finance, which gives VBI a unique advantage. Over the past four decades, Islamic finance has advanced significantly.

Islamic banking must reevaluate its operating paradigm in light of the strategic sustainability issue it faces in this transitional decade. It is commonly acknowledged that the world economy's current linear strategy is to blame for the development of landfills, ecological and environmental degradation, climate change, and other stressors facing the globe. Although the prevailing capitalist worldview emphasizes "taking, making, using, disposing, and wasting" the planet's resources, the water cycle and other ecological principles show that nature never wastes. These fundamental ideas have helped the circular economic system become more and more popular throughout the world in recent years. It investigates strategies, procedures, and rewards designed to reduce waste—ideally, all waste. Given this, how likely is it that Islamic finance and this new paradigm will shake hands? In-depth research and careful consideration are required to examine how economics, finance, business, management, and other humanities disciplines might benefit from nature's lessons through the prism of Islamic principles in addition to the UN's multifaceted SDGs.

According to the 2017 SDGs report, leaving no one behind by reducing inequality, reaching the most vulnerable, and maintaining the ecosystem are the key to preserving human rights and guaranteeing peace and security. In order to accomplish the aims of sustainable development, the current Islamic banking sector must get ready. One initiative to help attain the SDGs may be VBI. According to Jan et al. (2021: 89-105), addressing social and environmental issues is more crucial than looking just at the financial industry's growth statistics when assessing the Islamic finance sector. With the adoption of ideas like sustainable, responsible, impact investing (SRI) in pursuit of objectives beyond

financial incentive, VBI enables Islamic finance to take the lead in the field of ethical finance.

An empirical investigation on the relationship between ESG performance and bank financial performance was carried out by Harahap et al (2023: 6-17). The study found a substantial positive correlation between banks' financial performance and their environmental and social performance. But when it comes to developing markets, the effect of governance on bank performance is minimal. The use of ESG in Shariah stock screening in financial institutions was the subject of a study done in 2021 by Mustafida and Fauziah. They came to the conclusion that, notwithstanding some sustainability challenges, practically all institutions have excellent corporate governance. In order to monitor sustained success, a new criterion for screening Sharia stocks is desperately needed. In a similar vein, Al Ansari et al. (2020) proposed that before Islamic finance and ESG can work together, a number of issues need to be resolved. However, integrating ESG with Islamic financing could prove useful later on. Determining how to get over the obstacles and limitations of ESG integration is the first step toward achieving a higher ESG score.

Brescia et al. (2021: 45-53), examine the financial significance of ESG practices in business. According to their findings, 88% of operations are performed efficiently, and 90% of them demonstrate cost savings. They came to the conclusion that businesses should include ESG in their operations if they wish to "do well while doing good". Additionally, Ayub et al., (2024: 45–67) highlighted how the four pillars of VBI—an entrepreneurial attitude, community empowerment, sound self-governance, and best conduct—embodied in Islamic banks' business strategies will benefit shariah and Islam itself in addition to other stakeholders. According to Rabbani, (2022: 1-28), human civilization has demonstrated the need for a value-based economic system in the global economy. The essential elements and tenets of Islamic economics, which prioritize values in order to promote social justice, are drawn from Islamic scriptures.

2.6 Merging Islamic Finance with Value-Based Intermediation (VBI)

The financial industry benefits from VBI through increased innovation, improved efficiency, and an effective ecosystem; customers and the community benefit from fair

and transparent treatment that raises standards of living; the government benefits from the realignment of business focus with the national agenda; and regulators benefit from strengthened financial stability (Jones, 2021: 5-61). The core tenets of VBI include best behavior, self-governance, empowerment of the community, and an entrepreneurial attitude (Jones, 2021: 5-61). Individuals are encouraged to participate in work, which is considered a form of worship (Ibadah) in Islam when done with the intention of seeking Allah's approval. Furthermore, it includes businesses that provide individuals with the opportunity to generate income from halal sources. Moreover, Nasrullah, (2024: 347-360) asserts that the Islamic financial transaction, serving as the legal framework governing human economic activity, carries great religious significance. As to the teachings of the Prophet Muhammad (PBUH),

"90% of sources of income are derived from business-related activities." (Al-Tirmidhi)(Al-Tirmidhi is the narrator of the hadith).

The main goal of the VBI's "Entrepreneurial Mindset" is to enhance the involvement of IBIs in supporting entrepreneurial endeavours, as stated by the proverb. This will be achieved through the provision of financial aid, as well as proactive support in the form of advisory services, market infrastructure, and business networks[4]. Moreover, by capitalizing on the opportunity to offer all-encompassing services for entrepreneurial endeavors, the Islamic Banking Institutions (IBI) might enhance its innovative capabilities and more effectively meet the demands of businesses and entrepreneurs. The VBI aims to cultivate a conducive business environment that upholds the principles of Islamic entrepreneurship.

One of the etymological sources of the term Maqasid. The term "Shari'ah" originates from the combination of two words: "Maqsad" or "Maqsid" and "Shari'ah," which refers to the purpose of Shari'ah. The Arabic word "maqsad" or "maqsid" refers to the concept of objective, wisdom, intent, or purpose. Additionally, it is a phrase that can be used interchangeably. When used with the term Shari'ah, the term Maqsad or Maqsid can be interpreted as "route," "method," or "a route to a source of water."

[4] The source of the information is the BNM Strategy Paper from 2017

"Shari'ah" refers to a strict adherence to Allah's commands, guidance, and principles that pertain to human activity in both the present life and the afterlife. This is the comprehensive implementation of the term "Shari'ah" (Rasool & all 2020).

Maqsid Shari'ah refers to the safeguarding of the fundamental aspects of the human being (Rasool et al. 2020: 25-46). The verdict is motivated by the Maqasid Shari'ah, which seeks to fulfil the essential needs of mankind and enhance its well-being (Nasir, 2021: 108-119). Maqasid Shari'ah is described as the act of improving human well-being, as stated by Shihan et al. (2023: 1038-1044). Maqasid, also known as Shari'ah, is comprised of three distinct characteristics: essentials (daruriyat), enhancements (hajjiyat), and embellishments (tahsiniyat) (Mubarak et al. 2022: 629-978). In essence, Maqasid Shari'ah is a framework that expedites the advancement towards human excellence in both the present life and the hereafter, aiming to bring benefits to both society and individuals (Norman and Ruhullah, 2024: 47-77).

The strategy paper of the Central Bank of Malaysia describes VBI as a role that acts as an intermediary to achieve the desired goals of Shariah by implementing policies, conduct, and services that benefit the economy, community, and environment while still maintaining shareholder profits (Norman and Ruhullah, 2024: 47-77). The idea is also the implementation of "Shari'ah" practices into the businesses. To expedite the implementation of this initiative through strategic networking, nurturing potential champions, enhanced disclosure, and performance measurement, Islamic banks use their maturity level in partnership with stakeholders to "promote a conducive environment via various strategies" (Alias et al. 2024: 1-16).

In Islam, work is regarded as an act of worship, known as Ibadah, when done with the aim of obtaining Allah's grace. Furthermore, this includes business operations that generate revenue from halal sources. Furthermore, Islam emphasizes the role of Islamic financial transactions in economic activity (Lahsasna, 2013: 5-22). VBI's 'Entrepreneurial Mindset' aims to enhance IBI participation in promoting entrepreneurship by providing a wide range of services including funding, advisory services, market infrastructure, and business networks (BNM Strategy Paper, 2017). Providing comprehensive packages for entrepreneurial endeavors can assist IBIs in developing new goods, tools, and business

models to aid firms and entrepreneurs. The primary objective of VBI is to establish a nurturing and proactive atmosphere for entrepreneurial endeavors, while also upholding the essence of entrepreneurship within the Islamic framework (BNM Strategy Paper, 2017).

In accordance with Islamic principles, Muslims have a duty to assume social responsibility for their communities. The Islamic economic system promotes equitable and prosperous living without engaging in the exploitation of others, so benefiting society as a whole (Lewis, 2006: 19-34). The concept of 'Community Empowerment' aims to enhance the power and autonomy of a community by providing them with financial solutions that are advantageous to their interests. An IBI can provide enduring economic advantages to communities by harmonizing commercial and social elements. IBIs can develop, finance, and implement effective solutions to address community concerns, which can have a beneficial impact on communities and create new economic prospects. The combination of Waqf and Sadaqah in Islamic financial transactions is exemplified in the BNM Strategy Paper of 2017. The Quran clarifies the concept of Ihsan as a complement to justice. Allah (SWT) states in the Quran:

"Indeed, Allah orders justice and good conduct and giving to relatives and forbids immorality and bad conduct and oppression. He admonishes you that perhaps you will be reminded." (AlQuran, 16:19).

The term "righteousness" (Ihsan) is consistently employed in the Quran, albeit with distinct connotations. Justice pertains to legal concepts, while ihsan pertains to moral concepts. In Islam, Muslims are urged to pursue excellence and perfection in all element of their lives (Asutay, 2015: 189-192). The Hadith of Gabriel in which Prophet Muhammad (PBUH) states

"Ihsan" is to worship God as though you see Him, and if you cannot achieve this state of devotion then you must consider that He is looking at you" (al-BukhÉrÊ & hadith N° 47, 1980).

Asutay (2015: 189-192) asserts that the Hadith of States promotes the pursuit of excellence and perfection in life. The concept of Ihsan, as defined in VBI, is characterized by the notion of 'Good Self-governance'. This entails promoting organizational discipline

and encouraging stakeholder involvement in the governance process, as outlined in the BNM Strategy Paper of 2017. Good self-government is primarily characterized by the essential components of inclusion and self-governance. The concept of Ihsan is seen in self-governance, where self-discipline is integrated into IBI procedures and practices. To enhance accountability and integrity in Islamic banking institutions (IBIs), it is crucial to adhere to the principle of Ihsan. This principle plays a vital role in promoting the well-being of the community and preventing harm, as stated in the BNM Strategy Paper of 2017.

Istisharah is an Arabic terminology that is strongly linked to the concept of shura. This language originates from the Quran, where Allah SWT explicitly states:

"And those who have responded to their lord and established prayer and whose affair is (determined by) consultation among themselves, and from what We have provided them, they spend." (AlQur'an, 42:38).

Shura involves a strong dedication to engaging in mutual consultation, practicing tolerance, and placing trust in Allah (SWT). Additionally, it possesses the fundamental characteristic of an Islamic administration. Muslims should give priority to engaging in mutual consultation when it comes to matters of commerce and governance, especially with regards to partners and rulers (Lewis, 2006: 19-34). As to the Quran, judgments that involve several parties require access and consultation based on the principles of Shura. Islam promotes and supports the practice of open and sincere cooperation in the process of making decisions.

Lewis (2006: 19-34) states that the shuratic decision-making process establishes a connection between economic and other decision-making by incorporating Islamic moral precepts. This approach is advocated for by emphasizing the principles of "good self-governance" and inclusive governance. Inclusive governance encompasses the decision-making process of an International Business Institution (IBI) that affects not just its shareholders, but also its extended stakeholders, consumers, and investors. IBIs necessitate the active involvement of stakeholders in crucial decision-making processes. A holistic consultation enhances perspectives, insights, and expectations for IBIs, hence impacting the outcomes of business plans (BNM Strategy Paper, 2017).

The VBI strategy, which BNM designed for the Malaysian Islamic finance industry, consists of six tactics. It is also made clear that the concept of VBI is not new, as it is similar to well-known contracts such as Ethical Finance, Environmental, Social and Corporate Governance (ESG), and Sustainable, Responsible, Impact Investing (SRI). The primary distinction between these contracts and VBI is that the latter relied on Shariah to determine its core values (BNM, 2018). Additionally, there are differences between VBI and CSR. While CSR initiatives are typically separated from business activities (on a philanthropic basis) and are seen as a cost center rather than a profit center, VBI focuses on doing good that is well integrated within business activities such as offerings and practices (as a source of competitive advantage) (BNM, 2018).

2.7 Circular Economy

The Circular Economy (CE) is an innovative concept with the potential to fundamentally transform traditional production, consumption, and manufacturing practices. Based on a closed-loop methodology, CE seeks to minimize waste and maximize the use of resources, contrasting with the extractive and wasteful "take, make, dispose" model of the linear economy (MacArthur Foundation, 2020). CE introduces eco-friendly and sustainable production processes, fostering value creation and economic prosperity globally. The framework is characterized by principles of reduction, reuse, and recycling, aiming to decouple economic growth from resource consumption while minimizing environmental harm (Geissdoerfer et al., 2020: 89-105). Historically, the term "circular economy" was first defined by Kenneth Boulding in the 1970s in his work The Economics of the Coming Spaceship Earth. He differentiated open and closed systems, arguing that while open systems lose resources to waste, closed systems retain resources for future reuse, ensuring sustainability (Korhonen et al., 2021: 37-46). The concept has since evolved, with scholars emphasizing its regenerative nature, aimed at restoring ecosystems and creating resilience through innovative design and sustainable practices. Modern interpretations emphasize the transition from "take, make, waste" to "reduce, reuse, recycle," fostering both business growth and environmental conservation (Kirchherr et al., 2021: 123-145).

CE's global adoption has been driven by its potential to address resource scarcity, promote efficiency, and contribute to the achievement of Sustainable Development Goals (SDGs).

A study by Alam et al. (2021: 23-56) on green financing revealed that while CE-based companies often rely on internal financing mechanisms like retained earnings, external funding from banks and investors is increasingly available. Regulatory frameworks supportive of CE have encouraged financial institutions to invest in circular businesses, signaling a broader shift toward sustainability-driven financing. Ibrahim et al. (2021: 78-92) explored the role of Islamic finance in supporting CE, particularly in OIC nations. Their study highlighted how Shariah-compliant financial instruments such as equity financing and risk-sharing contracts can drive investments in CE enterprises, aligning economic progress with environmental preservation. Islamic finance has demonstrated significant potential in facilitating the transition to a CE, leveraging principles like Maqasid al-Shariah to ensure sustainable and ethical economic activities. Research by Mohamed (2021: 15-28) emphasized the importance of integrating social and environmental considerations into Islamic financial decisions, arguing that economic activities must align with broader societal welfare. Similarly, Hassan et al. (2020: 30-55) found that Islamic banking systems could accelerate the shift to CE by aligning their operations with SDGs, providing a robust framework for addressing climate change, poverty, and resource inefficiencies. The concept of Venture Waqf has been identified as an innovative mechanism for funding CE projects. According to Khan (2021: 134-155), Venture Waqf combines Islamic philanthropy with venture capital principles to support entrepreneurial activities in CE. By providing risk-free capital for innovative businesses, this mechanism fosters sustainable development while upholding ethical investment practices.

CE's adoption varies across regions, with countries like China, the European Union, and Canada leading efforts through comprehensive policies and regulations. The European Commission estimates that CE could add €600 billion annually to the EU economy, highlighting its potential for economic growth (Schroder et al., 2021: 110-125). China pioneered CE legislation in 2008, creating a legal framework to promote resource efficiency and industrial recycling. However, the global implementation of CE faces significant barriers, including lack of consumer awareness, limited demand-side support, and resistance to systemic change (Rizos et al., 2021: 56-75). According to Kirchherr et al. (2021: 123-145), one of the primary challenges in CE adoption is ideological resistance

from organizations, which often prioritize short-term profitability over long-term sustainability. Structural and political barriers also hinder progress, as institutions struggle to integrate CE principles into existing frameworks. Despite these obstacles, technological advancements and policy innovations have created opportunities for scaling CE practices. Schroder et al. (2021: 110-125) argue that stronger institutional frameworks and stakeholder collaboration are essential to overcoming these barriers. The economic benefits of CE extend beyond resource conservation. By fostering innovation and creating new market opportunities, CE drives economic growth while reducing environmental impact. Studies by Rizos et al. (2021: 56-75) and Geissdoerfer et al. (2020: 89-105) highlight the transformative potential of CE in industries such as renewable energy, waste management, and sustainable agriculture. Furthermore, CE contributes to social welfare by promoting job creation and community development, aligning with SDG objectives (MacArthur Foundation, 2020). However, the transition to CE also presents challenges. Initial investments in CE practices can be cost-intensive, deterring small and medium-sized enterprises (SMEs) from adopting these models. Kirchherr et al. (2021: 123-145) note that while large corporations have the resources to implement CE strategies, SMEs often face financial and logistical constraints. Additionally, the effectiveness of CE depends on consumer participation, as recycling and reuse initiatives require widespread public engagement.

Financial institutions play a critical role in enabling the transition to CE by providing funding and support for sustainable projects. Green financing, a key component of CE, involves directing capital toward environmentally sustainable initiatives such as renewable energy, energy efficiency, and green infrastructure (Alam et al., 2021: 23-56). Islamic finance, with its emphasis on ethical investment, offers unique opportunities to support CE. Instruments like green sukuk provide Shariah-compliant options for funding sustainable development, aligning financial activities with both environmental and religious principles (Ibrahim et al., 2021: 78-92). Research by Mohamed (2021: 15-28) highlights the potential of Islamic finance to address the financing gap for CE projects in developing countries. By leveraging instruments like profit-sharing contracts and venture waqf, Islamic financial institutions can provide the necessary capital for CE enterprises, fostering economic resilience and environmental sustainability. The integration of CE

principles into Islamic finance represents a significant step toward achieving global sustainability goals. By aligning financial practices with Maqasid al-Shariah, Islamic financial institutions can contribute to the development of a more equitable and sustainable economic system. However, realizing this potential requires overcoming several challenges, including regulatory barriers, lack of consumer awareness, and resistance from traditional financial institutions (Schroder et al., 2021: 110-125). Future research should focus on developing innovative financial instruments that align with CE principles and exploring the role of technology in scaling sustainable practices. Additionally, stronger collaboration between policymakers, financial institutions, and businesses is essential to creating an enabling environment for CE adoption. By addressing these challenges, CE and Islamic finance can play a transformative role in shaping a sustainable future.

2.7.1 Islamic Finance and Circular Economy

The linear economy is the name of the economic model that is now in use. It consists of resource extraction, production, utilization, and waste. This paradigm focuses exclusively on consumption, construction, and abstraction. Waste production's externalities are disregarded and viewed as the responsibility of others (Tahir, 2019: 12-27). The primary goal of the current economic system is wealth maximization.

Figure 2.1: Linear Economy
Source: Tahir, 2019

There are three stages to the circular economy's deployment. The first is at the micro- or enterprise-level, where businesses prioritize using innovation to drive economic expansion and process improvement. Additionally, implementation planning helps businesses save expenses by improving their reputation with investors and customers. The organizations that are part of the industry and profit from both the environment and regional economies make up the meso level. Finally, the macro level places greater

emphasis on the development of infrastructure, such as economically favorable provinces or cities, through the introduction of institutional influence and environmental legislation.

The circular economy model shares similarities with the Islamic philosophy of protecting the environment and meeting human needs. By giving humanity direction and a road map, the goals of shariah guarantee the viability of society and social welfare (Chapra, 2008: 4-48). Renowned Islamic thinker Al-Ghazali divided the goals of shariah into five categories according to human needs. These goals, though, are merely starting points because they can be used to achieve other goals.

Figure 2.2: Objectives of Shariah

Source: Al-Ghazali, 2007

1. Religion (Din): The ultimate revelation is sent through Prophet Muhammad (Peace Be Upon Him) to complete the religion of Islam. And to prosper both here on Earth and in the hereafter, one must follow the instructions and maintain the order given. The state accomplishes this goal and is in charge of implementation. It can be attained by making sure that Islamic precepts are upheld and that no one defiles the Islamic doctrine (Chapra, 2008: 4-48).

2. Self (Nafs): This goal makes clear how humans fit into Allah's Khalifah function. Humans have a responsibility to protect the earth's resources, which include its physical, intellectual, and technical capacities. And these are essential to both the long-term

viability of society and the welfare of its citizens. The goal is to ensure that people understand their worth, social equality, decency, and fraternity (Chapra, 2008: 4-48).

3. Intellect (Aql): Thanks to Allah's gift of intellect, humans have been freed from other creations. It is enhanced by comprehension and knowledge. Studying, comprehending, and interpreting scholarly writings as well as religious materials helps achieve this goal. In order for humans to make rational and moral decisions based on reason and revelation, they also need to acquire information about science education. (Chapra, 2008: 4-48)

4. Posterity (Nasl): This goal makes sure that moral growth, good upbringing, intellectual demands are met, the environment is healthy, harmony is maintained, and protection occurs. Civilization cannot thrive if the next generation does not experience healthy mental, physical, and spiritual development (Chapra, 2008: 4-48).

5. Wealth (Mal): This goal is more important to ensuring society's well-being and sustainable growth. Income disparities in society are lessened by the Zakah rule. Getting wealthy also makes it easier to fund efficiency studies, top-notch education, etc. According to Chapra (2008: 4-48).

It is evident from the explanation above that shariah aims support the long-term and short-term social welfare of people, the environment, and society at large. Human welfare is guaranteed as well as society is enhanced and flourishes when the afore mentioned goals are met. The primary objectives of the current linear economic system are economic growth and wealth maximization. As a result, it disregards factors like social development and environmental preservation that are essential for sustainability. Because of this, it is difficult to fulfill the goals of shariah under this paradigm. As such, the circular economy takes into account the aspects that align with Islamic ideology (Tahir, 2019: 12-27).

2.7.2 Merging Islamic Finance with Circular Economy:

According to Hassan et al. (2020: 30-55), the Circular Economy (CE) model emphasizes a transition from the linear economy to a sustainable system that reduces waste and promotes environmental sustainability. This shift aligns closely with the principles of Islamic banking, as resource sustainability and conservation are central tenets of Maqasid Al-Shariah, the higher objectives of Islamic law. The integration of CE with Islamic finance is not only a logical progression but also an ethical imperative in light of the

Quranic teachings. For instance, as highlighted by Khan (2019: 45-65), Quranic verse 42:20 underscores the dichotomy in human motivation: material desires versus moral responsibility. Additionally, Quranic verse 17:27 warns against wastefulness, labeling it a devilish act. These verses provide a framework for balancing consumption with conservation, a principle that lies at the heart of CE and is embedded within Islamic ethical teachings. The connection between the CE and Maqasid Al-Shariah is further elucidated through the concept of two paradigms of human behavior, as identified by Khan (2019: 45-65). The first paradigm, driven by material motives, reflects wasteful and profit-centric tendencies often evident in the modern linear economy. This approach disrupts social equality and environmental stability, as it prioritizes financial gain over societal welfare. In contrast, the second paradigm, grounded in Quranic verse 2:201, advocates for a balance between worldly pursuits and spiritual accountability. This paradigm aligns with CE principles, encouraging entrepreneurship and economic activity that is honest, reliable, compassionate, and environmentally conscious.

Khan (2019: 45-65) further critiques the misuse of traditional Islamic financial instruments, such as Kafalah, Daman, Tawarruq, Wad, and Hawalat Al-Dayn, which were originally intended to foster compassion and societal welfare. Over time, these instruments have been commercialized, sacrificing their intrinsic value to society for mere financial profit. This deviation underscores the urgency of reconnecting Islamic finance with its ethical foundations as outlined in Maqasid Al-Shariah. By aligning Islamic finance with the CE model, financial practices can be reoriented toward creating value for society, promoting sustainability, and achieving holistic economic growth. The integration of CE principles within Islamic finance not only fulfills religious and ethical obligations but also offers a practical pathway for addressing contemporary economic and environmental challenges. Islamic finance, when aligned with CE, can serve as a robust framework for fostering sustainable development, minimizing waste, and ensuring social equity. This alignment has the potential to redefine the global economic landscape, offering a balanced approach that harmonizes material prosperity with spiritual and environmental stewardship.

2.7.3 Role of Islamic Finance in the Transformation from Linear to Circular Economy

The Islamic financial system is increasingly regarded as a reliable and practical funding option for fostering sustainable economic development, particularly when compared to its conventional counterpart. Islamic financial institutions (IFIs) benefit from an inherent structural advantage, as they are based on the principle of risk-sharing rather than profit maximization. This framework encourages equitable economic participation while mitigating the risks associated with speculative activities. Notably, the robustness of Islamic finance was highlighted during the global financial crisis of 2007–2008, where it demonstrated greater resilience compared to conventional financial systems. Over the past two decades, the Islamic banking sector has experienced significant growth, expanding rapidly in both Muslim-majority and non-Muslim-majority nations (IFSB, 2020).

The potential of Islamic finance in promoting sustainability is particularly evident in its alignment with the principles of the circular economy (CE). The Ellen MacArthur Foundation (2021) underscores the limitations of the linear economy, emphasizing that approximately 21 billion tons of materials used in production are not incorporated into end products, resulting in wasted resources. This inefficiency highlights the urgent need for a transition to CE models that minimize waste and optimize resource use. In this context, Islamic finance presents a compelling alternative, as its principles of ethical investing and social responsibility align seamlessly with the goals of CE. According to the IFSB (2020), Shariah-compliant banking and financing systems operate in more than 30 countries, with assets exceeding USD 2.5 trillion. The growth of Islamic finance into international markets positions it as a significant force for global sustainable development. The foundational objectives of Islamic finance—social equity, environmental stewardship, and ethical governance—make it uniquely suited to support the transition from a linear economy to CE. Through mechanisms such as profit-and-loss sharing contracts, equity-based financing, and ethical investment strategies, Islamic finance can channel substantial resources into socially and environmentally conscious businesses.

Islamic social funds, including zakat, waqf, and sadaqah, further enhance the capacity of Islamic finance to drive the CE agenda. These instruments provide critical funding for

initiatives that reduce waste, recycle discarded materials, and promote innovative environmental solutions. For example, green sukuk (Islamic bonds) have emerged as a powerful tool for financing sustainable projects such as renewable energy, waste management, and sustainable infrastructure (Hassan et al., 2021: 339-365). By embedding Shariah principles into financial products and services, Islamic finance ensures that economic activities contribute positively to societal and environmental well-being. Additionally, Islamic financial schemes can support the governance structures necessary for implementing and maintaining sustainable business models. By financing companies committed to environmental innovation, Islamic finance fosters the development of efficient circular business practices. These include recycling, resource optimization, and the creation of closed-loop supply chains. Furthermore, the advisory services provided by IFIs, grounded in Shariah principles, ensure that businesses adhere to ethical and sustainable practices while aligning their operations with the broader goals of the CE and the Sustainable Development Goals (SDGs).

2.8 Discussion of Key Variables

2.8.1 Resource Efficiency

Resource efficiency refers to the optimal use of resources to achieve maximum output with minimal harm to the environment. According to Wang et al. (2022: 130-144), this concept encompasses the processes of resource extraction, processing, manufacturing, consumption, and disposal, all performed in the most efficient manner possible. The significance of resource efficiency lies in its potential to reduce resource consumption, decrease operational costs, and lessen the environmental footprint of economic activities. By improving resource efficiency, businesses and industries can enhance their economic and environmental performance while contributing to global sustainability goals. Resource efficiency is evident across various sectors, demonstrating its adaptability and effectiveness. As noted by Bodas-Freitas and Corrocher (2019: 102-118), manufacturing industries have adopted lean manufacturing systems to minimize waste and maximize efficiency. Tools like Just-in-Time (JIT) inventory control help reduce the costs associated with excessive inventory storage, while continuous improvement initiatives enhance productivity and product quality. In the construction sector, resource efficiency involves

the use of sustainable building materials, energy-efficient designs, and innovative construction methods. Cheng et al. (2024: 55-78) highlight how prefabrication technologies in construction reduce waste and shorten project timelines, resulting in cost savings and minimal environmental impact. Similarly, agriculture demonstrates resource efficiency through precision farming techniques, which optimize the use of inputs like water, fertilizers, and pesticides. Fan and Chen (2022: 123-144) emphasize that such technologies improve yields while minimizing environmental degradation.

Resource efficiency is not only an environmental necessity but also a driver of economic and social benefits. From an environmental perspective, resource efficiency reduces the consumption of natural resources, limits greenhouse gas emissions, and curtails pollution. As noted by Xu et al. (2023: 78-94), industries and households adopting efficient resource utilization practices can significantly mitigate their impact on climate change. Economically, resource efficiency reduces production costs, enhances business competitiveness, and opens avenues for innovation. Yi et al. (2023: 45-60) point out that resource-efficient businesses often experience increased revenues and market advantages due to cost savings and improved operational practices. Moreover, resource efficiency fosters the development of new technologies and business models, creating opportunities for sustainable economic growth. On the social front, resource efficiency contributes to meeting sustainable development objectives. Yan et al. (2023: 110-130) explain that efficient resource use ensures availability for future generations while reducing the social and health impacts associated with resource consumption. By promoting equity in resource allocation and minimizing environmental degradation, resource efficiency supports broader societal goals. Ultimately, resource efficiency represents a vital component of sustainable development, addressing economic, environmental, and social needs in an integrated manner.

2.8.2 Waste Management

Waste management refers to the deliberate process of collecting, transporting, treating, and disposing of waste. According to Zorpas (2020: 145-165), waste management is a critical intervention to conserve health, the environment, and valuable resources. Its primary goals include reducing the harmful effects of waste on the environment and

human health, minimizing greenhouse gas emissions, and conserving natural resources (Das et al., 2021: 112-126). Transitioning from the traditional economy, where waste is discarded, to a circular economy, where waste is recovered, reused, or recycled, underscores the transformative potential of effective waste management. As highlighted by Bui et al. (2020: 34-56), adopting specific approaches can significantly enhance waste management systems and align them with circular economy objectives.

One of the most effective strategies is the promotion of waste reduction programs. These initiatives aim to minimize waste generation at the source, encouraging sustainable production and consumption patterns (Aparcana, 2020: 78-95). This can be achieved through designing products for durability, facilitating repair and disassembly, and creating awareness campaigns to discourage unnecessary wastage. Zhang et al. (2021: 200-220) emphasized that recycling and composting are equally vital, as they help process waste materials and nutrients for reuse. For instance, recycling paper, glass, metals, and plastics reduces reliance on landfilling, conserving virgin resources. Organic waste such as food scraps and yard trimmings can be composted to create nutrient-rich compost, which is valuable for sustainable agricultural practices (Fernández-González et al., 2020: 210-230).

Another strategic approach involves the utilization of waste-to-energy (WTE) facilities, which generate energy from non-recyclable waste while reducing the volume of waste requiring disposal (Rodić & Wilson, 2020: 89-108). This not only addresses waste disposal challenges but also contributes to renewable energy generation. Wulandari et al. (2021: 90-115) highlighted the centrality of waste management in achieving circular economy goals, noting that the proper collection, sorting, and processing of waste materials are crucial for enhancing their reuse, recycling, and recovery potential. Effective waste management prevents the disposal of materials in landfills and incinerators, conserving natural resources and reducing environmental degradation. França et al. (2021: 45-72) argue that this approach creates secondary markets for recycled materials, encouraging the incorporation of recycled content in production processes and product designs. By doing so, waste management fosters innovation and investment in sustainable technologies and infrastructure, creating economic opportunities and improving resource security (Salmenperä et al., 2021: 67-89). Furthermore, waste management minimizes the ecological impacts of manufacturing and consumption, supports climate change

mitigation, and improves the sustainability of urban and rural environments (Rodić & Wilson, 2020: 89-108).

2.8.3 Recycling Rates

Recycling rates, as defined by Jin et al. (2021: 200–220), represent the proportion of waste materials that are not incinerated or discarded in landfills but are instead processed for reuse or other purposes. This metric is calculated by determining the ratio of recyclable waste collected and processed to the total waste generated. Recycling rates serve as critical indicators of the effectiveness of recycling initiatives, regulations, and their associated environmental and economic impacts. Tang et al. (2020: 65-80) highlight that high recycling rates demonstrate efficient waste diversion and resource recovery, contributing significantly to the achievement of sustainable development goals (SDGs). These rates relieve pressure on natural resources, reduce emissions, and enhance the sustainability of environmental management systems.

The extent of recycling in any given region depends on multiple factors, including policy measures, public awareness, and the availability of infrastructure. According to Razzaq et al. (2021: 98-115), initiatives like mandatory recycling ordinances and landfill levies positively influence recycling behavior, compelling individuals and businesses to actively participate in recycling activities. Ma et al. (2022: 112-130) emphasize that public awareness and education play an essential role in promoting recycling by encouraging communities to adopt and embrace recycling practices. Additionally, the presence of adequate recycling infrastructure, such as efficient collection services, drop-off centers, and sorting facilities, significantly enhances recycling rates. Faraca et al. (2021: 88-110) also underscore the importance of economic factors, such as market demand for recycled materials and the costs associated with recycling processes, in determining the feasibility and profitability of recycling businesses.

The benefits of high recycling rates extend beyond waste management, encompassing substantial environmental, economic, and social advantages. Environmentally, increased recycling preserves natural resource capital and ecosystems by minimizing the need for virgin materials. As noted by d'Ambrières (2020: 56-78), recycling reduces waste disposal in landfills and incinerators, subsequently lowering emissions of harmful gases like

methane and carbon dioxide. Additionally, recycling protects land and water resources from pollution. Xiao et al. (2021: 45-70) argue that the economic advantages include job creation in collection, processing, and manufacturing industries, fostering economic growth. Recycling also results in cost savings, as processing recycled materials is often less expensive than sourcing and using virgin resources. Furthermore, high recycling rates stimulate innovation, fostering new technologies and business models that enhance economic competitiveness and sustainability (Reschovsky & Stone, 2021: 34-50). Socially, recycling promotes environmental consciousness, cultivating a culture of sustainability within communities. Shevchenko et al. (2021: 89-112) emphasize that by engaging in recycling practices, societies develop a shared commitment to protecting the environment and ensuring sustainable economic development for future generations. This collective responsibility strengthens environmental stewardship and underscores the interconnectedness of environmental, economic, and social well-being.

2.8.4 Water Usage

As stated by Galaz et al. (2018), water is an essential and scarce resource for human beings, agriculture, industries, and ecosystems, hence proper utilization of water is a vital facet of sustainable development. Water conservation is important because it helps to ensure the provision of additional fresh water for the present and future generations, preservation of the health of ecosystems, and decrease in the negative effects from water abstraction and use. Dikau and Volz (2020: 8-25) posit that water insecurity is on the rise in many parts of the world owing to factors including population pressure, climate change, rising food and manufacturing needs among others. These challenges warrant efficient water usage practices in order to improve water management. There are several techniques that can be applied to minimize water consumption in various sectors. As cited by Taghizadeh-Hesary & Yoshino, (2019: 505-518), in agriculture that is the most extensive consumer of water globally, the methods of drip irrigation, rainwater harvesting, and soil moisture sensors will enhance water efficiency. Micro irrigation works by reaching the plant root zone with least evaporation and drainage while rain water management involves collecting rain water for irrigation. As stated by Meo and Abd Karim (2022), the soil moisture sensors allow farmers to control water application depending on the real-time availability of soil moisture hence minimize wastage in water application. Some best

practices and technologies include closed cooling system, water reuse and recycling, and proper management of equipment. As stated by Ren et al., (2020: 7-12), closed loop cooling system circulate water within the systems and reduce the use of fresh water while water recycling and reuse involve purification of waste water and reusing it in industries. Effective management of equipment helps to ensure that the equipment performs its function effectively, thus minimizing water losses through leakage or inefficiencies.

Water usage in the context of the environment is a very significant factor since the extraction and consumption of water may lead to pollution of available water sources and destruction of habitats. Sachs et al. (2019: 804-812) argued that the effects of excessive use of water include disappearance of rivers, lakes and aquifers hence affecting the aquatic life and human beings who depend on them for water sources. This also leads to wastage of energy as extraction, purification and delivery of water consumes a lot of energy. As stated by Zhou et al. (2020: 112-130), water conservation is an effective way of decreasing energy intensity and total emissions of greenhouse gases, thus slowing down climate change. Also, minimal water wastage means that there is less water that has to be treated and consequently, less water that is likely to pollute the environment. Zhang et al. (2021: 200-220) have put it that integrated water resources management and use of water-saving technologies is critical in satisfying human needs and sustaining natural ecosystems for sustainable use of water.

2.8.5 Ecological Footprint

The ecological footprint refers to the human impact on the environment in terms of the amount of bioproductive space and resources used. As defined by Kihombo et al. (2021), it measures the extent of the biologically productive area and water needed to provide the resources used and to condition the wastes produced by a population, person or activity. This idea gives a full picture of man's interaction with his environment as far as utilization of resources and discharge of wastes is concerned. Yao et al, (2021: 2-12) mentions that when comparing the human ecological footprint to the biocapacity, one can determine whether the world is sustainable. Ecological overshoot occurs when an individual's ecological footprint is larger than the biocapacity of the Earth, which suggests that consumption rates are unsustainable and consuming natural capital.

As pointed out by Destek and Sarkodie, methods for measuring ecological footprint include estimating the quantities of land and water needed for distinct uses including agricultural and croplands for food production, rangelands for grazing, forest land for timber and for carbon storage, fishery grounds for seafood, and constructed land for development. This measurement also includes the area of land needed to offset CO2 emissions from the burning of fossil fuels. Wang et al., (2023: 212-234) noted that bodies like the Global Footprint Network use standard method of determining these values thereby making cross geographical area and temporal comparisons possible. Some of the ways by which the ecological footprint can be minimized include efficiency improvement, sustainable agriculture, conservation of energy, proper disposal of waste products, and sustainable consumption (Baloch et al., 2019). For example, eating less meat can potentially reduce the pressure on grazing lands, whereas improving the efficiency of energy use and utilizing renewable energy sources can reduce the carbon intensity.

The role of ecological footprint in sustainability assessment is rather critical. The paper of Majeed and Mazhar (2019: 487-514) has a practical significance for assessing the human impact on the Earth and highlighting the areas that exceed the planetary boundaries. In essence, it will assist policymakers, businesses, and individuals to take all necessary measures to reduce their footprint and embrace sustainable practices. According to Kihombo et al., (2021), understanding the ecological consequences enables resources, production and corporate responsibility in the business. The ecological footprint data can help governments apply environmental policies, set goals and objectives and measure achievement of the goals (Yao et al., 2021: 2-12). Additionally, it is advantageous in enhancing people's consciousness on the need to adopt environmentally friendly practices that would assist in the support of planet earth.

2.8.6 Interest Rate

Interest rates, as defined by Smith and Taylor (2022: 45-70), represent a critical variable in financial markets, determining the cost of borrowed funds and the returns on saved or invested capital. Central banks and financial institutions establish interest rates to maintain economic stability, control inflation, and foster growth. Interest rates significantly influence various economic activities, including household expenditures, firm

investments, the housing market, and government borrowing. According to Blanchard (2020: 34-56), lower interest rates reduce borrowing costs, thereby increasing spending and investment, which can drive economic growth. Conversely, higher interest rates raise borrowing costs, reducing consumption and investment, which helps control inflation but may slow economic expansion.

Interest rates play a pivotal role in shaping investment and economic activities. Cochrane (2021: 98-112) asserts that lower interest rates reduce the cost of capital, which is crucial for funding new projects, expanding business operations, and fostering innovation. This, in turn, leads to increased output, job creation, and overall economic growth. Altavilla et al. (2021: 123-145) highlight that lower interest rates benefit consumers by reducing credit costs for significant purchases such as homes and vehicles, boosting demand. However, higher interest rates elevate financing costs, deterring business investments and household consumption. As Goodhart and Lim (2023: 78-99) point out, while high interest rates can curb inflation, they also hinder growth and limit employment opportunities. Moreover, interest rate fluctuations influence exchange rates, thereby affecting international trade and investment dynamics.

The relationship between interest rates and sustainable finance is complex and multifaceted. Sustainable finance involves managing and allocating funds to support activities that are environmentally responsible, socially equitable, and economically viable. Brunnermeier and Koby (2022: 67-89) argue that interest rates directly impact the cost and accessibility of capital for sustainable investments. Lower interest rates encourage investments in renewable energy, energy efficiency, and other sustainable projects by reducing borrowing costs. Additionally, low rates promote demand for green bonds and other sustainable financial products, channeling more capital into eco-friendly initiatives. According to Holston et al. (2021: 210-230), central banks and market regulators can further sustainable finance by integrating sustainability principles into monetary policy frameworks and ensuring that financing activities account for environmental and social costs.

However, promoting sustainable finance requires broader strategies beyond interest rate adjustments. Blanchard (2020: 34-56) emphasizes the importance of establishing

legislation and policies that support investments in sustainable assets, purchasing financial instruments aligned with environmental and social goals, and incorporating Environmental, Social, and Governance (ESG) criteria into financing frameworks. Altavilla et al. (2021: 123-145) also highlight the role of international agreements, such as the Paris Accord and the Sustainable Development Goals (SDGs), in providing frameworks for sustainable development. These agreements set objectives for promoting sustainability through coordinated global efforts. Consequently, financial institutions, investors, and policymakers must collaborate to advance sustainable finance initiatives, ensuring that economic activities yield positive environmental and social impacts while maintaining financial stability.

2.8.7 Investment in Job Creation

Employment is a fundamental driver of economic and social development. Balsmeier and Woerter (2021: 45-67) highlight that employment not only generates income for individuals but also stimulates demand for goods and services, creating a virtuous cycle of spending and production that promotes economic prosperity and stability. Furthermore, employment fosters social opportunities by enabling individuals to participate in economic activities, contributing to poverty eradication within communities. Shakoor and Shojaei Fard (2020: 56-78) assert that job creation advances social justice by allowing diverse populations to engage in the economy, addressing inequities, and enhancing social cohesion. When challenges such as unemployment and underemployment are addressed, the resulting productivity improvements contribute to eradicating unfairness and fostering equitable economic growth.

Promoting investments in job creation requires deliberate strategies and policies. Ram et al. (2021: 45-78) outline several measures governments and private sectors can adopt to boost employment. For example, providing tax credits, subsidies, and grants to businesses can incentivize them to create more job opportunities. Cloyne et al. (2021: 34-56) note that such incentives reduce the cost of recruitment and help organizations expand their workforce. Additionally, funding education and vocational training is crucial for equipping individuals with skills that enhance their employability and productivity. Fragkos and Paroussos (2021: 112-135) emphasize the importance of infrastructure

development in sectors such as transportation, energy, and communication. These projects not only create direct employment opportunities but also improve the business environment, attracting further investments and driving economic growth.

The benefits of job creation extend beyond economic gains to include significant contributions to community welfare and sustainability. Schoenmaker and Schramade (2021: 89-112) argue that employment raises the quality of life by enabling individuals to afford better healthcare, education, and housing, leading to healthier, better-educated, and more secure populations. Moreover, job creation boosts demand for locally produced goods and services, encourages the growth of small enterprises, and strengthens local economies. From a sustainability perspective, Dvořák et al. (2021: 78-100) point out that job creation can support the transition to a green economy by fostering sustainable employment in renewable energy, energy efficiency, and sustainable agriculture. Green jobs not only reduce carbon emissions but also promote the utilization of renewable resources, contributing to environmental sustainability. Targeted employment initiatives also address social sustainability by focusing on vulnerable and marginalized groups. By providing job opportunities to these populations, employment policies help reduce inequalities and foster social inclusion. Dvořák et al. (2021: 78-100) highlight that such targeted efforts create a more equitable society while enhancing the overall resilience and sustainability of communities. In conclusion, employment generation is a critical pillar of economic growth, social justice, and environmental sustainability, making it a priority for governments and private sectors worldwide.

2.8.8 Value-Based Intermediation (VBI)

Ismail et al. , (2022: 76-85) define Value-Based Intermediation (VBI) as a strategic framework developed by BNM that is meant to advance the function of Islamic financial institutions to create positive social and environmental impact. VBI principles talk about the incorporation of ethical, social, and environmental factors into the financial practices as per the objectives of Shariah (maqasid al-shariah). The pointed out principles of VBI are the expansion of inclusion and the increase in the general welfare, commitment to the real economy, non-discrimination and transparency, and reference to the long-term value for the society rather than the short-term profit. While following them, Islamic banks

strive not only for the shareholder profits but also for the value added to the customers, employees, communities and the environment (Zahra, 2018: 45-67).

The importance of VBI in Islamic finance lies in the possibility of turning the financial industry into an enabler of sustainable development. Ethical behaviour, social justice and economic equity which form the core of Shariah have always been central to Islamic finance. Zahra (2018: 45-67) argues that VBI builds on these aspects in that environmental sustainability and social responsibilities are integrated into the financial evaluation process. This approach correlates with the increase in the adoption of Environmental, Social, and Governance (ESG) standards around the world, thus putting Islamic finance at the forefront of sustainable financing. Mallick states that VBI challenges Islamic banks to innovate and deliver Shariah-compliant products and services that meet SDGs objectives. In that way, VBI follows the real economy, avoiding the speculation and negative impact on the economy and sustainable development, where financial transactions stimulate productive investments that benefited for the society and environment (Shafruddin and Shahimi, 2024: 12-29).

It is worth noting that many case studies and examples reflect the application of the principles of VBI in the sphere of Islamic finance. As highlighted by Ismail et al. (2020: 45-56), an excellent example is Bank Islam Malaysia Berhad (BIMB) that has adopted VBI as a strategic approach. BIMB aims at identifying projects that have potential social and/or environmental returns like; low-cost housing, solar based power projects, and social businesses. In their opinion, Mahyudin and Rosman, (2020: 34-44) stated that, through the VBI management, BIMB helps the formation of sustainable communities and fosters the socio-economic growth of the country. Another example of VBI implementation is Maybank Islamic – this company applies the concept of VBI to solve the issues of financial exclusion and environmental issue. Maybank Islamic for instance has micro-finance products to reach out to the low end of the society to improve on their standard of living. Moreover, as pointed out by Mahadi et al (2019: 70-87), the bank finances renewable energy companies to invest in green projects like solar power and energy efficient buildings.

Therefore, the examples highlighted above illustrate the workings of VBI and the potential consequences of its application. Therefore, the integration of VBI into Islamic banks can enhance the banks' brand recognition and market standing, target socially-savvy investors, and improve customer and community ties (Hamad et al. 2023: 379-398). The VBI framework also provides a strong risk management frame by focusing the attention of the banks on long-term implications of environmental and social factors. It helps the Islamic banks to work within the ever-evolving global financial environment efficiently and with stability.

2.9 Relationship Between Key Variables

2.9.1 Resource Efficiency and Value Based Intermediation

As stated by Noordin bin Hasan and Syed Jaafar Alhabshi (2023: 56-78), reinforcing the sustainability of Islamic Financial Institutions (IFIs) requires establishing a connection between the concept of resource efficiency and the principles of Value-Based Intermediation (VBI). Resource efficiency emphasizes the optimal use of resources to minimize waste and emissions, making it an integral part of ethical and sustainable approaches within VBI (Ayub, 2023: 45-67). Jagadish et al. (2023: 34) describe VBI as focusing on the business and financial value created by financial operations while considering their social and environmental impacts. Hence, resource efficiency aligns with the attainment of Sustainable Development Goals (SDGs) within the framework of Shariah principles as implemented by Islamic banks (Shahrom & Kunhibava, 2024: 89-112). Empirical evidence supports this relationship. Snyder et al. (2022: 78-102) reported that measures within the VBI framework, such as energy-efficient technologies and effective waste management, have proven to offer both environmental and economic value to banks. For instance, a study conducted by the Global Footprint Network revealed that banks adopting these measures reduced costs by up to 20% while lowering carbon emissions by approximately 30% (Mallick, 2021: 78-94). In Malaysia, Bank Islam Malaysia Berhad (BIMB) has exemplified resource efficiency by supporting green technologies and sustainable projects. Through initiatives such as building retrofits and renewable energy integration, BIMB not only reduced resource usage but also enhanced its reputation as a sustainable bank (Mahyudin et al., 2024: 51-65).

The implications for sustainable finance are substantial. Shahrom and Kunhibava (2024: 89-112) emphasize that incorporating resource efficiency as a core principle enables IFIs to mitigate environmental issues and adapt to resource fluctuations. This approach aligns with the VBI framework, which encourages organizations to focus on sustainable value creation and effective risk management. Additionally, the efficient use of resources attracts socially responsible investors who prioritize sustainability in their portfolios. According to Osman et al. (2022: 67-89), global sustainable investment assets reached $35.3 trillion in 2020, accounting for 36% of professionally managed assets. This growth underscores the increasing demand for sustainable financial products, presenting a strong business case for Islamic banks to integrate resource efficiency into their VBI frameworks. By embedding resource efficiency into their operations, IFIs can address environmental challenges, enhance their sustainability credentials, and capture the growing interest in sustainable finance. This integration not only fulfills the dual objectives of adhering to Shariah principles and contributing to sustainable development but also positions Islamic finance as a leader in the global shift towards sustainability. In this way, they can not only meet their ethical responsibilities but also harness new market opportunities, thus increasing the sustainability and inclusiveness of the financial system, Ismail et al., (2022: 76-85). Based on this literature review following hypothesis can be developed:

H1: There is a significant relationship between resource efficiency and different components of VBI

2.9.2 Waste Management and Value Based Intermediation

Rahman et al., (2024: 45-60) posited that waste management strategies correlate with VBI constituents because both seek to encourage eco-friendliness and efficient use of resources. Waste management includes the reduction, reuse, and recycling of waste materials in a way that shall minimize the effects of wastes on the environment. The integration of these practices into VBI frameworks enables Islamic financial institutions to achieve sustainable development objectives in line with Shariah guidelines, particularly the conservation of natural resources and the welfare of the society (Mahadi et al. 2019: 70-87). Another study by Ibrahim et al. , (2018: 110) identified Maybank Islamic as one of the institutions that have adopted robust waste management strategies under VBI

management. Some of the measures include paperless banking and environmental recycling, e-waste banking among others. They have contributed to the reduction of paper usage by 25% and have had a noticeable positive impact on the reduction of e-waste. Further, Maybank Islamic has partnered with local recycling firms to recycle waste materials in its environmental conservationism endeavors. For instance, Ayub (2021) also reports that CIMB Islamic Bank has also incorporated waste management within its CSR activities. CIMB Islamic has also supported community recycling programs and initiated awareness on the consequences of wastage and recycling. These measures have not only benefited the bank by improving sustainability performance indicators but have also improved the interface between the bank and society.

There are the following benefits of incorporating waste management practices in VBI: From the environmental point of view, proper waste management helps in minimizing the amount of waste sent to the landfill, emission of greenhouse gases, and the use of natural resources. According to Ismail et al., (2020: 45-56), in the financial aspect, it may cause the exclusion of high costs associated with the disposal of waste and the optimization of costs of operations. For instance, research conducted by Ellen MacArthur Foundation found out that companies that adopt circular economy principles, including waste management, are likely to reap $1tn in cost savings by 2025 (Ayub, 2021: 218-228). In addition, as Zahra, (2018: 45-67), noted, sustainability efforts enhance the Islamic bank brand image and attracts environmentally conscious consumers and investors. This is evidenced by the increased size of green bonds, which stood at $270+ billion in 2020 (Ismail et al., 2020: 45-56). Therefore, by integrating waste management into their respective VBI frameworks, Islamic banks can enter this market and offer environment-friendly financial services. Based on this literature review following hypothesis can be developed:

H2: There is a significant relationship between waste management and different components of VBI

2.9.3 Recycling Rates and Value Based Intermediation

Haneef (2020: 137) affirms that there has always been a significant correlation between the recycling rates and VBI techniques because both aspects are rooted in sustainable use

of resources. VBI principles compel Islamic banks to engage in business operations that yield positive societal and ecological impacts. Recycling of waste materials also comes under the waste management principles because it helps in reducing wastes, conserving resources, and preventing pollution of environment. According to Rashid et al. , (2023: 150-175) high recycling rates indicate proper resource utilization and sustainability, which are key pillars at VBI. Through their VBI programs, Islamic banks have shown much interest in recycling. For example, Maybank Islamic has formulated a recycling plan for all its branches and offices (Zijlstra, 2023). This involves categorizing materials such as paper, plastics and electrical and electronic gadgets and sourcing for the services of local recycling companies for disposal. According to Zijlstra (2023), within one year of implementation, Maybank Islamic has been able to improve the rates of recycling by 30%. Similarly, CIMB Islamic Bank has initiated green office where recycling and waste management are considered important. Recycling bins are available in all buildings owned by the bank, employees of the bank have received information on environmental policies and the bank has hired recycling companies to manage wastes. Measures of this nature have helped to improve the effectiveness of CIMB Islamic recycling by raising the portion of waste recycled by forty percent (Zahid et al. , 2024: 962-992).

The positive effects of high recycling rates on the community and environment are immeasurable. In the view of Man et al., (2024), environmentally, the enhanced practice of recycling minimizes the extraction of raw materials from the natural environment. It also reduces greenhouse gas emission from other methods of waste disposal like landfilling and incineration. For instance, Zahra, (2018: 45-67) notes that recycling aluminum conserves 95% of the energy used in the production of aluminum from other materials, thus lowering carbon emissions. From a community health perspective, recycling reduces pollution, which leads to enhanced public health since pollutants are not discharged into the surrounding environment, including the atmosphere, water bodies, and the ground. Furthermore, Rahman et al. (2024: 45-60) posited that these programs may generate employment opportunities within the recycling and waste management industries hence stimulating economic growth and human welfare. Incorporating strategies such as recycling into VBI programs is a way of showing that Islamic banks support environment

conservation but at the same time improve the standard of living of the people. Based on this literature review following hypothesis can be developed:

H3: There is a significant relationship between recycling rates and different components of VBI

2.9.4 Water Usage and Value Based Intermediation

Water conservation is strongly linked with the concept of VBI, since sustainability and efficient use of resources are characteristic for Islamic finance. As supported by Shahrom and Kunhibava, (2023: 125-166), VBI helps Islamic banks understand and appreciate the future social and ecological consequences of their actions to practice sustainable practices in the use of natural resources and the fostering of the welfare of communities (Musa, 2023: 31-54). Water management is another key component of this approach because it is important to save water, prevent water pollution, and guarantee access to fresh water in the future. These include the following, which exemplify how Islamic banks are contributing to water conservation through VBI: As stated by Khan, (2021: 134-155), Bank Islam Malaysia Berhad (BIMB) has implemented measures in its business processes and in its financing operations related to water conservation. For instance, low-flow fixtures have been adopted in offices, and water-efficient landscaping practices have been employed. Furthermore, BIMB offers financial support for projects that are related to the efficient use of water as well as the management of water resources, such as the creation of water-saving technologies and facilities. Such activities have made the bank save 20% of its water usage, and also helped lots of community projects that are focused on water efficiency, as stated by Khan, (2021: 134-155).

Another example according to Zain et al., (2024: 41-50) is Kuwait Finance House (KFH) that has incorporated water conservation into its CSR and VBI management. Some of the projects that have been funded by KFH revolves on water management and efficiency such as the provision of drip irrigation to the areas of agriculture and rain water management systems to communities. These projects have greatly enhanced the efficient use of water, lowering the use of water by half in some areas (Zain et al. , 2024: 41-50). These solutions not only have a positive impact on the environment, but they also help farmers and communities of Bahrain by offering them the necessary means to improve the

way they use water. The advantages of proper water management for sustainability and cutting the expenses are significant. In their piece, Osman et al., (2022: 67-89) posit that, environmentally, water conservation contributes to the conservation of water sources, aquatic life, and energy used in water purification and transportation. For instance, saving water also saves energy because less energy is required in pumping, treating, and heating water. This, in turn, means less production of greenhouse gases and thus minimizes climate change. Mallick (2019: 70-92) posited that from the economic point of view, water conservation leads to money-saving both for the companies and societies. For instance, applying water-saving technologies and measures helps to minimize costs, decrease the invoice for water, and reduce investment in water supply infrastructure. Based on this literature review following hypothesis can be developed:

H4: There is a significant relationship between water usage and different components of VBI

2.9.5 Ecological Footprint and Value Based Intermediation

According to the hypothesis formulated by Kolley, (2020: 88-109), the correlation between the ecological footprint and Value-Based Intermediation (VBI) is very vital in identifying the position of IFI towards environmental sustainability. Ecological footprint is defined as the total area of land and sea required to produce the resources consumed and to absorb the wastes generated by a given population. This paper supports Aassouli and Shah (2022: 39-47) conclusion that by integrating the VBI principles in their operations, Islamic banks can reduce their environmental footprints. It also ensures that their operations and investments align with sustainable use of resources and minimisation of negative impacts on the environment. According to Tlemsani et al., (2023: 15-35), the authors reported that the Islamic bank achieved a 25% cut of its ecological footprint in five years following the integration of VBI principles. This reduction was achieved through financing in renewable energy technologies, efficient energy appliances and equipment, and efficient farming techniques. For example, Haneef and Jamaludin (2021: 73-90) agree that Dubai Islamic Bank has incorporated environmentalism into its operations through financing solar energy and using green architecture in facilities. They have reduced energy consumption by 30% and greenhouse gases emission by 20%;

therefore, the VBI can work towards sustainability goals (Haneef, Jamaludin, 2021: 73-90).

Some of the way of implementing VBI that can assist in the reduction of ecological footprint include green financing, Green business and environmental and social responsibility. According to Zahir & Afiq (2024: 4-12), green financing can be defined as the provision of environmentally sustainable financial products and or services for green projects such as renewable energy, energy efficiency and agriculture. Green Bonds, Green Sukuk and other financial products can be developed by Islamic banks to obtain investors interested in sustainable projects. In addition, Mahadi and Zakariyah (2024: 31-37) posit that the adoption of sustainable business practices such as paperless policy, energy efficient solution and waste management decreases the effect of a bank on ecology. For example, Muhmad et al., (2021: 123â-136) indicate that HSBC Amanah has embarked on a paperless banking drive that has seen the bank cut its paper use by 40% as part of its sustainable development strategies. Another successful approach is the implementation of community-based environmental programs to minimize the impact on the environment by using VBI. Islamic banks can provide financing for reforestation, water conservation, and health and environment awareness programs (Khan, 2021: 134-155). Through the dialogue and interaction with other members of the society, banks can help inculcate the culture of environmental stewardship in the people. They do not only have an importance in decreasing the ecological impact but also contribute in improving the image of the bank and in furthering the connection it has with the society. Based on this literature review following hypothesis can be developed:

H5: There is a significant relationship between ecological footprint and different components of VBI

2.9.6 Interest Rate and Value Based Intermediation

As noted by Bakar et al., (2019: 91-115), interest rates have a direct relationship with VBI practices since it determines the costs of borrowing, investment and economic activity. Regarding Islamic finance where the charging and payment of interest is prohibited, the costs and returns of financing are handled differently. As highlighted by Daud et al., (2018: 482-499), contrary to conventional interest-based loans, Islamic banks offer PLS,

leasing and other Shariah compliant contracts. These alternative financing methods are in harmony with the VBI principles in that they are fair, share risks, and are ethical. The existence of ethical finance in VBI is based on the coherence between ethical finance and interest rate management. Ethical finance is one that aims to achieve financial profit without negatively affecting society or the environment as defined by Ibrahim et al. (2023: 45-63). Therefore, since Islamic banks do not engage in interest based transactions, they reduce on the risks that come with high interest debts namely; financial instability and costly borrowing. As stated by Ayub, (2019: 235-247), they work with equity-based financing and real economic activities, which are associated with sustainable development goals. These findings have confirmed the hypothesis that Islamic banks perform better during times of crises because of risk sharing and asset based financing. For example, Tok and Yesuf, (2022: 3-21) explained that during the global financial crisis of 2008, GCC region Islamic banks experienced relatively lower losses than conventional ones proving efficiency of the VBI approach.

Consequences for economic stability and sustainability are rather vast when it comes to discussing the influence of interest rates on VBI practices. To that effect, as highlighted by Mallick (2019: 70-92), the non-interest based financial tools such as profit-and-loss sharing employed by the Islamic banking system can enhance economic stability through better alignment of financial gains to real economic activities (Mallick, 2019: 70-92). This approach ensures that there are no speculative bubbles and financial crises because the two are known to happen where there is high levels of debt and high interest rate volatility. Furthermore, the emphasis on ethical finance and sustainable investment is beneficial for long-term economic growth as well as the welfare of society. In the study by Alwi et al. (2021: 965-972), it was established that the global Islamic finance industry grew by 14% in 2019 in terms of assets worth $2. 88 trillion due to increased demand of economic products with no element of interest. Based on this literature review following hypothesis can be developed:

H6: There is a significant relationship between interest rate and different components of VBI

2.9.7 Investment in Job Creation and Value Based Intermediation

In the study by Noordin and Syed Jaafar Alhabshi (2023), the authors opined that VBI has a significant influence on investment in job creations as VBI is centred on value-based financial intermediation practice. Other socio-political responsibility perspectives that VBI has asked Islamic banks to consider include employment opportunities. Accordingly, through the funding of the projects, which generate sustainable employment, the Islamic banks could prop up the economic development and social returns as stated by Ishak and Zaini (2024: 58-75). This approach is in compliance with the objectives of Shariah that emphasizes on the establishment of justice and improvement of the society's quality of life. The VBI encourages Islamic banks toward the direction of extending finance to sectors that may generate employment opportunities such as SMEs, green technology and social businesses (Mahyudin and Rosman, 2020: 34-44).

In the same source, Shafruddin and Shahimi said that examples of job creation initiatives implemented under VBI show the practical aspect of these principles. For instance, Bank Islam Malaysia Berhad (BIMB) has introduced several financing schemes targeting SMEs which are essential in generating employment and fostering economic growth. In 2020, BIMB provided about MYR 2 billion ($500 million) of funds to SMEs, which supported the generation of tens of thousands of employment opportunities (Osman et al, 2022: 67-89). Besides injecting much-needed capital into small businesses, this undertaking also helped to foster the strength and development of the local economy. Another example is Kuwait Finance House (KFH): employing green technologies in renewable energy investment projects. In Ayub's (2019: 235-247) report on KFH, it is stated that financing of solar and wind energy projects have led to job creation opportunities in construction, maintenance, and operation of renewable power projects in the sustainable economy. Such ideas demonstrate how VBI principles can lead to investment efforts that have a tangible and beneficial effect on employment.

The incentives of VBI for investment in employment to promote economic development and social well-being are numerous. As pointed out by Mallick, (2019: 70-92), The economic benefits of job creation include among them increased consumption levels, enhanced household income and elevated economic activity. For instance, a report by ILO

revealed that each direct employment opportunity in the renewable energy industry may result in other employment opportunities in other sectors of the economy due to increased consumption (Saeed Mohammed and Mansor, 2021: 644-663). This multiplier effect is especially pronounced in the developing world, as employment generation leads to poverty alleviation and improved economic stability. As noted by Khan, (2021: 134-155) socially, employment opportunities positively impact social well-being, increase employment stability, decrease income gaps and enhance social justice. Job creation promotes social integration since it provides people with an opportunity to fend for themselves and their families.

Furthermore, Mahadi et al., (2019: 70-87) also pointed out that the job creation initiatives through VBI are consistent with the other international sustainable development goals (SDGs) such as SDG 8 on decent work and economic growth (Rahman et al. , 2022: 76-85). In this way, Islamic banks can realise these goals of employment generation and contribute to poverty eradication and inclusive economic growth initiatives across the world. Saeed Mohammed and Mansor, (2021: 644-663) established that, the focus on ethical and responsible finance ensure that employment creation initiatives are not only good for the economy but also for the society and the environment. Such integrated approach to investment and development is consistent with objectives of sustainable development and economic sustainability (Ismail et al., 2022: 76-85). VBI is a crucial tool for increasing investment in job creation, as VBI encourages ethical, socially responsible, and sustainable financial practices. As proposed by Alwi et al., (2020: 174-185), in papers such as BIMB and KFH, real-life examples from Islamic banks show how VBI principles are implemented to fund job creation and hence growth and welfare. It is also important to note that the outcomes of these activities are not just financial; they improve the degree of social inclusion and positively impacts communities (Rahman et al. , 2022: 76-85). Hence, by incorporating job creation into their VBI framework, Islamic banks have the potential to champion a transformation of the current financial model that would enhance positive economic and social change. Based on this literature review following hypothesis can be developed:

H7: There is a significant relationship between investment in job creation and different components of VBI

2.10 Research Gaps

Despite the extensive literature on Islamic finance and its principles, significant knowledge gaps remain, particularly regarding its application in modern financial systems and its potential to drive sustainable development. One critical gap is the lack of empirical research on the integration of Islamic finance with circular economy principles. While both concepts rely on such pillars as sustainability, efficiency of resources, and ethical behaviors, there is limited information on how IFIs can adapt the principles of circular economy into their framework (Billah, 2020: 56-78; Akosile & Sharofiddin, 2020: 34-49). It is especially significant in the sphere of the application and the evaluation of the achieved outcomes which remain crucial for determining the effectiveness of such integration. Another area that needs further research is the extent of awareness of Value-Based Intermediation (VBI) and its impact. Yet, VBI has been discussed as a possible approach to enhance the social and environmental performance of Islamic banks, but the literature still lacks a sufficient number of studies about its long-term consequences regarding financial performance, management of stakeholder, and welfare of society (Akhtar et al. 2022: 261-268). First, the current literature lacks sufficient case studies and the actual application of VBI (Agustin et al. 2023: 134-150; Islam et al. 2023: 6-9). This gap also limits assessing the relevance and issues of VBI in real-life scenarios and environments. Furthermore, there is a research gap of applying Islamic finance, VBI, and the circular economy into practice. However, the interaction between these ideas has not been explored to optimize the achievement of sustainable development objectives, which is problematic (Nor et al. 2021: 45-67). It is especially essential for the policymakers and practitioners who are in the process of developing and executing the integrated Islamic financial structure that should support environment and social causes.

There are also theoretical research gaps in the literature on Islamic finance, VBI, and the circular economy. Its chief theoretical weakness is a failure to provide a theoretical synthesis of these concepts. Even though specific postulates exist in Islamic finance, including the bans on riba or interest, as well as principles of risk-sharing, there is no unifying theoretical framework that would link these principles to circular economy (Ercanbrack, 2022: 89-102; Mahyudin and Rosman, 2022: 89-103). When creating such a framework, it is possible to further the academic discussion and establish a foundation

for empirical research. Moreover, the theoretical underpinnings of VBI remains limited (Cherqaoui, 2022: 122-140). However, there is still a lack of clarity as to how the maqasid al-shariah such as religion, life, intellect, progeny, and wealth may be applied in the context of modern banking through VBI. Current theories are generally vague and do not consider the relationships between financial processes, social consequences, and environmental effects (Cherqaoui, 2022: 122-140; Tlemsani et al., 2023: 15-35; Billah et al., 2024: 51-65). Filling this gap would require creating detailed theoretical frameworks that stated how VBI could fulfill its intended objectives.

Another aspect that seems promising for further theoretical analysis is the connection between VBI and conventional sustainability frameworks, including the Environmental, Social and Governance (ESG) criteria. Although VBI and ESG are intended to advance ethical and sustainable practices, VBI and ESG have distinct principles and approaches (Bertillo & Bertillo, 2022: 123-140). While the theoretical foundations of these frameworks are relatively well understood, there are few insights on how these frameworks can be integrated or how VBI can meaningfully enhance the discourse on sustainable finance. Closing this gap would improve the theoretical validity of VBI and shed light on its possible alignment with international sustainable development criteria. However, there are also some methodological limitations in the literature on Islamic finance, VBI, and the circular economy as well (Saeed Mohammed and Mansor, 2021: 644-663). Another research direction that requires further study is the evaluation of the impact of VBI and circular economy initiatives on financial and non-financial outcomes. However, most of the existing research works have used case studies and interviews which are theory saturated but lack the quantitative and scientific approach (Ayub et al. 2023: 45-67; Fitria et al. 2022: 201-225). Further methodologically more rigorous qualitative and quantitative researches are needed to provide an assessment of VBI and circular economy initiatives.

However, there are no clear suggestions on how social and environmental impacts can be quantified in the area of Islamic finance. Hence, ROI and profitability are insufficient indicators of the societal gains arising from VBI and the deployment of circular economy principles (Jan et al, 2021: 89-105). With regard to empirical research, there is need to set up standards and benchmarks that reflect the social and environmental accountability of

IFIs. This would call for the creation of other modes of data collection such as questionnaires and performance indicators that would be effective in capturing the variety of impacts of such practices (Ayub et al. , 2023: 45-67). Lack of longitudinal studies over the effects of VBI and circular economy activities is another methodological limitation. In most of the presented papers, authors fail to conduct a deeper analysis of the practices and trends which take place over time (Harahap et al. , 2023: 6-17). Longitudinal research is also appropriate because VBI and circular economy activities are evolving and it will be useful to investigate how sustainable they are and how they withstand changes in economic and environmental cycles. This would therefore call for development of research efforts that evaluates the effectiveness of such programs over time.

This implies that there is a lack of context specificity regarding the operation of IF, VBI, and circular economy in different geographic, cultural, and legal environments. The main contextual void is the scarcity of cross-regional and cross-country overviews of the use of these concepts. While there are numerous studies on Islamic finance in Middle Eastern and ASEAN countries, there is a dearth of information on the other regions including the African and European ones (Faziya et al. 2023: 34-50; Zahid et al. 2024: 962-992). Comparing the organisations or countries would show what influence the potential of implementing VBI and circular economy practices. In addition, there is a research void regarding the influence of culture and religion on Islamic finance and VBI implementation and results (Musa, 2021: 66). One has to note that the application of Islamic finance principles is rooted in religion and culture and may vary within the Muslim countries. To design such strategies, it is important to understand how these cultural and religious factors affect the VBI and circular economy adoption and attitude (Haneef, 2020: 137). Another significant external contingency that influences the adoption of Islamic finance and VBI is the regulatory environment. The legal environment and the institutionalization of IFIs vary across countries, which influences the prospects and effectiveness of VBI operations (Hassan et al. 2021: 339-365). More future researches regarding the integrated relations between the regulatory environment and VBI and the implementation of circular economy need to be conducted to provide ideas for recommendations and policies. This would involve assessing the opportunities and challenges of the regulations in various contexts and assessing their impact on the overall performance of the IFIGs.

From the highlighted research gaps, it is clear that the present research needs to encompass IF, VBI, and circular economy in a wider context. The lack of such information in the current literature will be useful in understanding the applicability and effectiveness of these notions in realizing sustainable development. In this way, the study will contribute to the development of theoretical propositions that will be used in subsequent studies in the area of Islamic finance and sustainability. As for the method, this research will extend the theoretical knowledge by using new research methods and developing the criteria to assess the social and environmental impacts of VBI and circular economy projects. This will also enhance the reliability and transferability of the findings as a way of providing empirical evidence to policymakers and practitioners. Consequently, the study will qualify how culture, religion, and regulation impact the success of Islamic finance, VBI, and circular economy in different contexts. The rationale for this study also lies in the possibility to contribute to policy and practice. By presenting the results based on quantitative data and specific recommendations, the study will help to create policies and measures to implement the Islamic finance, VBI, and circular economy principles. This will assist the financial institutions, governments and other stakeholders in developing and deploying interventions that support the achievement of sustainable development goals. Furthermore, the study will contribute towards the awareness and acceptance of Islamic finance as a sound and ethical system to conventional finance, thus promoting the development of the industry internationally.

2.11 Hypothesis of The Study

While the existing literature has offered useful insights about VBI and its implications, there is currently no empirical study that has explored the relationship between VBI and CE, to the best of my knowledge. I have formulated these hypotheses:

H1. There is a significant relationship between resource efficiency and different components of VBI

H2. There is a significant relationship between waste management and different components of VBI

H3. There is a significant relationship between recycling rates and different components of VBI

H4. There is a significant relationship between water usage and different components of VBI

H5. There is a significant relationship between ecological footprint and different components of VBI

H6. There is a significant relationship between interest rate and different components of VBI

H7. There is a significant relationship between investment in job creation and different components of VBI

2.12 Summary of The Chapter

The literature review has provided a comprehensive exploration of the key components relevant to this study, including Islamic finance, Value-Based Intermediation (VBI), and the Circular Economy (CE). Islamic finance, with its ethical foundations rooted in Shariah law, emphasizes principles such as the prohibition of riba (interest) and the promotion of risk-sharing and social justice. VBI, introduced to enhance the ethical performance of Islamic banks, integrates environmental, social, and governance (ESG) considerations into financial practices. The CE model, which seeks to minimize waste and maximize resource efficiency through closed-loop systems, presents significant potential for sustainable development. The review has identified critical gaps in knowledge, theoretical frameworks, methodologies, and contextual understanding. It highlights the need for empirical studies examining the integration of Islamic finance and CE principles through VBI, the development of unified theoretical models, and the creation of standardized metrics for assessing social and environmental impacts. The lack of comparative studies across different regions and the need for more robust regulatory frameworks to support the integration of these concepts were also emphasized. This synthesis underscores the importance of advancing research in these areas to develop practical frameworks and strategic initiatives that promote a more ethical, responsible, and sustainable financial

ecosystem. By addressing these gaps, the study aims to contribute to the achievement of the Sustainable Development Goals (SDGs) and provide valuable insights for financial institutions, policymakers, and stakeholders.

CHAPTER III

DATA AND METHODOLOGY

3.1 Data and Methodology

This section provides a comprehensive explanation of the research design, including the specific types of data collected, the sources from which it was obtained, and the methods used for data collection. Moreover, it elucidates the analytical methodologies and procedures employed to scrutinise and draw inferences from the acquired data. The data and processes used in the research are thoroughly scrutinised to assess their reliability and validity, so ensuring the robustness and consistency of the research findings. This chapter establishes the basis for the study's results, guaranteeing openness and precision throughout the research procedure.

3.2 Data Description

The data for the current study was collected form the reliable and transparent sources, including the Association of Islamic Banking and Financial Institutions Malaysia (AIBIM), particularly the AIBIM (2021) report and related disclosures by CoP members. The following steps detail how the dataset was collected and validated. The study has used AIBIM (2021) report as a primary source for the collection of VBI practices for CoP member banks in malaysia. The data has been collected and organized from these reports based on the VBI variables, which includes EM, Community Empowerment, Good Governance, and Best Conduct. From these reports, data for each of the variables and its subsets has been arranged as shown in the Table III.1. The CE variables were also collected from WDI, Malaysian Investment Development Authority, FRED Economic Data, Sustainable Municipal Solid Waste Management report, Statista and global foot print network.

3.2.1 Population of The Study

The VBI concept was introduced by BNM in 2017 with the intention of bringing Islamic finance business models into conformity with its tenets. The objective is to influence the economy, community, and environment in a more advantageous and enduring manner via the conduct, offerings, practices, and products of industry participants. After the initiation

of the programme by BNM, the following months proved to be a challenging moment for Islamic banks. However, member banks of the Association of Islamic Banking and Financial Institutions Malaysia (AIBIM) remain devoted and are eager to enhance their dedication and surpass mere financial incentives.

In connection with Islamic finance practices, Malaysia has emerged as a global leader in adoption of these Islamic practices within the banking sector. BNM has also rank Malaysia at the top for the adoption of VBI practices, which they introduced to integrate sustainability principles in the Islamic financial practices. The CoP framework followed by Malaysia serves as a role model for other nations. Islamic financial institutions in Malaysia, particularly CoP members, have vigorously disclosed the sustainability related data in their financial statements. This transparency helps in comprehensive and reliable decision making.

The banking sector in Malaysia has been given a measurable progress in the key areas of CE, including SME financing, waste management and sustainable investments. This makes it a compelling case study for understanding how VBI influences CE outcomes. The VBI's enablement community/network, known as the Community of Practitioners or CoP, was established in 2017 with the participation of 9 Islamic banks, which accounted for 35% of the current number. In 2021, the VBI community continued its journey into Year Five, achieving notable advancements and ongoing expansion. In October 2021, there were 15 members of the CoP, which accounted for 58% of the whole AIBIM membership. This current number is almost twice as large as the previous one. The nine members in 2017 included the five founder members and four more members. This platform facilitates collaboration among industry stakeholders to strategically promote the widespread adoption of the VBI agenda.

In 2021, members of the CoP made a greater effort to enhance transparency and responsibility by providing more detailed information to the public. This was done through several reports such as the Integrated Annual Report, Sustainability Report, and Task Force on Climate-related Financial Disclosures (TCFD). The TCFD, an internationally recognised disclosure mechanism established by the Financial Stability Board (FSB) in 2015, aims to furnish stakeholders with precise information regarding

financial institutions' vulnerability to climate-related risks and opportunities. HSBC Amanah achieved the distinction of being the first CoP member to publish a TCFD Report in April 2021, subsequent to its VBI Disclosure in 2019. The current study will investigate the impact of VBI on CE for the CoP's. The adoption of CoP membership by the Islamic banks given in Figure 3.1.

Figure 3.1: Cop Membership: Progress from 2017 to 2021

Source: AIBIM, 2021

The CoP members perform a remarkable contribution to VBI-related financing. Between 2020 and 2021, a total of 375,000 accounts were granted RM82.6 billion in VBI financing. VBI-related funding was 18.0% of the overall finance in the period of 2020-2021, which represents a decrease from 26% in the period of 2017-2020. In the fiscal year 2020-2021, financing accounts associated to VBI accounted for 22.2% of the total, which is an increase from 10% in 2017. In 2020-2021, SMEs and micro-SMEs obtained the highest amount of VBI finance, reaching RM51.0 billion. This represents a significant growth of 25.6% compared to the RM40.6 billion received in the period of 2017-2020 (AIBIM, 2021). Furthermore, their investments in VBI are RM15.2 billion, accounting for 21.6% of their overall investments, which amount to RM24.6 billion between 2017 and 2020. The total value of deposit and investment accounts associated to VBI has risen from RM36.8 billion between 2017 and 2020 to the current amount of RM48.7 billion. Furthermore, the ratio of VBI-related accounts to the overall total has increased from 8.1% to 12.2%. Their reported value-added services amounted to RM190 million from 2017 to

2020. These services include professionally managed zakat, charity funds for charitable organisations, waqf, and ṣadaqah sponsorship.

3.3 Variables Description:

VBI involves the integration of environmental, social, and governance (ESG) considerations into the decision-making processes of financial institutions. The instruments of VBI are various strategies, policies, and practices adopted by these institutions to align their activities with sustainable and responsible principles. VBI can play a crucial role in enhancing the sustainable impact of economic activities. While specific instruments may vary among financial institutions, here are some common ones and their potential effects on the CE will be investigated in this study. The Islamic banking industry utilises four key ideas, namely EM, Community Empowerment, Good Governance, and Best Conduct, to guide their planning, strategizing, and implementation of VBI initiatives and practices within their institutions.

Table 3.1, provides a comprehensive overview of the primary and secondary measures used to assess VBI in the banking industry. The categorization is subsequently subdivided into distinct sub-indicators that encompass various facets of value creation.

Table 3.1: List of Variables for Value Based Intermediation

Entrepreneurial Mindset	1. Customer	i. SME's ii. Startup iii. Ansaf Enterprises iv. Micro Entrepreneurs and micro-SME’s v. Social Enterprises vi. Business clients

		vii. Charity organizations viii. Women
	2. No. of Banking Solution 3. No. of Digital Solution	No. of Banking Solution No. of Digital Solution
Community Empowerment	1. Customers 2. No. of Banking Solution 3. No. of Digital Solution	i. B40 ii. M40 iii. youth iv. B50 No. of Banking Solution No. of Digital Solution
Good Self-governance	1. Environment Footprint	i. Economical Stationery supplies use ii. Energy Efficiency Equipment iii. Proper Waste Management iv. Environmentally Friendly Campaigns v. Green Certified products

	2. Sustainability Management	i. Ethical behaviour ii. Transparency iii. Accountability iv. Sustainability Governance Structure v. ESG disciplines vi. ESG financing vii. Business best practices viii. ESG Risk Acceptance Criteria ix. Awareness Campaign
Best Conduct		i. Charitable Activities ii. Number of Digital Initiative iii. Employee Welfare iv. Part of VBI/ESG-Industry Working Group v. Crowdfunding

Source: Author's working based on the AIBIM, 2021

The EM refers to the promotion of entrepreneurial activity by Islamic financial institutions. This is achieved by the provision of comprehensive services, including finance and proactive assistance such as advisory services, market infrastructure, and business networking. This involves promoting entrepreneurship by creating and enhancing new goods, tools, and business models to support and empower firms and entrepreneurs. The banks under the EM set aims to cater to a wide array of customers, which includes small and medium-sized firms (SMEs), startups, Ansaf firms, micro entrepreneurs, social enterprises, business clients, charity organizations, and women. The primary emphasis is on delivering customized banking business and digital solutions to meet their specific requirements.

Community Empowerment (CEM) is the practice of providing communities with financial solutions that have positive consequences. This is accomplished by developing, financing, and implementing effective solutions to community challenges, with the purpose of producing positive outcomes for communities and opening up new economic opportunities for IFIs. CE initiatives seek to provide assistance to several the customer segments, including B40, M40, youth, and B50. Like the EM, this focus likewise prioritizes offering banking and digital solutions to these specific groups.

Good self-governance (GS) promotes the building of organizational discipline as well as the engagement of all stakeholders in the governance framework to enable effective participation. These things consist of, Inclusive governance refers to the practice of Islamic financial institutions making choices that affect not just shareholders, but also other stakeholders such as consumers and investors. Self-governance is the cultivation of a culture of self-discipline within the operations and practices of Islamic financial organizations. GS prioritizes the reduction of environmental footprint by implementing measures such as using cost-effective stationery supplies, utilizing energy-efficient technology, implementing adequate waste management practices, and promoting environmentally friendly campaigns. The scope of this also encompasses sustainability management practices, which entail ethical conduct, transparency, accountability, governance structures that promote sustainability, disciplines related to environmental, social, and governance (ESG) factors, finance that aligns with ESG principles, best practices in business, criteria for accepting ESG risks, and campaigns to raise awareness.

Best Conduct (BC) refers to the implementation of strategies that improve the products, procedures, and interactions of Islamic financial institutions with their stakeholders, such as clients and workers. This behaviour is motivated by a dedication to attain ongoing enhancement and increase stakeholder contentment. The BC initiatives encompass philanthropic activities, digital undertakings, employee well-being, active involvement in VBI and ESG sector coalitions, as well as crowdfunding.

The variables included in this study represent the seven variables of CE's environmental, economic, and social components from 2018 to 2021. Gross capital formation (% of GDP) data from the World Development Indicators (WDI) database are used to assess resource efficiency and investment in sustainable infrastructure and technology. The nominal policy rate, as calculated from the WDI database, influences the cost of capital and credit availability, both of which are critical for supporting CE operations. The Ecological Footprint, collected from the Global Footprint Network, assesses environmental impact by calculating the amount of biologically productive land and marine area required to support human activities. This underlines the importance of reducing resource usage and the ecological imprint.

Table 3.2: List of Variables for Circular Economy

Sr. no.	Variables	Measurement	Source
1	**Resource Efficiency**	Gross Capital Formation (% of GDP)	WDI
2	**Interest Rate**	The Nominal Policy Rate	WDI
3	**Ecological Footprint**	Ecological Footprint (gha per person)	Global footprint network
4	**Waste Management**	Waste Management Practices	Malaysian Investment Development

5	**Job Creation**	Employment to Population Ratio	FRED Economic Data
6	**Recycling Rate**	Recycling Rate	Sustainable Municipal Solid Waste Management
7	**Water Usage**	Water Usage	Statista

Source: Author's working based on the AIBIM, 2021

The waste management practices shown on the Malaysian Investment Development Authority website highlight the effectiveness of waste reduction and resource recovery programs, which are critical for establishing circularity in material flows. The Employment to Population Ratio, a variable in the WDI database, illustrates labor market dynamics and job growth potential in circular economy-related industries. The Recycling Rate, calculated using official government data or environmental agencies, quantifies the percentage of garbage that is recycled and serves as an indicator of progress in sustainable resource utilization and waste reduction.

[5] https://eng.ox.ac.uk/media/12832/towards-sustainable-municipal-solid-waste-management-in-malaysia.pdf

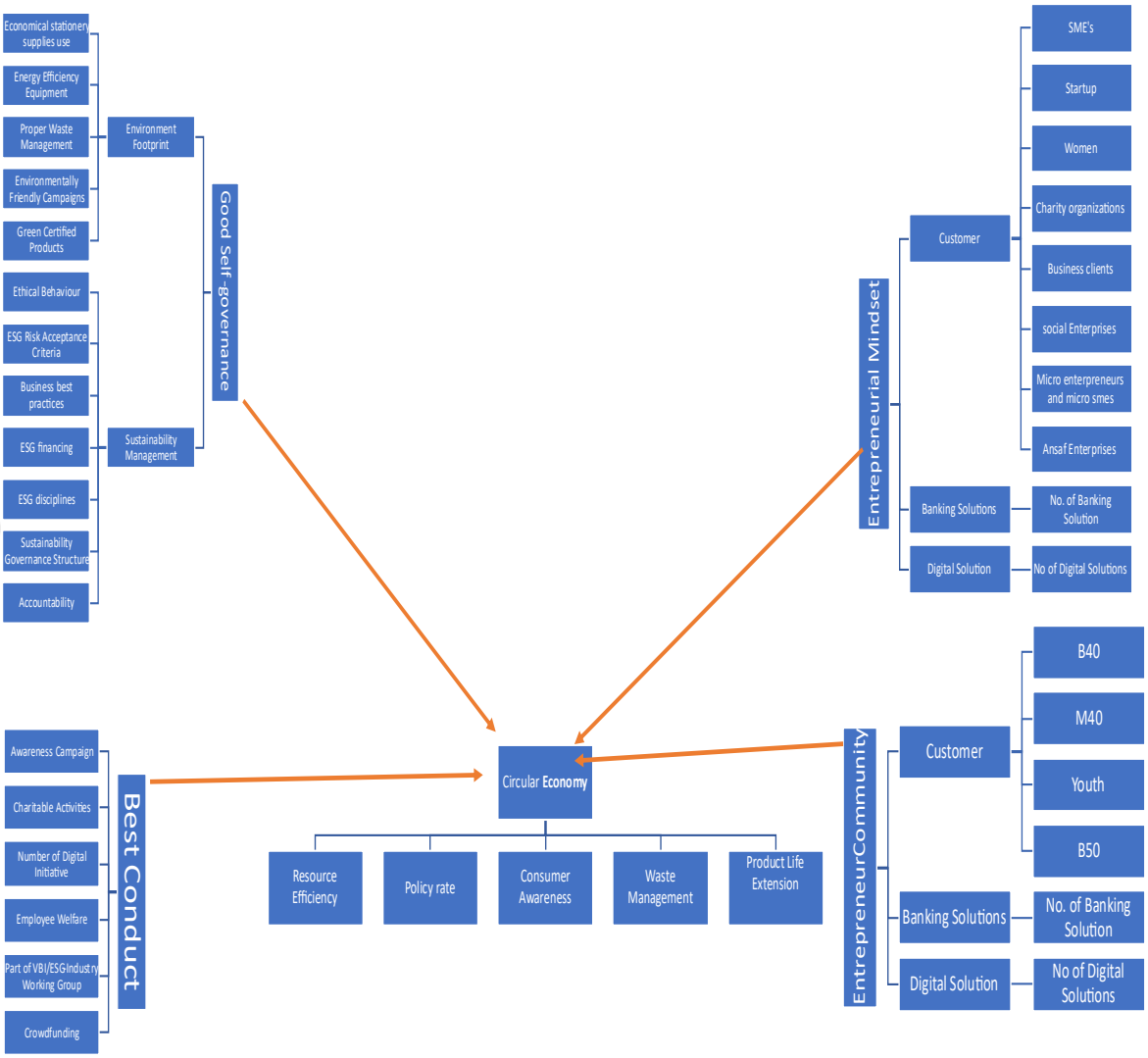

Figure 3.2: Hypothesized Model for Value Based Intermediation and Circular Economy

Source: Framework Prepared by the Author

3.4 Methodology

The purpose of this study is to investigate how the VBI elements influence the variables of CE. The VBI consists of different characteristics which include, Entrepreneurial Mindset, Community Empowerment, Good self-governance, and Business Conduct. It is very critical to check the impact of each element of VBI on different factors of CE include resource efficiency, interest rates, environmental foot print, waste management, job creation, recycling rate and waste usage. This section covers the research methodology to establish the relationship between the VBI and CE.

The current study has used quantitative methods to establish the link between the said variables by using descriptive statistics and examine the elasticities between different factors of VBI and CE. The descriptive statistics shows the behavior of variables such as resource efficiency, interest rates, environmental footprint, job creation and other variables, which help to understand the patterns, trends, correlations and outliers in the data.

The elasticities measure the degree to which one variable responds to the change of the other variable. The elasticity calculation is rooted in the Structural Equation Model (SEM), evaluates the direct and indirect effects of VBI elements on CE variables. Using SEM coefficients in elasticity calculations reduces bias and enhances the reliability of the results, making the findings more robust. It captures the responsiveness of each of the CE variable to changes in the VBI elements to quantifies how 1% change in one variable impacts the other variable. The data has been collected for all CoP banks of Malaysia those adapted the VBI framework to generalize the findings. That helps actionable insights to which component of VBI has most significant effect on the CE to guide policymakers and financial institutions in resource allocation and strategy formulation.

3.4.1 Econometric Model

The first informal explanation of price elasticity can be found in Alfred Marshall's famous 1890 book Principles of Economics. Levy and Pollock in the late 1960s thorough examination on the price elasticity of supply and demand for US commodities produced strong empirical proof for this essential theory. Elasticity is a key concept in neoclassical economic theory, helping to explain a variety of economic phenomena. It contributes to a better understanding of taxes, marginal ideas in business theory, wealth distribution, and commodity categorization in consumer choice theory. Furthermore, understanding elasticity is critical for arguments about welfare distribution, which includes consumer surplus, producer surplus, and government surplus.

Elasticities are unit less ratios that remain constant irrespective to the change in the individual values.

Elasticity is a unit less ratio that remains constant regardless of the individual values being modified. An elastic variable reacts to changes in other variables more than

proportionately if its absolute elasticity value is bigger than one. In contrast, a unit elastic variable reacts proportionately to changes in other variables and has an absolute elasticity value of exactly one. When a variable's absolute elasticity value is less than one, it is considered to be inelastic and reacts to changes in other variables less proportionately.

Elasticity calculations will be conducted to gauge the degree of responsiveness of one variable to fluctuations in another. The equation representing elasticity (E) is as follows:

$$E = \frac{dy}{dx} \times \frac{x}{y} \quad (1)$$

In this equation, the variable $\frac{dy}{dx}$ denotes the coefficient determined through the use of the SEM, whereas $\frac{x}{y}$ indicates the ratio of the average values of the variables.

When E >1, the dependent variable (e.g., a CE component) reacts more than proportionately to changes in the independent variable (a VBI element), indicating high responsiveness.

When E=1, the response is proportional, signifying unit elasticity.

When E<1, the reaction is less than proportional, denoting inelasticity.

The elasticity calculations will offer insights into the magnitude of the correlations, enabling a more comprehensive comprehension of the interactions between VBI and CE components.

This approach employs elasticity calculations and descriptive statistics to comprehensively investigate the relationship between VBI and CE. This comprehensive technique ensures a thorough understanding of the structures and their interactions, providing substantial contributions to the field.

CHAPTER IV

RESULTS AND DISCUSSION

4.1 Results and Discussion

4.1.1 Value Based Intermediation

The analysis of EM solutions adopted by 15 Islamic banks concentrates on three distinct areas: customer engagement, the range of banking solutions provided, and the availability of digital solutions (Camacho, Janowski, Konak, & Kulturel-Konak, 2016). The investigation determines whether these solutions are present or absent in banks. Table 4.1 states that all 15 Islamic banks have regular engagement with their customers, showcasing a robust dedication to customer care within the industry. Regarding banking solutions, a total of fourteen banks provide a diverse range of services, excluding RHB Islamic.

Table 4.1: Entrepreneurial Mindset Solutions

Sr.	Banks	Custome	No. of Banking	No. of Digital	Level of
1	**AFFIN Islamic**	√	√	√	High
2	**Agro Bank**	√	√	√	High
3	**Alliance Islamic**	√	√	√	High
4	**Alrajhi Bank**	√	√	**X**	Moderat
5	**AmBank Islamic**	√	√	√	High
6	**Bank Islam**	√	√	**X**	Moderat
7	**Bank Muamalat**	√	√	**X**	Moderat
8	**Bank Rakyat**	√	√	**X**	Moderat
9	**CIMB Islamic**	√	√	√	Low
10	**HSBC Amanah**	√	√	√	High
11	**Maybank Islamic**	√	√	√	High
12	**OCBC Al-Amin**	√	√	√	High
13	**Public Islamic**	√	√	√	High
14	**RHB Islamic**	√	**X**	**X**	Low

15	**Standard Charter**	√	√	**X**	Moderat

Source: Author's working based on the AIBIM, 2021

In the above table out of the 15 banks, only nine offer digital solutions, while the remaining four, specifically Alrajhi Bank, Bank Islam, Bank Muamalat, Bank Rakyat, RHB and Standard Chartered, do not provide such solutions. This discrepancy emphasises a crucial domain for potential expansion and advancement, particularly considering the increasing prevalence of digital banking trends. The uniform client engagement across all establishments underscores the need of preserving exceptional customer relationships in the Islamic banking industry, which is crucial for retaining customers and fostering trust in a competitive market.

Banks typically provide a wide array of banking services, which demonstrate a business-oriented mindset aimed at fulfilling different financial requirements. This ultimately leads to higher levels of customer satisfaction and loyalty (Famiyeh, Asante-Darko, & Kwarteng, 2018: 678-681). Ten banks adopting digital solutions signifies a substantial step towards utilising technology to enhance banking services. Nevertheless, the absence of digital solutions at five institutions indicates a potential for further advancement. In order to stay competitive and meet the evolving needs of technologically proficient clients, these banks may have to allocate resources towards enhancing their digital infrastructure.

The disparity in digital solution offerings underscores issues such as limited resources, regulatory obstacles, and strategic priorities. However, it offers a chance for financial institutions to innovate and potentially gain new market segments by integrating digital banking services (Shaikh, Glavee-Geo, & Karjaluoto, 2017: 67-89). The resutls provide insight into the level of entrepreneurial activity and adoption of technology in the Islamic banking industry. Although customer engagement and a diverse range of banking products are advantageous, there is much potential for expansion in digital solutions. By addressing this deficiency, banks have the potential to enhance service delivery, elevate customer experience, and position themselves for long-term success in an ever more digitalized environment.

Based on the results, AFFIN Islamic, Agro Bank, Alliance Islamic Bank, AmBank Islamic, HSBC Amanah, Maybank Islamic, OCBC Al-Amin, and Public Islamic Bank

have shown a significant level of acceptance of EM Solutions. These solutions encompass advisory services, market infrastructure, and business networking, all of which aim to provide business and digital solutions to customers. These banks are actively integrating these solutions into their VBI activities. Alrajhi Bank, Bank Islam, Bank Muamalat, and Bank Rakyat demonstrate a moderate level of acceptance, but CIMB Islamic and RHB Islamic indicate a lesser level of adoption. However, Standard Chartered demonstrates a moderate level of acceptance in this area. The implementation of EM Solutions differs across Islamic banks, with a few leading the way in incorporating these strategies into their operations to improve VBI.

Figure 4.1, assesses the EM Solutions of different banks based on the above given three primary indicators: customer solutions, the quantity of banking solutions, and the quantity of digital solutions. Every indication is further subdivided into sub-indicators, demonstrating the diverse range of solutions offered by each bank. Certain banks only provide Islamic banking services, such as Alrajhi Bank, Bank Islam, Bank Muamalat, Bank Rakyat, RHB Islamic, and Standard Chartered. Several banks provide a combination of traditional banking services and digital solutions. These banks include AFFIN Islamic, Agro Bank, Alliance Islamic Bank, AmBank Islamic, CIMB Islamic, HSBC Amanah, Maybank Islamic, OCBC Al-Amin, and Public Islamic Bank. AFFIN Islamic provides a wide variety of seven solutions, consisting of three options for consumers, including five banking solutions, as well as two digital solutions. Agro Bank distinguishes itself by offering a total of nine solutions, which include six banking solutions for consumers and three digital solutions. However, RHB Islamic does not provide any solution.

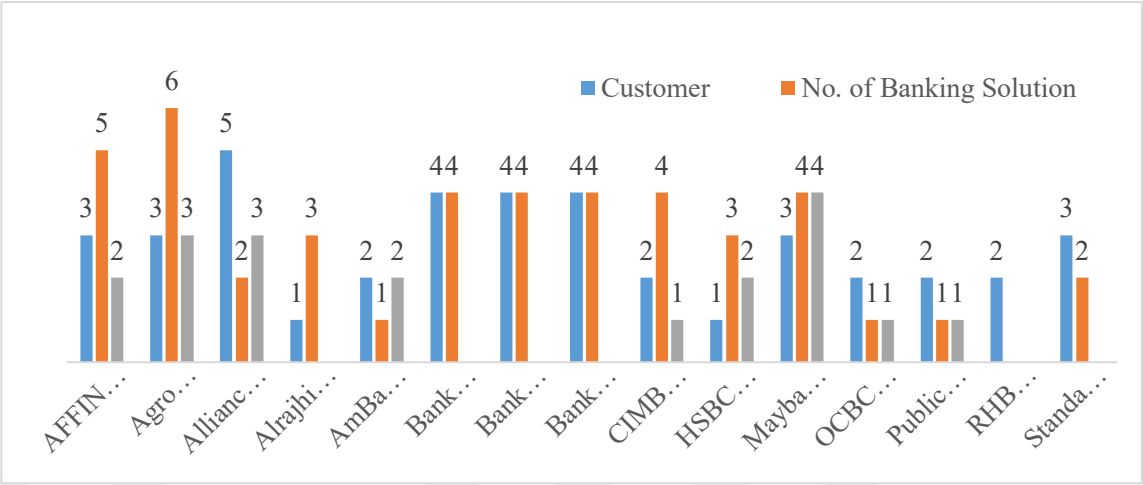

Figure 4.1: Entrepreneurial Mindset Solutions

Source: Author's calculations based on the AIBIM, 2021

For community empowerment Islamic banks in Malaysia cater to a diverse range of customers, including those from the B40, M40, young, and B50 segments, each of which has distinct economic requirements and obstacles. The government provides assistance and affordable financial solutions specifically targeted towards the B40 category, comprising the 40% of those with the lowest income who encounter various difficulties. Several banks cater to this demographic, such as AFFIN Islamic, Agro Bank, AmBank Islamic, and various more. The M40 cohort, also known as the middle 40%, plays a crucial role in maintaining economic stability by making significant contributions to the Gross Domestic Product (GDP) and taking advantage of opportunities to accumulate wealth. AFFIN Islamic, Alrajhi Bank, Bank Islam, and CIMB Islamic provide banking services in this region. Table 4.2 provides the customer distribution for community empowerment in Malysian banks.

Table 4.2: Community Empowerment Customers

Sr.	Banks	Customers				Level of
		B40	M40	youth	B50	
1	**AFFIN Islamic**	√	√	X	X	Moderate
2	**Agro Bank**	√	X	X	X	Low
3	**Alliance Islamic Bank**	X	X	X	X	Very Low

4	**Alrajhi Bank**	X	√	X	X	Low
5	**AmBank Islamic**	√	X	X	X	Low
6	**Bank Islam**	√	√	√	X	Moderate
7	**Bank Muamalat**	√	√	√	√	High
8	**Bank Rakyat**	√	X	√	X	Moderate
9	**CIMB Islamic**	√	√	X	X	Moderate
10	**HSBC Amanah**	√	√	X	X	Moderate
11	**Maybank Islamic**	√	√	X	X	Moderate
12	**OCBC Al-Amin**	√	√	X	X	Moderate
13	**Public Islamic Bank**	√	√	X	X	Moderate
14	**RHB Islamic**	√	√	X	X	Moderate
15	**Standard Charter**	√	√	X	X	Moderate

Source: Author's working based on the AIBIM, 2021

Community empowerment is an essential element of VBI, a strategy designed to enhance the social influence of Islamic banks. Banks can enhance their client service and contribute to long-term success by focusing on the diverse needs of different community sectors (Ramachandran & Chidambaram, 2012). An analysis of different banks' strategies in customer solutions, banking solutions, and digital solutions reveals a diverse variety of approaches and opportunities for improvement in community engagement and service delivery.

Notwithstanding the prevalence of unemployment and the increasing expense of living, individuals between the ages of 15 and 30 are the main drivers of digital innovation. The main policies focus on education, skill development, and entrepreneurship, and only Bank Islam, Bank Muamalat, and Bank Rakyat offer services to this particular demographic. In order to enhance economic mobility and resilience, it is imperative to provide the B50 group, including the 50% of individuals with the lowest income, with comprehensive social security and easily available financial services. Bank Muamalat is among the limited number of institutions that cater to this particular market.

VBI strives to foster community empowerment by providing a variety of banking services to consumers from varied backgrounds, including B40, M40, youth, and B50 categories.

Bank Muamalat shows a high level of adoption, suggesting a strong commitment to engage these communities. Meanwhile, most banks, including Bank Islam, Public Islamic Bank, and Maybank Islamic, have modest levels of acceptance, indicating significant progress but with room for additional development. Banks such as Agro Bank and Alliance Islamic Bank have lower adoption rates, indicating that more attention and strategy improvement are required to conform with the ideals of value-based intermediation. Further efforts are required to increase adoption rates among institutions with lower levels of involvement in order to achieve broad integration of VBI principles throughout the banking system.

In order to achieve equitable growth and sustainable development in Malaysia, it is necessary to implement targeted policies and financial products that cater to the specific requirements of various sectors. The table depicts the manner in which Malaysian banks cater to specific demographics.

Figure 4.2 presents a comparison of the community empowerment performance of various banks based on three primary indicators: customer-based solutions, banking solutions, and digital solutions. AFFIN Islamic Bank exhibits a targeted approach by providing two out of four potential solutions tailored to customer needs, along with six banking products and one digital solution. Agro Bank exhibits limited client interaction, offering only one service tailored to customers, one financial solution, and no digital options. Alliance Islamic Bank does not offer any solutions in any of the three areas, indicating a limited level of engagement in community empowerment.

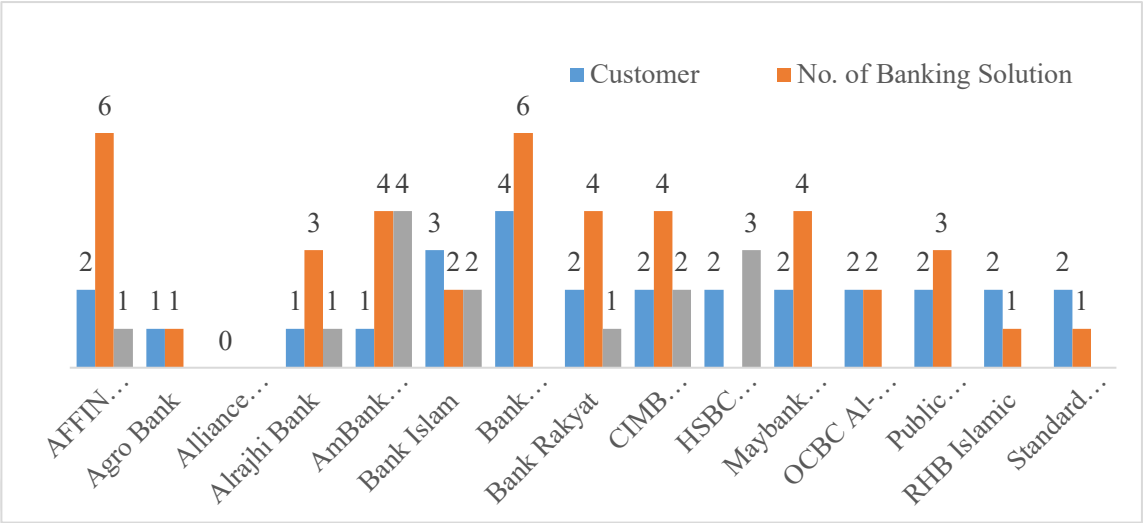

Figure 4.2: Community Empowerment

Source: Author's calculations based on the AIBIM, 2021

Alrajhi Bank offers a limited selection of services, consisting of one solution tailored to customers, three solutions related to banking, and one solution related to digital services. AmBank Islamic demonstrates a notable dedication to digital accessibility through the provision of one customer-oriented solution, four banking solutions, and four digital solutions. Bank Islam has a well-rounded strategy by providing three customer-centric solutions, two financial solutions, and two digital solutions to effectively meet the diverse needs of the community. Bank Muamalat demonstrates exceptional proficiency in catering to various segments of the community, providing four customer-centric solutions and six banking solutions. However, it falls short in terms of digital solutions. Bank Rakyat, CIMB Islamic, and HSBC Amanah all provide two customer-centric choices that vary in terms of banking and digital capabilities. HSBC Amanah has a solid digital strategy that emphasises digital solutions. However, it falls short in providing banking solutions, while offering three digital offers.

Maybank Islamic, OCBC Al-Amin, and Public Islamic Bank offer two customer-centric solutions and a range of financial services, although they lack in terms of digital products. This suggests that these banks have the opportunity to enhance their digital engagement in order to provide better service to their communities. RHB Islamic and Standard Chartered provide two customer-centric solutions and one banking solution each, without any digital products, indicating a more conventional approach to banking services. The

research illustrates that banks employ distinct ways to fulfil community obligations, with AFFIN Islamic, AmBank Islamic, and Bank Muamalat excelling in conventional banking services, while AmBank Islamic and HSBC Amanah prioritise digital solutions.

These results highlight significant opportunities for banks to enhance their digital engagement and environmental sustainability initiatives. By adopting a more holistic approach to VBI, Islamic banks can effectively enhance the empowerment of their communities, cater to a broader spectrum of demands, and actively contribute to the achievement of long-term development objectives. This not only enhances the societal influence of Islamic banking, but also aligns with VBI's overarching objectives of promoting ethical and sustainable financial practices.

Good self-governance is essential component of VBI to ensure ethical conduct, transparency, accountability, and sustainability in Islamic banks. The subsequent analysis offers a comprehensive examination of how different Islamic banks employ these governance principles, specifically emphasising their compliance with environmental, social, and governance (ESG) disciplines, finance, business best practices, and risk acceptance criteria.

The Good self-governance has two constructs the first one is sustainability management and the other one is environmental foot print (Matuštík & Kočí, 2021). Each component includes multiple facets of sustainable behaviours and implications. Environmental Footprint mostly addresses the direct environmental effects and eco-friendly actions, while Sustainability Management primarily focuses on establishing a system of governance that integrates sustainability into the organization's culture and activities. Together, these structures ensure to guarantee that organisations minimise their environmental impact while upholding ethical and transparent business practices that support long-term sustainability goals.

Table 4.3 present the practices of Good self-governance in Malaysian Islamic Banks, AFFIN Islamic demonstrates a commendable governance framework, displaying exemplary conduct in terms of ethics, transparency, responsibility, and sustainable governance. However, it lacks in ESG financing and adherence to corporate best practices. Agro Bank has commendable self-governance by performing strongly in all aspects,

including ESG disciplines and funding. However, it does not fully meet the criteria for accepting ESG risks.

Alliance Islamic Bank exhibits robust governance, achieving excellent ratings in ethical conduct, openness, sustainability governance, and all environmental, social, and governance (ESG) attributes except accountability. Alrajhi Bank demonstrates strong proficiency in sustainability governance and commercial best practices, but it lacks in ethical conduct, transparency, and accountability.

Customer Experience Management (CEM) has emerged as one of the key success factors in delivering the right and quick services that would enhance customer loyalty in banks. In the context of Islamic banking, CEM is considered to be vital for not only satisfying customer needs and wants but also for the provisions of Sharia law. This dual focus makes the management of Islamic banks different from that of conventional banks and poses different possibilities and risks (Zadegan et al. 2023: 61-76). CEM in Islamic banks involves the incorporation of the institution's principles of ethical conduct, customer-oriented service, and operational transparency. One fundamental way is through the offering of customized banking services. Similar to the traditional banking system, Islamic banks appreciate the notion that every client has a unique experience when dealing with his or her bank (Abadi et al. 2021: 187-195). But they take it a notch higher by making sure that such customized services are Shariah compliant. For example, savings accounts, investment funds, and loans are in order to achieve financial objectives besides the Sharia law, which prohibits engagement in interest (Riba) and other activities.

CEM in Islamic banking has also been impacted by digital transformation to a greater extent. Most of the Islamic banks have adopted digital banking products to improve the customer experience. These are mobile banking applications, online banking interfaces, and self-service interfaces of customers and clients. For instance, Emirates Islamic and Bank Islam have established innovative online platforms that include features like opening an account without physically going to the bank, real-time notification of transactions, and secure, online payments (Hosseini et al. 2020: 159-168). Apart from bringing convenience, these tools also make certain that most of the banking services can be extended to the general public, especially those in the rural areas. Furthermore, Islamic

banks employ the enhanced data analytics to enhance the understanding of the customers' behaviors and preferences. These banks also have big data and artificial intelligence that allows them to provide the necessary recommendations and also financial planning. For example, if the customer is involved in giving many donations then the bank may recommend Zakat accounts or other Islamic charitable financial services. Such a level of personalization strengthens overall customer relations and therefore increases satisfaction.

In contrast, traditional banks likewise utilize the same digital enablers and data mining but may be inclined toward generating greater revenues than strictly observing ethical standards. Though both types of banking systems try to deliver the best customer experience through the use of technology, these is where Islamic banks stand out because of their adherence to Sharia laws that enhance the level of trust and loyalty among their clients (Al-lami and Abd al-Zubaidi, 2023: 13-35). The other relevant area of CEM in Islamic banking is the area of financial literacy and financial information. To ensure the proper understanding of Islamic finance and the advantages of the offered services, Islamic banks provide educational activities. This is important as the idea behind Islamic banking and the products offered may be different from those that are offered by conventional banks. Such banks as Qatar Islamic Bank and Al Rajhi Bank often hold workshops, Webinars, and issue educational materials to explain Islamic financial instruments to general public. This not only helps in understanding the customers better but also in gaining their trust and confidence in the services provided by the bank.

Moreover, the concept of operational transparency is an essential component of CEM in Islamic banking. Many Islamic banks guarantee their customers clear terms and conditions of the financial product including risks and gains involved. Such transparency helps to build a sense of stability and trustworthiness among customers (Sivakumar and Ganeshkumar, 2022: 314-341). For instance, Mudarabah (profit-sharing investment) accounts show the profit-sharing ratios; Murabaha (cost-plus financing) transactions entails the following: They differ from some traditional banks where due to high obscurity of charges and conditions, the clients may feel unsatisfied. Other elements of CEM in Islamic banking also include customer feedback mechanisms. These banks also regularly solicit and consider consumers' opinions in their provision and enhancement of services. Customer feedback is obtained through questionnaires and feedback forms, and customer

feedback through telephone calls (Mousavi et al. 2024). In fact, some banks have created the customer advisory boards to make sure that the customer feedback reaches strategic decision-making levels. This constant feedback process helps Islamic banks to address customer needs and expectations in the provision of services effectively.

Islamic banking reward programs are major on both loyalty and on the Shari'ah principles. Unlike conventional banks that may use interest to offer the reward, Islamic banks usually offer tangible incentives that include discounts on the total charges of the banking services, memberships in welfare programs within the society, and privilege to attend certain events. For example, some Islamic banks reward their customers with loyalty points that can be used for scholarships for education or donations to charity which reflect the essence of Islamic finance as a social responsible system (Abhari et al. 2019: 560-569). Yet another aspect of CEM in Islamic banking is customer service excellence. For instance, the Dubai Islamic Bank and Meezan Bank have focused on customized service delivery via competent personnel who are conversant with the principles of Islamic finance. To provide sound advice to these customers, these banks provide adequate training programs to their employees. This focus on knowledgeable and empathetic customer service can be seen as one of the ways by which Islamic banks distinguish themselves from the more conventional ones where it might be more of a matter of getting the job done in the quickest and most efficient manner possible (Heshmati et al. 2019: 790-810). Furthermore, Islamic banks can also play an active role at the community level through social responsibilities, which are a part of the CEM plan. Such efforts are equally useful in building the community as well as the bank's image and improving customer satisfaction. For instance, a bank can support educational schemes, medical projects, and relief operations. In this way, the banks are supporting the ethic and social aspects of Islamic finance which in turn increases the customer satisfaction and loyalty to the banks.

Table 4.3: Sustainability Management for Good Self Governance Practices in Malaysian Banks

Sr. No.	Banks	EB	Trans	Acc	SGS	ESG Dis	ESG fin	BBP	ESG RAC	Level of
1	**AFFIN**	√	√	√	√	√	X	X	X	Modera
2	**Agro**	√	√	√	√	√	√	√	X	High
3	**Alliance**	√	√	X	√	√	√	√	√	High
4	**Alrajhi**	X	X	X	√	√	X	√	√	Modera
5	**AmBank**	X	√	X	√	√	X	√	√	Modera
6	**Bank**	√	√	√	√	√	√	√	√	High
7	**Bank**	√	√	X	√	X	√	√	√	Modera
8	**Bank**	√	X	X	√	√	X	√	√	Modera
9	**CIMB**	√	X	√	√	X	√	√	√	Modera
10	**HSBC**	√	X	X	√	X	√	√	X	Modera
11	**Mayban**	√	X	X	X	√	X	X	√	Low
12	**OCBC**	√	X	X	X	X	√	√	X	Low
13	**Public**	√	X	X	√	√	√	√	X	Modera
14	**RHB**	√	√	X	√	√	√	√	X	High
15	**Standard**	√	√	X	√	√	√	√	√	High

Source: Author's working based on the AIBIM, 2021

Note: Ethical behavior (EB), Transparency (Trans), Accountability (ACC), Sustainability Governance Structure (SGS), ESG disciplines (ESG Dis), ESG financing (ESG fin), Business best practices (BBP), ESG Risk Acceptance Criteria (ESG RAC)

AmBank Islamic demonstrates robust sustainable governance and commercial best practices, although exhibits deficiencies in ethical conduct and accountability. Bank Islam

excels in all aspects of governance, showcasing its unwavering dedication to efficient self-government and comprehensive integration of environmental, social, and governance factors. Bank Muamalat demonstrates exemplary ethical conduct and sustainable governance, while there is need for improvement in terms of accountability and ESG practices. Bank Rakyat prioritises exemplary ethical conduct and sustainable governance, although falls short in terms of transparency and responsibility. CIMB Islamic demonstrates robust ethical conduct and responsibility, while there is a requirement for improvement in openness and adherence to environmental, social, and governance (ESG) standards. HSBC Amanah demonstrates proficiency in ethical conduct and ESG financing but requires enhanced levels of openness and accountability.

Maybank Islamic demonstrates commendable ethical conduct, although it lacks transparency, responsibility, and sustainable governance. Although OCBC Al-Amin is ethically good, it needs substantial improvement in various governance aspects. Public Islamic Bank demonstrates exemplary ethical behaviour and sustainability governance, although lacks sufficient accountability. RHB Islamic has exemplary ethical conduct, transparency, and sustainable governance, while there is room for enhancement in its accountability mechanisms. Standard Charter excels in various governance areas, especially in ESG disciplines and risk acceptance criteria, showcasing a robust dedication to effective self-government.

The results show the various adoption patterns across banks, Agro Bank, Alliance Islamic Bank, Bank Islam, RHB Islamic, and Standard Chartered all have high levels of adoption in these areas, demonstrating a strong commitment to adopting sustainable principles into their governance structures. This is accomplished through the implementation of strict ethical behaviour guidelines, transparent reporting, comprehensive accountability mechanisms, well-established sustainability governance structures, and the incorporation of environmental, social, and governance (ESG) disciplines and financing practices. Maybank Islamic and OCBC Al-Amin, on the other hand, have lower adoption rates for ESG disciplines, ESG finance, and ethical behaviour. This implies that there is room for improvement to better match with the ideals of value-based intermediation. These findings highlight the ongoing need for comprehensive initiatives in the banking industry to

strengthen the implementation of sustainable governance standards and successfully integrate notions of VBI.

These results focused on the different strategies employed by Malaysian Islamic banks in implementing VBI procedures. While several banks, like Bank Islam and Agro Bank, have robust governance structures, others have room for improvement in areas such as transparency, accountability, and ESG integration. Enhancing these fundamental aspects of governance can significantly influence the banks' overall VBI aims, guaranteeing the implementation of sustainable and morally upright financial procedures. It higlights the significance of continuing and comprehensive initiatives across the banking industry to ensure effective implementation of sustainable governance measures.

The above given components of Good Self-Governance are collectively covered in sustainability management construct and are presented in Figure 4.3. The Good Self-governance report highlights the diversity of sustainability management solutions offered by different banks, ranging from 3 to 8 solutions.

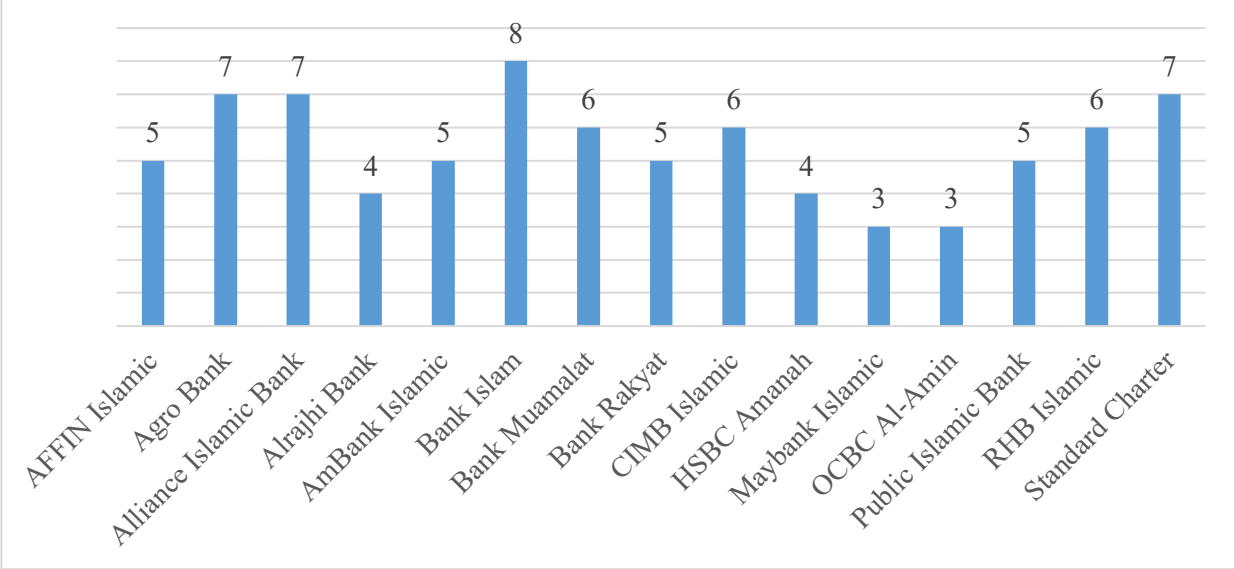

Figure 4.3: Sustainability Management

Source: Author's calculations based on the AIBIM, 2021

The provided Figure 4.3 contains the sustainability management scores of 15 Malaysian Islamic banks, which reflect their performance and endeavours to incorporate sustainability into their operations. In the banking business, sustainability management

involves integrating environmental, social, and governance (ESG) considerations into bank operations and decision-making processes (Tashtamirov, 2023: 2-9). This integration involves reducing carbon emissions, minimising waste, promoting sustainable financing, and implementing initiatives for community development, employee well-being, and consumer satisfaction. Furthermore, robust governance frameworks are necessary to guarantee ethical business practices, transparency, and accountability. Bank Islam is leading the way, as evidenced by its score of 8, which indicates robust sustainability and governance mechanisms. Both Agro Bank and Alliance Islamic Bank received a commendable score of 7, demonstrating their comprehensive implementation of sustainable practices. Standard Chartered has achieved a high score in sustainability management, indicating significant success.

On the contrary, banks including AFFIN Islamic, AmBank Islamic, Bank Muamalat, Bank Rakyat, CIMB Islamic, Public Islamic Bank, and RHB Islamic have obtained moderate scores ranging from 5 to 6. These scores indicate that they have performed well, but there is still room for improvement in certain aspects of sustainability management. Maybank Islamic and OCBC Al-Amin, with a score of 3, as well as HSBC Amanah and Alrajhi Bank, with a score of 4, need to significantly enhance their sustainability criteria in order to be competitive with other banks. The significant scores highlight possible weaknesses in their sustainability policies, underscoring the importance for major banks to prioritise enhancements in this domain.

The findings provide insight into the management of sustainable operations and adherence to good governance criteria by Malaysian Islamic banks. These conclusions establish standards for stakeholders and investors seeking to back banks that engage in ethical and sustainable business operations. The sustainability management scores offer a comprehensive evaluation of the extent to which these institutions have effectively incorporated sustainability into their business strategies. Banks that have higher sustainability scores are likely to have enhanced their sustainability initiatives, indicating a strong correlation with VBI principles (Tok & Yesuf, 2022: 3-21). However, banks with lower ratings have been identified as needing to prioritise and enhance their sustainability programmes in order to align more closely with industry standards and VBI criteria. Moreover, the results emphasise particular areas that need enhancement, urging

institutions to bolster their sustainability initiatives. This not only enables banks to meet the evolving expectations of stakeholders and investors, but it also promotes ongoing improvement in their business operations to attain more ethical and sustainable results.

Environmental Footprint specifically examines the measurable and confirmed environmental effects caused by an organization (Lehmann, Bach, & Finkbeiner, 2015: 747-762). Important elements encompass the use of cost-effective stationery supplies use, energy-efficient equipment, proper waste management, environmentally conscious initiatives, and items certified as environmentally friendly. These practices aim to minimize resource use, waste generation, and emissions, hence reducing the environmental impact of organizational activities. The table 4.3 presents presence of the facets of environment footprint in Malaysian Banks.

Islamic banking works under the main principles of the Islamic Shari'ah law, which helps to avoid any immoral and sinful actions in the banking sector. These ethical standards are qualitatively different from those of conventional banking and provide a completely different paradigm to banking for finance, which is based on equity, justice and social responsibility (Wilson, 2002). The concept of Islamic banking is based on the principle of not charging interest or Riba as it is forbidden in Islam. Islamic economics does not allow the practice of charging or giving interest for loans and deposits as it is unfair. This principle arises from the conviction that money per se should not make money without engaging in productive economic activities. However, Islamic banks used different modes of financing that include Mudarabah (profit-sharing) and Musharakah (partnership financing), wherein the risks and the returns are borne by both the bank and the customer. This is quite striking as compared to the traditional banking business where interest-based lending is the key source of income, and as we have seen the borrower takes all the risk of finance.

The principle of risk sharing is another core ethical practice in Islamic banking and finance. Therefore, Islamic financial transactions are designed in such a manner that both the buyer and the seller are exposed to similar risks as well as benefits (Osman & Elamin, 2023: 408-429). This is evident in financing models such as Murabaha which is a cost plus financing model where the bank purchases an asset and then sells it to the customer

at a profit margin where the customer pays through installments. This means that the risk of ownership is shared; the bank owns the asset until the customer finishes paying for it. Conventional banks, on the other hand, pass all risks on to the borrower from the point where the loan is granted and thus a borrower may face financial strain in adverse economic conditions.

Another rule in Islamic finance is Gharar, which deals with excessive uncertainty. Islamic banks do not enter into contracts that contain large elements of risk and uncertainty as to the terms and conditions. This involves elimination of activities such as Maisir which is similar to gambling and is considered as unfair and unethical (Daoulhadj & Hussin, 2023: 21). That is why Islamic banks emphasize the objectives of clarity of contract where the intent of the contract is clear to all the involved parties. Conventional banks, however, tend to indulge in activities such as derivatives where such activities involve higher tendencies of uncertainty and risks. Another characteristic of Islamic banking is ethical investment. It is also important to note that Sharia law does not allow any investments in businesses that are deemed Haram or forbidden, including alcohol production, gambling, pork products and any unethical practices (Rashid & Siddique, 2021: 53-72). Islamic banks undergo rigorous examinations to make sure that its investments conform to Islamic ethical standards. On the other hand, conventional banks do not invest based on religiously prescribed ethical standards, but they respect general ethical investment principles based on ESG factors.

The code of ethics of Islamic banking includes charity and social responsibility. It is mandatory for Islamic banks to facilitate social and economic uplift through the two pillars namely Zakat and Qard Hasan. To the shareholders, zakat entails donating a portion of the bank's profit to the needy or to be utilized in other noble causes such as poverty eradication (Eberhardt et al., 2019: 2-8). Qard Hasan are renewable without charging any interest to the needy people and are aimed at providing financial support to poor people. Real CSR activities are performed by conventional banks but these are more of corporate activities resulting from strategic management rather than religious or ethical mandates. Islamic banking demands high levels of transparency and accountability. The financial transaction has to be transparent; where the emphasis is put on clarity of terms and conditions of the financial transaction so that there is no element of deception or unfair

business practice (Velenturf & Purnell, 2021: 1437-1457). Islamic banks are known to have high levels of accountability, thus implying that they conduct their operations in a transparent fashion. It must also be mentioned that conventional banks cherish transparency and accountability; however, these values are supported within the context of legal requirements and shareholders rather than religious teachings.

The ethical principles in Islamic banking also apply to employees and stakeholders. Islamic banks aim at maintaining the values of justice and equality in the shariah compliant workplace to ensure fair treatment, equal opportunities, and ethical conduct among employees. This is anchored on the Islamic concept of Ihsan or doing what is right and good. However, similar to the conventional banks, they support attributes of fairness and corporate ethicality, though these are normally driven by corporate codes of conducts and laws rather than religion (Rahman et al., n.d.). Ethical conduct also impacts the debt and financial management in Islamic banking due to its core principle. Unlike conventional banks that often spur consumers into borrowing money through credit cards and personal loans, Islamic banks promote sound financial practices. They prevent reckless borrowing and encourage people to save and invest wisely. The ethics of finance suggests that financial operations should not cause unjustified suffering, and should foster social justice in finance. Ethical issues are closely connected with the concept of corporate governance in the context of Islamic banking. An Islamic bank is usually managed by a Sharia supervisory board that checks and ensures that all the operations that the bank carries out are Sharia compliant (Engzell & Kambanou, 2024: 551-580). This board offers leadership and supervision to ensure compliance with all the ethics embraced by the bank. Conventional banks, on the other hand, are managed by boards of directors and their primary motivation is the shareholder value, which can be sometimes unethically motivated.

In terms of environmental responsibility, Islamic banking is now gradually adopting principles that are environmentally friendly. This is consistent with the Islamic ethical principle of Khilafah or stewardship where one is to safeguard the resources and ensure their proper utilization. A number of Islamic banks have recently started introducing green finance activities and supporting projects aimed at minimizing environmental impact and carbon emissions (Mohiuddin & Siddiqui, 2023: 10-41). Green finance is also practiced

by conventional banks but for Islamic banks it is part of their religious and ethical obligations.

4.1.1.1 Green Banking Practices in Islamic Finance

Green banking, a concept that considers environmental concerns in banking, is now a notable trend for both Islamic and conventional banking systems. Green banking principles correspond with ethical and social responsibility postures that Islamic finance entails, thus making it suitable for Islamic banks who seek to meet their religious and moral obligations. Sustainable or green banking in Islamic finance could be undertaken not only for environmental purposes but also for the compliance with the Shariah principles of justice welfare and the prohibition of harm. It has been observed that the Islamic banks have embarked on green banking operation to support sustainable development and environmental conservation (Rizos et al., 2016: 3-14). Such programs include funding of renewable energy projects, energy conservation, and supporting green infrastructure. For instance, most Islamic banks have begun offering Shariah-compliant financing solutions for solar energy, wind power, and other types of renewable power generation. These projects are funded with Islamic finance instruments such as Sukuk which are Islamic bonds and Murabaha which is cost plus financing to ensure that an investment is Sharia compliant. Thus, Islamic banks also participate in the fight against climate change by supporting renewable energy sources and innovative energy initiatives that help lower carbon emissions (Chiang, 2024).

A prime example of green banking in Islamic finance is green Sukuk. Green Sukuk can be described as money instruments employed in establishing environmentally friendly projects. They work in the same way as conventional green bonds, although their issue is based on the principles of Sharia law. Malaysia and Indonesia have therefore led the way on green Sukuk, to fund several green projects such as renewable energy, waste management and sustainable agriculture (Julia and Kassim, 2020b: 729-744). Besides offering Islamic banks a means of financing sustainable projects, these green Sukuk also appeal to investors who seek socially responsible and environmentally friendly investment products. The experiences from green Sukuk have shown that Islamic finance can play a major role in supporting sustainability internationally. In the same way, Islamic banks

invest in green projects, they also encourage energy conservation and emission control in their day-to-day business. To mitigate their impact on climate change, most Islamic banks have installed eco-friendly hardware and software, use less paper to enhance the implementation of electronic banking services, and encourage the use of recycling bins in their offices (Julia and Kassim, 2020a: 729-744). Hereby, improving their operational sustainability, these banks become role models for their clients and the rest of the community. This internal commitment to green practices is a clear manifestation of the Islamic concept of stewardship (Khilafah) which calls for the rational use and management of resources.

Similarly, the conventional commercial banks have not been left behind in green banking due to enhanced regulation and customer demand for green products. Green banking involves the provision of products such as green loans, green mortgages, and sustainability-linked loans according to conventional banks (Ali et al. 2020: 393-411). The above financial products enable its clients to implement sustainable environmental practices and initiatives. Furthermore, most traditional banks have incorporated sustainability standards in their credit and investment management known as Environmental Social Governance (ESG). Indeed, the distinction between Islamic and conventional green banks is rooted in the different incentives and ethical systems that govern them. While conventional banks may implement green banking measures for purposes of compliance, differentiation, and CSR, Islamic banks implement green banking measures due to the strict rules of Islamic law. It entails the ban on funding activities that generate negative impacts (Israf) and the responsibility to advance the common good (Maslahah). Thus, Islamic green strategies are often more ethically charged, as Islamic banks are also focused not only on environmental compliance but also on the ethical implications of their operations.

Moreover, sustainability and green banking in Islamic banks are also seen through community involvement and students' awareness campaigns. Most Islamic banks are keen on customer and community outreach in environmental conservation and green banking. They conduct training sessions, conferences and Information Education and Communication (IEC) sessions on sustainable consumption to the customers (Chiang, 2024). This proactive approach to community education strengthens the Islamic virtue of

Da'wah; calling people to Islamic knowledge and good deeds. As with community education, conventional banks also participate in this process through the implementation of CSR policies. Such initiatives may encompass cooperation with environmental NGOs, supporting environmental causes and campaigns, and financing environmental projects. However, the implementation of these activities in the business model may differ significantly in conventional banks depending on their adherence to ESG principles and their awareness of the value of sustainability for the financial sector.

Another difference lies on the financial tools that apply in Islamic banks for green financing. As stated earlier, green Sukuk are one of the most popular instruments in Islamic finance, which are both Sharia-compliant and environmentally conscious. While conventional banks mainly deploy green bonds and other traditional debt securities to fund green initiatives (Chen et al. 2022: 123-144). Although both types of instruments have the goal of providing funds for sustainable activities, there are differences in the instruments' construction and ethical concerns. Green Sukuk cannot be based on interest, and the underlying projects cannot be forbidden according to Sharia, that is alcohol production, gambling, or tobacco production. Furthermore, sustainability is an essential component of the Islamic bank by incorporating environmental, social, and governance (ESG) factors into the banking corporate strategy (Bouteraa et al. 2020: 1-11). This way, all its business processes and financial activities are in line with the concept of sustainable and ethical business. The same holistic ESG approaches are adopted by conventional banks, but the level of integration and commitment may differ. Another potential difference is that while some conventional banks might provide short-term financial benefit to their shareholders, Islamic banks cannot compromise on their religious and moral standards and will adhere to ethical and sustainable practices in the long-term.

4.1.1.2 Future Directions for Green Banking in Islamic Finance

The possibilities of green banking for Islamic finance in the future look promising due to the growing trends of sustainability and environmentalism within the global financial systems. The embracing of green banking in Islamic finance is not only an extension of shariah and ethical legalism but also a corporate and market response to the increasing desire for environmentally sound banking products and services (Hassan et al. 2023: 102-

120). Some of the important trends and future directions that are expected to define the trajectory of green banking in the context of Islamic finance include technological innovation, regulatory changes, and growing relevance of ESG factors (Liu and Lai, 2021: 65-80). The second potential future area of green banking in Islamic finance is the growth and diversification of green Sukuk. Green Sukuk, which are Islamic bonds for green investment, have already been developed in some countries including Malaysia and Indonesia. In the future, there should be an increase in the amount and the number of countries in which green Sukuk will be issued. This growth will be enabled with the help of standardization of issuance of green Sukuk guidelines in order to increase the number of investors in green Sukuk (Khairunnessa et al. 2021: 3-20). Also, new kinds of green Sukuk could appear that would focus on particular sectors that are related to sustainable development such as renewable energy sources, sustainable agriculture, and green infrastructure.

Technological development is expected to be a core enabler of green banking for Islamic finance. For instance, the application of blockchain technology can increase the transparency and accountability of the green Sukuk and other green financial instruments. Blockchain can help to create a tamper-proof record of the environmental outcomes of funded projects while also ensuring that funded projects are utilised for their intended purpose and reach sustainability objectives (Naeem et al. 2023: 608-629). This transparency will not only help in creating trust among the investors but also help in adhering with the principles of Islam. In addition, through the use of digital platforms, internet and mobile applications, greater numbers of customers and other stakeholders can be reached to promote green banking services. Another noteworthy development in green banking is the incorporation of ESG criteria into Islamic banking activities. Many Islamic banks have shifted their focus towards the integration of ESG factors into their investment and lending portfolios (Sarma and Roy, 2021: 143-162). This involves measuring the returns of potential investment projects in terms of their social and environmental effect. Islamic banks can, therefore, integrate ESG criteria into their core business strategies to enhance the positive impacts of financial activities towards sustainability. In the future, there will be significant development in Islamic banks regarding the implementation of

integrated ESG frameworks and reporting policies to engage ethical investors and fulfill the expectations of regulators.

Innovations in Regulations will also shape the future of Green banking in Islamic Finance. Policymakers globally are coming up with measures and incentives on sustainable finance and Islamic banks will be forced to conform to those regulatory standards. For instance, the green taxonomy that outlines and categorizes economically sustainable activities will guide the Islamic banks on what constitutes green finance (Pathan et al. 2022: 193-210). Adherence to these taxonomies would be important in order for the Islamic banks to be eligible for benefits such as tax exemptions and subsidies. Furthermore, new rules on climate risk reporting will force Islamic banks to incorporate climate risks into their risk management systems to ensure they are ready for environmental shocks. Coalition and partnership shall be essential for going to the next level in green banking agenda in Islamic finance. Islamic banks have an opportunity to cooperate with IOs, development banks, and other financial institutions to launch large-scale Islamic green projects. Such collaborations can provide merging of different expertise and assets to achieve the implementation of numerous and significant sustainability initiatives (Julia and Kassim, 2020: 729-744). For instance, cooperation with such organizations as the Islamic Development Bank (IsDB) can help to attract financing for green infrastructures in developing countries that face environmental and socio-economic problems. Such partnerships can also assist in the dissemination of best practices and innovations in green banking to the rest of the Islamic finance sector.

Rising demand for sustainable financial products will put pressure on Islamic banks to increase their green banking portfolios. People start to realize the importance of environmental problems while making a decision on their financial products and services. Islamic banks can address this demand by innovating more Islamic green financial products like Islamic green saving accounts, Islamic green mortgages, and Islamic green credit cards. It can also be tailored to encourage the use of sustainable practices by clients, for instance, through providing cheaper rates for energy-efficient home renovations or offering bonuses for environmentally friendly purchases (Akomea-Frimpong et al. 2022: 1241-1264). The increased focus on sustainable finance indicates that Islamic banks can attract young people concerned about the environment. Public enlightenment programmes

and awareness creation will be very crucial for the enhancement of green banking practices in Islamic finance. Islamic banks can take on the responsibility of educating its consumers, employees, and communities about sustainability as well as the value of green finance. Seminar, training, and sensitization are some of the ways through which awareness can be created to ensure the sustainability of the Islamic finance industry (Bouteraa et al., 2020: 1-11). Also, it will be possible to include sustainability education into the learning processes that will help prepare bank employees to promote and sell the respective products and services to customers. This way, Islamic banks can improve their sustainability knowledge and, therefore, strengthen their green banking pledges.

AI and big data analytics will be more pivotal in the future of green banking in Islamic finance. The integration of AI and big data can help Islamic banks analyze the habits of the consumers, the effects of their actions on the environment, and the existing trends to improve the sustainability strategies (Alshater et al. 2023: 205-213). For example, it can be applied to process big data to look for investment targets that meet ESG standards or for evaluating the environmental sustainability of financed initiatives. Big data analytics can also play a role in tracking sustainability performance of Islamic banks and report the same to the public.

4.1.1.3 Regulatory Compliance and Challenges in Islamic Banking

The Islamic banking system is based on the principles of Sharia law and exists in a multilayered and highly regulated environment. Notably, while traditional banking activities are governed by secular banking laws, Islamic banking operates under these laws as well as Sharia laws. This compliance duality means that Islamic banks are faced with a complex web of regulation that has to be carefully managed. In essence, one of the toughest regulatory factors that confront Islamic banks is the legal and religious constraint on usury, uncertainty and speculation. The implementation of these principles in financial products and financial transactions necessitates sound Sharia governance structures (Islam, 2024: 36-67). Most Islamic banks have Sharia supervisory boards which are made of Islamic scholars to ensure that the operations of the bank are Sharia compliant. These boards scrutinize and endorse financial products and contracts to ensure that the prohibited features are not included. However, the implementation of Sharia laws has caused

controversies and the compliance issues differ from one scholar to another and from one market to another.

Another important factor is that there is no universal code of standard regulation for Islamic banks across the world. However, some countries like Malaysia and Bahrain have well-structured legal framework for Islamic finance whereas many other countries do not have specific legal provision for Islamic banking. This inconsistency makes Islamic banking face a web of laws, which may pose a challenge to the smooth undertaking of its operations across national boundaries (Tok & Yesuf, 2022: 3-21). Harmonized standards are also lacking, which poses a constraint to the creation of international Islamic financial products and prevents the expansion of Islamic banks across borders. Another disadvantage stems from regulatory fragmentation where Islamic banks have to apply international standards including those of the Basel Committee on Banking Supervision. For example, Basel III focuses on the strong capital standards and the robustness of risk management systems. Despite the fact that these standards seek to improve the soundness and robustness of the banking sector, it remains difficult for Islamic banks to apply these regulatory measures because of their distinct financial offerings. For instance, the fact that most Islamic instruments entail profit and loss sharing hampers the establishment of risk-weighted assets and capital adequacy ratios. Islamic banks need to find out ways and means and reshape their risk management models to meet these international standards whilst being Sharia compliant.

Another issue in the regulation of non-bank financial institutions is the increase in the number of anti-money laundering and counter-terrorism financing measures. For these reasons, it is imperative for Islamic banks to apply effective AML/CTF measures to curb unlawful activities and meet international financial regulations. However, the nature of the Islamic financial transactions is that they involve a large number of people and complex contracts, which makes it challenging to identify and prevent the use of funds received from money laundering and financing of terrorism (Delle Foglie & Keshminder, 2024: 3202-3225). AML/CTF presents a challenge to Islamic banks that require better technology and knowledge to improve on the area the area of transaction monitoring and the evaluation of customers and transactions. The issue on transparency and disclosure in Islamic banking also raises questions on several regulatory concerns. It is equally

important for Islamic banks to disclose adequate and relevant information to both the regulators and their customers (Musa, 2023: 31-54). This includes the disclosure of the manner in which profit and loss are shared, the risks involved in selling and dealing with financial instruments, and conformity to Sharia law. Such level of transparency may be difficult to attain especially when it comes to new financial instruments or venturing into new fronts. This is because Islamic banks need to adhere to good disclosure standards to meet regulatory standards and gain stakeholders' confidence.

To mitigate these regulatory challenges, Islamic banks can consider the following approaches. One approach include enhancing the Sharia governance structures by developing robust Sharia compliance functions and training specialized Sharia compliance professionals and scholars (Ofodile et al., 2024: 423-433). Thus, increasing internal resources and ensuring compliance with Sharia as well as regulatory demands would minimize the probability of a regulatory violation at Islamic banks. The third approach is to call for the formulation of standardized regulatory structures and policies for Islamic banking on national and multilateral bases. The stakeholders that include Islamic banks, industry associations and regulatory can therefore work together to design harmonized standards and codes of practicing Shariah compliant banking. Such initiatives may involve defining standard characteristics of Islamic financial instruments, providing common guidelines for the accounting and reporting of Islamic financial transactions, and designing international accreditation schemes for Sharia rulers. Such initiatives may contribute to the simplification of regulation and the subsequent development of the market of Islamic finance.

The use of technology is also vital in improving regulation in Islamic banking. For instance, Islamic banks can engage in the procurement of advanced technologies in regulation and compliance, better known as RegTech. For instance: the application of blockchain technology can be applied to produce tamper-proof ledgers of financial transactions (Ahmed et al., 2024: 118-135). AI and ML can improve transaction monitoring and fraud detection and prevention in Islamic banks to adhere to the AML/CTF standards. The effects of digital transformation in Islamic banking Regulation compliance and operational efficiency can be enhanced by the adoption of digital transformation. Regulatory challenges also require engagement with regulators and

policymakers as a key approach to dealing with them. These include the ability of the Islamic banks to engage in consultation with the regulators, give their opinion on the proposed regulations and work hand in hand with the regulators in coming up with policies that support the growth of Islamic finance (Ismail et al., 2020: 45-56). Regulatory engagement is a powerful tool that allows Islamic banks to have a say in the formulation of regulations so that bankers can effectively pass their message across to the regulators.

Moreover, Islamic banks could improve their compliance through the application of conventional banking standards but in a manner that conforms to Sharia. Some of these measures are effective risk management practices, compliance with international accounting standards, and sound corporate governance practices (Ramli & Muhamed, 2018). Through such best practices, Islamic banks can increase their reliability, operational continuity and achieve the expectations of the regulators, investors, and customers.

4.1.1.4 Impact of Ethical Governance on Bank Performance

Ethical governance is one of the key components of Islamic banking systems and is firmly grounded in Shariah standards that require ethical and fair dealing. These ethical governance practices affect the performance of the Islamic banks, in terms of stability, customer confidence and overall competitiveness in the market (Viganò, 2020). The effects of ethical governance on the performance of Islamic banks may be examined across different footings such as financial, risk, customer and reputation. Another area that has been influenced by ethical governance implementation in Islamic banking is the financial stability and performance. Islamic banks due to the nature of their business since they do not engage in interest-based transactions (Riba) but instead apply profit-and-loss sharing naturally are in sync with the clients' needs (Salin et al. ,2019). This alignment enhances prudence and responsibility in the management of risks. For example, in financing techniques like Mudarabah and Musharakah, both the bank and the customer bear the responsibility of the investment returns. This risk-sharing mechanism results in a more stable financial environment since banks are compelled to analyze the feasibility of the projects and the investments thoroughly. Research by the International Monetary Fund (IMF) revealed that the Islamic banks performed relatively better during the 2008 financial

crisis than the conventional banks mainly because of ethical governance and shared accountability (As Sahara and Setiawan 2022).

Ethical governance also improves the risk management frameworks of the Islamic banks. Through eliminating Maisir and Gharar the Islamic banks do not invest in highly risky ventures which may harm the bank's profitability. This conservative approach to risk is evident from the fact that Islamic banking assets are less volatile than those of conventional banks. A research paper by the World Bank found out that Islamic banking system has lower NPLs and more stable asset expansion. It is useful for preserving investor confidence and achieving long-term financial stability (Mergaliyev et al. 2021). In addition, there are strict Sharia compliance standards that call for thorough critical evaluation and constant supervision of the financial operations, which enhances the risk management of Islamic banks. The ethical governance practices of the Islamic banks have a positive impact on customer trust and satisfaction. This pledge of transparency, fairness, and social responsibility ensures the development of sound relations with the customers. There is also the requirement that the Islamic banks must ensure that the terms and conditions of the products that they offer their clients is well understood by the clients. It minimizes conflict of interest situations and increases customers' trust in the bank. For instance, the explicit declaration of Mudarabah profit-sharing ratios or the detailed elaboration of the cost-plus Murabaha pricing are good examples of the level of transparency that has been employed by Islamic banks. According to a survey by Ernst & Young, customers of Islamic banks tend to be more satisfied and trusting of the Islamic banks as compared to those who are using the conventional banks due to the fact that the banks are implementing the ethical principles of Islamic banking.

Ethical corporate governance also influences social responsibility of the Islamic banks and its effects on its image and society. Islamic banks are required to give back to society through channels like Zakat and Qard Hassan which is a non-interest based financing. These initiatives not only benefit disadvantaged communities but also have the beneficial effect for the bank's image as a socially responsible company (Dewi, 2022: 18488-18500). For instance, Al Rajhi Bank has set up several foundations for charitable purposes in Saudi Arabia and offers Qard Hasan, which targets small businesses and needy individuals. These socially responsible practices enable Islamic banks to have a competitive edge over

conventional banks by appealing to their customers who are considerate of socially responsible banking. Ethical governance also affects corporate culture and employee satisfaction in Islamic banks (Harahap et al., 2023: 6-17). Since the Islamic banks encourage high standards of integrity, accountability, and ethical practices in the organization, the workforce feels motivated and productive. When the employees accept the ethical mission of the company, they will be motivated and focused in their jobs. This commitment is reflected in improved customer relationships and increased organizational effectiveness. For instance, Dubai Islamic Bank has had a very strong corporate culture and ethical governance system and this has ensured high levels of employee satisfaction and retention. A research conducted by CIPD revealed that ethical governance and great organisational culture are the factors that influence engagement and performance in banking.

In addition, ethical governance practices can reach ethical investors who seek to invest in socially responsible companies. Since there is a growing trend of investors who are willing to invest in an Islamic way, then the banks with good governance practices in place are set to capture this niche market. Ethical investors are another area whereby Islamic banks can make use of Sukuk, which are Islamic bonds that are issued in accordance with the Sharia law (Chukwujioke, 2018). These instruments are designed to fund activities which are deemed to be socially useful and environmentally friendly such as generation of power from renewable sources and construction of infrastructure. This research has also found that green Sukuk by Islamic banks in Malaysia and Indonesia are capable of attracting ethical as well as traditional investors hence improving the financial performance of the banks. Nevertheless, the ethical governance also poses some difficulties that the Islamic banks have to face (Tuan Ibrahim et al, 2020: 1918-1939.). Maintaining Sharia compliance across different markets and jurisdictions is often challenging due to different approaches to Islamic law. Furthermore, strict ethical standards mean higher expenditures on compliance programs, personnel, and control systems. However, Islamic banks have to weigh these costs with the advantages of ethical governance for sustainable growth.

4.1.1.5 Challenges and Barriers to Technological Adoption in Islamic Banks

New technologies are regarded as highly promising in terms of improving efficiency, customer relations and Sharia compliance in Islamic banks. However, this technological transformation is not without challenges and barriers. Challenges that affect the adoption of financial technology (fintech) include regulatory, cultural, and infrastructure aspects, among which Islamic banks must be strategic in order to overcome (Hanif & Zafar, 2020: 3-21). The regulatory environment is one major challenge of technological implementation in Islamic banks. Therefore, Islamic banking has a legal framework of both conventional banking laws and Sharia standards. These two compliance requirements pose some challenges that are not experienced in normal banking (Rashid & Siddique, 2021: 53-72). For instance, when adopting solutions like blockchain or artificial intelligence, all the operations need to be free from Riba, Gharar, and Maisir. The regulatory authorities in most countries are still in the process of formulating guidelines regarding these distinctive characteristics of Islamic finance, and as a result, there are no universal rules governing the implementation of fintech in Islamic banking (Bouteraa, Raja Hisham and Zainol, 2023: 1-11). Such regulatory uncertainties can slow the adoption of new technologies because banks often end up exploring relatively unknown regulatory landscapes and may have to approach regulators individually. Another challenge to new technologies adoption in Islamic banks is cultural resistance. The banking culture in many Islamic countries is conservative by nature and more accustomed to person-to-person communication. This cultural preference becomes a barrier to digital transformation because customers and bank employees may not trust new technologies and will not use them. Furthermore, there is always the attitude that change is bad and that one should not deviate from the norm. For instance, customers who are used to dealing with banks' employees personally may have concerns about mobile applications or automatic services. To address this issue, Islamic banks should continue educating the public and implementing training programs to increase reliance on new technologies and the understanding of their positive impact (Alam et al., 2023: 3-22). These programs should focus on how the adoption of these fintech solutions can improve service delivery without compromising the basic tenets of Islamic finance.

Another challenge that affect adoption of new technologies in Islamic banks is infrastructure problems. In many regions of Islamic banking there is still no well-developed infrastructure for the introduction of more complex fintech solutions. For example, high-speed internet connection and robust information infrastructure are vital for smooth running of online banking systems and distributed ledger technologies (Vann Yaroson et al., 2024: 1399-1433). However, in some Islamic countries, particularly the rural and less developed ones, the digital platform for supporting these technologies is still in its infancy. This discrepancy may reduce the potential impact of fintech solutions in some regions and thus prevent Islamic banks from offering uniformly stable services. Solving these infrastructure issues implies a massive capital outlay and the cooperation of governments, banks, and technology partners to create that digital infrastructure.

Another challenge that is associated with infrastructure is the question of security, particularly, cyber security. This is because; When Islamic banks embark on new technologies they are exposed to risks of cyber threats. Proper security measures need to be put in place to safeguard consumers' data as well as finances. But establishing robust and broad cybersecurity frameworks may be difficult, particularly where the Islamic banks are relatively small and not adequately endowed (Mirakhor & Hamid, n.d.). These banks may not have the experience or the resources to invest in high-level protection technologies and measures. Thus, they might be reluctant to start using new digital solutions for their work because of possible cyber threats and leaks. To address this challenge, there is a need to improve cybersecurity skills through collaboration, education, and by implementing the latest developments in security technologies (Aysan et al. 2022: 206-215). Thus, the ability of fintech solutions to integrate with Islamic banks' legacy systems is another challenge. A large number of Islamic banks are relatively old and use IT infrastructure that does not facilitate integration with contemporary fintech solutions. Updating or replacing these systems is not easy, cheap, and fast. In addition, migration from the old technology must be done in a way that does not disrupt the existing service offerings. For the Islamic banks, there is a need to have outlined plans that will see the integration of fintech together with the traditional banking systems which a process that may take time, involve gradual on boarding, testing and monitoring. This process involves much planning and resources hence can be a challenge to institution with restricted funds.

In the adoption of new technologies, human capital and expertise are also found to be influential in Islamic banks. Due to the increased complexity of fintech solutions, there is a need for competent and experienced individuals in the operation and management of the solutions and an understanding of the principles of Islamic finance. However, it is acknowledged that such specialized talent is scarce in the Islamic banking sector most of the time (Awamleh et al. 2024: 147-157). Quite a number of banks might face challenges in sourcing and attracting the right talent to support their digital transformation agendas. In order to overcome this barrier, Islamic banks have to focus on the development of their human capital through training, cooperation with universities, and promotion of innovation. The human capital issue can only be solved by creating a pipeline of people who are familiar with fintech and Islamic finance. Even the rate of technological advancement becomes a challenge to its implementation for Islamic banks (Al-Quradaghi, 2023: 290-300). One of the challenges that banks face is that fintech is a rapidly developing industry and there is a constant emergence of new solutions and innovations. Such a rate of innovation can cause delay and confusion as to which technologies to adopt as well as how to leverage them successfully. Currently, there is a need to devise working models that can enable Islamic banks to counter technological changes effectively subject to Sharia law. This agility means always being on the lookout for innovation and learning opportunities and being prepared to shift gears as appropriate.

4.1.1.6 Impact of Community Empowerment on Economic Development

Through community empowerment, Islamic banks ensure that they help improve overall economic development as specified by the Islamic finance principles of social justice and economic equity. Such programs are meant to empower communities financially, educationally and in other ways that help people and businesses to grow (Musa, n.d.). Hence, when Islamic banks commit to the principles of inclusive growth and sustainable development, they improve not only their own performance and image but also the overall well-being of the regions in which the Islamic banks operate.

Micro financing is one of the primary areas where Islamic banks can help empower communities. Micro financing entails extending of small credit facilities and other financial services to persons and business that are unable to access credit in other formal

ways. Such a facility can be provided without charging any interest (Riba) and in accordance with Islamic law using Islamic methods such as Mudarabah (partnership) and or Qard Hasan (benevolent loans) (Mohan & Katakojwala, 2021). For example, Grameen Bank approach adopted by many Islamic micro financing institutions has helped millions of people in countries such as Bangladesh, Indonesia and Pakistan. Through empowering small business owners to commence or diversify their companies, Islamic microfinance has eliminate poverty and unemployment among many families in addition to promoting the economy. For instance, the Islamic Research and Training Institute (IRTI) has shown that Islamic microfinance plays a crucial role in eradicating poverty. The study discovered that there is a positive impact of Islamic microfinance since there was an increase in income levels, business growth and employment rates where Islamic microfinance is more established (Setianingsih and Aalin, 2020). For instance, BMT (Baitul Maal wat Tamwil) has been offering Islamic microfinance to the poor in Indonesia and has significantly uplifted the earning rates of households and minimized income inequality. Basing on these examples, it is clear that financial inclusion plays a crucial role in the economic growth process.

Another significant aspect of community empowerment strategies developed by Islamic banks is the education and training. These programs seek to prepare people to be capable of planning their finances, starting and operating businesses and making sound economic decisions. These programs are provided by Islamic banks in partnership with educational institutions, non-governmental organizations, and community based organizations. For instance, the Bahrain Islamic Bank has offered some of the best financial literacy programs directed at young business people and women for them to be able to manage their business and personal financial status (Mohan & Katakojwala, 2021). In this way, Islamic banks develop the society's financially intelligent populace capable of promoting economic growth and stability. In addition, the mentioned Islamic banks are involved in CSR initiatives that have a positive impact on the community. Such activities include provision of funds for the health, education, physical development and social services undertakings. For instance, the Al Rajhi Bank of Saudi Arabia has developed an efficient CSR strategy aimed at funding different community needs such as construction of schools, scholarships, and health care centers (Thamrin, 2023: 499-507). Such developments not

only enhance the well-being of the people in the affected communities but also enhance the business environment. Education and health sectors improve workforce productivity and efficient infrastructure develops the flow of commerce and business.

Lastly, Zakat (almsgiving) and Sadaqah (charitable donations) in the Islamic banking system also demonstrate this commitment towards community empower. Zakat, one of the Five Pillars of Islam, is managed by Islamic banks in terms of collection as well as distribution for the benefit of the needy in society. This is because, through the payment of Zakat, wealth is circulated, poverty alleviation is achieved besides supporting the vulnerable groups in the society (Osman & Elamin, 2023: 408-429). For instance, Kuwait Finance House gives a percentage of its net income to Zakat to support programs that include housing, health, and education for needy families. It not only eases existing financial pressures but also develops human capital, critical for sustained growth in any economy. Other facet of community empowerment through Islamic banking also involves financing of SMEs, which are vital players in economic development. SMEs are commonly referred to as the engine of economies because of the roles they play in employment and production. Islamic banks offer shariah-compliant financial solutions for enabling the growth of SMEs (Zaki et al. 2022: 317-335). For instance, Bank Islam Malaysia Berhad has provided a special financing for SMEs namely Ijarah (leasing) and Istisna (manufacturing) financing. Such financial instruments enable SMEs to obtain the required assets and funds to grow, create new products and services, and compete in the market. SMEs' growth also result in increased employment rates, higher income per capita, and a more vibrant economy.

The effects of these community empowerment programs are well reflected in every aspect of the economy. Communities where Islamic banks participate in the funding of CDPs have relatively higher economic stability and growth (Ibrahim & Shirazi, 2020: 1918-1939.). A study conducted by IsDB showed that IsDB member countries where Islamic banks engage in community development initiatives record higher Human Development Index scores, lower poverty levels, and enhanced economic diversification. For instance in Sudan, the Faisal Islamic Bank has been at the forefront in financing and providing technical support to the agricultural sector which has boosted food production (Osman & Elamin, 2023: 408-429). Moreover, the ethical and social aspect of Islamic banking appeal

to a wide range of customers who are keen on such values. This helps expand the market of the Islamic banks and makes customers more loyal to the banks. The emphasis on ethical investments and community welfare can be related to the global shift towards sustainable and socially responsible investing. Today, more and more people and investors pay attention to ethical issues, which makes Islamic banks relevant to capture this market, contributing to its growth and profitability and developing the economy.

Table 4.4: Environment Footprint for Good Self Governance Practices in Malaysian Banks

Sr. No.	Banks	ESSU	EEE	PWM	EFC	GCO	Level of adoption
1	**AFFIN Islamic**	√	√	√	√	X	High
2	**Agro Bank**	√	√	√	X	X	Moderate
3	**Alliance Islamic Bank**	√	√	X	√	√	High
4	**Alrajhi Bank**	√	√	X	X	X	Low
5	**AmBank Islamic**	X	√	√	√	X	Moderate
6	**Bank Islam**	√	√	√	√	√	High
7	**Bank Muamalat**	√	√	X	√	X	Moderate
8	**Bank Rakyat**	√	√	X	√	X	Moderate
9	**CIMB Islamic**	X	√	X	√	√	Moderate
10	**HSBC Amanah**	X	X	X	√	X	Low
11	**Maybank Islamic**	√	√	√	√	√	High
12	**OCBC Al-Amin**	X	√	X	√	√	Moderate
13	**Public Islamic Bank**	X	√	X	√	√	Moderate
14	**RHB Islamic**	X	√	X	√	√	Moderate
15	**Standard Charter**	X	√	√	√	X	Moderate

Source: Author's working based on the AIBIM, 2021

Note: Economical Stationery Supplies Use (ESSU), Energy Efficiency Equipment (EEE), Proper Waste Management (PWM), Environmentally Friendly Campaigns (EFC), Green Certified Products (GCP)

Table 4.4 evaluates the incorporation of exemplary self-governance elements related to environmental impact by 15 Malaysian Islamic banks, in line with VBI criteria. These

elements encompass the use of economical office supplies, energy-conserving machinery, proper trash disposal, eco-conscious advertising initiatives, and products designated as environmentally friendly.

AFFIN Islamic demonstrates a strong commitment by combining low-cost office supplies, energy-efficient machinery, smart waste management methods, and environmentally friendly advertising campaigns. However, it lacks green-certified products. Agro Bank exhibits expertise in using low-cost office supplies, energy-efficient gear, and effective waste disposal ways. However, the bank does not actively participate in environmentally friendly projects or offer items that are certified as ecologically sustainable. Alliance Islamic Bank exhibits a significant dedication by integrating low-cost office supplies, energy-efficient equipment, and eco-friendly programmes. The bank also provides products that have been verified as environmentally beneficial. However, it falls short of sustainable waste management.

Alrajhi Bank prioritises the adoption of low-cost office supplies and energy-efficient equipment. However, it does not actively participate in acceptable waste management methods, environmental efforts, or provide environmentally friendly products. AmBank Islamic uses energy-efficient equipment, employs smart waste management techniques, and supports environmentally conscious projects. However, the company does not use low-cost stationery supplies or offer environmentally friendly products. Bank Islam outperforms in all five areas, indicating its wide and comprehensive environmental activities. Bank Muamalat meets four requirements by using cost-effective office supplies, energy-efficient equipment, and ecologically friendly efforts. However, it does not offer environmentally friendly products. Bank Rakyat meets four requirements; nonetheless, it lacks proper waste management methods and does not provide green-certified products.

CIMB Islamic uses energy-efficient technology, supports environmentally conscious activities, and offers green-certified products. However, it does not use cost-effective stationery supplies or exercise good waste management. HSBC Amanah focuses solely on environmentally friendly projects, ignoring other elements. Maybank Islamic demonstrates good sustainability standards by including all five components, which include cost-effective office supplies, energy-efficient technology, effective waste

disposal systems, environmentally conscious advertising campaigns, and ecologically certified merchandise (Abdulkareem et al., 2021: 23-35). OCBC Al-Amin uses energy-efficient technology, supports environmentally conscious activities, and offers green-certified products. However, the organisation does not use cost-effective stationery or manage waste properly. Public Islamic Bank follows a similar approach to OCBC Al-Amin, meeting three standards but falling short on the use of cost-effective office supplies and proper waste disposal processes.

RHB Islamic uses energy-efficient equipment, promotes environmentally friendly projects, and offers green-certified products. However, it does not use cost-effective stationery or manage waste properly. Standard Chartered uses energy-efficient technologies, manages waste responsibly, and promotes environmentally friendly campaigns. However, the bank does not use low-cost stationery or offer environmentally friendly items. The results show the various levels of commitment among Malaysian Islamic banks to implementing effective self-governance procedures in terms of environmental impact. The practices that are vital to VBI indicate the bank's commitment to sustainability (Anaruma et al., 2022: 2691-2709). Bank Islam and Maybank Islamic distinguish themselves by effectively applying all five criteria, showcasing their comprehensive sustainability initiatives. While other banks may excel in some areas, they also show areas for improvement. These findings provide reference points for stakeholders and investors looking to support banks that use ethical and sustainable business practices. They also highlight areas where banks may improve their sustainability efforts to meet the criteria of VBI.

AFFIN Islamic, Alliance Islamic Bank, Bank Islam, and Maybank Islamic are rated as having a high level of adoption. This suggests that they are likely highly skilled at implementing comprehensive practices across all components of environmental footprint. A high adoption rate reflects aggressive efforts to promote environmental sustainability. Agro Bank, AmBank Islamic, Bank Muamalat, Bank Rakyat, CIMB Islamic, OCBC Al-Amin, Public Islamic Bank, RHB Islamic, and Standard Charter are all rated as having moderate acceptance (Rusydiana & Ali, 2022: 39-49). This means that they have successfully implemented a significant portion of the Environment Footprint for Good Self Governance Practices, while there may be areas where they may improve their

performance. Alrajhi Bank and HSBC Amanah are considered as having low levels of adoption.

This implies that they have only implemented a subset of Environment Footprint for Good Self Governance Practices, and that these practices may not have been properly integrated into their operational structure. This could suggest a lack of significant efforts in implementation of Environment Footprint. Overall, the banks have various levels of adoption of Environment Footprint for Good Self Governance Practices, suggesting varying degrees of commitment to and execution of sustainable practices. Banks with high adoption rates are projected to be at the forefront of this field, whereas banks with moderate and low adoption rates have varying levels of implementation and opportunity for improving their environmental governance policies.

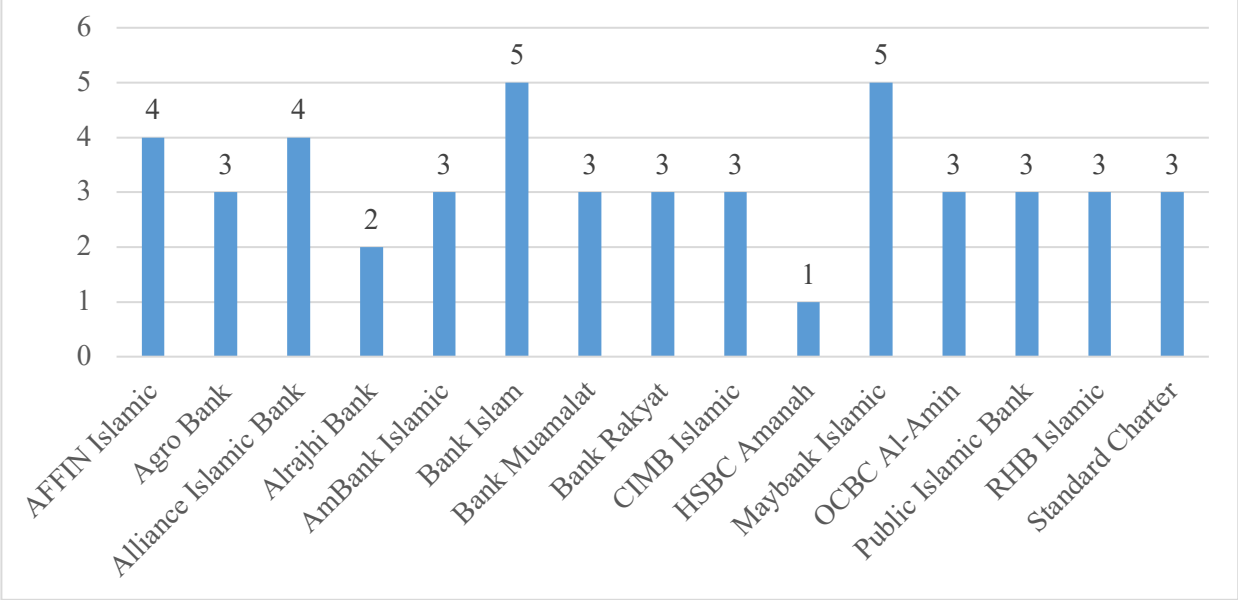

Figure 4.4: Environment Footprint

Source: Author's calculations based on the AIBIM, 2021

Figure 4.4 depicts the Environment Footprint of 15 Malaysian Islamic banks, assessing their sustainability measures across multiple dimensions. Each bank's score is based on its use of cost-efficient office supplies, energy-saving machinery, effective waste disposal techniques, eco-conscious advertising campaigns, and environmentally friendly products, which are scored on a scale of 1 to 5. Higher ratings indicate higher environmental performance.

AFFIN Islamic received a score of 4, indicating a strong commitment to sustainability with considerable strengths in the most of categories, however it falls short in green-certified items. Agro Bank received a score of 3, indicating that it has strengths in sustainability but weaknesses in green programming and commodities. Alliance Islamic Bank has received a rating of 4, indicating high compliance but potential for improvement in waste management. Alrajhi Bank received a score of 2, indicating the possibilities of expansion beyond energy efficiency and stationery. AmBank Islamic has received a rating of 3, indicating that it follows good procedures. However, there is still room for growth in terms of supplying economical stationery and green-certified products.

Bank Islam received the maximum score of 5, indicating that they have undertaken extensive sustainability initiatives across all areas. The number 3 represents a substantial level of dedication; yet, no Bank Muamalat products are certified as green. Bank Rakyat achieved a score of three, with space for improvement in waste management and the usage of green-certified commodities. CIMB Islamic achieved a rating of three, showing strength in energy efficiency and promotions but poor in stationery and waste management (Ishak & Zaini, 2024: 58-75). HSBC Amanah achieved a score of one, indicating a low level of interest in sustainability, mostly focused on environmental activities. Bank Islam and Maybank Islamic received a score of 5, proving their significant and comprehensive commitment to sustainability.

OCBC Al-Amin, Public Islamic Bank, and RHB Islamic all received a score of 3, indicating that they meet intermediate sustainability standards. However, there is always room for improvement in areas such as stationery, waste management, and the usage of eco-friendly products. Standard Chartered received a score of 3, indicating satisfactory performance in a variety of categories, but there is room for improvement in the acquisition of stationery and green-certified products.

To recapitulate, the aggregated rankings give a clear picture of each bank's environmental impact, underlining its commitment to sustainability. Bank Islam and Maybank Islamic are in the forefront, with top ratings and strong environmental activities. HSBC Amanah has curtailed its activity. The moderate banks have undertaken a number of sustainability initiatives; yet, there remains room for improvement. These findings show that Malaysian

Islamic banks have different levels of environmental sustainability, giving them a benchmark for stakeholders and investors that value ethical and sustainable business practices.

The Best Conduct component of VBI assures that Islamic banks adhere to ethical, transparent, and sustainable processes (Dewi, Yaswirman, Helmi, & Henmaidi, 2023). The evaluation of these elements is used to assess each bank's commitment to VBI practices, which are critical for sustainable and ethical banking. The Best Conduct factor is critical in ensuring that banks maintain high ethical standards, promote transparency, and make positive contributions to society and the environment. This, in turn, improves their image and long-term profitability. The Table 4.5 evaluates the Best Conduct part of VBI, which is applied in 15 Malaysian Islamic banks. It focuses on several key factors, including awareness campaigns, charitable activities, the number of digital initiatives, employee welfare, involvement in the "VBI or ESG-Industry Working Group," and crowdfunding.

The analysis shows that banks like AFFIN Islamic, Agro Bank, AmBank Islamic, CIMB Islamic, HSBC Amanah, Maybank Islamic, Public Islamic Bank, and Standard Chartered actively participate in Awareness Campaigns, demonstrating their commitment to informing stakeholders about ethical and sustainable practices. Agro Bank, AmBank Islamic, Bank Muamalat, Bank Rakyat, HSBC Amanah, Maybank Islamic, Public Islamic Bank, and Standard Chartered are known for their humanitarian operations that benefit societal causes (Ismail et al., 2022: 76-85). Standard Chartered and other banks have implemented digital initiatives to improve service delivery through technology.

Several banks, including AFFIN Islamic, Agro Bank, AmBank Islamic, Bank Muamalat, CIMB Islamic, HSBC Amanah, Maybank Islamic, Public Islamic Bank, and Standard Chartered, have launched employee wellness schemes. These schemes reflect a dedication to employee safety. AmBank Islamic, Bank Islam, Bank Muamalat, CIMB Islamic, HSBC Amanah, Maybank Islamic, Public Islamic Bank, and Standard Chartered are active participants in the "VBI or ESG-Industry Working Groups." These groups encourage collaboration on environmental, social, and governance (ESG) issues. AmBank Islamic, Maybank Islamic, and Public Islamic Bank offer crowdfunding platforms for the financing

of social and environmental projects. These findings demonstrate the varying levels of commitment to VBI policies among Malaysian Islamic banks and provide insight into their efforts to promote sustainable and responsible banking practices.

Table 4.5: Best Conduct Practices in Malaysian Islamic Banks

Sr. No.	Banks	AC	CA	NDI	EW	ESG WG	Cro	Level of adoption
1	**AFFIN Islamic**	√	√	√	√	X	X	Moderate
2	**Agro Bank**	√	√	X	√	√	X	Moderate
3	**Alliance Islamic**	√	X	X	√	X	X	Low
4	**Alrajhi Bank**	√	X	X	X	X	X	Low
5	**AmBank Islamic**	√	√	X	√	√	√	High
6	**Bank Islam**	X	√	X	X	√	√	Moderate
7	**Bank Muamalat**	X	√	X	X	√	√	Moderate
8	**Bank Rakyat**	X	√	X	X	√	X	Low
9	**CIMB Islamic**	√	X	X	X	√	X	Low
10	**HSBC Amanah**	√	√	X	X	√	X	Moderate
11	**Maybank Islamic**	√	√	X	√	√	√	High
12	**OCBC Al-Amin**	X	√	X	√	X	X	Low
13	**Public Islamic Bank**	√	X	X	√	√	X	Moderate
14	**RHB Islamic**	X	√	X	X	X	X	Low
15	**Standard Charter**	√	X	√	X	√	X	Moderate

Source: Author's working based on the AIBIM, 2021

Note: Awareness Campaign (AC), Charitable Activities (CA), Number of Digital Initiative (NDI), Employee Welfare (EW), VBI or ESG-Industry Working Group (ESG WG), Crowdfunding (Cro)

The table shows the adoption rates of several components of the Best Conduct framework inside the VBI framework across multiple institutions. Banks are divided into three categories of adoption: low, moderate, and high. Affin Islamic, Agro Bank, and Bank Islam are classified as having a moderate level of adoption, whilst Alliance Islamic Bank, Alrajhi Bank, and CIMB Islamic have a low level of adoption. AmBank Islamic and Maybank Islamic are examples of banks with a high level of acceptance and

implementation. The findings highlight the varying levels of ethical and sustainability practices incorporated by Islamic banks, as well as opportunities for further improvement and uniformity within the VBI framework.

Figure 4.5 provides scores ranging from one to five to banks based on their adherence to best conduct guidelines. AmBank Islamic and Maybank Islamic have achieved the highest rating of 5, signifying outstanding performance. AFFIN Islamic and Agro Bank have ratings of 4, signifying strong performance. Banks such as Bank Islam, Bank Muamalat, HSBC Amanah, Public Islamic Bank, and Standard Chartered have a score of three, which signifies their adherence to average conduct norms. Alliance Islamic Bank, Bank Rakyat, CIMB Islamic, and OCBC Al-Amin all have a score of two, indicating subpar conduct, while Alrajhi Bank and RHB Islamic have the lowest scores of one, suggesting a substantial requirement for enhancement. This illustrates the varying degrees of compliance with optimal ethical standards among financial institutions.

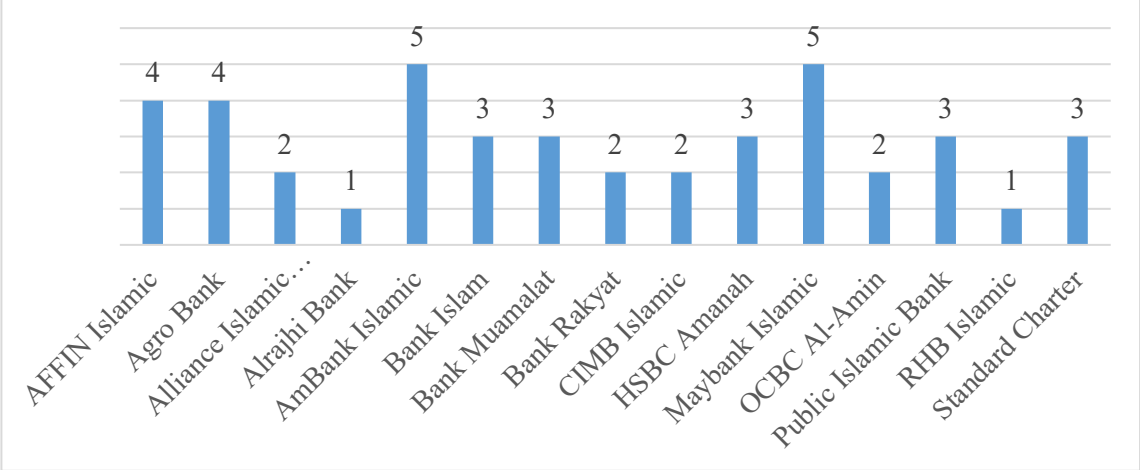

Figure 4.5: Best Conduct

Source: Author's calculations based on the AIBIM, 2021

The Best Conduct component of VBI is critical to ensure that Islamic banks operate ethically, transparently, and sustainably (Dewi et al., 2023). This congruence with ethical ideals is critical to the long-term profitability and sustainability of Islamic banking organisations.

Upon further examination of the Best Conduct element, it is clear that several banks, including AFFIN Islamic, Agro Bank, AmBank Islamic, CIMB Islamic, HSBC Amanah, Maybank Islamic, Public Islamic Bank, and Standard Chartered, are actively engaged in Awareness Campaigns to educate stakeholders on ethical and sustainable practices. Agro Bank, AmBank Islamic, Bank Muamalat, Bank Rakyat, HSBC Amanah, Maybank Islamic, Public Islamic Bank, and Standard Chartered all disclose charity efforts to benefit humanitarian causes. Standard Chartered is one of the organisations that has implemented digital initiatives to improve service delivery through technology.

Banks include AFFIN Islamic, Agro Bank, AmBank Islamic, Bank Muamalat, CIMB Islamic, HSBC Amanah, Maybank Islamic, Public Islamic Bank, and Standard Chartered are introducing employee wellness programmes. AmBank Islamic, Bank Islam, Bank Muamalat, CIMB Islamic, HSBC Amanah, Maybank Islamic, Public Islamic Bank, and Standard Chartered are all members of the "VBI or ESG-Industry Working Groups," which seek to promote collaboration in solving environmental, social, and governance (ESG) challenges. AmBank Islamic, Maybank Islamic, and Public Islamic Bank all offer crowdfunding platforms for the aim of sponsoring social or environmental projects.

4.1.2 Circular Economy

Given the facts on the Malaysian economy, it is possible to conclude that the fall in policy rates contributed to increased investment (Laldin & Djafri, 2021: 107-126). This is corroborated by the observed increase in Gross Capital Formation in 2021 and 2022 following the policy rate decreases. During this time, Malaysia experienced economic challenges, mainly as a result of the COVID-19 outbreak, which had an influence on both Gross Capital Formation and policy rates. Between 2018 and 2022, the Malaysian economy experienced fluctuations in Gross Capital Formation, which reflected movements in net investment levels. The percentage of GDP dedicated to this began at 23.9% in 2018 before falling to 21.0% in 2019, presumably due to economic uncertainties. The decline continued, reaching 19.7% in 2020 as a result of the pandemic's impact on investment activity. Nevertheless, Gross Capital Formation improved significantly, reaching 22.1% in 2021 and expanding to 23.5% in 2022. This points to a positive shift in investor attitude.

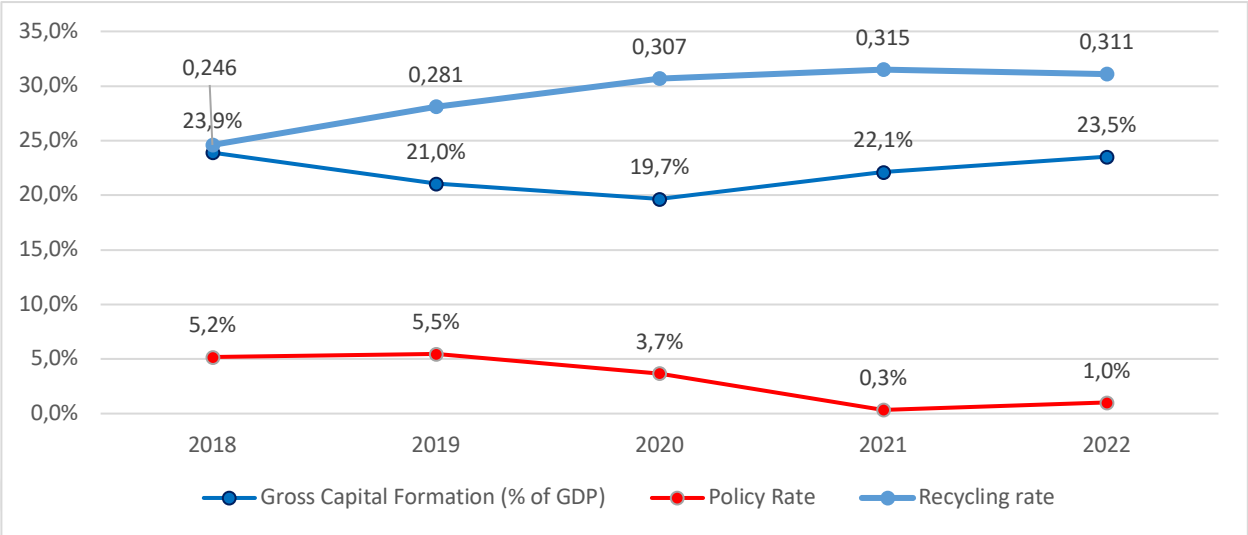

Figure 4.6: GFCF % of GDP, Policy Rate and Recycling Rate

Source: Author's calculations based WDI data and other source of data

At the same time, the policy rate, which influences the cost of borrowing and thus economic activity, began at 5.2% in 2018 and rose to 5.5% in 2019. The policy rate was significantly reduced to 3.7% in 2020 due to the pandemic's economic impact. In 2021, the policy rate was further reduced to 0.3%. This drop was most likely implemented to expedite economic recovery in response to the epidemic's challenges. In 2022, the policy rate had risen slightly to 1.0%, indicating continuous efforts to strike a balance between economic stability and inflationary concerns.

The data shows Malaysia's recycling rate from 2018 to 2022, with a constant upward trend and a slight decline in the last year. The recycling rate, an important aspect in the CE, estimates the proportion of waste materials diverted from landfills and processed for reuse. This indicator is critical for determining the effectiveness of waste management techniques and progress towards sustainable development. The adoption of VBI in Malaysia's banking sector is predicted to have a significant impact on recycling rates and other circular economy-related aspects. VBI encourages the incorporation of ethical, social, and environmental issues into bank financial operations, hence driving investment in sustainable initiatives and environmentally friendly technologies.

Financial institutions that follow the principles of VBI are more likely to fund projects that improve recycling infrastructure and technology. This includes funding for recycling

facilities, waste segregation centres, and public education programmers. As a result, the recycling rate has steadily improved, increasing from 0.246 in 2018 to 0.315 in 2022. VBI also promotes ethical corporate behaviour, encouraging businesses to use sustainable practices such as improved waste management and recycling. Offering financial incentives and attractive financing circumstances to businesses that effectively execute recycling programmes can help to increase overall recycling rates. Malaysia's recycling rate increased from 24.6% to 31.5% between 2018 and 2021, showing a positive trend. This enhancement corresponds to the period when VBI ideas were gradually adopted in the Malaysian banking industry. The fall to 31.1% in 2022 can be attributed to a variety of factors, including potential economic disruptions or execution challenges. However, the overall trend indicates progress in recycling efforts.

The data on recycling rates from 2018 to 2022 show that the implementation of VBI in Malaysia's banking sector most likely contributed to improved recycling practices (Shahrom & Kunhibava, 2023: 125-166). VBI has the potential to increase Malaysia's recycling rate and overall sustainability by encouraging investment in recycling infrastructure, advocating for environmentally friendly business practices, and actively incorporating the community. Ensuring continued commitment to VBI principles and encouraging collaboration among financial institutions, businesses, and governments will be critical for preserving and accelerating progress in the (Ayub, 2021: 218-228).

During the COVID-19 epidemic, banks that followed VBI principles were more likely to contribute to economic recovery by boosting lending and investing in productive businesses (Jan et al., 2021: 89-105). The reduction in policy rates in 2020 and 2021 most certainly aided these efforts by lowering borrowing costs and simplifying access to funding for businesses and individuals. The increase in Gross Capital Formation in 2021 and 2022 can be attributed to the combined benefits of carrying out VBI and implementing accommodating monetary policies. The reduction in policy rates, in particular, may have spurred increased investment, which is consistent with the VBI's goals of promoting economic expansion and supporting ethical and sustainable banking standards. The changes in Gross Capital Formation and policy rates in Malaysia between 2018 and 2022 are the consequence of a complex interaction of economic factors, including the implementation of VBI principles in the banking industry. To accelerate Malaysia's

economic recovery and promote inclusive growth, the government must continually adhere to the VBI principles and make prudent monetary policy changes.

The implementation of VBI in Malaysia's banking industry has had an impact on these CE variables. VBI promotes for the incorporation of environmental and social concerns into bank lending and investment decisions, thereby promoting sustainable development and the CE. Figure 4.7 portrays data on various CE variables, exhibiting patterns in ecological footprint, waste management, employment to population ratio, and water usage over an unknown time period.

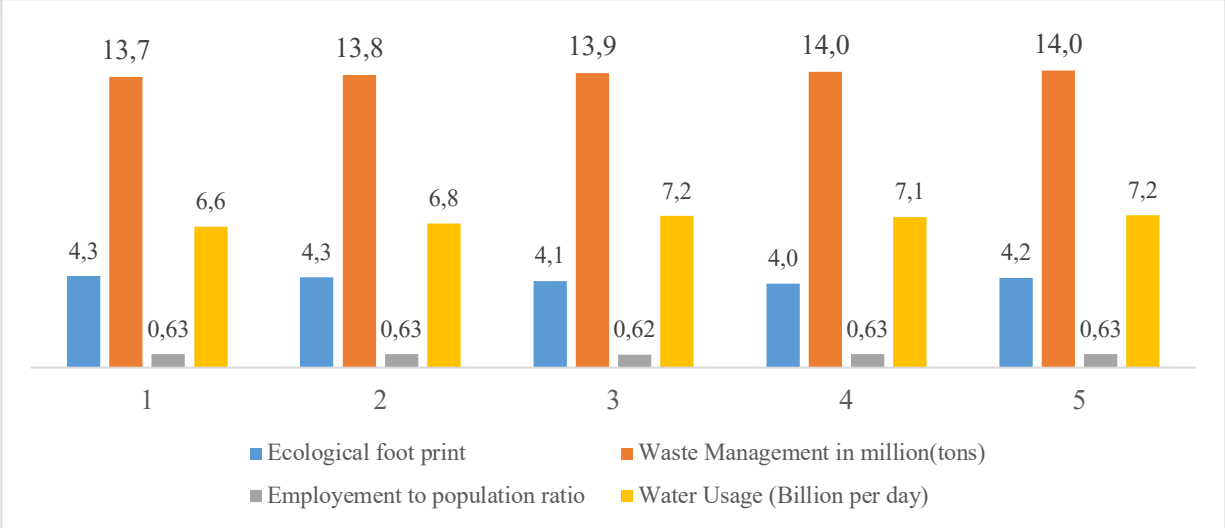

Figure 4.7: Cicular Economy

Source: Author's calculations based WDI data and other source of data

The ecological footprint given in global hectare (gha) which is a unit of measurement used in ecological footprint accounting to precisely quantify and compare the environmental repercussions of human activities across different regions or countries. The word refers to the entire amount of land and sea required to sustainably produce the resources needed and safely dispose of the waste generated by a population, region, or activity. The ecological footprint decreases somewhat from 4.3 to 4.0, indicating a reduction in environmental impact, but then rises marginally to 4.2 in the recent year. The volume of waste management has gradually increased from 13.7 million tonnes to 14.0 million tonnes of municipal solid waste, indicating an improvement in waste management capacity or efficiency. The employment to population ratio stayed constant at 0.6, showing

a stable employment rate relative to the population. Daily water usage has gradually increased from 6.6 billion to 7.2 billion, with a brief dip to 7.1 billion before resuming an upward trend. This shows an increasing demand for water supplies. Overall, the data shows encouraging advances in waste management and stable employment, but it also highlights the challenges of reducing water use and maintaining environmental effect reductions.

Financial institutions that follow VBI principles are more likely to support initiatives and activities that improve waste management, water conservation, and job creation. With reference to waste management, financial institutions that follow VBI principles might fund programmes to improve garbage collection, recycling, and disposal procedures (Lehmann et al., 2015: 747-762). As a result, the total efficacy of waste management improves significantly. Furthermore, VBI encourages investments that provide work opportunities while also fostering social inclusion, which may contribute to the stable employment-to-population ratio indicated in the data. Nonetheless, there are still challenges to solve in order to reduce water consumption while maintaining the environmental effect reductions that have been achieved. This highlights the necessity of continuing efforts to incorporate sustainability concepts throughout the banking business. Finally, the ecological footprint, waste management, employment-to-population ratio, and water usage patterns show the complex interplay between economic activity, environmental effects, and societal welfare. The use of VBI in the banking industry has the potential to significantly improve these trends by encouraging sustainable practices and supporting efforts that contribute to Malaysia's CE goals. It is critical to maintain a strong commitment to VBI principles and sustainable finance operations in order to effectively address these issues and achieve long-term sustainable development objectives.

Table 4.6: Descriptive Statistic Of Circular Economy Variables For Sample Period

	Gross Capital Formation (% of GDP)	***Policy Rate***	***Recycling rate***	***Ecological foot print***	***Waste Management in million(tons)***	***Employment to population ratio***	***Water Usage (Billion per day)***
Mean	22%	3%	29%	4.18	13.88	63%	6.99
Standard Error	1%	1%	1%	0.07	0.05	0%	0.11
Median	22%	4%	31%	4.24	13.91	63%	7.11
Standard Deviation	2%	2%	3%	0.15	0.12	0%	0.25
Sample Variance	0%	0%	0%	0.02	0.01	0%	0.06
Kurtosis	-138%	-281%	82%	-0.65	-1.38	196%	-1.78
Skewness	-39%	-31%	-131%	-0.88	-0.33	-59%	-0.79
Range	4%	5%	7%	0.36	0.29	1%	0.56
Minimum	20%	0%	25%	3.96	13.73	62%	6.64
Maximum	24%	5%	32%	4.32	14.02	63%	7.20

Source: Author's calculations based WDI data and other source of data

The table shows descriptive data for key CE variables in Malaysia. These variables are Gross Capital Formation as a proportion of GDP, Policy Rate, Recycling Rate, Ecological Footprint, Waste Management in million tonnes, Employment to Population Ratio, and Water Usage in billions per day. According to the average data, Gross Capital Formation accounts for around 22% of GDP, showing moderate economic investment. The Policy

Rate, which averages 3%, is a tool used by the central bank to exert control over economic activity through interest rate manipulation. The recycling rate is 29%, which means that almost one-third of waste is diverted from landfills, a significant achievement in terms of sustainability efforts. The average Ecological Footprint is 4.18 global hectares, indicating the environmental impact of consumer habits. The 13.88 million tonnes of trash handled demonstrate waste management's capabilities and effectiveness. The Employment to Population Ratio is 63%, indicating a constant level of employment in comparison to the population. The daily average water usage is 6.99 billion litres, demonstrating the amount of demand for water resources.

The variables have low standard errors, implying that the mean estimations are accurate and reliable representations of the true population mean. The low variability of these summary data promotes confidence in their accuracy. The medians, which represent the dataset's core values, are very near to the means for the vast majority of variables. This close proximity shows that the distributions of these variables are roughly symmetrical. Nonetheless, the median Policy Rate (4%) is higher than the mean (3%), indicating some asymmetry in the data distribution.

The standard deviations and sample variances provide useful information about the distribution of the data. Gross Capital Formation, Policy Rate, and Recycling Rate have greater variability than other components. This shows that these factors change more over time. In contrast, indices such as waste management, employment to population ratio, and water usage have lower levels of variability, indicating a better degree of stability in these measurements.

Kurtosis values indicate how far a distribution deviates from a normal distribution in terms of its tails. The majority of variables have negative kurtosis, indicating that their distributions are less peaked than a normal distribution, resulting in fewer extreme outliers. Nonetheless, the Recycling Rate of 82% and Employment to Population Ratio of 196% have positive kurtosis, indicating distributions with more dramatic peaks and maybe a higher incidence of extreme values.

Skewness measures the lack of symmetry in the distribution. The majority of variables, including Gross Capital Formation (-39%), Policy Rate (-31%), Recycling Rate (-131%),

Ecological Footprint (-0.88), Waste Management (-0.33), Employment to Population Ratio (-59%), and Water Usage (-0.79%), have negative skewness, which means that the distributions have longer or fatter left tails than right tails. This means that lower values occur more frequently or are more extreme than higher values.

The range of values, which indicates the difference between the greatest and lowest values, shows the degree of variability in the data. The Gross Capital Formation, which indicates overall investment in an economy, ranges from 20% to 24% of the GDP. This suggests that there are minor variations in investment levels. The Policy Rate ranges between 0% and 5%, suggesting significant monetary policy shifts. The recycling rate ranges from 25% to 32%, indicating advances in waste management systems. The Ecological Footprint ranges from 3.96 to 4.32 global hectares, suggesting changes in environmental impact. The waste management capacity ranges from 13.73 to 14.02 million tonnes, demonstrating slight increases in trash treatment capability. The Employment to Population Ratio ranges between 62% and 63%, indicating constant employment levels. The daily water use ranges from 6.64 to 7.20 billion litres, showing an increasing demand for water resources.

These descriptive statistics offer a thorough summary of the dataset's essential characteristics, demonstrating both central tendencies and variability. They emphasise the relatively low variability in most variables, with the exception of the Policy Rate and Recycling Rate, and provide insight into the data's distribution, skewness, and kurtosis. Understanding these statistics is critical for analysing Malaysia's economic and environmental trends, as well as evaluating the possible influence of VBI on these variables. VBI strives to incorporate ethical, social, and environmental issues into financial operations, with the ability to influence economic and environmental indicators through long-term investment and financing decisions.

4.1.3 Gross Capital Formation as a Proportion of GDP

Gross Capital Formation (GCF) is an important variable that reflects the level of investment of a country’s economy. In the case of Malaysia, the average level of GCF as a percentage of GDP is 22%, with the median equal to 22% and fluctuating between 20% and 24%. This fairly restricted variation implies fairly constant investment throughout the

study period. The value of standard error is 1% which suggest that the mean of the sample is a good estimate of the population parameter. In relation to other comparable economies, Malaysia's GCF is fairly average. For instance, according to the World Bank, the GCF of developed countries such as Germany is approximately 20%, while that of developing countries such as China is over 40%. This may imply that although Malaysia has moderate levels of investment, there is scope for greater capital accumulation to enhance the rate of economic growth. The implications of these findings suggest one policy prescription, that there should be more investment to open up growth opportunities and increase competitiveness in the global economy.

4.1.4 Policy Rate

The Policy Rate which is 3% on average but with a median of 4% is used in the manipulation of the interest rate in controlling the levels of economic activities. The values range from 0% to 5% signifying large changes in monetary policy amidst the central bank's drive towards managing the stability of the economy. Past records of other countries suggest that policy rates can differ; for instance, the US Federal Reserve rate ranged between 0. 25% and 2. 5% in the last decade, whereas the ECB rate hovered at around 0%. This comparison also highlights the fact that policy rates differ across countries due to the differences in economic conditions and policy goals. The policy rate for Malaysia indicates that the country aims at encouraging economic growth while at the same time seeking to avoid high inflation rates. In essence, the study highlights the need for an accommodative monetary policy that takes cognisance of existing trends towards sustainable development.

4.1.5 Recycling Rate

The Recycling Rate mean of 29% and range of 25% to 32% suggests that 29 percent of waste is diverted from landfills in Malaysia. This rate is important for sustainability and waste management objectives. Thus, Germany and South Korea have recycling rates higher than 60% which indicates more effective WR systems are in place. Overall, Malaysia has demonstrated good recycling initiatives; however, the findings reveal room for improvement to attain a greater level of sustainability. This mean and median difference, along with a low standard error, indicate that recycling has been steady across

time. These implications suggest that increasing the recycling facilities and awareness could significantly improve the recycling efficiency in Malaysia and foster the country to achieve the sustainable development goals.

4.1.6 Ecological Footprint

The Ecological Footprint reflects the ability to account for the consumption rates of resources. The mean of Malaysia is approximately 4. 18 Gha, the median 4. 24 and the spread of the data is between 3. 96 and 4. 32. Such a close clustering testifies to the steadiness of consumption. Global ecological footprint is approximately 2. 8 global hectares while developed countries such as United States has a ecological footprint of over 8 global hectares per head. Malaysia's footprint is higher than the world average which means that it requires policies that could promote sustainable consumption and lower the effects to the environment. The research shows that environmental factors need to be included in the planning of the economy for sustainable development

4.1.7 Waste Management

Waste Management in Malaysia disposes an average of 13. 88 million tonnes waste per annum with the variation of 13.73 million to 14.02 million tonnes. This data gives an idea of the status of waste management in the country which is an important aspect of conserving the environment. On the other hand, Japan disposes of about 44 million tonnes of waste annually with a significant focus on recycling and waste to energy. Looking at the Malaysian waste management system, it shows that there is the possibility of adopting more sophisticated technologies and practices that would improve efficiency and impact on the environment. Therefore, enhancing infrastructures in waste management and more so, adopting innovations can reduce environmental depletion and enhance the concept of circular economy.

4.1.8 Employment to Population Ratio

Employment to population ratio which stands at an average of 63%, and a range of 62% to 63%, suggest that employment in Malaysia remains relatively constant. This ratio is not very different from the international average, the International Labour Organization has similar rates for middle-income countries. But higher ratios are recorded in economies with strong labour market like, Switzerland, and Netherlands where employment to

population ratio is above 70 percentage. The stability of employment rates in Malaysia indicates a strong and healthy labor market but the slight fluctuations can be looked at as areas that can be worked on in terms of generating more job opportunities and increasing the participation of the Malaysian population economically. Therefore, the governments should adopt policies that encourage the development of workforce and economic growth to improve employment.

4.1.9 Water Usage

Daily water consumption in Malaysia is 6.99 billion liters, the minimum being 6.64 billion liters and the maximum being 7.20 billion liters. This high demand of water resources is as a result of the economic activities and population of the country. On the other hand, countries with comparable climate conditions and level of development, including Thailand and Vietnam, use approximately 5 billion liters of water on a daily basis. A comparison of the water usage of Malaysia to other countries highlights the demands placed on this resource and the importance of sustainable utilization. The evidence presented in the paper shows the importance of proper water management policies and their impact on the sustainable availability of the resource to facilitate economics without detriment to the environment.

4.2 Elasticities of Value Based Intermediation and Circular Economy

The analysis presented herein explores the elasticities between Value-Based Intermediation (VBI) principles and various components of the circular economy (CE) within the context of the Islamic banking industry. VBI, guided by four fundamental concepts—Entrepreneurial Mindset, Community Empowerment, Good Governance, and Best Conduct—serves as a framework for shaping strategic initiatives in Islamic finance. This analysis examines the interrelationships between seven critical variables representing the environmental, economic, and social dimensions of the CE: Resource Efficiency, Interest Rate, Ecological Footprint, Waste Management, Job Creation, Recycling Rate, and Water Usage. By calculating the elasticities between these VBI principles and CE components, we aim to uncover insights into how the adoption of ethical, socially responsible banking practices can drive sustainable economic growth and environmental stewardship in Malaysia.

Table 4.7: Entrepreneurial Mindset and Circular Economy

Variables	Customer	No. of Banking Solution	No. of Digital Solution
Gross Capital Formation (% of GDP)	0.069	0.062	0.080
Policy Rate	-1.059	-0.951	-1.229
Recycling rate	0.071	0.064	0.082
Ecological foot print	-0.003	-0.003	-0.004
Waste Management in million(tons)	0.010	0.009	0.011
Employment to population ratio	-0.005	-0.005	-0.006
Water Usage (Billion per day)	0.035	0.031	0.040

Source: Author's calculations

Table 4.7, shows how Entrepreneurial Mindset elements (Customer, Number of Banking Solutions, and Number of Digital Solutions) influence Circular Economy variables, providing valuable insights for economic reasoning. For Gross Capital Formation (% of GDP), a 1% increase in customer activities, banking solutions, and digital solutions results in increases of 0.069%, 0.062%, and 0.080%, respectively. This demonstrates that entrepreneurial activities boost investment in the economy, which promotes growth and progress. A 1% increase in customer-related activities reduces the Policy Rate by 1.059%, whereas banking and digital solutions result in reductions of 0.951% and 1.229%, respectively. Lower policy rates can encourage borrowing and spending, so accelerating economic activity. The Recycling Rate increases by 0.071%, 0.064%, and 0.082%, corresponding to a 1% increase in customer activities, financial solutions, and digital solutions. Increased recycling rates promote sustainable economic practices and resource efficiency.

An increase of 1% in customer entrepreneurial activities, financial solutions, and digital solutions reduces the Ecological Footprint by 0.003%, 0.003%, and 0.004%, respectively. This drop reflects a shift towards more sustainable corporate practices and lower environmental impact, which are consistent with the principles of a circular economy. In terms of waste management (million tonnes), a 1% increase in customer activities, financial solutions, and digital solutions resulted in increases of 0.010, 0.009, and 0.011 million tonnes, respectively. Effective waste management is critical for reducing environmental degradation and promoting circular economic activity. The Employment to Population Ratio decreases by 0.005%, 0.005%, and 0.006% with a 1% increase in customer activities, financial solutions, and digital solutions, respectively. While this may indicate a short-term shift in employment dynamics, overall entrepreneurial activity could lead to long-term job growth and economic stability. Finally, water consumption (in billion litres per day) rises by 0.035, 0.031, and 0.040 billion litres per day with a 1% increase in customer activities, financial solutions, and digital solutions, respectively. This emphasizes the need of effective water management in fostering long-term economic prosperity.

Overall, these elasticities show different levels of responsiveness in Circular Economy variables to changes in Entrepreneurial Mindset components. Positive elasticities imply that increases in entrepreneurial activity are linked to gains in comparable circular economy measurements, hence facilitating long-term economic growth. Conversely, negative elasticities suggest an inverse relationship, emphasizing the importance of integrating economic activity and environmental sustainability.

4.2.1 Entrepreneurial Mindset and Circular Economy

The correlation between entrepreneurial mindset and circular economy variables as observed from the Malaysian context shows that there are effects on several economic and environmental parameters. Gross Capital Formation (% of GDP) has a positive change relationship with entrepreneurial activities where an increase of one percent in customer activities, banking solutions, and digital solutions increase Gross Capital Formation (% of GDP) by 0. 069 percent, 0. 062 percent, and 0. 080 percent respectively. This means that entrepreneurial activities significantly increase investment and this is in harmony with

previous research works which have attributed the growth of GDP to entrepreneurship (Acs et al. , 2012). This has been supported by theories that postulate that entrepreneurial activities promote growth in the economy through innovation and investment (Schumpeter, 1934). Also, the decrease in the Policy Rate due to entrepreneurial activities is persuasive. An increase of 1% in entrepreneurial activities decreases the policy rate by 1. 059 percentage points for customers and banking solutions, 0. 951 percentage points for banking solutions, and 1. 229 percentage points for digital solutions. This implies that entrepreneurial activities help in enhancing economic conditions and makes it unnecessary to increase the policy rates in order to curb inflation and bring stability into the economy. This finding is supported by Meiryani, (2024), who explain that more entrepreneurial activities contribute to lower interest rates through improving economic stability and decreasing risks.

The analysis of proposed models shows the positive impact of entrepreneurial mindset on the Recycling Rate adding 0. 071% for the Customer Activities, 0. 064% for the Financial Solutions, and 0. 082% for the Digital Solutions. This is in line with the research of Raimi et al., (2024: 4-12) that details the integration of sustainable practices in entrepreneurial plans and operations. This is supported by the reduction in the Ecological Footprint through entrepreneurial activities. An increase in entrepreneurial activities by 1% decreases the ecological footprint by 0. 003% for customer activities, 0. 003% for financial solutions, and 0. 004% for digital solutions. This reduction is in line with the global implementation of sustainable business practices for new entrepreneurial ventures (Shahrom & Kunhibava, 2023: 125-166). The increase in the efficiency of waste management resulting from entrepreneurial activities is another important finding. An increase in entrepreneurial activities by 1% increases waste management by 0. 010, 0. 009, and 0. 011 million tonnes for customer activities, financial solutions, and digital solutions respectively. This improvement pinpoints the role of innovative entrepreneurship solutions in solving waste management problems as other studies in other zones have highlighted the beneficial effect of entrepreneurial activities on the efficiency of waste management (Mikail et al., 2024: 43-66).

The Employment to Population Ratio is reduced by 0. 005%, 0. 005%, and 0. 006% in the short-run if there is an increase in entrepreneurial activities by 1% in customer activities,

financial solutions, and digital solutions. Although this may seem to indicate a short term movement in the labor market, the social value of entrepreneurial activities, specifically in the creation of employment opportunities and continuity, should not be overlooked. Delle Foglie & Keshminder, (2024: 3202-3225), establish that entrepreneurship has a net positive impact on employment creation and employment growth in the longer run, as has been the case with Malaysia. Last of all, customer activities, financial solutions, and digital solutions increase the Water Usage associated with entrepreneurial activities and rise from 0. 035, 0. 031, and 0. 040 billion liters per day respectively, meaning that any economic related activity demands water hence the increase. This increase also raises the issue of sustainable water management to achieve economic growth whilst preserving resources, which has been discussed by Ibrahim, (2022: 123-136) on sustainable entrepreneurship and resource management. Combined, these studies underscore the diverse influence of business ventures on economic and environmental metrics, which underlines the importance of entrepreneurship in driving a circular economy. Malaysia also exhibited similar trends as other countries, further emphasizing the need for incorporating the entrepreneurial attitude into policy strategies for sustainable economic growth. When comparing these conclusions with the theoretical background, it is possible to identify the impact of entrepreneurial activities on the economic and environmental results supporting the overall concept of sustainable development and circular economy.

Table 4.8: Community Empowerment and Circular Economy

Variables	Customer	No. of Banking Solution	No. of Digital Solution
Gross Capital Formation (% of GDP)	0.080	0.062	0.080
Policy Rate	-1.229	-0.951	-1.229
Recycling rate	0.082	0.064	0.082

Ecological foot print	-0.004	-0.003	-0.004
Waste Management in million(tons)	0.011	0.009	0.011
Employment to population ratio	-0.006	-0.005	-0.006
Water Usage (Billion per day)	0.040	0.031	0.040

Source: Author's calculations

The elasticities Table 4.8 depicts how various community empowerment variables influence different aspects of the circular economy. For Gross Capital Formation (% of GDP), a 1% increase in client activities, banking solutions, and digital solutions results in increases of 0.080%, 0.062%, and 0.080%, respectively. This suggests that entrepreneurial activities encourage investment in the economy, which aids growth and development. A 1% increase in customer-related activity lowers the Policy Rate by 1.229%, whereas banking and digital solutions result in decreases of 0.951% and 1.229%, respectively. Lower policy rates can encourage borrowing and spending, so boosting economic activity.

The Recycling Rate increases by 0.082%, 0.064%, and 0.082%, corresponding to a 1% rise in customer activities, financial solutions, and digital solutions. Increased recycling rates help to promote sustainable economic practices and efficient resource use. A 1% increase in customer entrepreneurial activities, financial solutions, and digital solutions reduced the ecological footprint by 0.004%, 0.003%, and 0.004%, respectively. This drop reflects a shift towards more sustainable corporate operations with a lower environmental effect, which aligns with the principles of a circular economy.

In terms of waste management (million tonnes), a 1% increase in customer activities, financial solutions, and digital solutions results in increases of 0.011, 0.009, and 0.011 million tonnes, respectively. Effective waste management is critical to reducing environmental effect and promoting circular economic activities. The Employment to Population Ratio falls by 0.006%, 0.005%, and 0.006%, respectively, with a 1% increase in customer activities, financial solutions, and digital solutions. While this may indicate a short-term shift in employment dynamics, overall entrepreneurial activity could result in

long-term job growth and economic stability. Finally, water consumption (in billion litres per day) rises by 0.040, 0.031, and 0.040 billion litres per day with a 1% increase in customer activities, financial solutions, and digital solutions. This exibits the importance of sound water management in ensuring long-term, consistent economic growth. Overall, the elasticities show that, while they may temporarily lower employment ratios and increase water consumption, increases in customer activities, banking solutions, and digital solutions generally have a positive effect on investment, recycling rates, and waste management while lowering policy rates and environmental impacts.

4.2.2 Community Empowerment and Circular Economy

Community empowerment plays a crucial role in influencing different aspects of economic and environmental performance. It is the empowered communities that translate economic investments hence supporting the assertion of Putnam (2000) that social capital and community formations are essential for economic development. Engaging communities can help in the mobilisation of resources for development, as seen in the case of Malaysia. Community empowerment also plays a significant role in the policy rate reduction since it fosters a stable economic environment where policy rates can be comfortably set. This finding accredits the work done by DiPasquale and Glaeser (1999) to theorize that strong community networks have a stabilizing impact on the economic policy that does not require higher policy rates to curb economic fluctuations.

Another important plus is the promotion of recycling activities in the community as a major goal. The sustainability activities in the communities under study indicate that community involvement is critical in sustainability initiatives, as concluded by Hassan et al., (2020: 30-55), on the importance of local participation in recycling programs. Community power reduces the ecological footprint, which is consistent with the global trend in powering the change. Ford, (2019), bring the focus on the need for bottom-up community solutions and their potential to make a difference on environmental outcomes. Community activities also enhance waste management, as other research conducted in other parts of the world show, Golob et al., (2024: 11-18), suggest that community participation is an essential aspect in waste management. The short-run and long-run effects of community empowerment in relation to employment are not easily determined.

The conclusion here is that the long-term effects of community empowerment on labour markets are likely to be positive despite potential short-term changes. Aldrich and Meyer (2015) also argue that community-led economic development creates much-needed and long-lasting jobs and economic growth. This underscores the fact that more long term gains of community based empowerment are profound for labor markets after some initial dynamics.

The rise in water usage resulting from the community activities show that active community participation leads to demands for water resources. This conclusion highlighted the importance of sustainable water management approaches, where the community's economic pursuits should not be at the expense of resource utilization. For example, Gleick (2003) recognixes the need to incorporate community participation in water management for sustainability. Current study found that community empowerments positively contribute to the advancement of circular economy in Malaysia as it promotes economic investment, stability of economic policies, recycling and efficient waste management, decreased ecological footprints, employment opportunities, and water usage. These research findings align with past studies on the application of community leadership in the advancement of a circular economy and sustainable economic development. The positive relationship between community initiatives and Gross Capital Formation provided an indication of how empowered communities foster economic growth hence supporting the view that social capital and local participation are critical for economic growth (Putnam, 2000). The decrease in policy rates resulting from community activities shows a more stable economic environment that would warrant lower interest rates; as noted by DiPasquale & Glaeser (1999) people create strong communities that reduce economic fluctuations.

Furthermore, the improvement of recycling through neighbourhood participation also corroborates the analysis of Barr (2007) on sustainable activities. The decrease in the ecological footprint through empowering the community is consistent with the present developmental trends towards sustainability, community based initiatives, and innovations in decreasing the burden on environment (Seyfang and Smith, 2007: 584-603). Enhanced waste management is in line with Wilson et al. (2001) assertion that community participation is vital in waste management. While there may be moderate

fluctuations in employment mainly caused by community empowerment, labor markets in general receive positive effects. Aldrich and Meyer (2015) showed that community-level economic development results in long economic growth and employment opportunities. People use more water in connection with the various activities of their communities, and this has called for sustainable use of water resources while supporting community's economic activities. Other sources like Gleick (2003) have also emphasized on the need community involvement in water management for sustainability.

Table 4.9: Good Self-governance and Circular economy

Variables	Environment Footprint	Sustainability Management
Gross Capital Formation (% of GDP)	0.069	0.113
Policy Rate	-1.059	-1.737
Recycling rate	0.071	0.116
Ecological foot print	-0.003	-0.005
Waste Management in million(tons)	0.010	0.016
Employement to population ratio	-0.005	-0.009
Water Usage (Billion per day)	0.035	0.057

Source: Author's calculations

Table 4.9 provides the impact of Good Self-governance variables on circular economy, specifically Environmental Footprint and Sustainability Management. A 1% increase, for instance, corresponds to a 0.069% rise in environmental footprint and a 0.113% increase in sustainability management, according to Gross Capital Formation (% of GDP). Advances in infrastructure and technology, which support environmental sustainability through more efficient use of resources and cleaner industrial technologies, are often

included in increased capital formation investments. On the other hand, a 1% increase in the policy rate results in a 1.059% decrease in the environmental footprint and a 1.737% fall in sustainability management. This indicates that the policy rate has a considerable negative influence. Increased policy rates usually signify tighter monetary policy, which restricts investment in sectors of the economy that have a significant negative influence on the environment. This lowers environmental footprint and sustainability initiatives.

Comparably, a 1% rise in the recycling rate causes the environmental footprint to increase by 0.071% and the sustainability management to improve by 0.116%. These results show improved waste management practices that lessen resource extraction and trash disposal. There is a marginal decline in both the Environmental Footprint and the Sustainability Management with a 1% increase in the Ecological Footprint, suggesting a marginally negative influence on the environment per unit of economic production. The environmental footprint and sustainability management increase by 0.010% and 0.016%, respectively, with a 1% increase in waste management (measured in million tonnes). This suggests that better waste management practices have a positive impact on the environment, even though waste handling procedures have some negative effects. Higher employment rates may increase resource consumption while also possibly improving environmental management practices, as indicated by the Employment to Population Ratio, which shows that a 1% increase results in a 0.005% decrease in Environmental Footprint and a 0.009% decrease in Sustainability Management. The last factor to consider is the positive impact of water usage, which is measured in billions per day. A 1% increase in water use leads to a 0.035% increase in environmental footprint and a 0.057% increase in sustainability management. This shows how increasing water use affects resource demand as well as the necessity of sustainable water management techniques. Overall, these elasticities highlight the complicated interaction between economic policies, environmental impacts, and sustainability results by demonstrating how governance variables can either favorably or negatively affect many aspects of the circular economy.

4.2.3 Good Self-Governance and Circular Economy

Self-governance had a positive and strong impact on both economic and environmental performance, which indicates an association with circular economy measures. There is a significant effect of good self-governance on Gross Capital Formation (GCF). Good governance entails ensuring accountability, openness and proper utilization of available resources, which in one way or the other, causes mobilization of resources and hence, economic development. Kaufmann et al. (2011) confirms this, stating that nations with high governance yields usually post high economic growth rates. These findings are supported by the positive relationship that Malaysia has between good governance and the GCF, which shows how governance reforms increase investor confidence and economic transactions. The lowering of the Policy Rate through effective self-governance is another important result. Good governance enables an efficient and predictable business climate that eliminates uncertainties and risks to investors. This stability enables central banks to set lower policy rates, which in turn boosts economic activity. Similar conclusions were reached by Rodrik (2008), indicating that, for instance, lower interest rates are characteristic of macroeconomic policies in countries with effective governance systems. For economic policy, the possibilities are revolutionary, as good governance can increase the effectiveness of monetary policy and improve the investment climate.

Good governance also has a positive impact on sustainability practices such as the improvement of the Recycling Rate. Proper governance entails compliance with environmental legal frameworks, and encouragement of green practices resulting in improved recycling rates. This is in line with the research by Esty and Porter (2005) where they posit that good environmental governance is a key determinant of sustainability. The positive effect on Malaysia's recycling rate reinforces the argument of governance towards circular economy. The reduction in the ecological footprint through good governance also supports this notion. Sustainable management of resources through effective governance frameworks that support environmental conservation leads to improvements in the ecological footprint. Internationally, nations with improved environmental management systems for example those of the Scandinavian nations have a much lower ecological impact (Scruggs, 2001). Therefore, the experience of Malaysia

is similar to these global trends, indicating that increasing the level of governance improves the sustainability of the environment.

Improvements in waste management that can be attributed to governance have also been observed. Good governance helps in implementing the waste management policies and providing them with the required framework. This leads to enhanced efficiency in waste disposal and minimal impact on the environment. Studied such as those done by Keestra et al. (2018) reveal that governance structures are normally associated to better performance waste management systems. The changes in waste management in Malaysia show that governance has a positive influence on the management of the environment. The effects of governance on the Employment to Population Ratio both in the short-run and the long-run are complex. Although the initial outcomes of governance reforms are the alteration of employment adjustments in the short-term, it is normally good in the long run. Good governance leading to the creation of employment opportunities and stability of the economy. This concurs with findings of North (1990) where he posited that institutions and governance structures are indeed critical for economic performance and employment growth. The case of Malaysia implies that improvements in governance can generate stronger and more diverse labor markets.

The impact of governance activities on the use of water as shown below calls for better resource management; While good governance encourages economic activities, which may lead to higher demand for water, it also fosters sustainable use of water. According to Pahl-Wostl et al. (2008), governance plays a crucial role in the sustainable management of water resources. The study results from Malaysia support the paradoxical link between governance and economic growth on one side and sustainable use of resources on the other side. Therefore, the evaluation of good self-governance and its implications on the circular economy demonstrate that good governance fosters economic investment, promotes stability in economic policies, and creates better efficiency in sustainability practices, decreases ecological footprints, and increases waste management in Malaysia. These results conform to the available literature on the subject of governance and economic performance, stressing the significance of governance in fulfilling circular economy goals and encouraging sustainable development. The positive relationship between good governance and GCF may be seen to back the argument that transparency and

accountability in governance leads to investment and growth (Kaufmann et al. , 2011). The decrease in policy rates due to good governance suggests that the economic environment is suitable for low interest rates as supported by Rodrik (2008) that acknowledged that strong governance correlates with macro-economic stability. Furthermore, the improvement of recycling through the principles of good governance signifies the role of governance in advancing sustainability as pointed out by Esty and Porter (2005). Decreasing the ecological footprint by promoting good governance is consistent with the direction of sustainable governance worldwide, which underlines the preservation of the biosphere and rational utilization of natural resources (Scruggs, 2001). Enhanced waste management owing to governance interventions affirms premises by Keestra et al. (2018: 197-210) that the strong governance is associated with effective waste management. The short-run changes and the long-run effects of good governance on employment are consistent with North (1990) who focused on institutions in determining economic performance and employment. This has revealed the need to practice sustainable water management which is inclusive of economic development without exploitation of the resource, as argued by Pahl-Wostl et al. (2008).

Table 4.10: Best Conduct and Circular Economy

Variables	**Best Conduct**
Gross Capital Formation (% of GDP)	0.069
Policy Rate	-1.059
Recycling rate	0.071
Ecological foot print	-0.003
Waste Management in million(tons)	0.010
Employment to population ratio	-0.005
Water Usage (Billion per day)	0.035

Source: Author's calculations

The Table 4.10 shows the elasticities of various variables with respect to "Best Conduct" and “Circular economy”. Growth in "Best Conduct" has a favorable impact on capital development, as indicated by the elasticity of 0.069 for Gross Capital Development (% of GDP). This illustrates how more moral and conscientious behaviour in business can lead to higher GDP percentages of capital development. Because more capital formation frequently translates into higher levels of investment and productivity, this is essential for economic progress. By contrast, there is a negative link between "Best Conduct" and the Policy Rate, as indicated by its elasticity of -1.059. A greater degree of "best conduct" is linked to reduced insurance rates. This illustrates how moral company conduct and sound governance can result in more favourable lending terms and cheaper interest rates, which in turn spur economic growth and investment.

Enhancements in "Best Conduct" are linked to increased recycling rates, as indicated by the elasticity of 0.071 for the Recycling Rate. This shows that economies and companies with high standards of behaviour are more likely to place a high priority on environmental sustainability, which leads to increased recycling and more effective use of resources. Ecological Footprint is slightly negatively correlated with "Best Conduct" and has an elasticity of -0.003. This shows that there is a slight decrease in ecological footprint when "Best Conduct" gets better. This shows that moral behaviour can, even in tiny ways, lessen environmental harm.

Better behaviour is correlated with increased waste management skills, according to the elasticity of 0.010 for waste management (million tonnes). This illustrates how better waste management techniques are encouraged by ethical behaviour, leading to cleaner ecosystems and possibly fewer environmental costs. A slight negative correlation with "best conduct" is indicated by the Employment to Population Ratio's elasticity of -0.005. This implies that moral behaviour may not always translate into greater employment rates, even though it may encourage more productive economic activities. Ultimately, the Water Usage (Billion per day) elasticity of 0.035 shows that increases in "Best Conduct" are linked to higher water consumption. This might be an indication of more conscientious water management practices or of rising demand brought on by a combination of improved behaviour and economic activity. To sum up, these elasticities show how different ethical and responsible behaviour has an impact on various circular economy

components. They contend that promoting better conduct has important consequences for employment and resource management that should be carefully taken into account in economic strategy and policymaking, in addition to improving economic indicators and environmental sustainability.

It is evident from the data in Tables 4.7, 4.8, 4.9, and 4.10 that the circular economy requires robust governance practices and an entrepreneurial mentality. Economic growth is supported by sustainable practices and is encouraged by entrepreneurial activities like consumer involvement and digital solutions, as seen by the positive elasticities observed in Gross Capital Formation, Recycling Rates, and Ecological Footprint Reductions. According to these results, encouraging entrepreneurial ecosystems may boost environmental sustainability and resource efficiency, establishing a relationship between long-term environmental stewardship and economic development. On the other hand, potential trade-offs are highlighted by negative elasticities connected to variables like the policy rate and employment-to-population ratio. While lower policy rates encourage economic growth, they may have short-term effects on employment dynamics. In a similar vein, higher water use combined with better governance standards highlights the significance of long-term water management strategies in the context of economic expansion. Developing effective policies and programmes that support resilient, inclusive, and sustainable economic development in the next years will depend heavily on this in-depth understanding.

4.2.4 Best Conduct and Circular Economy

Ethical conduct in business operations, also known as 'business etiquette,' significantly affects various economic and environmental aspects in the context of circular economy. Ethical behaviour has a strong bearing on Gross Capital Formation (GCF). Ethical business practices build credibility and dependability, which are essential in attracting investors. It becomes easier for investors to invest in companies and regions with high ethical standards thereby minimizing risks such as corruption and unethical practices. Guiso et al. (2006) have substantiated this, pointing out that where the levels of trust and ethical standards are high, economic growth rates will also be higher. Malaysia's

experience shows that ethical conduct leads to higher GCF, underlining the role that corporate ethics plays in influencing the investment and development of the economy.

Another important discovery is the decrease in Policy Rate through ethical behavior. Ethical business practices help in creating a stable predictable economic environment which in turn minimizes risks and volatilities from investors. This stability enables central banks to keep their policy rates lower, thus boosting economic activities. Studies conducted by Jha and Panda (2017: 256-272) show that ethical governance and corporate behavior can improve macroeconomic conditions and lower interest rates in particular. Based on the research findings it is evident that ethical conduct leads to the observed decrease in policy rates in Malaysia to support economic stability and investment climate.

Ethical behavior also plays a significant role in the improvement of sustainability practices through enhancing the Recycling Rate. Business organizations with high ethical standards tend to support sustainable business practices such as efficient recycling systems. This is in conformity with Eccles et al (2014) who opined that firms with well developed ethics perform better in environmental compliance. The increase in the rate of recycling in Malaysia is an example of how business ethics of doing the right thing supports sustainability. This view is also backed by the decrease in the ecological footprint as a result of ethical behaviour. Employers implementing ethical principles in their operations are more likely to reduce their effects on the environment. Internationally, businesses with sound ethical systems, for instance, those from the Nordic nations, use fewer natural resources (Hahn and Kühnen, 2013). These global trends are reflected in the experience of Malaysia, which shows that ethical behavior results in a more environmentally friendly approach.

Improvements in waste management as a result of ethical practices are also seen here. Ethical businesses are attentive to proper disposal of wastes, minimizing impacts to the environment. Several comparative works such as those done by McWilliams and Siegel (2001) reveal that areas with high ethical standards are normally associated with effective and efficient waste disposal systems. This shows that ethical conduct enhances environmental management as evidenced by Malaysia's enhanced performance in waste management. There are short-term and long-term consequences of ethical conduct on the

Employment to Population Ratio as shown below. Ethical reforms may in the short run affect the employment patterns but mostly have a positive impact on employment in the long run. The ethical behavior enhances stability in the economic structure, employment, and stability of the economy. This accords with Van Buren (2001) whose research showed the importance of corporate social responsibility and ethical conduct in long term employment growth. The example of Malaysia demonstrates that raising ethical standards can produce stronger and more diverse labor markets.

The fact that the ethical activities, which are beneficial for the company and society, require more water shows that there is a need for proper resource management. Whereas ethical business practices encourage economic activities that could lead to more use of water, they also guarantee the efficient use of water. Such works by Gleick (2003) show that ethical issues should be incorporated in the management of water resources in a sustainable manner. Finally, the evidence from Malaysia reaffirms the duality of ethics in promoting economic development and responsible utilization of resources. Lastly, based on the best conduct and its implications on the circular economy of Malaysia, it is evident that ethics fosters economic investment, stabilizes the economic policies, increases sustainability measures, decreases the ecological footprints, and manages waste effectively. These propositions are in line with the previous research in the area of corporate ethics and economic performance to stress the significance of ethical standards for reaching the goals of the circular economy and sustainable development. The positive relation between ethical conduct and GCF lends credence to the postulation of Guiso et al. , (2006) on corporate ethics as drivers of investment and economic growth. The cut in policy rates because of ethical behavior underlines a stable structure of the economy that favours low rate of interest in line with Jha and Panda (2017: 256-272) who also pointed out that ethical governance enhances stability of macro economic policies.

Furthermore, the promotion of ethical conduct in recycling depicts how corporate ethics help in the form of sustainability, as discussed by Eccles et al. (2014). This kind of ethical behavior leads to the reduction of ecological footprint which is in accordance with the contemporary trends in the practice of ethical business (Hahn, & Kühnen, 2013). Better waste management resulting from ethical conduct aligns with McWilliams and Siegel's (2001) argument that countries with high ethical standards are more effective in waste

management. The short-term measure and long-term gains of ethical business practices on employment correspond to Van Buren (2001) who underscored that corporate social responsibility is critical to economic results and employment generation. The augmentation of water usage related to other ethical activities supports sustainable use of water in the economic development to conserve the scarce resource, as Gleick (2003) pointed out.

CONCLUSION

The analysis of Entrepreneurial Mindset (EM) solutions within 15 Islamic banks reveals significant insights into the current state of Value-Based Intermediation (VBI) adoption. The findings underscore the varying levels of commitment and integration of customer engagement strategies, diverse banking solutions, and digital offerings across these institutions. While some banks demonstrate a high level of adoption and innovation, others lag behind, indicating substantial room for improvement. Customer engagement emerges as a strong area across all 15 Islamic banks, with each institution showcasing regular interaction with their clientele. This consistent engagement highlights the banks' dedication to maintaining robust customer relationships, which is crucial for fostering trust and loyalty. However, the methods and effectiveness of these engagements vary, suggesting that there is potential for further enhancing the quality and impact of customer interactions. The diversity of banking solutions offered by the banks reflects their entrepreneurial mindset and ability to cater to a wide range of financial needs. Fourteen of the 15 banks provide a comprehensive array of services, with only RHB Islamic falling short in this aspect. This finding indicates that most Islamic banks are proactive in developing diverse banking solutions to meet the demands of their customers. However, there is always scope for innovation and expansion to address emerging financial needs and preferences. The adoption of digital solutions presents a mixed picture. While nine banks have embraced digital technologies to enhance their service delivery, six institutions, including Alrajhi Bank, Bank Islam, Bank Muamalat, Bank Rakyat, RHB Islamic, and Standard Chartered, lack significant digital offerings. This discrepancy highlights a critical area for potential growth, particularly as digital banking continues to gain prominence. Banks that lag in digital adoption must prioritize enhancing their digital infrastructure to remain competitive and meet the expectations of tech-savvy customers.

The disparities in digital solution offerings can be attributed to various factors, including limited resources, regulatory challenges, and differing strategic priorities. These challenges, however, also present opportunities for financial institutions to innovate and capture new market segments by integrating digital banking services. Addressing these gaps is essential for improving service delivery, elevating customer experience, and positioning the banks for long-term success in an increasingly digitalized environment.

Banks such as AFFIN Islamic, Agro Bank, Alliance Islamic Bank, AmBank Islamic, HSBC Amanah, Maybank Islamic, OCBC Al-Amin, and Public Islamic Bank stand out for their significant adoption of EM solutions. These institutions have integrated advisory services, market infrastructure, and business networking into their VBI activities, showcasing their commitment to entrepreneurial strategies. Conversely, banks like CIMB Islamic and RHB Islamic exhibit lower levels of adoption, indicating a need for strategic focus and resource allocation to enhance their entrepreneurial initiatives.

The analysis also highlights the importance of community empowerment as a core element of VBI. Islamic banks in Malaysia cater to diverse customer segments, including B40, M40, youth, and B50 categories, addressing their unique economic requirements and challenges. Banks such as Bank Muamalat demonstrate a high level of adoption, indicating a strong commitment to engaging these communities. However, banks with lower adoption rates, like Agro Bank and Alliance Islamic Bank, must enhance their strategies to align with VBI principles and contribute to equitable growth and sustainable development. The chapter underscores the critical role of EM solutions in advancing VBI within Islamic banking. While significant progress has been made, there is substantial potential for further enhancement, particularly in digital adoption and community engagement. By addressing these areas, Islamic banks can not only improve their service delivery and customer experience but also strengthen their ethical and sustainable banking practices. The findings provide a roadmap for Islamic banks to innovate, expand their digital capabilities, and deepen their community impact, thereby positioning themselves for long-term success in a dynamic financial landscape.

RECOMMENDATIONS

- The following recommendations are derived from the study to from the impact of VBI on CE:
- The Islamic banks of Malaysia can enhance their digital infrastructure by investing in the digital banking technology to provide better service delivery and customer engagement.
- The Islamic institutions must take community empowerment initiatives by targeting different deprived groups like B40 i.e., demographic and youth by engaging then into financial literacy programs and customer specific banking products.
- The banks have to strengthen the governance and ethical practices through intervention related to transparency and accountability to achieve sustainability by taking ecofriendly initiatives and promote environment responsible operations.
- Enhance investment in recycling infrastructure by increasing funding for recycling facilities and waste segregation centers to improve waste management efficiency and increase the recycling rate.
- Encourage collaboration among financial institutions, government agencies, and private sector stakeholders to align policies and initiatives that support the principles of Value-Based Intermediation (VBI) and circular economy goals.
- Foster innovation in waste management technologies through partnerships with research institutions and startups to enhance recycling processes and resource recovery.
- Strengthen community engagement by developing initiatives that promote resource mobilization and local participation in sustainability projects, including workshops on recycling and waste management.
- Conduct longitudinal studies to support ongoing research that monitors the long-term effects of entrepreneurial activities, community empowerment, and governance on the circular economy for informed policy development.

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