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Message from EDITOR-IN-CHIEF

Vol 2, Issue 2, June 2026

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It is my pleasure to present Volume 2, Issue 2 of the Journal of Islamic Banking, Economics and Policy (JIBEP).

As financial systems confront rapid technological change, environmental pressures, and rising inequality, the importance of ethical and socially responsible scholarship continues to grow. Islamic banking and finance provide a values-based framework through which questions of justice, accountability, inclusion, and human wellbeing can be addressed.

This issue reflects that mission. The articles in this volume explore *zakat* and long-term elderly care, Islamic cooperative finance and economic empowerment, risk management in Islamic banking, *ribawi* evaluation of financial instruments, and sustainable leadership. Together, they show how research can connect Islamic principles with practical contemporary challenges.

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I sincerely thank our authors, reviewers, editorial board, and readers for their trust and continued support. I hope this issue inspires further dialogue, collaboration, and research that contributes to more ethical and resilient financial systems.

Warm regards,

Dr. Faiza Raza
Editor-in-Chief
Journal of Islamic Banking, Economics and Policy (JIBEP)
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In the name of Allah, the Most Merciful, the Most Compassionate, the editorial team of JIBEP expresses sincere gratitude for the support, trust, and scholarly contributions that made this issue possible.

We gratefully acknowledge our authors for entrusting the journal with their research, our reviewers for their time, expertise, and constructive feedback, and our editorial board for its guidance and commitment to academic quality.

We also thank Islamic Finance Review (IFR), our readers, and the wider scholarly community for supporting JIBEP's mission to promote ethical, inclusive, and policy-relevant research in Islamic banking, economics, and policy.

Your collective efforts have been instrumental in the successful publication of Volume 2, Issue 2 | June 2026.

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Empowering The Elderly: Integrating Zakat into Long-Term Care in Malaysia

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Muhsin Nor Paizin[1]

ABSTRACT

Malaysia's rapid transition into an ageing nation poses significant challenges to existing social security frameworks, particularly for the B40 group (Bottom 40% of households by income in Malaysia) and destitute elderly who lack adequate family support. Current welfare provisions often leave vulnerable senior citizens with insufficient resources for long-term care. This study explores the potential of integrating Zakat into long-term care as a sustainable funding mechanism to bridge these welfare gaps. It aims to establish the Shari'ah legitimacy and operational feasibility of using Islamic social finance to enhance elderly care. Employing a qualitative library-based research design, this paper systematically analyzes academic literature, statutory documents (such as the Care Centres Act 1993), and official publications from Malaysian state Islamic religious councils including Lembaga Zakat Selangor and MAIWP. The research validates a "Hybrid Financing Model" that synergizes Waqf for capital expenditure (CAPEX), such as infrastructure, and Zakat for operational expenditure (OPEX). This model ensures Shari'ah compliance regarding Tamlik (ownership transfer) while leveraging Maqasid al-Shari'ah (Objectives of Islamic Law) principles to preserve the life (hifz al-nafs) and dignity (hifz al-'ird) of the elderly. Findings confirm that senior citizens qualify for support under the asnaf (eligible Zakat recipients) categories of Fakir (destitute), Miskin (poor), and Gharimin (debtors). The study concludes that successful implementation requires rigorous governance, specifically the "ring-fencing" of funds and strict adherence to the Care Centres Act 1993 (Act 506).

Keywords: Zakat; Elderly Care; Islamic Social Finance; Sustainable Financing.

JEL Classification: G23, I38, Z12

Paper Type: Conceptual / Policy & Governance Framework

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1. Introduction

Malaysia is currently standing at a critical demographic juncture. The nation is rapidly transitioning towards becoming an "aged nation," where the percentage of the population aged 60 and above is expected to exceed 15% by 2030, with projections reaching approximately 5.8 million individuals (Abdullah et al., 2024; Department of Statistics Malaysia [DOSM], 2023). This profound demographic shift, driven by declining fertility rates and increased healthy life expectancy, is expected to place an unprecedented strain on national healthcare infrastructure, social security systems, and the demand for long-term care facilities (Asrulsani et al., 2023; Hassan et al., 2020).

At present, the support ecosystem for senior citizens in Malaysia relies heavily on government-funded welfare homes and the informal support of family institutions. However, rapid urbanization, changing social structures, and the rise of nuclear families have severely weakened these traditional safety nets (Asrulsani et al., 2023; Khazanah Research Institute, 2021). This vulnerability is particularly acute among the B40 income group, childless seniors, and those abandoned by their kin, who often fall through the cracks due to the rising cost of private nursing care, escalating healthcare expenses, and social isolation (Asrulsani et al., 2023; Batumalai, 2020).

In addressing these challenges, Islamic social finance offers a viable and sustainable solution to complement government efforts. Scholars argue that integrating *Zakat* and *Waqf* into elderly care initiatives can serve as a systematic funding mechanism to bridge existing welfare gaps (Shaikh et al., 2017). By leveraging *Zakat* funds for operational expenditures (OPEX) alongside *Waqf* for capital expenditures (CAPEX) like infrastructure, religious institutions can provide high-quality care that preserves the dignity of the elderly. The sustainability of this model is further strengthened through elite philanthropy, which generates substantial endowments for *Waqf* (Zainal & Nor Paizin, 2026), and mission-driven corporate *zakat* commitments that provide a steady stream of OPEX funding (Aziz et al., 2026). To execute this efficiently, a decentralized zakat management structure is crucial, empowering localized institutions to identify and respond rapidly to the specific needs of the elderly in their jurisdictions (Paizin & Sarif, 2018).

Beyond mere financial distribution, empowering the elderly requires aligning operational models with both the United Nations Sustainable Development Goals (SDGs) and *Maqasid al-Shari'ah* (Objectives of Islamic Law) (Abdullah et al., 2025; Atan et al., 2025). True empowerment ensures that recipients receive holistic support that uplifts their standard of living, transitioning them from passive receivers to active participants in a sustainable ecosystem (Jamal et al., 2025; Wahab et al., 2020). Therefore, this article explores the Shari'ah legitimacy and operational feasibility of a Hybrid Financing Model. By mapping its implementation against the SDGs and Maqasid al-Shari'ah, this study aims to provide an ethical, scalable, and decentralized framework for transforming elderly care in Malaysia.

2. Literature Review

2.1 Demographic Shifts and the Welfare Deficit

The urgency of reforming elderly care financing is driven by Malaysia's rapid demographic transition. While the country is currently an "ageing nation," it is projected to officially reach "aged nation" status by 2030, with 15.3% of the population aged 60 and above. Furthermore, while overall life expectancy has faced slight fluctuations, healthy life expectancy rates have improved, meaning Malaysians live longer but will experience an extended period requiring long-term care services. This demographic shift presents a critical challenge to the existing social welfare framework. The traditional family support structure is weakening due to urbanization, resulting in heightened social isolation, financial difficulties, and an inability to cope with escalating healthcare costs. Consequently, many vulnerable elderly individuals, particularly in the B40 income group, are falling through the cracks of current public and private care systems (Asrulsani et al., 2023; Batumalai, 2020).

2.2 The Zakat-Waqf Hybrid Mechanism and the Care Economy

To address these financial and infrastructural barriers, contemporary Islamic finance scholars advocate for a "hybrid model" integrating Zakat and Waqf. This model distinguishes between developmental and consumption needs: *Waqf* is utilized for capital expenditure (CAPEX), ensuring the preservation of permanent assets. Conversely, *Zakat* funds are ring-fenced for operational expenditure (OPEX) to support the direct daily needs of *asnaf* (eligible *Zakat* recipients) beneficiaries (Shaikh et al., 2017). This approach is strongly supported by the emerging concept of the "care economy," which encompasses both paid and unpaid care activities essential to societal well-being. Integrating Islamic social finance instruments like Waqf into the care economy addresses market failures by providing a sustainable, community-driven approach to healthcare accessibility, thereby alleviating the pressure on state-funded medical institutions (Atan et al., 2025).

2.3 Decentralization and Corporate Philanthropy

The sustainability of this hybrid model relies heavily on robust governance and strategic funding streams. Elite philanthropy, driven by altruistic motivations and identity construction, plays a pivotal role in accumulating significant endowments for Waqf CAPEX (Zainal & Nor Paizin, 2026). Simultaneously, mission-driven corporate zakat commitments provide a reliable stream of OPEX funding, reflecting a strong stakeholder management perspective (Aziz et al., 2026). However, the effective deployment of these funds requires structural reform. Decentralization within zakat management organizations allows localized institutions to operate with greater autonomy, enabling them to identify and respond rapidly to the specific, localized needs of the elderly in their jurisdictions (Paizin & Sarif, 2018).

2.4 Aligning Maqasid al-Shari'ah with Sustainable Development Goals (SDGs)

The integration of *Zakat* and *Waqf* in elderly care transcends basic sheltering; it is a manifestation of *Maqasid al-Shari'ah* (Objectives of Islamic Law) and closely aligns with the United Nations SDGs. Recent frameworks highlight that preserving life (*hifz al-nafs*) equates to providing quality healthcare, directly supporting SDG 3 (Good Health and Well-being) (Abdullah et al., 2025). Furthermore, effective *Zakat* management must prioritize "customer effectiveness" to truly empower the *asnaf*. Empowerment means ensuring recipients become self-reliant and their standard of living is uplifted (Wahab et al., 2020). Practical applications of this can be seen in social entrepreneurship initiatives like SEEDS@WAKAF, which empowers Technical and Vocational Education and Training (TVET) students to refurbish and redistribute medical equipment to the elderly. Such programs seamlessly blend education, Islamic finance, and community service, fulfilling SDG 3 and SDG 12 (Responsible Consumption and Production) while transforming Zakat institutions into proactive guardians of social welfare (Jamal et al., 2025).

3. Methodology

This study employs a qualitative library-based research design, relying primarily on document analysis and an extensive review of secondary data sources to construct a Shari'ah-compliant model for senior care. The research framework involves a systematic examination of academic literature, statutory documents, and official publications from Malaysian state Islamic religious councils. This approach is deemed most appropriate for evaluating existing policy frameworks and operational precedents to synthesize a comprehensive, culturally and religiously aligned financing model. Data was purposively sampled from multiple authoritative domains to ensure robust triangulation. Key statutory data sources include the Care Centres Act 1993 (Act 506) and the Care Centres Regulations 1994, which serve as the legal baseline for operational compliance in elderly care institutions. Furthermore, the study analyzes annual reports, sustainability disclosures, and official digital portals of major zakat institutions, specifically Lembaga Zakat Selangor (LZS), the Federal Territories Islamic Religious Council (MAIWP), and Zakat Pulau Pinang (MAINPP), to identify existing operational precedents such as Bait Al-Mawaddah and Darul Hanan. These institutional records were triangulated with demographic projections from the Department of Statistics Malaysia (DOSM) regarding the ageing population and contemporary *Shari'ah* rulings regarding *asnaf* eligibility and financial "ring-fencing" practices. Finally, the gathered data was subjected to content analysis to extract key themes related to financing mechanisms, operational governance, and *Shari'ah* compliance. This analytical process facilitated the synthesis of a robust framework that integrates *Maqasid al-Shari'ah* principles with practical governance standards. By evaluating the intersection of statutory obligations and Islamic social finance principles, the analysis logically deduces the viability of a decentralized, hybrid *Zakat-Waqf* model for elderly care.

4. Discussion

4.1 The Strategic Integration of Zakat and Waqf: A Hybrid Financing Model The sustainability of elderly care within the Islamic finance ecosystem relies heavily on transitioning from ad-hoc financial aid to stable institutional frameworks. The analysis confirms that a "hybrid financing model" represents the most viable and Shari'ah-compliant approach, effectively synergizing the permanence of *Waqf* (endowment) with the liquidity of *Zakat*. In this operational framework, *Waqf* funds or general charitable donations (*Sadaqah*) are utilized strictly for Capital Expenditure (CAPEX), such as land acquisition, building construction, and purchasing permanent medical equipment. This ensures that the physical infrastructure adheres to the principle of perpetual charity (*Sadaqah Jariyah*), creating a lasting foundation for care services without depleting the principal assets (Shaikh et al., 2017).

To ensure the long-term financial viability of this hybrid model, strategic sourcing of funds is paramount. The CAPEX requirements can be significantly accelerated by tapping into elite philanthropy, where high-net-worth individuals are motivated by altruism and religious identity construction to create lasting *Waqf* endowments (Zainal & Nor Paizin, 2026). Conversely, *Zakat* funds are ring-fenced specifically for Operational Expenditure (OPEX) to cover direct consumption needs, such as food, utilities, and caregiver salaries. This OPEX stream can be consistently sustained through mission-driven corporate zakat commitments, ensuring that the daily needs of the elderly are met reliably while corporations fulfil their stakeholder management obligations (Aziz et al., 2026).

4.2 Institutional Precedents and Decentralized Governance

Practical precedents in Malaysia validate the operational success of this "Assets via *Waqf*, Operations via *Zakat*" approach. Institutions such as the Bait Al-Mawaddah centre in Selangor and the Darul Ilmi facility in the Federal Territories demonstrate how physical spaces built on *Waqf* land can be functionally sustained through *Zakat* allocations (Shaikh et al., 2017). This strict separation of funds is not just an administrative preference but a critical necessity to satisfy the *Shari'ah* condition of *Tamlik* (transfer of ownership). By ring-fencing OPEX, it guarantees that *Zakat* is consumed directly by the eligible poor rather than being inappropriately immobilized in non-liquid assets like concrete buildings.

However, executing this model efficiently across different states requires a shift away from rigid, top-down administrative systems. A decentralized zakat management structure is crucial for the effective deployment of these funds. Decentralization empowers localized organizational branches to operate with greater agility and autonomy, allowing them to identify and respond rapidly to the specific, localized welfare deficits of the elderly in their immediate jurisdictions (Paizin & Sarif, 2018). Furthermore, decentralized governance enhances transparency and community trust, ensuring that localized Waqf and Zakat contributions directly benefit the local ageing population.

4.3 Redefining Asnaf Eligibility in the Context of an Ageing Society

Determining eligibility for long-term care requires a nuanced interpretation of *asnaf* (eligible *Zakat* recipients) categories to ensure that aid reaches the most vulnerable demographics. Senior citizens primarily qualify for *Zakat* support under the categories of *Fakir* (destitute) and *Miskin* (poor), which are rigorously determined based on the *Had al-Kifayah* (poverty line index). However, this assessment must extend beyond mere financial metrics to include "social poverty." Due to changing family structures, rapid urbanization, and a weakened traditional safety net, many elderly individuals face severe social isolation and abandonment, effectively rendering them destitute regardless of their past financial status (Asrulsani et al., 2023).

In addition to poverty-based categories, the category of *Gharimin* (debtors) has emerged as a critical safety net for the elderly. While traditionally applied to general debt, current operational practices correctly extend this category to cover escalating medical debts. The ageing population frequently struggles with outstanding medical expenses, such as costly dialysis treatments, specialized medications, or accumulated hospital bills (Abdullah et al., 2024; Hassan et al., 2020).

By classifying these vulnerable seniors under *Gharimin*, Zakat institutions can directly alleviate the crushing financial burdens of healthcare, preventing the elderly from falling further into extreme poverty.

4.4 Operationalizing Maqasid al-Shari'ah and the SDGs in Care Design

Unlike secular nursing homes, *Zakat*-funded care centres are conceptually and physically designed to uphold the *Maqasid al-Shari'ah* (Objectives of Islamic Law) while simultaneously fulfilling the United Nations Sustainable Development Goals (SDGs) (Abdullah et al., 2025). The preservation of life (*Hifz al-Nafs*) is prioritized as the core operational mandate. This is achieved through mandatory health screenings, proactive chronic disease management, and the provision of specialized, nutritious meals. Such interventions directly support SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-being), ensuring that the biological needs of the elderly are sustained ethically and comprehensively (Abdullah et al., 2024; Abdullah et al., 2025).

Simultaneously, the design of these facilities actively enforces the preservation of dignity (*Hifz al-'Ird*) and intellect (*Hifz al-'Aql*). Dignity is protected through strict privacy protocols and compassionate caregiving, while cognitive health is maintained through social interaction modules designed to combat dementia and isolation. This value-driven approach cultivates a dignified, intellectually active existence that aligns perfectly with SDG 10 (Reduced Inequalities) and SDG 11 (Sustainable Cities and Communities) (Abdullah et al., 2025; Asrulsani et al., 2023). By merging Islamic ethics with global sustainability benchmarks, these institutions offer a holistic blueprint for elderly care.

4.5 Regulatory Compliance and the Care Economy Ecosystem

To maintain public trust and institutional integrity, Zakat-funded senior care projects must adhere to rigorous governance standards that blend religious and civil accountability. Strict compliance with statutory regulations, such as the Care Centres Act 1993 (Act 506), ensures that these facilities meet national safety and healthcare standards. Beyond basic compliance, the integration of Waqf and Zakat directly contributes to the development of the "care economy," recognizing that accessible healthcare and professional caregiving are fundamental components of broader economic resilience and social well-being (Atan et al., 2025).

Furthermore, evaluating the performance of these institutions must focus on "customer effectiveness," ensuring that Zakat recipients are truly empowered rather than treated as passive receivers of charity (Wahab et al., 2020). Innovative models like the SEEDS@WAKAF initiative illustrate this empowerment perfectly. By utilizing Waqf concepts, Technical and Vocational Education and Training (TVET) students refurbish and redistribute essential medical equipment to underserved elderly populations. This model bridges critical healthcare gaps while promoting SDG 12 (Responsible Consumption and Production) through the reduction of medical waste, ultimately transforming Zakat institutions into proactive, sustainable guardians of social welfare (Jamal et al., 2025).

5. Conclusion

The transition of Malaysia into an aged nation by 2030 presents an urgent call to reform the current social security frameworks, which are increasingly insufficient to support the vulnerable and destitute elderly population. This study conclusively demonstrates that the integration of Islamic social finance, specifically through a hybrid *Zakat-Waqf* financing model, is not merely a *Shari'ah*-compliant alternative, but a strategic imperative for long-term care. By leveraging Waqf and elite philanthropy for permanent infrastructure (CAPEX), and ring-fencing Zakat and mission-driven corporate contributions for daily operational costs (OPEX), this model ensures sustainable and dignified care without depleting religious endowments.

The successful operationalization of this framework, however, depends heavily on agile governance. A decentralized zakat management structure is vital to empower localized institutions, enabling them to respond swiftly to the unique demographic and healthcare deficits in their respective jurisdictions. Furthermore, by redefining *asnaf* eligibility to acknowledge "social poverty" and critical medical debts under the *Gharimin* category, *Zakat* institutions can directly alleviate the modern burdens of the ageing B40 group. Ultimately, aligning these operations with the *Maqasid al-Shari'ah* and the United Nations Sustainable Development Goals (SDGs) ensures that elderly care transcends basic sheltering. It fosters a care economy ecosystem that preserves human dignity, promotes holistic well-being, and empowers the community through sustainable initiatives like medical equipment redistribution.

Limitations of the Study and Future Research

While this paper provides a robust conceptual and policy-oriented framework, it is bound by certain limitations. As a qualitative, library-based research study, the findings are primarily derived from statutory document analysis, institutional reports, and secondary academic literature. The study lacks empirical validation through primary fieldwork, such as in-depth interviews or quantitative surveys with the elderly *asnaf*, care centre operators, or corporate zakat contributors. Consequently, the operational nuances and ground-level challenges of executing the decentralized hybrid model remain theoretically deduced. Future research should address this gap by employing empirical or mixed-methods approaches to test the framework's operational efficiency across different states in Malaysia. Additionally, longitudinal studies evaluating the socio-economic impact of community-driven initiatives on the elderly's quality of life will be crucial to further refine and scale this Shari'ah-compliant care model.

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Islamic Cooperative Finance and Economic Empowerment: Evidence from Malaysia

DOI: 10.63740/8egvh960

Mohd Yaziz Bin MOHD ISA[1]
Muhamad Shukri Bin Othman[2]
Abdul Aziz Yahya Saoqi[3]

ABSTRACT:

Purpose: This study examines the determinants of economic empowerment among Islamic cooperative members in Malaysia, focusing on KOPSYA (Koperasi Pembiayaan Syariah Angkasa Berhad). Method: Using survey data from 127 respondents, we tested the effects of financial literacy, social capital and trust, governance and transparency, and regulatory support on economic empowerment, with cooperative economy as a mediating variable. Findings: Multiple regression and mediation analyses revealed that all four factors significantly predict economic empowerment (R^2=0.749). Regulatory and policy support showed the strongest effect (β=0.325), followed by financial literacy (β=0.218). The cooperative economy demonstrated a significant mediating role, amplifying the effects of these factors on member empowerment. Implications: These findings provide practical implications for policymakers and cooperative managers seeking to enhance financial inclusion through Shariah-compliant financing in Asian markets.

Keywords: Cooperative financing, Islamic financing, financial literacy.

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1. Introduction

The role of cooperative institutions in enhancing financial inclusion and promoting economic empowerment has gained significant attention globally, within developing economies (World Bank, 2020; Birchall, 2013). In Malaysia, KOPERASI PEMBIAYAAN SYARIAH ANGKASA BERHAD (KOPSYA) is a pioneering institution that integrates Islamic financial principles into the cooperative sectors. It was established with the core objectives of addressing the financing needs of its members involved in cooperative business and projects by offering Syariah-compliant financing solutions (SKM, 2022; Mohd Thas Thaker & Pitchay, 2018). KOPSYA provides Islamic financial products in line with the principles of fairness, ethical conducts and social justices (Dusuki & Abdullah, 2007), to members from marginalized and underserved communities (Obaidullah & Khan, 2008; Dusuki, 2008). Its steady growth in financing portfolio from 2020 to 2024 does reflect its increasing role in financial inclusion and economic empowerment aligning with impact in providing Syariah-compliant financial products and improving socio economy of cooperative well-being (Yusof & Bakar, 2012). But rising financing amounts pose challenges with regulatory compliance and increased competition, and the need for sustainable growth strategies (Hassan & Lewis, 2007; Bank Negara Malaysia, 2021), therefore this study is crucial (Salleh & Lajis, 2020; Nor & Hashim, 2021).

KOPSYA offers financing options such as cost plus financing(*murabahah*), profit sharing*(mudharabah*), diminishing partnerships (*musyarakah mutanaqisah*), and commodity trading(*tawarruqq*).

The challenge for cooperative institutions offering these financings is to compete with the conventional banks while ensuring that their Islamic financial products remain accessible, regulatory adaptation and financial education to promote the benefits of Shariah compliant financial solutions among members (World Bank, 2020; Ismail et al., 2021). Another critical challenge is the long-term impact of Islamic financial financing on the sustainability of cooperative institutions. While many cooperatives have adopted Islamic finance models, empirical research on their financial health, growth, and long-term liability is still lacking. It is unclear whether these cooperatives perform a better than those who are relying on conventional financing models or if they would face a greater financial portfolio as shown in the graph 1.1 above (RM447.3 million in 2020 to 750.71 million in 2024) suggest a positive financial growth but further research is needed to determine whether this trends is sustainable in the long run or not (Yusof & Bakar, 2012; Haniffa & Hudaib, 2007).

The research is driven by key questions that will examines both the benefits and limitations of Islamic financial products compared to conventional financing model and products (Dusuki, 2008; Pitchay et al., 2020). How the economic empowerment mediating financial literacy effects cooperative economy, social capital and trust effects, governance and transparency effects? How does the economic empowerment mediating regulatory and policy support effects on cooperative economy?

The significance gap of the study lies in exploration of operational framework of financial products and the impacts they have on both the cooperative's members and the broader cooperative economy (Yusof & Bakar, 2012). Additionally, the study is significant to examine the challenges faced such as regulatory compliance by Malaysian Cooperative Commission, or competition from conventional financial institutions. The study fills research gaps for continuous innovation in Islamic financial products and compliance (Pitchay et al., 2020; Fathi, M., Noordin, K., & Mansor, F. (2026)). Also, it fills research gaps to contribute valuable insights to the development of Malaysia Islamic cooperative financial ecosystem (Nor Hashim, 2021) as Islamic finance integration into the cooperative sector presents both opportunities and challenges that required deeper exploration (Dusuki & Abdullah, 2007; Bakar & Yusof, 2019).

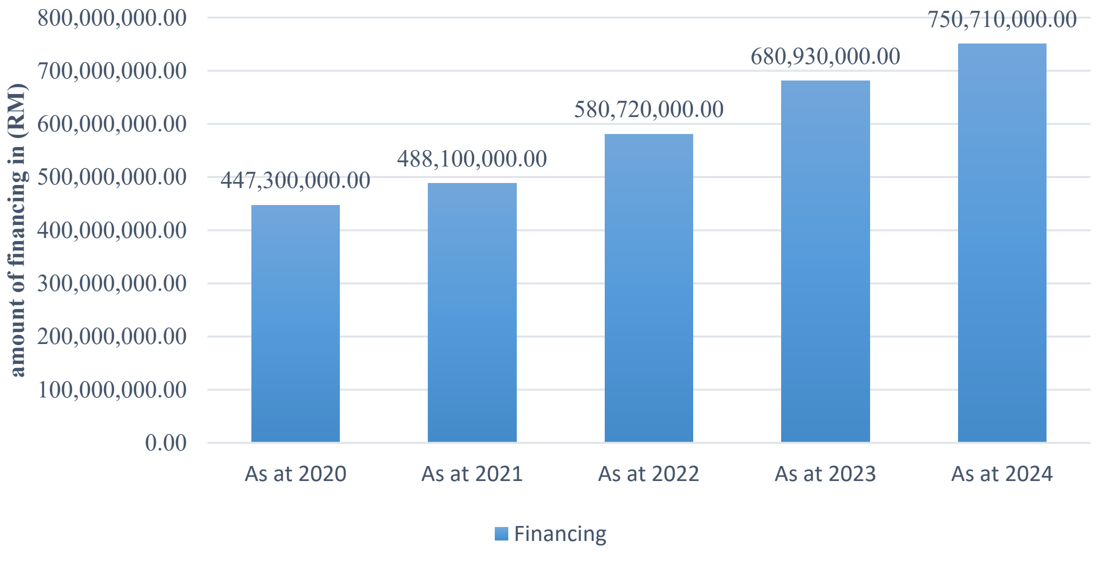
This research aims to paint a complete picture of how Islamic finance supports Malaysia's cooperative sectors. From financial growth and regulatory hurdles to member perception and sustainability, it will offer the valuable insights for improving financial inclusion and building a stronger and more ethical cooperative ecosystem (IIUM, 2022; Sabri, Salleh, & Kamaruddin, 2023; Kamaruddin, Salleh, & Shafii, 2024; Annizar & Junarsin, 2025, Fernanda, I. A., Nurhasanah, N., & Putri, D. (2023).

2. Literature review

This chapter discusses the theoretical issues underpinning the financing intermediation of KOPSYA for entire cooperative in micro, small, and medium businesses in the current economic landscape as well as the gap in the literature that this research seeks to address (Birchall, 2013; Majurin, 2012). To ensure a coherent discussion, this chapter examines the various financing sources available to KOPSYA today by considering the evolving of financial environment (Zainuddin et al., 2021; World Bank, 2020).

The sources of financing for KOPSYA are like the other Islamic cooperatives, typically include a variety of Shariah compliant financial products and funding mechanisms. These sources allow KOPSYA to provide the financing to its members while adhering to Islamic principles such as the prohibition of interest (Riba') and an emphasis on ethical, risk sharing financial solutions (Dusuki & Abdullah, 2007; Obaidullah & Khan, 2008) as in table 2.1 below.

Table 2.1: KOPSYA financing portfolio (in RM)



1.1 The graph highlight the steady growth of financing KOPSYA in 2020 until 2024.

Some common sources of financing KOPSYA utilizes from: members' contributions (as equity capital) and share capital through purchasing shares. This capital can be used as a base to finance the cooperative's operations and extend financing products to members (Zauinudin et al., 2021; SKM, 2020). These investment by cooperatives members is in accordance with Islamic principles like the profit sharing (*Mudharabah*) and partnership (*Musyarakah*) (Ayub, 2007; Haniffa & Hudaib, 2006). The Profit-Sharing Contracts (*Mudharabah and Musyarakah*) - Under *Mudharabah* contract, where principally, its members or investors provide the needed capital, and KOPSYA itself, provides management expertise. The profits are shared according to a pre- agreed ratio, while any financial losses are borne solely by the investors alone (Saeed, 2006; Iqbal & Mirakhor, 2011). *Musyarakah* financing involves a partnership where both of KOPSYA and its partners (including members, other cooperatives or financial institutions) contribute a capital for any joint venture. The profits are shared according to the partnership agreement while losses are shared in proportion to the capital invested (Usmani, 2002; Kamla & Rammal, 2013). In addition, external financing from Islamic Financing Institutions in the form of Shariah compliant loans or lines of credit are parts of KOPSYA sources incomes. KOPSYA collaborates with other Islamic financial institutions or banks for external funding options like CIMB, Alliance, MBSB, Banks Islam, RHB Islamic Banks. These funds are through Shariah compliant lines of credit or loans that are structured using profit sharing or lease-based contracts like *Mudharabah,Musyarakah, Ijarah or Murabahah* contract (BNM, 2023; ISRA, 2016).

Partnerships with other cooperatives is one of the sources. KOPSYA partners with other cooperative institutions or entities with have shariah compliant funding available like Malaysian Commission Cooperatives (SKM) Institute Cooperative Malaysia (IKMA) who give funding for pooling into one of resources to fund a larger initiatives or extension projects (SKM, 2020; IKMA, 2019).

Islamic Bonds (SUKUK) - Sukuk issuance probably is one of KOPSYA main source of income. KOPSYA issues sukuk to raise funds. Sukuk are Islamic bonds representing a share of an underlying asset, project or business. The returns on sukuk is derived from the income or profit generated by the asset or project in accordance with Islamic finance principles. This allows the cooperative to raise capital without incurring interest-based debt (Securities Commission Malaysia, 2021; Jobst et al., 2008). Grant and Government Funding - Government support is depending on the regulations and cooperatives policies in Malaysia, KOPSYA also receives government grants or financial support to enhance its service and promote financial inclusion within its community. These funds may be earned for specific projects such as social welfare programs, infrastructure development or entrepreneurship programs in underserved areas (Ministry of Entrepreneur and Cooperatives Development, 2022; BNM, 2023).

For the purpose of retention of profits like the other cooperatives, KOSPYA retains a portion of its profits and reinvests them into the business. This way allows the cooperative to grow its capital base organically and continue providing financial services to its members (Birchall, 2013; ICA, 2021). The use of these sources enables the cooperatives to enhance its financial inclusion efforts and support the long-term growth and sustainability of Malaysia's cooperative economy (Obaidullah & Khan, 2008; Dusuki, 2008).

KOPSYA offers them Shariah compliant financing alternatives that avoid the exploitative practices of high interest loans or excessive fees (Saeed, 2006; Iqbal & Mirakhor, 2011), where businesses and cooperative members help to uplift the marginalized communities (Fathi, M., Noordin, K., & Mansor, F. (2026)). The financing options offered by KOPSYA support the development of businesses creating employment opportunities, thereby addressing the economic challenges faced by low-income groups. This economic empowerment is one of KOPSYA's core contributions to the cooperative ecosystem (Yunus & Moingeon, 2010; Iqbal & Mirakhor, 2011).

Contributing to Islamic finance development as an Islamic cooperative financial institution, KOPSYA contributes to the broader growth of the Islamic finance industry in Malaysia. It assists strengthening the country's positions as a leading hub for Islamic finance by offering innovative, Shariah compliant financial solutions that meet the needs of cooperative members (BNM, 2023; Commission Malaysia, 2021). KOSPYA's success can serve as a model for other Islamic financial institutions seeking to serve the cooperative sectors. While primarily focused on the Malaysian market, KOPSYA's commitment to Islamic finance and cooperative values positions it as an important to Islamic finance and cooperative values may position it as an important player in international cooperative finance, particularly in regions seeking to integrate ethical and socially responsible financial solutions into their economic systems (ISRA, 2016; Saeed, 2006).

Providing financing to cooperatives members usually comes with several challenges and constraints. These challenges are often linked to both internal and external factors and their impact on the ability of financial institutions to effectively support cooperative growth and sustainability (Obaidullah & Khan, 2008; Dusuki, 2008). Complex regulatory environment for cooperatives adopting Islamic finance models to comply with, both conventional financial regulations and Shariah compliance standards, is among major ones. Particularly with compliance in navigating regulatory frameworks when there are differences between the rules governing conventional and Islamic financial institutions (BNM, 2023; Isra, 2016). For example, cooperative banks offering Shariah compliant products may face stricter scrutiny from regulators such as Bank Negara Malaysia (BNM) and the Malaysia Cooperative Commission (SKM), There are Shariah compliance costs also to ensuring that financial products are fully Shariah compliant requiring additional processes such as involving formation of Shariah advisory boards to review and approve products. This can increase operational costs and complexity which may limit the affordability and accessibility of financing for cooperatives (Haniffa & Hudaib, 2006; Iqbal & Mirakhor, 2011).

There is a lack of clear guidelines for Islamic cooperatives while Islamic finance has been well established principles, the specific guidelines for Islamic cooperatives like KOPSYA may still be evolving. The absence of clear and standardized regulations for Islamic cooperative financing creates confusion for both lenders and cooperatives (Dusuki & Abdullah, 2007; ISRA, 2016).

Limited access to capital for many cooperatives that particularly small or newly established ones for growth. Traditional financial institutions are often hesitant to lend to cooperatives because they may lack established credit histories or may not have sufficient collateral to secure loans. This is particularly problematic for Islamic financial institutions that operate under the principles of risk sharing and may be more caution about lending (Obaidullah & Khan, 2008; Ayub, 2007).

There is a high possibility of default risk in cooperatives, especially those serving lower income or marginalized communities. Members might face financial difficulties and make it harder for them to repay loans. Islamic finance principles such as profit sharing (*Mudharabah*) and the partnerships *(Musyarakah*) require a high degree of trust and mutual cooperation which can be strained if cooperatives members face a financial instability (Iqbal & Mirakhor, 2011; Saeed, 2006). Liquidity issues for many cooperatives who do not have the same level of liquidity as conventional financial institutions, making it difficult to access immediate financing. This can be compounded by the unique financing models that Islamic finance institutions offer not aligning with the immediate needs of cooperatives for working capitals (Jobst et al., 2008; BNM, 2023).

Understanding Islamic finance is one of the major barriers to adopting Islamic finance in cooperatives. The cooperative managers and members may not be well versed in Islamic financial principles and making them hesitant to adopt Islamic financial products over conventional ones (Zainuddin et al., 2021; Haniffa & Hudaib, 2006). Without proper education and awareness, the cooperatives might struggle to take full advantage of available financing options. There are weaknesses in educations and awareness among the cooperative that makes cooperative banking institutions couple with increasing the administrative costs in the process of ensuring compliance with Shariah law and managing Islamic financial products can be more complex and resource intensive than conventional financing (Haniffa & Hudaib, 2006; ISRA, 2016).

There are also high transaction costs for some cooperatives when attempting to access financing from Islamic financial institutions due to the additional documentation, verification processes and administrative steps involved in Shariah compliant financing (Ayub, 2007; Saeed, 2006).Competition with conventional financial institutions and Islamic financial institutions including cooperatives offering Shariah compliant products, often face stiff competition from conventional banks and financial institutions that provide simpler, quicker and less costly financing options. This can deter cooperatives from seeking Shariah compliant products especially when conventional loans are perceived as easier to obtain (Iqbal & Mirakhor, 2011; Kamla & Rammal, 2013). Resistance to change for some cooperatives may be due to a lack of trust or understanding of the benefits of Shariah compliant financing. The reluctance to embrace Islamic finance may be compounded by members lack of familiarity with its principles or a preference for conventional financial products that they know (Dusuki & Abdullah, 2007; Obaidullah & Khan, 2008).

The internal governance issues existed for some cooperatives struggles with weak structures creating inefficiencies in managing finances or monitoring loans. This makes them less attractive for extending financing (Haniffa & Hudaib, 2006; Birchall, 2013). Also, the lack of customization, while Islamic finance offers a variety of products but not all of them may be suitable for cooperatives. Products such as *Mudharabah, Murabaha, Ijarah, Musyarakah and tawarruq* may not be flexible enough to meet the diverse needs of cooperative businesses. Many cooperatives require tailored solutions that account for the unique nature of their operations. When Islamic financial institutions do not offer sufficiently customized products, the cooperatives may be less inclined to seek financing from them (ISRA, 2016; Zainuddin et al., 2021). Many cooperatives, especially those in rural areas lacks the technological infrastructure needed to manage modern financing solutions. This hinders their ability to efficiently handle transactions, monitoring financing or interact with financial institutions offering a Shariah compliant services (Yunus & Moingeon, 2010; Obaidullah & Khan, 2008).

The adoption of digital finance occurs while digital finance is growing globally (Shahzadi, Kanwal (2025)), many cooperatives still face challenges in adopting fintech solutions. This limits their ability to scale up operations and provide timely access to financing for their numbers (Securities Commission Malaysia, 2021; ISRA, 2016). The corporate financing frameworks plays a crucial role in shaping the stability, growth and socio-economic impact of cooperatives that particularly when underpinned by Islamic finance principles. These principles provide the cooperatives with an ethical, sustainable, and socially responsible financial structure.

KOPSYA is as example is excellent examples on how Islamic finance principles enhance financial stability. KOPSYA utilizes equity-based financing methods such as *Mudharabah and Musyarakah.* There are 9 hypotheses such as:

H1: There is significant relationship between financial literacy and economic empowerment.
H2: There is a significant relationship between social capital and trust with economic empowerment.
H3: There is a significant relationship between governance and transparency and economic empowerment.
H4: There is a significant relationship between regulatory and policy support with economic empowerment.
H5: There is significant relationship between financial literacy and the cooperative economy
H6: There is significant relationship between social capital and trust with the cooperative economy.
H7: There is significant relationship between governance and transparency with the cooperative economy.
H8: There is significant relationship between regulatory and policy support with the cooperative economy.
H9: There is significant relationship between the cooperative economy and economic empowerment

3. Methodology

The study also investigated the mediating role of the cooperative economy in linking Islamic finance practices to member economic empowerment. A structured questionnaire was used as the main tool for data collection, targeting respondents from various backgrounds including cooperative members, students, borrowers/ clients, and staff that involved in the cooperative sectors in Malaysia. A total of 127 respondents formed the sample size. The use of a 5-point Likert-scale ("1" highly disagree to "5" highly agree) survey enabled the researcher to quantify perceptions and experiences across the 6 key constructs based on aggregated mean score. This is shown in table 3.1 below.

Table 3.1. Measurement items

No.	Construct	Measurement items

1.	Financial Literacy (3)	1. "Financial knowledge helps to make a better economic choice?" 2. "KOPSYA or similar Islamic financial institutions actively support cooperatives?" 3. "Literacy on Islamic financing made it easier for members to fund business activities?"
2.	social capital & trust (3)	1. "Islamic finance provides fairer, more ethical financing compared to conventional systems?" 2. "I understand the key principles of Islamic finance?" 3. "I know Islamic finance is fairer for social development than conventional systems?"
3.	governance (3)	1. "There is less need for governing of education and training on Islamic finance within the cooperatives" 2. "Governance of Islamic finance has helped my cooperative grow in a more sustainable way?" 3. "Using Islamic finance has improved the financial health of cooperative?"
4.	regulatory & policy support (3)	1. "Islamic finance is a good long-term solution for cooperative sector development" 2. "Policy support of Islamic finance has helped my cooperative expand its service or membership" 3. "Stronger policy support and collaboration help Islamic cooperatives to grow"
5.	cooperative economy (3)	1. "My cooperative has increased its income/ revenue due to Shariah Compliant financing" 2. "We have been able to initiate and participate to the new projects or investments using the Islamic finance" 3. "Islamic finance helps to maintain economic balance within cooperative ecosystems"
6.	economic empowerment (5)	1. "a personal financial growth through Islamic finance programs in my cooperative" 2. "Cooperative members are able to start or grow a business/a better life with help from Islamic financing?" 3. "Shariah compliant financing has made a more secure financing" 4. "Islamic finance cooperative to avoid debt traps"

		5. "Islamic finance helped cooperatives to uplift low-income members"

The research employed a cross-sectional design, collecting data at a single point in time to capture current views and experiences. This design was appropriate for understanding the existing relationships between variables and evaluating the influence of Islamic finance within the cooperative sectors. The selected of 127 diverse respondents from different states and cooperatives roles allowed for broader insights into the accessibility, awareness and impact of Shariah-compliant financing tools.

A total 127 sample size of this study consisted of individuals that involved in the cooperative sector in Malaysia, particularly those with experience or awareness of Islamic financial institutions such as KOPSYA. This included cooperative members, students affiliated with financial or cooperative studies, staff and workers within cooperatives, borrowers or clients of Islamic financial products and the other stakeholders that engaged in cooperative economic activities. The diversity in roles ensures that the data captures a wide range of insights regarding the impact of Islamic finance on cooperative economic empowerment.

4. Results

The age composition of the respondents indicates a youthful profile with a substantial proportion of participants belonging to the younger age categories. The largest group of respondents show a strong representation of individuals with 18 to 30 years old comprising 42.1% of the total sample. This is followed by those aged 31 to 40 years who made up 33.3%. collectively, these two groups represent over 75% of the total respondents when suggesting that younger adults are actively involved in engaging with the cooperative finance and Islamic financial systems. Respondents aged 41 to 50 years accounted for 14.3% while only 10.3% were in the years and above category. This lower representation of adults may reflect a generational shift in the cooperative involvement where does the younger individuals are increasingly taking an interest in the ethical financial models, community-based financing and entrepreneurship supported through Shariah compliant instruments. The dominance of younger respondents aligns with the increasing trends of youth involvement in financial technology (Fintech) and the cooperative innovation in Malaysia. Many young cooperative members like Koperasi Belia Nasional Berhad are turning to digital Islamic finance solutions such as mobile apps offering *Murabahah* based microfinancing and online platforms for saving and their investments due to the convenience, transparency and compliance with Islamic principles.

Furthermore, the younger participants may be more inclined to explore Islamic finance as a sustainable alternative to conventional debt-based systems especially in light of economic uncertainties and the rising cost of living. Their perspectives are valuable for shaping future cooperative policies as they represent the emerging generation of cooperative leaders, entrepreneurs and digital finance users. In contrast, the relatively smaller percentage of older respondents may be due to less frequent use of online surveys or lower digital engagement though they still hold critical experience and legacy knowledge within the cooperative sectors.

In terms of gender, the data shows a relatively balanced representation with 53.2% male and 46.8% female respondents. This distribution reflects the active participation of both genders in cooperative financial activities while also suggesting that men may have a marginally higher presence in formal cooperative roles or be more responsive to financial related surveys. In Malaysia, especially in rural and semi urban areas, women often engage in microfinance, saving groups and income generating activities through cooperatives. A service like *Ar-Rahnu* (Islamic pawn brokering), *Qard Hassan* (benevolent loans) and *Mudarabah* based financing schemes offer the ethical and accessible alternatives for women to start or expand small businesses without conventional debt burdens. Moreover, the presence of women in Islamic finance indicates shifting cultural attitudes and enhanced confidence in financial decision making. The reliability score based on Cronbach

The results of the Pearson correlation analysis reveal that all relationships among the constructs are positive and statistically significant at the 0.01 level. This suggests that as one variable increases, the corresponding variable tends to increase as well while supporting the hypothesized linkages between the constructs. For instance, the correlation between financial literacy and cooperative economy yielded an R-value of 0.652 when indicating a strong and positive association. This means that individuals with higher financial literacy tend to contribute more positively to the cooperative economy. Similarly, the correlation between financial literacy and economic empowerment was found to be 0.667 when underscoring the direct impact of financial knowledge on individual capacity to improve their economic conditions. Likewise, social capital and trust demonstrated a moderate to strong positive correlation with both the cooperative economy when $r=0.609$ and economic empowerment when $r=0.642$. This suggests that cooperative members who exhibit higher levels of trust and social cohesion are more likely to contribute to, and benefit from, a robust cooperative economy. These findings affirm the importance of social dynamics in cooperative systems. Moreover, governance and transparency also displayed statistically significant correlations with both the cooperative economy when $r=0.584$ and economic empowerment when $r=0.609$. While slightly lower than the other variables, these values still indicate a meaningful relationship, implying that clear governance structures and transparency mechanisms are essential in fostering trust and efficiency within cooperative organizations. Another key variable, the regulatory and policy support showed a strong correlations with the cooperative economy when $r=0.643$ and with economic empowerment when $r=0.656$, highlighting the importance of institutional and policy frameworks in enabling cooperatives to flourish.

When regulatory conditions are favorable, cooperative societies like KOPSYA can operate more effectively thereby improving outcomes for their members. Perhaps most significantly, the correlation between cooperative economy and economic empowerment was the highest in the analysis, with an R-value of 0.712. This strong relationship confirms the central hypothesis of the study that a well-functioning cooperative economy significantly contributes to the economic empowerment of its members. This finding justifies the role of the cooperative economy as a mediating variable and suggests that the pathway from Islamic financial support to member empowerment is indeed routed through the health of the cooperative system.

The multiple regression model constructed in this study follows the basic linear form: Economic Empowerment= $B_0 + B_1$ (financial literacy) + B_2 (social capital and trust) B_3(governance and transparency) + B_4 (regulatory and policy support) + $_E$. The model summary output. The results indicate that approximately 74.9% of the variance in economic empowerment can be explained by the four independent variables combined. The F-test value is statistically significant when $p<0.001$ by confirming that the model is a good fit and the predictors reliably forecast economic empowerment. The model exhibits a good fit with an F-statistic of 183.673 when $p<0.001$ by confirming that the predictors collectively have a statistically significant effect on the dependent variable.

All four predictors are statistically significant at $p<0.001$. Regulatory and policy support shows the strongest influence on economic empowerment when $\beta= 0.325$ by suggesting its central role in enabling cooperative success. Financial literacy when $\beta=0.218$ and social capital and trust $\beta=0.214$ will contribute almost equally when underlining the importance of member education and trust-based networks. Governance and transparency also positively influence empowerment though slightly less so $\beta= 0.158$. These results imply that each variable contributes uniquely and significantly to improving the economic empowerment of cooperative members.

In a separate regression analysis, the cooperative economy was tested as a mediator and found to have a significant impact. This indicates that the cooperative economy plays a partially mediating role when enhancing the effects of financial literacy, trust, governance and policy on economic empowerment. It confirms that when cooperative systems are strong, the empowerment outcomes are significantly amplified.

A multiple regression analysis was performed with economic empowerment as the dependent variables. The findings revealed that all four independent variables significantly predicted positive effects on economic empowerment.

Mediation analysis was conducted to assess the role of the cooperative economy in transmitting the effects of the independent variables to the dependent variable. The result showed that the cooperative economy has a significant and strong effect on economic empowerment. Cooperative economic, Economy empowerment Standardized $\beta=0.856$, $t=33.729$, $p<0.001$as in table 4.1 below.

Table 4.1: Results

Variables	R-value	Significance (p-value)	Interpretation
FL ↔ CE	0.652	$p < 0.01$	Strong positive correlation
SCT ↔ CE	0.609	$p < 0.01$	Moderate to strong positive correlation

GT ↔ CE	0.584	p < 0.01	Moderate positive correlation
RPS ↔ CE	0.643	p < 0.01	Strong positive correlation
CE ↔ EE	0.712	p < 0.01	Strong positive correlation
FL ↔ EE	0.667	p < 0.01	Strong positive correlation
SCT ↔ EE	0.642	p < 0.01	Strong positive correlation
GT ↔ EE	0.609	p < 0.01	Moderate to strong correlation
RPS ↔ EE	0.656	p < 0.01	Strong positive correlation

This large beta value indicates that the cooperative economy plays a substantial mediating role, particularly in enabling the impacts of financial literacy, governance, and policy interventions to be realized through cooperative financial channels.

5. Discussions

The finding reveals that financial literacy among members significantly enhances their participation and decision-making capacity within the cooperative structure. Likewise, trust and social capital were found to be strong mediators that facilitate smoother interaction and better resource sharing, essential for sustaining a robust cooperative economy. The presence of transparent governance mechanism within KOPSYA boosts the confidence among member of cooperatives while supportive policies from regulatory bodies serve as catalysts for cooperative growth and innovation.

Furthermore, the research highlights the mediating role of the cooperative economy when reinforcing the idea that can will strength and efficiency of secondary cooperatives like KOPSYA directly correlate with members economic upliftment. The positive relationships among the variables will provide the practical implications for policymakers, cooperative leaders and Islamic financial institutions aiming to build a more inclusive and sustainable economic environments.

Interpretation of variables

The regression coefficients for each variable are displayed in tables 5.1 and hypothesis results in 5.2 below:

Table 5.1: Regression coefficient results

Independent Variable	Beta (β)	t-value	Sig. (p-value)
Financial Literacy	0.218	4.878	0.000
Social Capital and Trust	0.214	4.949	0.000
Governance and Transparency	0.158	4.302	0.000
Regulatory and Policy Support	0.325	8.021	0.000

Table 5.2: Hypothesis results

Hypothesis	Relationship	Path Coefficient (β)	Supported
H1	FL → EE	0.319	Yes
H2	SCT → EE	0.276	Yes
H3	GT → EE	0.253	Yes
H4	RPS → EE	0.294	Yes
H5	CE → EE	0.536	Yes
H6	FL → CE	0.478	Yes
H7	SCT → CE	0.427	Yes
H8	GT → CE	0.398	Yes
H9	RPS → CE	0.445	Yes

*Note:

FL- Financing literacy

SCT- Social capital and trust

GT- Governance transparency

RPS- Regulatory and policy support

EE- Economic empowerment

CE- Cooperative economy

While the study has made significant contributions, it is not without limitations, where the scope of the study could be expanded in future research to include qualitative data and explore the behavioral aspects in more depth.

H1: Financial Literacy has a significant direct effect on economic empowerment. The findings confirm that financial literacy has a significant and positive direct effect on economic empowerment.

H2: Social capital and trust have a significant direct effect on economic empowerment. This hypothesis was also supported with a β -value of 0.276. The social capital defined as the networks, norms and social trust that facilitate coordination and cooperation was shown to contribute significantly to economic empowerment.

H3: Governance and transparency have a significant direct effect on economic empowerment. Governance and transparency were found to have a positive effect on economic empowerment with a path coefficient of β =0.252.

H4: Regulatory and policy support has a significant direct effect on economic empowerment. Regulatory and policy support was found to play an important role in economic empowerment when β =0.294.

H5: Cooperative economy has a significant effect on economic empowerment. The strongest direct effect on economic empowerment came from the cooperative economy with a high β value of 0.536.
H6: Financial literacy has a significant effect on cooperative economy. Financial literacy was also found to significantly influence the strength of the cooperative economy when β=0.478.
H7: Social capital and trust have a significant effect on cooperative economy. The cooperative economy also benefits from strong social capital and trust when β= 0.427.
H8: Governance and transparency have a significant effect on cooperative economy. Effective governance and transparency within cooperatives significantly improve their economic functioning when β=0.398.
H9: Regulatory and policy support has a significant effect on cooperative economy. Finally, regulatory and policy support significantly contributes to strengthening the cooperative economy when β=0.445.

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The Role of Risk Management in Enhancing Product Development Efficiency in Islamic Banks

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ABSTRACT

Islamic banking, a rapidly expanding sector, draws a diverse range of stakeholders through its profit and loss sharing and interest-free financing models. With the growth and diversification of Islamic banking, effective risk management has become crucial. The unique nature of Shariah-compliant financial products introduces various risks, including compliance, market, credit, operational, and liquidity risks. Rigorous adherence to Islamic law is essential to maintain client and stakeholder trust. This research investigates how Islamic banks in Pakistan manage these risks in developing new Shariah-based financial products, employing a mixed-method approach. In first phase, content analysis is used for qualitative data collection by using NVivo. In second phase, questionnaire is developed based on the findings of first phase. Data is collected from Islamic banks in Pakistan. The study reveals that Islamic banks have proactive risk management systems, well-trained personnel, and dedicated departments for risk management, effectively addressing risks through strict Shariah compliance and mitigation techniques. The findings suggest that comprehensive risk management practices, such as rigorous credit assessments, benchmark rental rates, and robust internal controls, can enhance the resilience and sustainability of Islamic banks. By implementing these strategies, Islamic banks can navigate the complexities of developing new Shariah-compliant products, fostering innovation and growth in Islamic banking sector.

Keywords: Product development process, Risk Management, Credit Risk, Operational Risk, Market Risk, Liquidity Risk

JEL Classification: G21, G32, O31

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1. Introduction

One of the rapidly flourishing sectors worldwide is Islamic banking, which uniquely attracts a broad range of stakeholders. According to Belatik (2021), Islamic banking is gaining popularity not only in Muslim economies but also in non-Muslim economies. Furthermore, expansion of the halal industry has significantly contributed to the growth of Islamic banking institutions. Similarly, Shariah-compliant products and services drive innovation and transformation within the financial industry (Ayub, 2013). This trend is also evident in Pakistan, where the Islamic banking industry has seen substantial growth. Islamic banking's market share of assets and deposits is 19.6 percent and 22.5 percent, respectively, relative to the total banking industry (Islamic Banking Bulletin, 2023). Ahmad and Ihsan (2018) highlight a long-term relationship of economic development with Islamic financial institutions of a country, concluding that the rapid development of Islamic financial institutions will drive Pakistan's economic growth.

With this significant expansion of the Islamic banking industry and the diversification of its product portfolio, effective risk management becomes increasingly crucial (Gustanto et al., 2025). The rapid growth and introduction of a variety of Shariah-compliant financial products introduce various risks, including compliance, market, credit, operational, and liquidity risks. Risk management is significant during product development stages because of the unique nature of Shariah compliance. Islamic banking operates profit and loss sharing basis, asset-backed financial transactions, and interest prohibition, which require rigorous scrutiny and adherence to Islamic law. These principles make risk management particularly important, as non-compliance with Shariah principles can have a negative impact on the trust of stakeholders.

As Islamic banks develop new and innovative products to meet the growing demand, they must ensure that each product adheres strictly to Shariah principles to maintain the trust and confidence of their clients and stakeholders. Effective risk management supports Islamic banks navigate complexities by identifying, assessing, and mitigating potential risks linked with product development. This involves a thorough understanding of the various risks that can arise and implementing strategies to manage these risks effectively. Therefore, the primary goal of this research is to investigate how Islamic banks in Pakistan manage credit, market, operational, and liquidity risks in the development of new Shariah-based financial products. This research aims to provide insights into the risk management practices of Islamic banks in Pakistan and how these practices contribute to the successful development and introduction of new Shariah-compliant financial products.

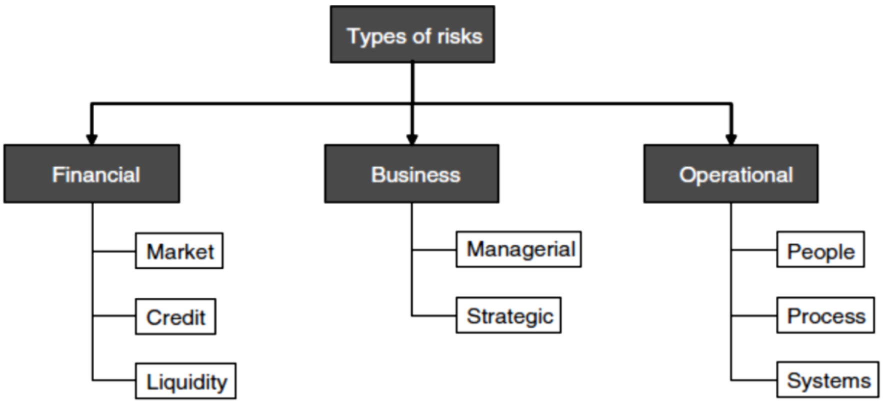
2. Risk Management in Product development of Islamic banks

Islamic banks operate within a unique framework that aligns with Shariah principles, emphasizing ethical finance and social responsibility. This enables them to develop innovative products that not only comply with Islamic regulation but also contribute to the benefits of individuals and society. Such products can include profit-sharing investment accounts, interest-free loans, and socially responsible investment options, all designed to fulfil the demands of the clients while promoting economic and social justice. However, alongside the potential benefits, Islamic banks face several risks. In fact, risk is an inevitable part of the financial institutions.

The victory and failure of any financial institution depend on the efficient management of risk. Effective risk management enables Islamic banks to navigate these complexities by identifying, assessing, and mitigating potential risks associated with new product development. By proactively managing these risks, Islamic banks can prevent legal and reputational damage that could arise from non-compliance or financial losses. Additionally, robust risk management frameworks help banks maintain financial stability and protect their assets and liabilities.

Generally, three types of risk are involved in financial institutions; financial risk, business risk and operational risk (see below Figure 1). Financial risk is the probability of loss of capital or finance in an investment or in a business (Cahyani & Sudirman, 2026). For Financial institutions, financial risk involves the instabilities, divergences and disturbances of the money market. Financial risk encompasses credit risk, market risk, and liquidity risk. Credit risk arises when a borrower or counterparty fails to fulfill its contractual obligations and is unable to repay the outstanding debt according to the agreed terms and conditions (Khalfallah & Dhaoui, 2026). It is considered the most significant risk faced by banks, with approximately 80% of bank failures attributed to credit risk (A. Ali et al., 2018). Liquidity risk refers to the possibility that a financial institution may be unable to meet its short-term financial obligations as they become due. Market risk, on the other hand, is the risk of financial losses resulting from adverse movements in market variables such as profit rates, exchange rates, equity prices, and commodity prices. Effective management of these financial risks is essential for ensuring the stability, profitability, and long-term sustainability of banking institutions (Roziq & Ilma Ahmad, 2024). Market risk is the possibility of losses due to fluctuations in the financial markets; for example market prices, interest rates, foreign exchange rates and equity values (Akkizidis & Khandelwal, 2007). Business risk is the probability that the bank's financial goals will not be achieved and the profit will be declined (Kenton, 2020). Operational risk is the risk of loss due to errors, interruptions or damage caused by people, systems or processes.

Figure 1 - Types of Risk in Financial Institutions



Source: Akkizidis and Khandelwal (2007)

As Islamic financial institutions are different from conventional financial institutions, assimilation of risks are also different but Fikri et al. (2018) argue that application of risk in Islamic banks are identical as in the commercial. In contrast, Akkizidis and Khandelwal (2007) reveal that IFIs' risk orientation have distinct features. Similarly, Sundararajan and Errico (2002) conclude that Islamic banks face more risk as compare to conventional banks due to many reasons. First and foremost, reason is that, interest is prohibited and Islamic financial contracts are based on profit and loss sharing. Secondly, there is a change in the relationship of the parties during the lifespan of the contracts. Thirdly, single project/product can be either financed via profit and loss sharing mode or non-profit and loss sharing mode. And lastly, Shariah compliance can create multiple contracts at a time for single project/product. Therefore, the risks involved are pertinent to the types of contracts (Akkizidis & Khandelwal, 2007).

An exclusive risk related to Islamic banks, is the Shariah risk. Noor et al. (2018) define Shariah risk as the risk of non-compliance of Shariah rules. The non-compliance of Shariah rules may lead a bank to prestige and credibility of the customers and causing the withdrawal of investments. A huge variety of matured products and services are available in conventional banking system and Islamic banks cannot just replicate these products and services without Shariah compliance. With the passage of time, Islamic banking industry is flourishing and launching solutions to compete conventional banking system and to cater modern market requirements. Sometimes, these solution are not fully Shariah compliant and are enticing Shariah risk (Akkizidis & Khandelwal, 2007). However, sheer precautions are required to scrutiny and surveillance of such products in liaison with Shariah compliance department.

Islamic banks in Pakistan are equally exposed to all types of risks as conventional banks (Rafiq & Siddiqui, 2018). Despite this fact, overall risk management, liquidity risk management, risk monitoring and reporting practices of Islamic banks are weak (Rehman et al., 2018). Shafiq and Nasr (2010) reveal that most of the banks in Pakistan face credit risk, liquidity risk, interest risk and foreign exchange risk. However, credit risk is the most crucial and persistent risk for Islamic banks in Pakistan (Rafiq & Siddiqui, 2018; Shafiq & Nasr, 2010). On other hand, Rasheed et al. (2018) specify the importance of operational risk in Islamic banking industry of Pakistan. They argue that IFIs consider only credit risk and market risk as foremost important and neglect operational risk and suggest being meticulous in the implementation of governance and transparency. State bank of Pakistan issued fifteen points guidelines to tackle risk management of Islamic banking institutions (IBIs). These guidelines provide various approaches and procedures to manage all six categories of risk including credit risk, market risk, liquidity risk, equity investment risk, rate of return risk and operational risk exclusively for IBIs. However, Shah (2011) argues that there is a lack of adequate technical and human resources for the risk management under Basel Accord.

3. **Methodology**

In line with the studies of Kachouie and Sedighadeli (2015); Seyed-Javadin et al. (2015) current article uses a mixed-method approach to collect and evaluate quantitative and qualitative data for its investigation of the product development process. A two steps exploratory sequential mixed-method technique is used to gather and evaluate the data (Creswell & Creswell, 2017).

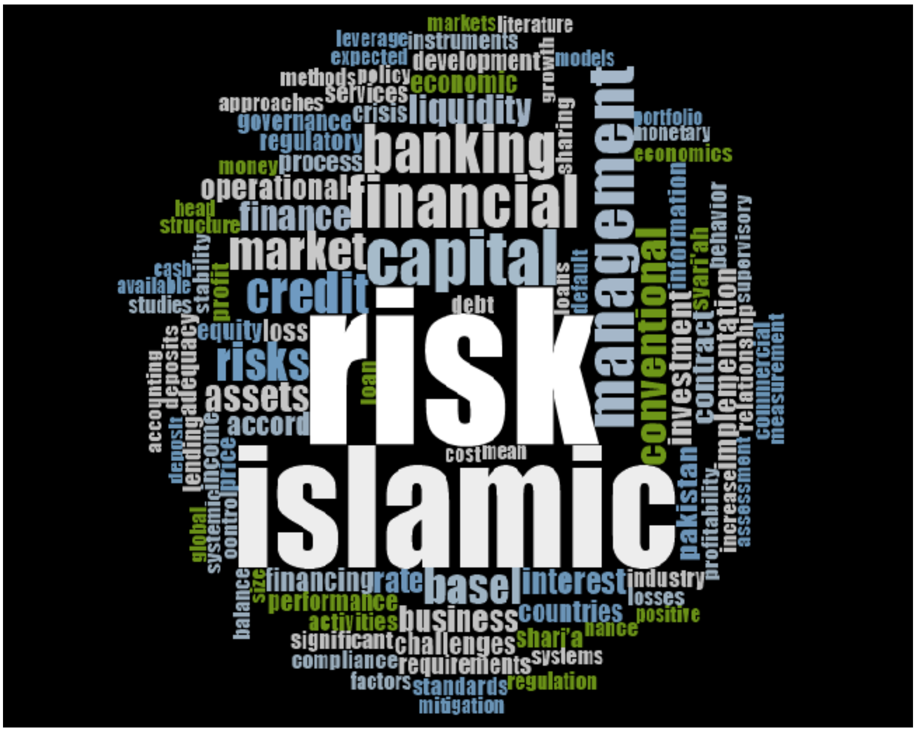
First step is qualitative data collection and analysis by using content analysis. With the help of existing research articles, books, and banks' documents, broad themes are coded at this stage as also used by Abd (2019); Abdul and Uthman (2017); N. M. Ali et al. (2020). NVivo 11 is utilized for content analysis to identify main themes and sub-themes. This in-depth design comprises information from 203 relevant books and research articles related to product development process of Islamic banks. 299 references identified five different sub-themes related to the main theme of risk management while developing the new product from 156 sources as shown in the following table 1:

Table 1: First Phase - Themes Identification

Themes	Sources	References
Risk Management for New Product	43	61
Credit Risk	36	71
Market Risk	20	39
Operational Risk	23	54
Liquidity Risk	18	34
BASEL Accord	16	40

The main theme extracted by NVivo is "risk management" while developing the products. 71 references highlight the importance of credit risk management for new products in Islamic banks. Effective credit risk management helps in designing products that are financially viable and sustainable, reducing the likelihood of defaults and financial losses. 39 references show the effectiveness of market risk management in identifying risk related to market fluctuations and adverse price movements. The importance of operational risk management is discussed by 54 references while developing new products for identification, assessment and mitigation of risks arising from internal processes, systems, human errors, and external events. 34 references shed light on the importance of liquidity risk management. It is pivotal in developing new products as it focuses on ensuring that sufficient funds are available to meet financial obligations associated with product development and ongoing operations (Mikou et al., 2024). 40 references discuss the role of Basel accord in risk management during new product development process. The Basel Accords, particularly Basel II and Basel III, play a significant role in shaping risk management practices when developing new financial products. Also, Figure 2 offers a word cloud-style visual depiction of the data to further aid in comprehending these themes.

Figure 2: Word Cloud - Product Development Process in Islamic Banks



Based on the theme and sub-themes identified in the first phase of data collection, a structured questionnaire is created in the second phase utilizing a quantitative methodology (Haque, 2016; Kimamancha, 2017). Questionnaire includes closed-ended questions. The validity of a questionnaire is important for the research survey. Thus, in order to verify the reliability of the questionnaire for the current study, it was first discussed with a number of pertinent practitioners. All remarks and suggestions are included in the finished questionnaire. The reliability and internal consistency of the questionnaire are also assessed using the Cronbach Alpha test. With a Cronbach alpha test result of 0.966, the current study exhibits a strong reliability. Senior management and Shariah advisors that work directly on product development from Karachi and Lahore fill the questionnaires. Information from 22 full-fledged Islamic banks, Islamic branches, or sub-branches of conventional banks, from which 73 responses were obtained, are included in the analysis.

4. Results and Discussion

Results gathered for the present study are based on the mixed-methods approach. From the first phase, effective risk management is identified as the main theme with five sub-themes while developing the new products by Islamic banks in Pakistan. Then, in the second phase, questionnaire is prepared and data is collected according to the themes are identified. Effective risk management ensures that new products align with these principles while mitigating potential financial, operational, and compliance risks. It helps Islamic banks maintain their credibility and trust among stakeholders by preventing breaches of Shariah law, which could lead to financial losses and reputational damage.

Table 2 revealed the practical adherence of the effective risk management by Islamic banks in Pakistan. 62% of respondents always have a proactive risk management system in their bank, 27.8% often have it and 7.6% have it sometimes whereas, 1.3% rarely have it and 1.3% respondents never have it. For the performance of effective and efficient risk management functions, there is a need for competent and well-trained personnel in IBIs. 40.5% of banks always have competent and well-trained staff, 40.5% often have it and 13.9% have it sometimes, whereas 5.1% rarely have it. This may be due to skill shortages, high employee turnover, and inadequate training and professional development opportunities, which can limit the availability and retention of qualified personnel in the banking sector (Salman et al., 2014). Compliance of risk management framework with Shariah rules and principles are also mandatory therefore, 63.3% respondents reveal that risk management framework is always in-line with the Shariah rules, 26.6% often have it and 6.3% have it sometimes, in contrast only 3.8% respondents rarely have it. Survey also reveals that 49.4% of banks' risk management departments always contribute to the new product development process, 35.4% contribute, and 8.9% sometimes contribute, whereas only 6.3% respondents rarely contribute to the product development process. The 6.3% of respondents reporting rare involvement of risk management departments in product development may be due to limited cross-functional integration and inadequate coordination between risk management and product development team (Oehmen et al., 2014).

According to Akkizidis and Khandelwal (2007, p. 31), risk cannot be eradicated but it can be mitigated. According to the survey, the risk management department of the 49.4% banks always consider risk mitigation while developing a product or service, 40% often consider it and 6.3% consider it sometimes, whereas only 3.8% banks rarely consider it as depicted in the table 2. Most of the risk management departments take part in product development process and consider risk mitigation techniques while developing the new product. However, 3.8% of banks that rarely consider risk mitigation during product development may be due to weak risk management culture, insufficient integration of risk management into strategic decision-making, or resource and expertise constraints within the organization (Fraser & Simkins, 2016). These results are similar with the findings of Ahmed (2011); Akkizidis and Khandelwal (2007) as they enlighten the importance of proactive risk management system of the Islamic bank and well trained staff, consideration of Shariah risk and risk mitigation techniques while developing a new product.

Table 2 - Risk Management Framework of the Islamic Banks

Questions		Responses	Frequency	Valid percent	Cumulative percent
For the product development purposes, rank how your bank prefers the followings:					
1	A proactive approach to risk management is implemented in your bank	Always	49	62	62.00
		Often	22	27.8	89.90
		Sometimes	6	7.6	97.50
		Rarely	1	1.3	97.70

		Never	1	1.3	100.00
		Total	79	100	
2	Competent and well-trained staff are available to handle risk management functions.	Always	32	40.5	40.50
		Often	32	40.5	81.00
		Sometimes	11	13.9	94.90
		Rarely	4	5.1	100.00
		Never	0	0	
		Total	79	100	
3	Risk management framework is according to the Shariah framework.	Always	50	63.3	63.30
		Often	21	26.6	89.90
		Sometimes	5	6.3	96.20
		Rarely	3	3.8	100.00
		Never	0	0	
		Total	79	100	
4	Risk management department contributes in new product development process.	Always	39	49.4	49.40
		Often	28	35.4	84.80
		Sometimes	7	8.9	93.70
		Rarely	5	6.3	100.00
		Never	0	0	
		Total	79	100	
5	Risk management department enquires how risks will be mitigated while developing the new product/service.	Always	39	49.4	49.40
		Often	32	40.5	89.90
		Sometimes	5	6.3	96.20
		Rarely	3	3.8	100.00
		Never	0	0	
		Total	79	100	

The first sub-theme identified in the first phase, is the credit risk is the risk that the debtor will fail to repay the debt and to meet its obligations as per agreed terms and conditions (Akkizidis & Khandelwal, 2007, p. 109; Khalfallah & Dhaoui, 2026). Credit risk is the principal risk of the banks (A. Ali et al., 2018). Credit risk encounter due to the financial problems of the individual counterparties, and due to the worst economic conditions (Akkizidis & Khandelwal, 2007). Credit risk default may also arise due to variable rentals which may erode the customer's ability to pay (Kabir et al., 2015). Table 3 depicts the responses of the Islamic bankers for the credit risk management in their banks. 49.4% of respondents always identify and consider credit risk while developing the new product/service, 41.8% often consider it and 7.6% consider it sometimes, whereas only 1.3% of respondents rarely consider it. Service Ijarah financing has different stages of financing therefore customers may default at any stage. Based on the survey, it is revealed that 45.6% of banks are always able to recognize potential credit risk exposure at different stages of financing, 43% bankers often recognize it and 8.9% recognize it sometimes. In contrast, only 2.5% rarely recognize it. The rare recognition of credit risk exposure by 2.5% of banks may reflect weaknesses in credit risk assessment systems and information availability, which can hinder effective risk identification (Kithinji, 2010). The credit guidelines must also be according to the specific features of the Islamic financial contracts. Therefore, 55.7% respondents always consider specific features of Islamic financial contracts while addressing the credit risk management, 34.2% often consider it and 8.9% consider it sometimes, whereas, only 1.3% rarely consider it. Akkizidis and Khandelwal (2007) suggest having guarantees and collaterals to mitigate the risk. 49.4% respondents always mitigate credit risk through guarantees and collaterals, 35.4% often have it and 13.9% have it sometimes, whereas only 1.3% respondents rarely have it. From the table 5.10, it can be noticed that most of the Islamic banks in Pakistan identify and consider credit risk while developing the new product or services. These findings are same as discussed by (A. Ali et al., 2018; Kabir et al., 2015; Qudzianna, 2019) in their studies.

Table 3 - Credit Risk Management for New Product Development

	Questions	Responses	Frequency	Valid percent	Cumulative percent
1	Risk management department identifies and considers Credit risk while developing the new product/service.	Always	39	49.4	49.40
		Often	33	41.8	91.10
		Sometimes	6	7.6	98.70
		Rarely	1	1.3	100.00
		Never	0	0	
		Total	79	100	
2	The bank is proficient in recognizing potential credit risks at various financing phases.	Always	36	45.6	45.60
		Often	34	43	88.60
		Sometimes	7	8.9	97.50
		Rarely	2	2.5	100.00
		Never	0	0	

		Total	79	100	
3	The credit guidelines cover credit risk related to the unique characteristics of Islamic financial contracts	Always	44	55.7	55.70
		Often	27	34.2	89.90
		Sometimes	7	8.9	98.70
		Rarely	1	1.3	100.00
		Never	0	0	
		Total	79	100	
4	Your bank mitigates credit risk exposure through guarantees and collaterals.	Always	39	49.4	49.40
		Often	28	35.4	84.80
		Sometimes	11	13.9	98.70
		Rarely	1	1.3	100.00
		Never	0	0	
		Total	79	100	

Wahyudi et al. (2015, p. 223) define market risk as the risk that causes losses in financial institutions due to adverse market price movements. There are four types of market risk that are exposed to Islamic financial instruments namely; rate of return (or markup risk), commodity risk, foreign exchange (FX) rate risks and equity price risk (Akkizidis & Khandelwal, 2007, p. 149). The rate of return or markup risks are the risk related to market inflation and interest rates. Though Islamic financial contracts are interest free, practically Islamic banks use market interest rates as a benchmark in pricing their products and services (Zainol & Kassim, 2012). This risk can be mitigated through floated benchmarked rental rate permissible with a floor and a cap (Ayub, 2013, p. 300). Based on the survey, the following table 4 shows the identification and consideration of market risk by the risk management department while developing the new product and service. 44.3% of respondents always consider market risks, 40.5% respondents often consider them, and 15.2% respondents consider it sometimes. Similarly, 53.2% respondents always have a sensitive and responsive risk management system to the adverse price movements in the market, 30.4% often have it and 16.5% have it sometimes. These results are similar with the conclusion of Wahyudi et al. (2015); Zainol and Kassim (2012).

Table 4 - Market Risk Management for New Product Development

	Questions	Responses	Frequency	Valid percent	Cumulative percent
1		Always	35	44.3	44.30
		Often	32	40.5	84.80

	Risk management department identifies and considers Market risk while developing the new product/service.	Sometimes	12	15.2	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	
2	Risk management system of the bank is responsive and sensitive to the adverse price movements in the market.	Always	42	53.2	53.20
		Often	24	30.4	83.50
		Sometimes	13	16.5	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	

Wahyudi et al. (2015, p. 249) elaborate liquidity risk as when a bank urgently needs liquid assets but can only obtain them with difficulty and at an excessive cost, it is experiencing liquidity risk. Akkizidis and Khandelwal (2007, p. 71) explain that the use of various Islamic financial products exposes the bank to credit, operational, and market risks, which in turn lead to liquidity risk at different stages. To reduce liquidity risk, it is essential to monitor and manage the underlying causes stemming from these other risks.

Table 5 presents the liquidity risk management practices adopted by the risk management departments of Islamic banks. The findings indicate that liquidity risk is given considerable attention during the development of new products and services, with 48.1% of respondents reporting that they always identify and consider liquidity risk, 36.7% often consider it, and 13.9% consider it sometimes, while only 1.3% rarely take it into account. The results further reveal that regular examination of assets and liabilities is a common practice among Islamic banks to maintain an appropriate balance between fund mobilization, profitability, and risk exposure. Specifically, 45.6% of respondents stated that they always examine their assets and liabilities, 38.0% do so often, and 15.2% sometimes, whereas only 1.3% rarely undertake such examinations.

Moreover, maintaining sufficient alternatives and an appropriate mix of Shariah-compliant funding sources is recognized as an important mechanism for mitigating liquidity risk. In this regard, 48.1% of respondents reported that they always ensure the availability of such funding alternatives, 38.0% often ensure it, and 11.4% sometimes ensure it, while only 2.5% rarely do so. The rare practice reported by 2.5% of respondents may be attributed to the limited availability of Shariah-compliant liquidity instruments and the underdeveloped Islamic money market infrastructure (Ahmed, 2015). Overall, the findings suggest that Islamic banks place significant emphasis on liquidity risk management through proactive risk assessment, continuous monitoring of assets and liabilities, and the maintenance of diversified Shariah-compliant funding sources. These results are consistent with the findings of Akkizidis and Khandelwal (2007); Shafiq and Nasr (2010); Wahyudi et al. (2015) who also highlighted the standing of effective liquidity risk management practices.

Table ***Error! No text of specified style in document.*** *- Liquidity Risk Management for Islamic Banks*

	Questions	Responses	Frequency	Valid percent	Cumulative percent
1	Risk management department identifies and considers Liquidity risk while developing the new product/service.	Always	38	48.1	48.10
		Often	29	36.7	84.80
		Sometimes	11	13.9	98.70
		Rarely	1	1.3	100.00
		Never	0	0	
		Total	79	100	
2	The bank regularly reviews all its assets and liabilities to maintain a balanced approach between fund collection and deployment, considering yield and risk exposure.	Always	36	45.6	45.60
		Often	30	38	83.50
		Sometimes	12	15.2	98.70
		Rarely	1	1.3	100.00
		Never	0	0	
		Total	79	100	
3	The bank ensures that its liquidity risk aligns with its ability to access adequate Shariah-compliant funds to mitigate risks.	Always	38	48.1	48.10
		Often	30	38	86.10
		Sometimes	9	11.4	97.50
		Rarely	2	2.5	100.00
		Never	0	0	
		Total	79	100	

Operational Risk management as defined by Akkizidis and Khandelwal (2007, p. 182), is the risk of failures in their internal controls involving processes, people and systems including losses due to Shariah non- compliance and fiduciary obligations . Akkizidis and Khandelwal (2007, p. 194) further indicate that people, policies/transactions and internal and external events are the main operational risks. Risk of loss by people may be intentional (frauds or misdeeds) and unintentional (errors). For example, in case of service Ijarah, incompetent and inexperienced employees may not be aware of student assessment procedures and credit approval processes. Risk of people can be mitigated through selection of trained or experienced employees, segregation of duties, internal supervision, and training of employees. Moreover, risk of loss by processes/transactions involves failure in collateral management, incomplete documentation and inaccurate valuations, markup or rentals. External events include credit fraud by students by providing fake job letters or business information. This risk can be mitigated by planning of scenario based collateral evaluation procedures, checklist of documents of all parties, and strict adherence of strategies and policies for profitability of the contract. Banks should also define internal control procedures that are aligned with Shariah principles. According to Wahyudi et al. (2015, p. 149), Shariah non-compliance risk can be mitigated when all the transactions and product/services are fully in compliance with Shariah principles. Fikri et al. (2018) recommend imposing administrative penalties to employees for non-compliance of policies and procedures of the banks.

Table 6 shows the responses of the Islamic bankers about the operational risk management in their banks. The risk management department of the 44.3% respondents always identifies and consider operational risk while developing a new product/service, 41.8% often consider it and 10.1% consider it sometimes. In contrast, 2.5% rarely consider it and 1.3% never consider it. The 2.5% who rarely and 1.3% who never consider operational risk during new product/service development may reflect weak risk management frameworks, inadequate risk awareness, insufficient staff expertise, or limited integration of operational risk management into the product development process (Abu Hussain & Al-Ajmi, 2012; Banking Supervision, 2011). For operation risk analysis, an effective identification and evaluation system is must. This system identifies the losses that occur due to failures in internal controls involving processes, people, policies, technologies and systems. Survey shows that 39.2% of banks always have such effective identification and evaluation system, 45.6% banks have it often and 13.9% have it sometimes, whereas only 1.3% of respondents never have it. Hence, most of the Islamic banks in Pakistan identify and consider operational risk while developing the new product and have efficient internal controls for processes, people, policies, technologies and systems. These results are similar with the findings of (Akkizidis & Khandelwal, 2007; Fikri et al., 2018; Qudzianna, 2019; Shafique et al., 2013).

Table 6 - Operational Risk for New Product Development

	Questions	Responses	Frequency	Valid percent	Cumulative percent
1	Risk management department identifies and considers operational risk while developing the new product/service.	Always	35	44.3	44.30
		Often	33	41.8	86.10
		Sometimes	8	10.1	96.20
		Rarely	2	2.5	98.70
		Never	1	1.3	100.00

		Total	79	100	
2	Your bank has an effective identification and evaluation system of operational risks analysis; that is, the identification of losses occurs inefficient internal controls encompassing processes, people, policies, technologies and systems.	Always	31	39.2	39.20
		Often	36	45.6	84.80
		Sometimes	11	13.9	98.70
		Rarely	0	0	100.00
		Never	1	1.3	
		Total	79	100	

State Bank of Pakistan (2008) has provided guidelines to various approaches and procedures to manage all six categories of risk including credit risk, market risk, liquidity risk, equity investment risk, rate of return risk and operational risk exclusively for IBIs. However, Shah (2011) argues that there is a lack of adequate technical and human resources for the risk management under Basel Accord. Based on the survey, the following table 7 depicts the implementation of Basel guidelines by the Islamic banks of Pakistan. 38 percent of banks always have inclination towards implementation of advanced approaches of the Basel Accord II and III for an adequate risk management system, 45.6 percent often have it, and 16.5 percent have it sometimes. Risk management department of 44.3 percent of banks always adopt Basel accord, 39.2 percent often adopt and 13.9 percent adopt it sometimes, whereas only 2.5 percent rarely adopt it. 45.6 percent of bankers are always using standardized approaches for measuring the credit, market and operational risks, 41.8 percent often use it, and 12.7 percent use it sometimes. 40.5 percent respondents always use standardized risk mitigation techniques as per the Basel accord, 44.3 percent often use it, and 15.2 percent use it sometimes. 43 percent of banks always comply with the disclosure requirements of the Basel accord, 43 percent often comply and 13.9 percent comply with it sometimes. These results are similar with the findings of (Ahmed, 2011; Akkizidis & Khandelwal, 2007; Shah, 2011; State Bank of Pakistan, 2008; Wahyudi et al., 2015).

Table 7 - Basel Accord and Islamic Banking Institutions in Pakistan:

	Questions	Responses	Frequency	Valid percent	Cumulative percent
1	Your bank strongly favors implementing advanced approaches under Basel Accord II & III to ensure a robust risk management system.	Always	30	38	38.00
		Often	36	45.6	83.50
		Sometimes	13	16.5	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	

2	Risk management department of your bank is highly functional in adopting Basel Accord.	Always	35	44.3	44.30
		Often	31	39.2	83.50
		Sometimes	11	13.9	97.50
		Rarely	2	2.5	100.00
		Never	0	0	
		Total	79	100	
3	Your bank is using Standardized approaches for measuring the credit, market and operational risks.	Always	36	45.6	45.60
		Often	33	41.8	87.30
		Sometimes	10	12.7	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	
4	Your bank is using standardized risk mitigation techniques as per the Basel Accord.	Always	32	40.5	40.50
		Often	35	44.3	84.80
		Sometimes	12	15.2	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	
5	Your bank adequately meets the disclosure requirements of the Basel Accord	Always	34	43	43.00
		Often	34	43	86.10
		Sometimes	11	13.9	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	

5. **Conclusion and Policy Implications**

As Islamic banks innovate to meet growing demand, they must ensure strict adherence to Shariah principles to maintain client and stakeholder trust. Effective risk management is essential in this process, involving the identification, assessment, and mitigation of potential risks. This research investigates how Islamic banks in Pakistan manage credit, market, operational, and liquidity risks in developing new Shariah-based financial products. The study aims to provide insights into these risk management practices and their role in the successful introduction of new Shariah-compliant products. A mixed-method approach was utilized for data analysis to accomplish this. Using Nvivo, facts and numbers are carefully studied in the preliminary qualitative stage, detecting the main theme and five sub themes related to risk management while developing new products. The questionnaire was created, and responses were analyzed in the second quantitative phase.

This study provides a comprehensive analysis of the risk management practices used by Islamic banks in Pakistan for developing new Shariah-compliant financial products. It highlights the key risks faced by these banks—credit, market, operational, and liquidity risks—and the strategies employed to mitigate them. The findings reveal that most Islamic banks have proactive risk management systems, well-trained and competent personnel, and dedicated risk management departments involved in all stages of product development. These banks effectively address risks arising from financial problems of individuals, poor economic conditions, adverse price movements, fund shortages, and weak internal controls by strictly adhering to Shariah compliance and utilizing effective mitigation techniques.

This research also offers practical insights into effective risk management practices that can enhance the resilience and sustainability of Islamic banks. The study suggests that a rigorous credit assessment process, along with the imposition of penalties for delayed payments and the inclusion of guarantees and collaterals, can mitigate credit risk. To address market risk, the introduction of benchmark rental rates with defined floors and caps is recommended. Additionally, comprehensive liquidity risk management requires a holistic approach that includes managing other types of risks. Operational risk can be reduced through robust internal controls, employee education on Islamic finance, strict adherence to policy manuals, and thorough documentation and collateral evaluation processes. By implementing these strategies, Islamic banks can better navigate the complexities of developing new Shariah-compliant products, thereby fostering innovation and growth in the Islamic finance sector.

The findings of this research contribute significantly to the existing literature on risk management in Islamic banking. By detailing the specific risks and mitigation techniques involved in the development of new financial products, this study provides a valuable reference for future research in this area. It underscores the need for Islamic banks to continuously refine their risk management strategies to address emerging challenges and ensure compliance with both Shariah principles and regulatory guidelines issued by the State Bank of Pakistan and the Basel Committee on Banking Supervision. Moreover, the insights gained from this research can aid Islamic banks in Pakistan and potentially in other regions, in strengthening their risk management frameworks, ensuring compliance with Shariah principles, and successfully developing innovative financial products that meet the evolving needs of their clients.

6. Limitations and Future Research Directions

This study has few limitations. First, the research is confined to Islamic banks operating in Pakistan; therefore, the findings may not be fully generalizable to Islamic banking institutions in other countries with different regulatory and institutional environments. Second, the study relies on questionnaire-based responses from banking professionals, which may be subject to respondent bias and personal perceptions. Third, the qualitative phase was based on thematic coding of existing literature rather than primary qualitative data collected through interviews or focus groups. Finally, the study primarily employs descriptive analysis and focuses on identifying prevailing risk management practices rather than examining causal relationships among variables.

Future research may extend this study by conducting cross-country comparisons of risk management practices in Islamic banks operating under different regulatory frameworks. Researchers may also collect primary qualitative data through interviews with risk managers, Shariah scholars, and product development specialists to gain deeper insights into the challenges associated with developing Shariah-compliant financial products. Furthermore, future studies may employ advanced statistical techniques, such as structural equation modeling (SEM), regression analysis, or factor analysis, to examine the impact of specific risk management practices on product development success, innovation, and organizational performance. Longitudinal studies may also be undertaken to assess how risk management practices evolve over time in response to regulatory changes, technological advancements, and emerging risks in the Islamic banking industry.

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Mizan: A Primary-Source Diagnostic Framework for Evaluating Islamic Financial Instruments Against Classical Ribawi Characteristics

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ABSTRACT:

Purpose: This paper introduces Mizan, an open-access digital diagnostic tool that evaluates Islamic financial instruments against classical jurisprudential criteria derived exclusively from primary sources (Quran, Hadith, and classical scholarly texts). The tool addresses a critical gap in Islamic finance: the absence of a standardised, transparent, source-traceable methodology for assessing Shariah compliance at the structural level rather than the transactional level. **Design/Methodology:** Adopting a Design Science Research (DSR) paradigm, the diagnostic framework is constructed through a three-stage process: (1) linguistic and juridical analysis of the Arabic roots of Riba, Qard, Dayn, and Bay'; (2) derivation of seven measurable characteristics of ribawi commodities from the Hadith of Riba al-Fadl, grounded in classical scholarly evidence; and (3) implementation as an interactive, rule-based diagnostic engine that routes users through structured questions and returns findings with primary-source citations. The tool introduces a dual-track analytical path that explicitly surfaces the unresolved scholarly question of whether fiat currency satisfies classical ribawi criteria. The framework's diagnostic outputs are validated against established Shariah standards, including AAOIFI rulings and Islamic Fiqh Academy resolutions. **Findings**: Systematic application of the seven ribawi characteristics to modern financial mediums reveals that fiat currency does not satisfy any of the seven criteria under this framework, while commodity-based mediums satisfy most. The diagnostic outputs demonstrate substantial concordance with established Shariah rulings on conventional lending, organised Tawarruq, and diminishing Musharakah, while surfacing areas of divergence that warrant further scholarly deliberation. The framework is diagnostic in nature, intended to surface evidence for scholarly engagement rather than to render adjudicative determinations. **Originality**: Mizan is the first diagnostic tool to (a) derive evaluation criteria exclusively from primary sources, (b) implement a measurable ribawi characteristics grid across multiple mediums, (c) incorporate a form-versus-substance "strip test" based on Ibn Qayyim al-Jawziyyah and Ibn Taymiyyah, and (d) present two analytical tracks that make the fiat currency question explicit rather than assumed. **Practical Implications:** The framework offers regulators, practitioners, and researchers a transparent, reproducible diagnostic methodology for Shariah compliance evaluation that complements existing institutional mechanisms, while preserving the primacy of qualified scholarly interpretation.

Keywords: Islamic FinTech, Shariah compliance, Riba, ribawi characteristics, digital diagnostics, fiat currency

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1. Introduction

1.1 The Problem

The contemporary Islamic finance industry, valued at over USD 4 trillion in assets (Islamic Financial Services Board [IFSB], 2024), relies on Shariah compliance mechanisms that operate primarily through institutional opinion. Individual Shariah boards, composed of qualified scholars, review financial products and issue rulings that may vary across jurisdictions, institutions, and time periods (Grais & Pellegrini, 2006). The same product structure may receive differing assessments from different boards. The methodology underlying these rulings is not always published in a form that external researchers or practitioners can independently verify (Garas & Pierce, 2010).

This observation concerns the structure of the compliance ecosystem rather than the competence of the scholars involved. When the analytical methodology is not transparent, the industry's credibility rests on the authority of individuals rather than the reproducibility of the process. This creates three challenges. First, practitioners cannot independently verify whether a product satisfies the primary-source criteria for permissibility (Kamali, 2000). Second, researchers cannot reproduce the analysis or test it against alternative products (Laldin & Furqani, 2013). Third, the open questions within Islamic jurisprudence, particularly regarding modern financial mediums, are not always surfaced explicitly, and may instead be resolved through institutional consensus without transparent engagement with the primary-source evidence (Chapra, 1985).

1.2 The Gap in Islamic FinTech

The growth of Islamic FinTech has been substantial. Digital Islamic banking platforms, blockchain-based Sukuk issuance, Islamic robo-advisory services, and peer-to-peer lending platforms compliant with Shariah principles have emerged across multiple jurisdictions (Biancone et al., 2020; Alam et al., 2022). However, a review of the existing landscape reveals a consistent pattern: FinTech innovation in Islamic finance has focused on digitising financial products rather than digitising the analytical methodology that determines whether those products are permissible (Todorof, 2018).

Existing digital tools for Islamic finance include halal stock screeners (which apply financial ratio thresholds such as debt-to-equity limits), Zakat calculators, and product comparison platforms (Obaidullah, 2005). These tools address important needs, but they do not engage with the foundational jurisprudential question: does a given financial arrangement, stripped to its economic substance, contain Riba?

No existing tool derives its evaluation criteria exclusively from primary sources, makes the derivation chain visible to the user, or explicitly addresses the unresolved question of whether modern fiat currency satisfies the classical ribawi criteria that define which items are subject to the prohibition of Riba (Siddiqi, 2004).

1.3 Research Objective

This paper presents Mizan, an open-access, browser-based diagnostic tool that shifts Shariah compliance evaluation from an opinion-dependent process to an evidence-traceable one. The specific objectives are threefold: to demonstrate how primary-source derivation of evaluation criteria can be operationalised into a digital diagnostic; to present the ribawi characteristics grid as a measurable, reproducible evaluation methodology applicable across financial mediums; and to evaluate the framework's diagnostic output against both representative financial instruments and established Shariah standards.

1.4 Contribution

This paper contributes to the Islamic FinTech literature in four ways. First, it presents the first open-access diagnostic tool whose evaluation criteria are derived exclusively from primary sources (Quran, Hadith, and classical scholarly texts), with every finding linked to a specific citation. Second, it introduces a measurable ribawi characteristics grid that evaluates financial mediums against seven criteria derived from the Hadith of Riba al-Fadl. Third, it operationalises the form-versus-substance analysis of Ibn Qayyim al-Jawziyyah and Ibn Taymiyyah as a structured diagnostic question (the "strip test"). Fourth, it introduces a dual-track analytical framework that makes the fiat currency question explicit, allowing users to evaluate financial instruments under both the mainstream scholarly position and the primary-source analytical framework without imposing either position.

2. Literature Review

2.1 Shariah Compliance Screening: Current Approaches

Contemporary Shariah screening operates primarily through two mechanisms: qualitative Shariah board review and quantitative financial ratio screening. The qualitative process involves scholars examining the structure of a financial product against established fiqhi principles and issuing a ruling (Al-Zuhayli, 2003). The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) has published Shariah standards covering over 60 product categories, providing a significant degree of standardisation (AAOIFI, 2023). The Islamic Financial Services Board (IFSB) has similarly issued guiding principles for Shariah governance systems. These institutional frameworks represent the most comprehensive standardisation efforts in the field and serve as the primary reference for practitioners globally.

Quantitative screening, used primarily for equity investments, applies financial ratio thresholds to determine permissibility. The Dow Jones Islamic Market Index, the S&P Shariah Index, and the MSCI Islamic Index each apply variations of debt-to-equity ratios, interest income thresholds, and sector exclusions (Derigs & Marzban, 2008). These thresholds vary across providers: the maximum permissible debt-to-equity ratio ranges from 30% to 33% depending on the screening methodology, and the maximum interest income threshold ranges from 5% to 10% (Hassan et al., 2019). Khatkhatay and Nisar (2007) demonstrated that variations in screening criteria produce materially different compliance outcomes for the same equity universe, illustrating the challenge of achieving consistency without transparent criteria.

Both approaches share a structural limitation: they address the transactional surface of financial arrangements without engaging with the question of whether the monetary medium itself satisfies the criteria that trigger ribawi rules. A conventional mortgage and a Murabahah home financing arrangement may receive different Shariah classifications, despite both being denominated in the same currency. The screening methodology evaluates the product structure; it does not evaluate the system in which the product operates.

2.2 Islamic FinTech: State of the Field

The Islamic FinTech sector has grown rapidly. Biancone et al. (2020) documented the emergence of over 100 Islamic FinTech firms globally, concentrated in Malaysia, Indonesia, Bahrain, and the United Arab Emirates. Key innovation areas include digital banking (with fully Shariah-compliant neobanks), blockchain-based Sukuk (Noman, 2025), peer-to-peer crowdfunding platforms structured as Musharakah, and robo-advisory services that apply Shariah screens to portfolio construction (Todorof, 2018).

Alam et al. (2022) noted that while these innovations expand access to Islamic financial services, they largely replicate conventional FinTech models with Shariah-compliant wrappers. The underlying analytical methodology remains unchanged: products are designed, then submitted for Shariah review. FinTech has accelerated the delivery of Islamic financial products but has not digitised the jurisprudential reasoning that determines their permissibility. Ayub (2007) similarly observed that the compliance process itself has not benefited from the technological advances that have transformed product delivery.

This paper proposes that the next frontier for Islamic FinTech lies in methodology innovation: making the analytical framework itself transparent, reproducible, and digitally accessible.

2.3 The Ribawi Classification Question

The identification and classification of ribawi items is one of the foundational questions of Islamic commercial jurisprudence. The primary source for this classification is the Hadith of Riba al-Fadl, narrated through multiple chains of transmission. Table A presents the principal Hadith references that establish the ribawi framework, together with the classical scholarly positions on the effective cause ('illah) that makes these items subject to ribawi restrictions.

Table A: *Principal Hadith References on Ribawi Items and Classical Scholarly Positions on the Effective Cause ('Illah)*

#	Hadith Reference	Source	Key Content	Relevance to Ribawi Framework
1	Hadith of Riba al-Fadl	Sahih Muslim 1587; Sahih al-Bukhari 2177	"Gold for gold, silver for silver, wheat for wheat, barley for barley, dates for dates, salt for salt, like for like, equal for equal, hand to hand. If the types differ, then sell as you wish, provided it is hand to hand."	Establishes the six ribawi items and the conditions for lawful exchange: equality in same-type and immediacy in cross-type transactions.
2	Curse on All Parties to Riba	Sahih Muslim 1598	The Prophet (peace be upon him) cursed the one who consumes Riba, the one who pays it, the one who records it, and the two witnesses to the transaction.	Extends culpability to all participants, indicating Riba is a systemic concern, not limited to the lender alone.
3	Farewell Sermon on Riba	Sahih Muslim 1218	The Prophet (peace be upon him) abolished all pre-Islamic Riba, beginning with his own uncle Abbas ibn Abd al-Muttalib's outstanding claims.	Demonstrates the finality and comprehensiveness of the prohibition, applied retroactively to outstanding obligations.
4	Hadith of Bilal (dates exchange)	Sahih al-Bukhari 2312; Sahih Muslim 1594	Bilal brought high-quality dates; the Prophet asked where they came from. Bilal said he exchanged two measures of lower quality for one of higher quality. The Prophet said: "This is the very essence of Riba."	Clarifies that Riba al-Fadl applies to commodities, not only monetary exchange, and that unequal same-type exchange is prohibited regardless of quality difference.

#	Hadith Reference	Source	Key Content	Relevance to Ribawi Framework
5	Hadith on Riba al-Nasi'ah	Sahih Muslim 1596	"There is no Riba except in Nasi'ah (deferment)." Interpreted by scholars as emphasising the severity of time-based Riba, not excluding Riba al-Fadl.	Establishes the temporal dimension of Riba: deferment in ribawi exchanges constitutes a distinct form of prohibition.
6	Hadith of the Necklace (Fadalah ibn Ubayd)	Sahih Muslim 1591	At Khaybar, a necklace containing gold and gemstones was offered for sale. The Prophet (peace be upon him) instructed that the gold be separated from the other materials and that gold be exchanged for gold only in equal weight, hand to hand.	Reinforces that monetary metals must be exchanged equal-for-equal by weight, and that items of mixed composition must be separated before exchange to prevent concealed inequality.

Table B: *Classical Scholarly Positions on the Effective Cause ('Illah) of Ribawi Classification*

School of Jurisprudence	'Illah for Monetary Items (Gold/Silver)	'Illah for Foodstuffs (Wheat, Barley, Dates, Salt)	Key Scholars	Implications for Modern Currency
Hanafi	Weight (wazn) combined with same genus (jins)	Volume (kayl) or weight (wazn) combined with same genus	Al-Sarakhsi (Al-Mabsut); Al-Kasani (Bada'i al-Sana'i)	Fiat currency, having no weight as a commodity, does not directly satisfy this criterion; treated as ribawi by analogy to thamaniyyah.

School of Jurisprudence	'Illah for Monetary Items (Gold/Silver)	'Illah for Foodstuffs (Wheat, Barley, Dates, Salt)	Key Scholars	Implications for Modern Currency
Shafi'i	Being a currency or medium of exchange (thamaniyyah)	Being a foodstuff (ta'am)	Al-Nawawi (Al-Majmu'); Al-Shirazi (Al-Muhadhdhab)	Fiat currency satisfies thamaniyyah by function; therefore subject to ribawi rules.
Maliki	Being a currency or medium of exchange (thamaniyyah)	Being a foodstuff that is storable (ta'am muddakhar)	Ibn Rushd (Bidayat al-Mujtahid); Al-Dardir (Al-Sharh al-Kabir)	Similar to Shafi'i position; fiat treated as ribawi through functional thamaniyyah.
Hanbali	Being a medium of exchange (thamaniyyah) or measured by weight	Being a foodstuff measured by volume or weight	Ibn Qudamah (Al-Mughni); Ibn Taymiyyah (Majmu' al-Fatawa)	Ibn Taymiyyah emphasised substance over form; his framework supports evaluating whether the medium genuinely possesses the characteristics of ribawi items.

The critical question for contemporary Islamic finance is whether fiat currency, which has replaced gold and silver as the dominant medium of exchange, satisfies these classical criteria. The majority scholarly position, articulated by Justice Muhammad Taqi Usmani and endorsed by the Islamic Fiqh Academy, holds that fiat currency possesses thamaniyyah (monetary nature) and is therefore subject to ribawi rules (Usmani, 2002). This position rests on the principle that the 'illah of thamaniyyah is not restricted to gold and silver but extends to any medium that functions as currency in practice. This is the dominant view across all four schools of jurisprudence in contemporary application.

A minority position, developed in the author's prior research (Abdul Majeed, 2026a), observes that fiat currency does not satisfy the seven shared characteristics of the six ribawi items when evaluated against the primary-source evidence. This paper does not advocate for either position. It presents a diagnostic framework that makes both positions operational and allows users to evaluate financial instruments under either analytical track. The framework's outputs are intended as starting points for scholarly deliberation rather than determinative rulings.

2.4 Form Versus Substance in Classical Jurisprudence

The question of when a formally permissible structure conceals a prohibited economic substance has occupied Islamic jurists since the earliest centuries. Ibn Qayyim al-Jawziyyah devoted substantial portions of I'lam al-Muwaqqi'in to identifying and dismantling legal stratagems (Hiyal) that give ribawi transactions the appearance of legitimate trade. His teacher, Ibn Taymiyyah, stated in Majmu' al-Fatawa that one who uses a Hilah to consume Riba under the cover of a sale commits a greater sin than one who consumes it openly, because the stratagem adds mockery of the law to the original transgression.

Al-Shatibi's Al-Muwafaqat further developed the principle that legal rulings must be evaluated by their outcomes and purposes (Maqasid), not merely by their formal compliance with contractual prerequisites (Al-Shatibi, n.d.). This Maqasid-oriented approach provides additional support for substance-over-form analysis in evaluating financial instruments.

This principle has direct relevance to contemporary Islamic finance. Organised Tawarruq, for instance, was declared impermissible by the Islamic Fiqh Academy (Resolution 179, 19th Session, 2009), precisely on the grounds that the commodity transaction serves no genuine commercial purpose and functions as a device for generating a cash loan with a fixed return. AAOIFI Shariah Standard No. 30 on Monetisation (Tawarruq) similarly restricts the practice, requiring genuine ownership transfer and real commodity risk (AAOIFI, 2023).

Despite the classical foundation for form-versus-substance analysis, no existing digital tool operationalises this principle as a structured diagnostic question. Mizan's "strip test," described in Section 3.4.3, addresses this gap.

2.5 Primary-Source Methodology in Islamic Finance Research

The approach of deriving analytical criteria directly from primary sources has precedent in classical usul al-fiqh (principles of jurisprudence). Al-Shafi'i's Al-Risalah established the hierarchy of evidential sources: the Quran, the Sunnah, Ijma' (scholarly consensus), and Qiyas (analogical reasoning) (Al-Shafi'i, n.d.). Within this hierarchy, the Quran and Sunnah occupy the primary position, with later scholarly methods serving as tools for extending primary-source principles to new situations (Kamali, 2003).

Contemporary Islamic finance scholarship has increasingly called for returning to primary-source analysis as a corrective to what some researchers describe as an over-reliance on inherited institutional positions (Chapra, 1985; Siddiqi, 2004). Al-Suwailem (2006) argued that financial innovation in Islamic finance must be grounded in a thorough understanding of the primary-source prohibitions rather than in formal compliance with contractual structures. Ayub (2007) similarly emphasised that the sustainability of Islamic financial institutions depends on the authenticity of their jurisprudential foundations.

The linguistic-juridical methodology employed in this study, proceeding from Arabic root analysis through Quranic and Hadith examination to the derivation of measurable criteria, follows the classical pattern of istiqra' (comprehensive induction) described by Al-Shatibi in Al-Muwafaqat: examining all instances of a principle across the primary sources to derive general rules that can be applied to new cases.

No existing study has operationalised this methodology as a digital diagnostic tool. The Mizan framework represents an attempt to bridge the gap between classical primary-source methodology and contemporary technological capability.

3. Methodology

3.0 Research Paradigm: Design Science Research

This study adopts the Design Science Research (DSR) paradigm (Hevner et al., 2004; Peffers et al., 2007). DSR is an established methodology in information systems and FinTech research that centres on the creation and evaluation of novel artefacts designed to address identified problems. Unlike empirical research, which observes and measures existing phenomena, DSR contributes knowledge through the act of building: the artefact itself, its design principles, and the evaluation of its utility constitute the research output.

The DSR framework is appropriate for this study for three reasons. First, the research objective is to produce a functional diagnostic tool (an artefact), not to test a hypothesis against observational data. Second, the evaluation of the artefact is demonstrated through application to representative cases and through concordance analysis against established Shariah standards, consistent with DSR evaluation methods as described by Venable et al. (2016). Third, the design knowledge produced, specifically the ribawi characteristics grid, the strip test, and the dual-track framework, is generalisable beyond the specific tool and can inform future diagnostic instruments in Islamic finance.

The three stages described below correspond to the DSR process model: problem identification (the absence of a transparent, source-traceable compliance methodology), artefact design (derivation of criteria and diagnostic architecture), and demonstration (application to representative financial products and comparison with established standards in Section 4).

3.1 Analytical Framework Overview

The research process follows a structured three-stage derivation that moves from primary-source analysis to measurable criteria to digital implementation. The stages are as follows:

Stage 1: Primary-Source Derivation. Linguistic and juridical analysis of the Arabic roots of Riba, Qard, Dayn, Bay, Gharar and Maysir', systematic examination of Quranic Ayahs and Hadith references, and review of classical scholarly positions. This stage produces the evidential foundation from which evaluation criteria are drawn.

Stage 2: Characteristic Extraction. Identification of seven shared characteristics of the six ribawi items named in the Hadith of Riba al-Fadl, validated against classical scholarly discussions of the 'illah (effective cause) of ribawi classification. This stage produces the measurable evaluation grid.

Stage 3: Diagnostic Implementation. Translation of the derived criteria into a structured, rule-based diagnostic engine with six entry categories, a dual-track analytical framework, a form-versus-substance "strip test," and 15 finding categories, each linked to specific primary-source citations.

Evaluation. The diagnostic outputs are evaluated through two methods: (a) demonstration through application to five representative financial products, and (b) concordance analysis comparing the framework's findings against published AAOIFI Shariah Standards and Islamic Fiqh Academy resolutions.

This structured process ensures that every diagnostic output can be traced from the tool's finding, through the evaluation criterion, back to a specific primary-source reference. The analytical framework is represented schematically in Figure 1.

Figure 1

The Mizan analytical framework: from primary sources to diagnostic output

```
Primary Sources (Quran, Hadith, Classical Texts)
     |
     v
Stage 1: Linguistic & Juridical Analysis
     |
     v
Stage 2: Seven Ribawi Characteristics (Table 1)
     |
     v
Stage 3: Diagnostic Engine
  |      |       |
  v      v       v
Dual-Track  Strip    15 Finding
Framework   Test     Categories
  |      |       |
  v      v       v
Diagnostic Output (with source citations)
     |
     v
Evaluation: Demonstration + Concordance Analysis
```

3.2 Stage 1: Linguistic and Juridical Derivation

The foundation of the framework is a 119-page linguistic and juridical investigation into the prohibition of Riba, the nature of Qard, Dayn, Bay, Gharar and Maysir', and the characteristics that define ribawi commodities (Abdul Majeed, 2026a). The methodology of that investigation proceeds as follows.

Root analysis. The study begins from the three-letter Arabic roots of the four foundational terms. Riba derives from R-B-W / R-B-Y, meaning to grow, to increase, to rise above, to swell, to exceed the original level. Every Quranic occurrence of this root is catalogued and analysed in its linguistic context. Qard derives from Q-R-D, meaning to cut: a piece cut from one's wealth and given freely, with only the exact equivalent (mithl) returning. Dayn, sharing its root with Din (faith, accountability) and Dayyan (the Judge), refers to the outstanding obligation, fixed at the point it arises. Bay' refers to bilateral exchange, requiring genuine prior ownership, genuine risk, and genuine counter-value on both sides.

Quranic progression. The study traces four progressive stages of Quranic prohibition, from moral discouragement in the Meccan period (Surah Al-Rum 30:39) through conditional prohibition (Surah Al-Imran 3:130) to absolute prohibition with a declaration of war from Allah and His Messenger against those who persist (Surah Al-Baqarah 2:275-279). This progressive revelation is consistent with the Quranic methodology of gradual legislation (tadarruj) observed by Al-Qurtubi in Al-Jami' li-Ahkam al-Qur'an.

Hadith analysis. Six key Hadith references are examined, centred on the Hadith of Riba al-Fadl (Sahih Muslim 1587), the Curse on All Parties to a Riba transaction (Sahih Muslim 1598), and the Farewell Sermon in which the Prophet (peace be upon him) abolished all pre-Islamic Riba, beginning with his own uncle's debts (Sahih Muslim 1218). The full Hadith references and their relevance to the diagnostic framework are detailed in Table A (Section 2.3).

Classical scholarly analysis. The form-versus-substance framework draws on Ibn Qayyim al-Jawziyyah's I'lam al-Muwaqqi'in and Ibn Taymiyyah's Majmu' al-Fatawa. Al-Ghazali's analysis of the function of money (thaman) in Ihya' 'Ulum al-Din informs the distinction between currency-level and transaction-level analysis. The scholarly positions on the effective cause of ribawi classification (Table B, Section 2.3) inform the selection of characteristics in Stage 2.

3.3 Stage 2: Derivation of Seven Ribawi Characteristics

From the primary-source analysis, seven shared characteristics of the six ribawi items (gold, silver, wheat, barley, dates, and salt) are identified. These characteristics represent what these items have in common that triggers the application of ribawi rules.

Table 1: *Seven Ribawi Characteristics Derived from the Hadith of Riba al-Fadl*

#	Characteristic	Arabic Term	Definition	Measurable Criterion
1	Fungibility	Mithiliyyah	Units are interchangeable without quality variation over time	Can one unit be exchanged for another of identical value at any future point?
2	Intrinsic Value	Qimah Dhatiyyah	Value exists independent of monetary designation	Does the item have utility or value if its monetary or legal status is removed?
3	Durability of Value	Baqa'	Value persists over time without systematic erosion	Does purchasing power remain stable over multi-year periods without policy intervention?
4	Universal Acceptance	Rawaj	Accepted broadly through demonstrated utility, not coercion	Is acceptance voluntary and based on perceived intrinsic value rather than legal mandate?
5	Knowable Quality	Sifah Ma'lumah	Quality and value can be assessed at time of transaction	Can both parties determine real (not merely nominal) value at the point of exchange?
6	Measurability	Kayl / Wazn	Precisely quantifiable in standardised units	Can the item be divided and measured with precision in units that retain stable meaning?

#	Characteristic	Arabic Term	Definition	Measurable Criterion
7	Essential Utility	Hajah 'Ammah	Serves a fundamental economic or human need	Does the item fulfil a need beyond the monetary system itself?

Scholarly grounding for the selection of characteristics. Each characteristic is grounded in classical scholarly discussions of the ribawi items and the conditions of valid exchange:

1. **Fungibility (Mithiliyyah).** Al-Sarakhsi in Al-Mabsut defines mithliyyat (fungible goods) as items where individual units are equivalent and interchangeable. Ibn Qudamah in Al-Mughni discusses the requirement of equality (tamathul) in same-type ribawi exchange, which presupposes that the items are genuinely fungible across time.

2. **Intrinsic Value (Qimah Dhatiyyah).** Al-Ghazali in Ihya' 'Ulum al-Din distinguished between items that are "desired for themselves" (maqsud li-dhatihi) and items that serve merely as a measure (mi'yar) for other things. The six ribawi items all possess value independent of any monetary designation: gold and silver have ornamental and industrial utility; wheat, barley, dates, and salt have nutritional and preservative value.

3. **Durability of Value (Baqa').** The classical jurists noted that the ribawi items are characterised by their ability to be stored without deterioration. Al-Kasani in Bada'i al-Sana'i discussed the storability of ribawi items as relevant to their function in deferred exchanges. The requirement that ribawi items retain their value over time is implicit in the conditions of same-type exchange.

4. **Universal Acceptance (Rawaj).** Al-Ghazali discussed rawaj as a quality of sound money: acceptance that arises from demonstrated utility rather than external compulsion. Ibn Khaldun in Al-Muqaddimah similarly identified voluntary acceptance as a characteristic of genuine monetary metals (Ibn Khaldun, n.d.)

5. **Knowable Quality (Sifah Ma'lumah).** The prohibition of Gharar (excessive uncertainty) in Islamic commercial law requires that the subject matter of an exchange be known to both parties at the time of transaction (Kamali, 2000). All six ribawi items possess qualities that can be assessed through weight, volume, or sensory evaluation at the point of exchange.

6. **Measurability (Kayl / Wazn).** The Hanafi 'illah for ribawi classification centres on items being measurable by weight or volume. Al-Sarakhsi in Al-Mabsut and Al-Kasani in Bada'i al-Sana'i both identify measurability as a defining characteristic that distinguishes ribawi from non-ribawi items.

7. **Essential Utility (Hajah 'Ammah).** The concept of hajah (need) in Islamic jurisprudence relates to items that serve fundamental human requirements. Al-Shatibi in Al-Muwafaqat classified needs into necessities (daruriyyat), needs (hajiyyat), and enhancements (tahsiniyyat). The six ribawi items all serve needs at the first or second level: sustenance (wheat, barley, dates), preservation (salt), and medium of exchange and store of value (gold, silver).

The derivation rationale for each characteristic thus traces both to the six ribawi items themselves and to the classical scholarly literature on the conditions and causes of ribawi classification. The framework does not claim that these seven characteristics are the only possible derivation; it claims that they are traceable to primary sources and classical scholarly discussions, and that they provide a measurable, reproducible basis for evaluation.

3.4 Stage 3: Diagnostic Engine Architecture

The diagnostic engine translates the primary-source framework into a structured, interactive evaluation tool.

3.4.1 Six Entry Categories

Financial arrangements are classified into six broad categories: (1) Finance and lending, covering mortgages, home finance, personal finance, business loans, and Islamic financial institution products; (2) Investment, covering stocks, Sukuk, funds, partnerships, cryptocurrency, and property; (3) Trade and exchange, covering goods trade, credit sales, Murabahah, Salam, and commodities; (4) Personal loans and gifts, covering Qard Hasan, joint ventures, and charitable giving; (5) Currency and money exchange, covering Forex, money changers, remittance, and stablecoins; and (6) Crypto and digital assets, covering Bitcoin, altcoins, DeFi protocols, NFTs, and tokenised real-world assets.

Each category contains sub-types with tailored question sets that address the specific structural risks of that arrangement type.

3.4.2 The Dual-Track Framework

The tool introduces a methodological feature designed to make the user's analytical framework explicit: three entry points corresponding to different positions on the monetary medium.

The first entry point, "Classical monetary medium," applies the full ribawi conditions without qualification. This applies to gold, silver, and genuine ribawi commodities.

The second entry point, "Fiat, treated as classical money," represents the mainstream scholarly position. Under this framework, fiat currency carries thamaniyyah (monetary nature), and therefore the same ribawi rules apply. This routes to the classical analytical track.

The third entry point, "Fiat, research framework," applies the findings of the ribawi characteristics analysis. Under this framework, fiat currency does not satisfy the seven ribawi characteristics, and what is conventionally called "interest" on fiat transactions is analysed separately from Riba in the Quranic sense. Critically, personal loans between individuals are still held to the full classical Qard Hasan standard even on this track, because the Qard relationship is one of brotherhood and mutual support, not institutional capital deployment.

The user selects their analytical framework explicitly. The tool does not impose a position. Both tracks lead to the same structural analysis of the arrangement. Neither permits exploitation.

3.4.3 The Strip Test

The central diagnostic question in the framework is drawn directly from the form-versus-substance analysis of Ibn Qayyim and Ibn Taymiyyah: if you remove the asset, the commodity, or the trade steps from this arrangement, what remains?

If what remains is money in, more money out, by prior agreement, the arrangement contains Riba. The asset, commodity, or formal trade steps functioned as a Hilah (legal device). This single question, applied consistently, identifies the structural pattern that distinguishes genuine Bay' from disguised lending.

3.4.4 Finding Categories

The diagnostic engine evaluates 15 specific patterns; each linked to primary-source citations:

1. Core Riba (stipulated excess above the principal)
2. Fixed and predetermined returns (not from genuine trade)
3. Absent genuine ownership (violation of Bay' conditions)
4. Nominal ownership (title without risk exposure)
5. Absent genuine risk (violation of al-kharaj bil-daman)
6. Growing Dayn (Riba al-Nasi'ah)

7. Hilah/subterfuge (strip test failure)
8. Organised Tawarruq (Islamic Fiqh Academy Resolution 179)
9. Prohibited underlying activity
10. Leverage (combined Riba, Gharar, and Maysir)
11. Speculative activity (Maysir concern)
12. Excessive uncertainty (Gharar)
13. Guaranteed returns (confirming loan, not investment)
14. Inescapable Dayn (Maqasid concern, Hifz al-Mal)
15. Riba al-Fadl (unequal same-type exchange)

Each finding includes a severity classification (fatal, warning, pass, or informational), a detailed explanation of the principle violated, and specific source citations.

3.4.5 Diagnostic Logic Overview

The diagnostic engine operates through a structured decision process. Upon selecting a financial arrangement category and monetary framework, the user is guided through a series of questions that map to the 15 finding categories above. The decision logic follows a three-layer evaluation:

Layer 1: Structural identification. The engine identifies the structural type of the arrangement (lending, equity participation, trade, exchange, or hybrid) and determines which finding categories are applicable.

Layer 2: Condition testing. For each applicable finding category, the engine evaluates whether the arrangement satisfies or violates the relevant conditions. For example, a lending arrangement is tested for the presence of stipulated excess (Finding 1), growing debt (Finding 6), and the strip test (Finding 7). An investment arrangement is tested for genuine ownership (Finding 3), genuine risk (Finding 5), and guaranteed returns (Finding 13).

Layer 3: Source-linked output. Each finding that is triggered produces an output that includes severity classification, a narrative explanation, and the specific primary-source citation chain. The output is deterministic: identical inputs always produce identical findings.

The complete decision rules and their source mappings are implemented in the diagnostic engine's codebase. The logic is rule-based rather than probabilistic, ensuring transparency and reproducibility. A full specification of the rules is beyond the scope of this paper, as it constitutes the technical implementation of the diagnostic tool rather than its scholarly methodology. However, the principles governing each finding category are fully described in Sections 3.4.3 and 3.4.4, and the primary-source citations are available through the tool itself.

3.4.6 Source Tracing

Every diagnostic finding is linked to its evidential chain. A finding identifying core Riba, for instance, cites Surah Al-Baqarah 2:275-279, the root analysis of R-B-W, the commentary of Ibn Abbas, Al-Tabari's Jami' al-Bayan, and Al-Qurtubi's Al-Jami' li-Ahkam al-Qur'an. No finding is presented without primary-source grounding.

3.4.7 Implementation

Mizan is implemented as a browser-based, open-access tool. It requires no registration, collects no user data, and operates entirely client-side. The diagnostic engine is rule-based (not machine learning), ensuring deterministic, reproducible outputs: the same inputs always produce the same findings. The tool is freely available at https://azim.cc/tools/mizan.

4. Findings

4.1 Ribawi Characteristics Grid: Cross-Medium Evaluation

The seven ribawi characteristics were applied systematically to five financial mediums: fiat currency, gold/silver, Bitcoin, physical commodities, and GX Coin Protocol (a fixed-supply, productivity-referenced digital currency protocol with no debt-based issuance, designed as a not-for-profit public utility). The results are summarised in Table 2.

Table 2: *Ribawi Characteristics Evaluation Across Financial Mediums*

Characteristic	Fiat Currency	Gold/Silver	Bitcoin	Physical Commodity	GX Coin Protocol
Mithiliyyah (Fungibility)	Does not satisfy equivalence decays through inflation; 100 units today are not equal to 100 units in one year	Satisfies	Satisfies	Satisfies (standardised grades)	Satisfies: each unit is equivalent; fixed supply prevents debasement
Qimah Dhatiyyah (Intrinsic Value)	Does not satisfy: no utility outside the monetary system; value exists only by institutional declaration	Satisfies (ornamental, industrial)	Uncertain: no material utility independent of network	Satisfies	Satisfies: value derived from productive economic activity within the ecosystem
Baqa' (Durability of Value)	Does not satisfy purchasing power erodes through inflation by design; the US dollar has lost approximately 96% of its purchasing power since 1913	Satisfies	Satisfies (fixed supply) but volatile in fiat-denominated terms	Satisfies (durable commodities)	Satisfies: immutable supply cap prevents monetary debasement
Rawaj (Universal Acceptance)	Does not satisfy under this criterion: acceptance is mandated through legal tender laws rather	Satisfies (historical)	Partial: growing but not universally used in daily commerce	Satisfies (global commodities)	Partial: currently limited to ecosystem participants; acceptance growing

Characteristic	Fiat Currency	Gold/Silver	Bitcoin	Physical Commodity	GX Coin Protocol
	than arising from demonstrated utility				through demonstrated utility
Sifah Ma'lumah (Knowable Quality)	Does not satisfy: future purchasing power is unknowable and dependent on policy decisions	Satisfies	Satisfies (code is transparent and auditable)	Satisfies (standardised grades)	Satisfies: all protocol parameters are transparent and algorithmically defined
Kayl / Wazn (Measurability)	Partial: nominal denomination only; real value shifts continuously	Satisfies	Satisfies (divisible to 8 decimal places)	Satisfies	Satisfies: precisely divisible in digital units
Hajah 'Ammah (Essential Utility)	Does not satisfy: no utility outside the monetary system	Satisfies	Uncertain: debate ongoing regarding material utility	Satisfies (food, industrial use)	Satisfies: designed as a medium of exchange within a productive economy
Score	**0 satisfy, 1 partial, 6 do not satisfy**	**7 satisfy**	**2 satisfy, 2 partial, 3 uncertain/do not satisfy**	**7 satisfy**	**6 satisfy, 1 partial, 0 do not satisfy**

The results reveal an asymmetry between the mediums. Gold, silver, and physical commodities, the items identified in the Hadith as ribawi, satisfy all seven characteristics. GX Coin Protocol satisfies six of seven, with universal acceptance as a temporal limitation rather than a structural deficiency. Fiat currency, which the majority scholarly position treats as equivalent to gold and silver for ribawi purposes, does not satisfy any of the seven characteristics under this framework. Bitcoin occupies an intermediate position, satisfying fungibility and measurability but remaining uncertain on intrinsic value and essential utility.

This asymmetry does not constitute a determination that fiat currency is not subject to ribawi rules. The majority scholarly position grounds fiat currency's ribawi status in thamaniyyah (functional monetary nature), a valid jurisprudential argument that operates at the level of functional analogy rather than characteristic matching. The observation that fiat currency does not share the measurable characteristics of the six named ribawi items is relevant to scholarly deliberation on the precise nature of the analogy, not to its validity or invalidity. The diagnostic framework surfaces this question for engagement rather than resolving it.

4.2 Diagnostic Output: Representative Financial Products

The diagnostic framework was applied to five representative financial products to demonstrate its analytical output.

Product 1: Conventional fixed-rate mortgage. The diagnostic identifies core Riba (stipulated excess above the principal), a growing Dayn (the outstanding obligation increases through compounding interest over the loan term), and a Maqasid concern regarding inescapable debt. The strip test is not required, as the ribawi structure is explicit.

Product 2: Murabahah home financing (commodity-based, fiat-denominated). The diagnostic identifies the product as formally structured as a sale (Bay') with a disclosed profit margin. However, the strip test raises a Hilah concern: when the commodity transfer is nominal (the financier never bears genuine commercial risk of ownership), removing the commodity layer reveals the same economic structure as a conventional loan with a fixed return. The diagnostic does not declare the product impermissible; it flags the structural concern and cites Ibn Qayyim's framework for the user's consideration.

Product 3: Musharakah Mutanaqisah (diminishing partnership). Under the classical track, the diagnostic identifies genuine shared ownership, genuine risk exposure (both parties bear potential loss), and a declining Dayn that does not grow through time. The arrangement passes the strip test: removing the property reveals a genuine partnership, not a disguised loan. On the fiat track, the arrangement also passes the structural tests, with an informational finding noting the open scholarly question regarding the fiat medium.

Product 4: Bitcoin spot purchase. No lending is involved; therefore, no Riba is identified. The diagnostic flags a Maysir (speculative gambling) concern if the purchase is for short-term price speculation rather than genuine utility or long-term holding. The ribawi characteristics grid is displayed, showing Bitcoin's mixed profile: it satisfies fungibility, durability, knowable quality, and measurability, but remains uncertain on intrinsic value and essential utility.

Product 5: Organised Tawarruq (commodity Murabahah for cash). The strip test identifies the arrangement as a Hilah: the commodity exists in form, but the substance is a cash loan with a fixed return. The diagnostic cites the Islamic Fiqh Academy Resolution 179 (2009) and Imam Ahmad ibn Hanbal's classification of Tawarruq as a stratagem. This finding is consistent across both analytical tracks.

4.3 Dual-Track Divergence

The dual-track framework produces identical results for three of the five products (conventional mortgage, Musharakah Mutanaqisah, and organised Tawarruq). These arrangements are either clearly ribawi (conventional mortgage), structurally sound (Musharakah), or structurally problematic (Tawarruq) regardless of the analytical track.

The divergence emerges in the Murabahah home financing product. On the classical track, where fiat is treated as a ribawi medium, the fixed return on a fiat-denominated transaction is analysed under the full ribawi framework. On the fiat research track, the question shifts: if fiat currency does not satisfy the ribawi characteristics, the fixed return may represent a compensation mechanism for the structural depreciation of the medium rather than Riba in the Quranic sense. The diagnostic does not resolve this question. It presents both analyses with their respective source citations, allowing the user to engage with the evidence directly.

This dual-track approach is the methodological contribution of the framework. It does not advocate for either position. It makes both positions operational and transparent, enabling informed engagement with a question that remains subject to scholarly deliberation.

4.4 Concordance with Established Shariah Standards

To assess the diagnostic framework's alignment with established institutional positions, the five representative products were evaluated against the relevant AAOIFI Shariah Standards and Islamic Fiqh Academy resolutions. Table 3 presents the concordance analysis.

Table 3: *Concordance Analysis: Mizan Diagnostic Output vs. Established Shariah Standards*

Financial Product	Mizan Diagnostic Output	Relevant AAOIFI Standard / IFA Resolution	Established Position	Concordance
Conventional mortgage	Core Riba identified; growing Dayn; Maqasid concern	AAOIFI SS No. 8 (Murabahah); general prohibition of Riba	Impermissible: stipulated interest constitutes Riba	**Full concordance.** Both the framework and established standards identify the product as containing Riba.
Murabahah home financing (nominal commodity transfer)	Hilah concern raised via strip test; structural similarity to conventional loan when ownership risk is absent	AAOIFI SS No. 8, Clause 3/1: "The institution must acquire the commodity before selling it... and must bear the risk of the commodity"	Permissible only when genuine ownership and risk are present; impermissible when ownership transfer is nominal	**Substantial concordance.** The strip test concern aligns with AAOIFI's requirement for genuine ownership and risk-bearing. The framework's finding is consistent with AAOIFI's conditions for valid Murabahah.
Musharakah Mutanaqisah	Passes structural tests; genuine ownership and risk identified	AAOIFI SS No. 12 (Musharakah), SS No. 13 (Diminishing Musharakah)	Permissible when structured with genuine partnership and risk-sharing	**Full concordance.** Both the framework and AAOIFI standards identify the product as structurally sound.

Financial Product	Mizan Diagnostic Output	Relevant AAOIFI Standard / IFA Resolution	Established Position	Concordance
Bitcoin spot purchase	No Riba; Maysir concern if speculative	No specific AAOIFI standard; varying scholarly positions	No consensus; some scholars permit with conditions, others express concern regarding Gharar and speculation	**Partial concordance.** The framework's identification of Maysir concern is consistent with the cautionary scholarly positions, while its finding of no Riba is consistent with the absence of a lending structure.
Organised Tawarruq	Hilah identified; strip test failure	AAOIFI SS No. 30 (Monetisation/Tawarruq); IFA Resolution 179 (2009)	Organised Tawarruq declared impermissible by IFA; AAOIFI restricts to genuine commodity transactions	**Full concordance.** Both the framework and the IFA/AAOIFI identify organised Tawarruq as a legal device masking a prohibited structure.

The concordance analysis demonstrates that the diagnostic framework's outputs align substantially with established Shariah standards across the evaluated products. Full concordance is observed in three of five cases (conventional mortgage, Musharakah Mutanaqisah, and organised Tawarruq). Substantial concordance is observed for Murabahah, where the framework's strip test concern mirrors AAOIFI's conditions for genuine ownership and risk. Partial concordance is observed for Bitcoin, where the absence of institutional consensus makes direct comparison less meaningful.

This analysis supports the framework's utility as a diagnostic tool that complements, rather than contradicts, established institutional positions. The areas of divergence, particularly the dual-track treatment of fiat-denominated products, represent the framework's contribution to surfacing questions that existing standards address through institutional consensus rather than through explicit engagement with primary-source criteria.

It should be noted that this concordance analysis compares diagnostic outputs against published standards and resolutions. A more rigorous evaluation would involve expert panel assessment comparing the framework's outputs against the reasoning of practising Shariah scholars across a broader range of financial products. Such a study is identified as a priority for future research (Section 5.5).

5. Discussion

5.1 Implications for Shariah Compliance Practice

The Mizan framework demonstrates that Shariah compliance evaluation can be made transparent, reproducible, and source-traceable while operating within, and complementary to, the existing institutional framework. The diagnostic does not issue Fatwas. It provides a structured diagnostic baseline that scholars, practitioners, and researchers can use as a starting point for further analysis.

The source-tracing requirement, where every finding is linked to a specific primary-source citation, addresses the transparency concern identified in Section 1.1. When a user receives a finding that an arrangement contains core Riba, the finding cites Surah Al-Baqarah 2:275-279, the root analysis of R-B-W, and specific classical commentaries. The user can verify the evidential chain independently. This represents a model distinct from the current prevailing practice, where compliance is often communicated as a binary ruling (permissible or impermissible) without transparent engagement with the underlying evidence.

The framework's diagnostic nature should be emphasised. Its outputs are intended as evidence-based starting points for scholarly deliberation, not as authoritative determinations. The tool provides analytical structure and source tracing; the interpretation of that evidence remains the domain of qualified scholars and informed individuals.

5.2 The Fiat Currency Question

The ribawi characteristics grid (Table 2) engages with a question that is typically addressed through institutional consensus in contemporary Islamic finance: whether fiat currency satisfies the classical criteria for ribawi classification. The majority scholarly position, articulated by Justice Muhammad Taqi Usmani and endorsed by major Shariah boards globally, treats fiat currency as subject to ribawi rules on the basis of thamaniyyah (Usmani, 2002). This position holds that the functional role of fiat currency as a medium of exchange is sufficient to trigger ribawi rules, regardless of whether fiat shares the material characteristics of gold and silver.

This position carries substantial weight. It is supported by the Shafi'i and Maliki schools' identification of thamaniyyah as the 'illah for monetary ribawi items, by the Islamic Fiqh Academy's resolutions on currency exchange, and by the practical reality that the global Islamic finance industry operates on this basis. AAOIFI's Shariah standards for currency exchange (Sarf) and related transactions are built upon this position.

The diagnostic framework's observation that fiat currency does not satisfy the seven measurable characteristics shared by the six named ribawi items operates at a different level of analysis. It does not challenge the thamaniyyah argument on its own terms; rather, it raises the question of whether functional analogy alone fully captures the relationship between modern fiat and classical ribawi items, or whether additional jurisprudential reasoning may be needed. The majority position addresses the question of function (does fiat serve as money?), while the ribawi characteristics analysis addresses the question of structural properties (does fiat share the material and economic properties of the six named items?).

This paper does not resolve this question, nor does it advocate for a particular resolution. The framework's contribution is to make the question visible and operational. The diagnostic finding that fiat currency does not share the measurable characteristics of the six ribawi items is offered as an observation warranting scholarly engagement, not as a conclusion displacing the majority position. The dual-track framework allows users to evaluate financial instruments under either analytical position, ensuring that neither the majority nor the minority view is assumed without the user's informed choice.

The implications of this observation, if taken to its logical conclusion, would be significant. If fiat currency does not satisfy the classical ribawi criteria, the analytical framework that contemporary Islamic finance applies to fiat-denominated transactions may require supplementary jurisprudential reasoning. This does not entail that interest on fiat is permissible; rather, it may mean that the prohibition could also be grounded in Maqasid al-Shariah (the fiat system's structural impact on Hifz al-Mal), the concept of Ghashsh (adulteration or deception in the medium of exchange), or other analytical foundations. These alternative grounds deserve exploration in future scholarly work.

5.3 FinTech as Methodology, Not Just Product

The current Islamic FinTech landscape is characterised by product-level innovation: digital banks, blockchain Sukuk, and robo-advisors that apply Shariah-compliant wrappers to conventional FinTech models (Alam et al., 2022). Mizan represents a different category of innovation: methodology-level FinTech. Rather than digitising a financial product, it digitises the analytical framework that informs whether products are permissible.

This distinction has practical significance. A digital Islamic bank still depends on its Shariah board for compliance determinations. Mizan does not replace that board, but it provides a transparent, reproducible baseline that the board, the bank's clients, and external researchers can all access. The diagnostic output can serve as a starting point for scholarly review, a training tool for Islamic finance students, or a due diligence mechanism for retail consumers evaluating financial products.

Rule-based architecture (as opposed to machine learning) is a deliberate design choice. Deterministic outputs, where the same inputs always produce the same findings, are essential for a diagnostic tool that claims transparency and reproducibility. Machine learning models, however powerful, introduce opacity that would undermine the framework's core value proposition.

5.4 Limitations

Several limitations must be acknowledged.

First, the seven ribawi characteristics are derived from one analytical framework. Other scholars may derive different characteristics or weigh them differently. The framework does not claim to be the only valid derivation; it claims to be transparent, source-traceable, and reproducible.

Second, the diagnostic is rule-based and evaluates arrangements based on user-provided descriptions. Users may describe their arrangements inaccurately, whether through misunderstanding or deliberate misrepresentation. The diagnostic cannot verify the factual accuracy of user inputs.

Third, the fiat currency analysis represents an observation within a specific analytical framework that produces results differing from the majority scholarly position. The majority position, endorsed by AAOIFI, major Shariah boards, and leading scholars, treats fiat as subject to ribawi rules. The diagnostic's dual-track framework may be interpreted as giving undue prominence to the minority view. The framework's intent is to surface the question for scholarly deliberation, not to give either position precedence.

Fourth, the diagnostic does not constitute a Fatwa and is not intended to replace qualified scholarly opinion. It is a diagnostic tool that surfaces evidence and identifies structural patterns. The interpretation of that evidence remains the domain of qualified scholars and informed individuals.

Fifth, the current implementation covers six broad categories of financial activity but does not yet address all possible financial arrangements. Complex derivatives, structured products, and novel DeFi protocols may require additional question sets and finding categories.

Sixth, the concordance analysis in Section 4.4 compares diagnostic outputs against published standards rather than against the reasoning of an expert panel of Shariah scholars. While the results demonstrate substantial alignment with established positions, a more rigorous validation through expert panel evaluation would strengthen the framework's empirical foundation.

Seventh, GX Coin Protocol is included in the cross-medium evaluation (Table 2) as a representative example of fixed supply, non-debt-based digital currency architecture. The author is the Chief Architect of the GX Coin Protocol, which is a not-for-profit public utility protocol. While the protocol receives a favourable evaluation under the ribawi characteristics grid, this evaluation follows from the application of the same criteria applied to all mediums. The protocol's inclusion is intended to demonstrate the framework's applicability to digital currency architectures; however, readers should note the author's relationship to this protocol when evaluating these results. The analysis of the remaining four mediums (fiat currency, gold/silver, Bitcoin, and physical commodities) is unaffected by this relationship.

5.5 Future Research

Several directions for future research emerge from this work. The most immediate priority is expert panel validation: a structured study in which practising Shariah scholars independently evaluate the same financial products using their established methodologies, with results compared against the diagnostic framework's outputs to measure concordance, divergence, and the reasoning behind any differences. This would provide the empirical validation necessary to assess the framework's reliability beyond the demonstration and concordance analysis presented here.

Extension of the diagnostic to additional financial instruments, particularly complex derivatives and DeFi protocols, would expand the framework's coverage. Collaborative development with Shariah scholars to refine the ribawi characteristics derivation and the diagnostic question sets would strengthen the framework's scholarly foundation. Integration with regulatory frameworks such as AAOIFI standards and IFSB guiding principles could position the diagnostic as a complement to existing compliance infrastructure.

Further research into alternative jurisprudential grounds for evaluating fiat-denominated transactions, including Maqasid-based analysis, the role of Islamic financing in easing monetary policy uncertainty (Yasmin & Arshed, 2025) and the concept of Ghashsh in the monetary medium, would advance the scholarly engagement that this paper seeks to facilitate.

6. Conclusion

This paper has presented Mizan, a primary-source diagnostic framework for evaluating Islamic financial instruments against classical ribawi characteristics. The framework addresses a gap in Islamic finance: the limited availability of standardised, transparent, source-traceable diagnostic methodologies for Shariah compliance evaluation that complement existing institutional mechanisms.

Three contributions emerge from this work. First, the ribawi characteristics grid provides a measurable, reproducible methodology for evaluating whether a financial medium satisfies the criteria that the six named ribawi items share. The systematic application of this grid produces the diagnostic observation that fiat currency does not satisfy these seven characteristics, an observation offered for scholarly deliberation rather than as a definitive classification. The majority scholarly position on fiat currency's ribawi status, grounded in thamaniyyah, remains the dominant and institutionally established view.

Second, the strip test operationalises the form-versus-substance analysis of Ibn Qayyim al-Jawziyyah and Ibn Taymiyyah as a structured diagnostic question applicable to any financial arrangement. This test identifies the structural pattern that distinguishes genuine trade from disguised lending, regardless of the labels applied to the arrangement. The concordance analysis demonstrates that this diagnostic question produces outputs substantially aligned with AAOIFI standards and Islamic Fiqh Academy resolutions.

Third, the dual-track analytical framework makes the fiat currency question explicit. Rather than silently assuming one scholarly position, the framework presents both the mainstream position and the primary-source analytical framework as operational tracks, allowing users to engage with the evidence directly. The framework is diagnostic, not adjudicative: its outputs are intended as starting points for qualified scholarly deliberation, not as determinative rulings.

The Islamic finance industry has reached a scale and complexity that benefits from analytical infrastructure that complements its existing scholarly foundations. FinTech innovation in this space can extend beyond product digitisation to methodology digitisation, making the jurisprudential foundations of Shariah compliance more transparent, reproducible, and accessible. Mizan is an initial contribution to this objective. Its limitations are acknowledged, and its findings are offered for scholarly scrutiny, refinement, and extension.

The tool is freely available at https://azim.cc/tools/mizan. The underlying research is published in full at https://azim.cc/blog/riba-research-paper and https://azim.cc/blog/gharar-and-maysir. Any errors of interpretation are the author's own.

Declarations

Authorship Statement. This paper is the sole work of the named author. There are no guest, gift, or ghost authors. The research, analysis, diagnostic framework design, and writing are entirely the author's own.

AI Disclosure. An AI language model (Claude, Anthropic) was used during the preparation of this manuscript for grammar checking, spelling correction, language flow, and formatting consistency. The full document was verified through this process to ensure clarity and readability. The author is fully responsible for all research, analysis, arguments, conclusions, and thesis content. The AI tool was not used to generate research findings, formulate arguments, or produce substantive analytical content.

Conflict of Interest. The Mizan diagnostic tool is an open-access, non-commercial project with no institutional funding or commercial backing. GX Coin Protocol, included in the cross-medium evaluation (Table 2), is a not-for-profit public utility protocol Architected by the author. The protocol is designed for public distribution as a grant to participants, not as a commercial product. The author's relationship to this protocol is disclosed in Section 5.4 (Limitations), and readers should evaluate the protocol's inclusion in Table 2 with this relationship in mind. The analysis of the remaining four mediums and all five representative financial products is unaffected by this relationship.

Prior Publication. This submission has not been previously published, nor is it under consideration by any other journal.

Ethics Statement. This research complies with JIBEP's Research Ethics Guidelines and the COPE Code of Conduct. No human subjects, personal data, or confidential information were involved in this study.

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Literature Review on Sustainable Leadership: Conceptual Foundations, Theoretical Perspectives, and Future Directions

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ABSTRACT

The increasing nature of the grand societal challenges such as climate change, social inequalities, economic variations and environmental pollution is making a change in leadership theory necessary. Sustainable leadership has come into being as a distinct leadership approach dealing with these multi-dimensional challenges. This paper presents a comprehensive literature review of the growing literature base on sustainable leadership. By following an integrative literature review approach with systematic search strategies (based on PRISMA guidelines), 74 peer reviewed sources were analysed for identifying the state of the art and gaps in concepts in sustainable leadership. The review highlights individual level mechanisms (ethical orientation, systems thinking, mindfulness, reflection and resilience) and organisational level mechanisms (sustainability standards, sustainability-focused corporate culture and stakeholders' involvement) that enable the functioning of sustainable leadership. The paper focuses on the contradictory tensions that exist in sustainable leadership and how leaders overcome the contradictory demands through integrative and paradoxical thinking. Based on the synthesis, a conceptual framework is proposed which explains the linkages among antecedents, mechanisms, contradictory tensions and outcomes of sustainable leadership. To advance the conceptualization of sustainable leadership, this paper suggests a synthesized definition, a theoretical typology and relevant research questions in accordance with theories. Furthermore, this review contextualises sustainable leadership within Islamic finance, underscoring its relevance for Shari'ah compliant ESG governance, green sukuk, and sustainable development, thereby offering a theoretical foundation for researchers and practitioners in Islamic financial institutions. Additionally, the findings offer practical implications for designing leadership development programmes and guiding organisational transformation toward sustainable practices.

Keywords: sustainable leadership, paradoxical tensions, systems thinking, stakeholder engagement, triple bottom line, Islamic finance, Integrative literature review.

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1. INTRODUCTION

Leadership has been recognized as a key determinant of organisational success for many decades, with numerous academic efforts made to uncover its intricacies, contingencies, and outcomes (Yukl, 2012; Avolio et al., 2009). Nonetheless, due to the emergence of a volatile, uncertain, complex, and ambiguous (VUCA) world (Bennett & Lemoine, 2014), novel leadership practices have become necessary. The issues of climate change, poverty, social inequality, and resource depletion represent grand challenges for society; these problems are multifaceted and interconnected and thus require leaders to use different approaches to meet all the requirements (George et al., 2016; Schad & Smith, 2019). Sustainability has become a strategic priority for modern organisations (Sajjad et al., 2015), which has resulted in increased expectations for corporate leaders' direct involvement in global environmental and social issues. As Burns et al. (2015) argue, "sustainability has become an inextricable aspect of leadership" (p. 89). Although sustainability leadership is critical in solving global challenges, scientific literature on this issue still represents fragmented knowledge with a lack of theoretical consistency (Sajjad et al., 2024; Armani et al., 2020). Although the characteristics, skills, and behaviors associated with sustainability leadership have been identified, there is a lack of knowledge regarding the functional connections

Fragmentation in the sustainable leadership body of knowledge is manifested in various distinct ways. The fragmentation at the conceptual level is seen in the wide range of definitions and inconsistency in terminologies used where scholars have used different terminologies like "sustainable leadership," "sustainability leadership," and "leadership for sustainability" interchangeably. Fragmentation is also seen at the theoretical level where different theories are employed in analysing sustainable leadership without any articulation on how they work together. The fragmentation of measurement is characterised by the lack of a well-developed and accepted measurement approach of sustainable leadership which uses constructs that are borrowed from other leadership constructs. The fragmentation at the context and geographic levels is seen in the concentration of empirical research in the Western developed world with little exploration of sustainable leadership in the developing countries. The fragmentation at the methodological level is witnessed due to the dominance of conceptual and qualitative research.

This review responds to these gaps by undertaking an in-depth, critical assessment of extant research on sustainable leadership. More specifically, this review will attempt to: (1) synthesize the theoretical underpinnings and defining characteristics of sustainable leadership, thus tackling conceptual fragmentation by formulating an integrated definition; (2) critically analyse theoretical approaches to sustainable leadership and their interactions, thus tackling theoretical fragmentation through the creation of a typology of theories and their complementarities and controversies; (3) identify and synthesize the most relevant individual and organisational drivers of sustainable leadership, thus tackling fragmentation in the realms of measurement and theory by developing a framework for the creation of future instruments; (4) investigate the paradoxical tensions inherent to sustainable leadership; (5) formulate an integrated conceptual model depicting the connections between mechanisms, tensions, and outcomes of sustainable leadership and thus provide the groundwork for further methodological advances; and (6) suggest an agenda for future research that tackles contextual and geographical fragmentation through the formulation of specific research questions.

2. METHODOLOGY

2.1 Research Approach

This research study uses an approach of an integrative literature review (Whittemore & Knafl, 2005), whereby it becomes possible to critically evaluate and integrate constructs that have emerged within different streams of literature (Torraco, 2005). This kind of research is appropriate for the investigation of emergent concepts in which there is fragmentation in terms of knowledge about the concept (Snyder, 2019). This is because an integrative review provides room for integration of diverse paradigms of research.

There were various factors that made integrative review an appropriate methodology for conducting a literature review. Unlike systematic reviews, which tend to be more concerned about addressing focused questions using quantitative synthesis, integrative reviews can be used for exploring constructs that are complex and multidimensional. Narrative reviews have been criticised for their lack of a well-defined methodology in reviewing literature, while integrative review employs a clear methodology for searching literature, screening literature, analysis, and synthesis. This feature of integrative review makes it ideal for sustainable leadership studies because of different epistemologies used in them.

2.2 Research Questions

The review was guided by the following research questions:

1. **RQ1**: What are the conceptual foundations and distinctive features that define sustainable leadership as a distinct construct?

2. **RQ2**: What theoretical perspectives inform sustainable leadership research, and how do these perspectives complement or conflict with one another?

3. **RQ3**: What individual-level and organisational-level mechanisms underpin sustainable leadership functioning, and how do these mechanisms interact?

4. **RQ4**: What paradoxical tensions characterise sustainable leadership, and how do leaders manage these tensions?

5. **RQ5**: What are the key outcomes associated with sustainable leadership, and what is the strength of evidence for these relationships?

6. **RQ6**: What gaps exist in the current literature, and what specific research directions should future studies pursue?

2.3 Search Strategy and Screening

According to the PRISMA approach (Moher et al., 2009; Page et al., 2021), a systematic search was carried out within the Scopus, Web of Science, and Google Scholar databases. The search spanned from January 1990 to October 2023 and included the formation of sustainable leadership as an area of study starting from the publication of the Brundtland Report (1987).

Search Strings:

Scopus: TITLE-ABS-KEY ("sustainable leadership" OR "sustainability leadership" OR "leadership for sustainability") AND ("organisation" OR "corporate" OR "business" OR "management").

Web of Science: ("sustainable leadership" OR "sustainability leadership" OR "leadership for sustainability") AND ("organisation" OR "corporate" OR "business" OR "management").

Google Scholar: ("sustainable leadership" OR "sustainability leadership

Criteria for inclusion of sources:

1. Peer-reviewed journal articles, book chapters and books
2. Written in English language
3. Addressing leadership within the sphere of sustainability
4. Dealing exclusively with the concept of sustainable leadership
5. Applying either quantitative, qualitative or mixed research methodology

Criteria for Exclusion:

1. Papers that only discuss sustainability and/or leadership indirectly
2. Literature studies that examine concepts of leadership but make no mention of sustainability
3. Non-English literature sources
4. Editorials, reviews of books, and opinions
5. Duplicates

Table 1: Inclusion and Exclusion Criteria

Criterion	**Inclusion**	**Exclusion**
Publication Type	Peer-reviewed journal articles, book chapters, scholarly books	Editorials, book reviews, conference abstracts, opinion pieces
Language	English	Non-English

Topic Focus	Directly addresses leadership in sustainability context	Mentions sustainability or leadership only peripherally
Leadership Focus	Specific focus on sustainable/sustainability leadership practice and analysis	Focus on leadership constructs without sustainability reference
Methodology	Quantitative, qualitative, or mixed methods	No methodological detail specified

A total of 235 sources were retrieved from databases, while 12 more sources were retrieved from snowballing. Screening of sources was done by two authors (Shahzadi & Ashraf), and any disagreements in the process were resolved by discussion and consensus with the third author (Shabbir). There were three levels of screening: (1) removal of duplicates (n = 58); (2) title/abstract screening (n = 189); and (3) full-text screening (n = 91). A total of 74 sources fulfilled the inclusion criteria and thus were included in the final analysis.

Exclusion Phases: During title/abstract screening phase, 98 articles were excluded on the following grounds: (1) no relevance to sustainable leadership (n = 47); (2) relevance to general leadership without sustainability aspect (n = 31); (3) relevance to sustainability without leadership aspect (n = 14); (4) non-English articles (n = 6). During full text screening phase, 17 articles were excluded on the following grounds: (1) inadequate coverage of sustainable leadership mechanisms (n = 8); (2) editorial comments (n = 5); (3) duplicate articles not identified before (n = 2); (4) inadequate methodology (n = 2).

2.4 Quality Assessment

Quality appraisal was conducted using a multiple criteria assessment technique based on previous sustainability leadership literature review (Hallinger & Suriyankietkaew, 2018):

1. Assessment of journal impact: journal citation indexes (JCR/Scopus) and database inclusion
2. Assessment of citation impact: number of citations (Google Scholar)
3. Research quality: for empirical papers - assessment of design, sampling, measurements and analysis; for conceptual papers - assessment of theory and argumentation
4. Assessment of theoretical importance: contribution to the theoretical development of sustainable leadership

2.5 Analysis and Synthesis

Thematic analysis was employed following a three-stage process (Braun & Clarke, 2006):

Stage 1: Open Coding - Readings of the sources included for this study to determine and extract themes from ideas, concepts, and results associated with the research questions. Over 200 initial codes were generated during this process. Two authors independently coded a random 20% of the included sources; the inter-coder reliability was 85%.

Stage 2: Axial Coding - Categorisation of codes into broader thematic categories based on conceptual relationships. Key categories included: conceptual definitions, theoretical perspectives, individual mechanisms, organisational mechanisms, paradoxical tensions, outcomes, and future directions. This stage involved iterative comparison and refinement to ensure conceptual clarity and consistency.

Stage 3: Synthesis and Integration - Construction of an integrative model that reveals the linkages between different categories and their patterns, conflicts, and shortcomings. This process included critical appraisal of the evidence, pinpointing convergences and divergences, and formulating the unique contributions.

Principles of Critical Integration (Whittemore & Knafl, 2005) were followed during the synthesis: (1) making sure that the synthesis is relevant to the research questions; (2) remaining open and transparent in the interpretation; (3) recognising limits and uncertainties; and (4) achieving something new beyond the individual studies.

3. CONCEPTUAL FOUNDATIONS OF SUSTAINABLE LEADERSHIP

3.1 The Emergence of Sustainable Leadership

The idea of sustainable leadership is born at the confluence of two different but related streams of ideas: leadership and sustainability theories. According to Hallinger & Suriyankietkaew (2018), it was the definition of sustainable development provided by Brundtland Commission in 1987 "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" that initiated the process of linking sustainability into organisational leadership in the first place. Later, this idea was developed further by Elkington (1998) and his triple bottom line approach.

Sustainable leadership emerged in academic discussion through Hargreaves and Fink (2004; 2006) who define it as leadership that "is able to cope with the needs of today's society without compromising the capacity of future generations to succeed" (Hargreaves & Fink, 2006, p. 8). Through their work which focuses on educational settings, seven principles of sustainable leadership have been identified: depth, duration, scope, justice, diversity, ingenuity, and conservation.

Avery (2005) took the theory further into the area of business management through the comparison between the Rhineland model of capitalism, which features long-term perspective, stakeholder involvement, and social responsibility, with the Anglo-American model of capitalism, whose key feature is the pursuit of maximizing shareholders' value in the short term. Such a comparison gave grounds for developing the concept of sustainable leadership.

The definition of sustainability leadership by Ferdig (2007) takes the concept a step further in integrating sustainability leadership into a complex balancing act involving "the balancing of competing needs and demands for sustainable economic, social, and environmental solutions" (p. 25). The complexity involved in sustainability leadership is reflected in the conflicting demands placed in various contexts, an issue that repeatedly comes up in the literature on sustainable leadership.

3.2 Defining Sustainable Leadership: A Critical Synthesis

Sustainable leadership is a complex term that has different meanings depending on various factors in the field. Table 2 below is a synthesis of different definitions of sustainable leadership, showing what makes each one distinct from the others.

Table 2: Definitions of Sustainable Leadership

Author(s)	Definition	Key Emphasis
Hargreaves & Fink (2006)	Leadership that "can meet the demands of today's society without affecting future generations' capability to succeed"	Intergenerational equity
Avery & Bergsteiner (2011a)	"Achieving futures in which humans live within their ecological and social means without exploiting others"	Ecological and social sustainability
Avery & Bergsteiner (2011b)	"The goal of sustainable leadership is keeping people, profits, and the planet in balance throughout the lifetime of the organisation"	Triple bottom line integration
Ferdig (2007)	Sustainability leadership as "balancing among and between simultaneous and sometimes contradictory demands for economically, socially, and environmentally sustainable solutions"	Paradox management
Rainey (2013)	"A vibrant mosaic of ideas, philosophies, perspectives, styles, mind-sets, experiences, approaches, and models"	Pluralism and diversity
Peterlin et al. (2015)	Leadership that "considers a large number of complex interrelationships existing among people, the business world, the global market, and the eco-system, with the prime objective of ensuring that the organisation creates welfare for itself by upholding social values	Systems thinking and value-based decision-making

	through value-based strategic decision making and maintaining the natural environment"	
Sajjad et al. (2024)	"A dynamic and complex process, wherein sustainability-focused leaders go through complex psychocognitive and sociocognitive (relational) processes to create sustainable outcomes for organisations and societies in both the immediate and distant future"	Dynamic processes and multilevel analysis

Critical Analysis of Definitions:

Despite differences, these definitions have quite a few common aspects that can be identified. First, sustainable leadership implies considering the future and current generation through long-term orientation. Second, it means that one should integrate different aspects like economic, social, and environmental. Third, it implies dealing with complexity and interdependencies by understanding that organisations, society, and ecosystems are linked to each other. Fourth, it is value-based action based on ethics rather than profit maximization.

However, critical evaluation shows that there exist several contradictions and ambiguities. The first one concerns the connection between the concepts of "sustainable leadership" and "sustainability leadership," although both terms have been used by many researchers interchangeably (Hallinger & Suriyankietkaew, 2018; Liao, 2022).

However, in this review, both terms are regarded as concepts which are related but have different meanings: "sustainability leadership" is associated directly with leaders who concentrate on achieving sustainability results whereas "sustainable leadership" can be seen as an umbrella term which involves sustainable leaders in general. Following a consistent terminology in this review, it is decided to use "sustainable leadership" as the major term, considering the prevalence of its use in the literature.

In the second case, definitions differ in relation to the stress laid on the importance of outcomes or processes. Some definitions may be concerned with sustainable leadership outcomes or aims (such as harmony between people, profits and planet), while others pay attention to sustainable leadership processes (such as dynamic cognitive and relational processes).

The third type of diversity that exists among the definitions of sustainable leadership refers to the unit of analysis. There can be three different units of analysis: individual leaders' traits and actions, organisational-level activities, or systemic-level effects.

Synthesised Definition:

Based on this critical synthesis, this review proposes the following integrated definition:

Sustainable leadership is a dynamic, multilevel process wherein leaders, through the integration of ethical values, systems thinking, mindfulness, and reflective practice, engage with diverse stakeholders to navigate paradoxical tensions and create enduring value that balances economic prosperity, social equity, and environmental integrity for present and future generations.

This definition encapsulates all the important elements in earlier definitions such as (1) the dynamism and process aspect (Sajjad et al., 2024); (2) the multilevel perspective covering individual and organisational levels; (3) the processes that underlie ethics (ethical values, systems thinking, mindfulness, and reflection); (4) stakeholder engagement; (5) paradoxical tension management; and (6) the triple bottom line of impacts for today and tomorrow. This is the foundation for the rest of this review.

3.3 Distinguishing Sustainable Leadership from Related Approaches

Sustainable leadership shares conceptual terrain with several established leadership models, yet possesses distinctive features that warrant its recognition as a separate construct. Table 3 presents a systematic comparison.

Table 3: Distinguishing Sustainable Leadership from Related Leadership Constructs

Leadership Type	Core Focus	Overlap with Sustainable Leadership	Key Distinction
Ethical Leadership	Moral conduct and promoting ethical behaviour through personal example (Brown et al., 2005)	Shared emphasis on ethical values and integrity	Sustainable leadership extends beyond ethics to include environmental and social sustainability outcomes; ethical leadership focuses primarily on moral conduct without explicit sustainability orientation
Servant Leadership	Prioritising followers' interests and societal good before self-interest (Eva et al., 2019)	Shared focus on serving broader stakeholder interests	Servant leadership tends toward either/or thinking in conflict resolution; sustainable leadership explicitly embraces both/and thinking to balance competing sustainability goals (Schad & Smith, 2019)

Responsible Leadership	Building trust-based relationships with stakeholders and addressing CSR issues (Maak & Pless, 2006)	Shared emphasis on stakeholder relationships and social responsibility	Sustainable leadership places greater emphasis on balancing social, economic, and environmental dimensions and creating value for future generations (De Haan et al., 2015)
Green Transformational Leadership	Encouraging followers to achieve environmental goals beyond expectations (Chen & Chang, 2013)	Shared focus on environmental outcomes	Green transformational leadership is narrow in focus, concentrating primarily on environmental achievements; sustainable leadership adopts a comprehensive triple bottom line perspective (Liao, 2022)
Authentic Leadership	Self-awareness, relational transparency, and moral perspective (Avolio & Gardner, 2005)	Shared emphasis on authenticity and integrity	Sustainability leadership requires additional competencies including systems thinking, paradoxical thinking, and stakeholder engagement; it consciously addresses multiple paradoxes and pursues competing goals simultaneously (Sajjad et al., 2024)

The Distinctive Features of Sustainable Leadership:

Through this comparative analysis, several distinctive features of sustainable leadership emerge:

1. **Paradoxical Thinking**: Whereas other theories of leadership try to solve these paradoxical situations by giving precedence to one dimension over another (for example, putting profits before environmental considerations), sustainable leadership is aware of these paradoxes and takes them into account. As stated by Schad and Smith (2019): "The great challenges of our time call for a more sophisticated form of leadership that can deal with conflicting demands simultaneously" (p. 58).

2. **Multilevel Integration**: Sustainable leadership can occur at the individual, organisational, and societal levels all at once, acknowledging that these levels are

interdependent (Sajjad et al., 2024). This multilevel approach is less important in other theories of leadership, which tend to concentrate mainly on leader-subordinate relationships.

3. **Triple Bottom Line Approach:** Although other leadership theories may deal with ethical issues (ethical leadership) or stakeholders' issues (responsible leadership), sustainable leadership alone is concerned with the economic, social, and environmental aspects of performance (Elkington, 1998).
4. **Future Generation Perspective:** The concern for future generations' interests sets sustainable leadership apart from other leadership theories that focus only on current stakeholders.
5. **Systems Thinking:** Sustainable leadership calls for systems thinking, making it more cognitively oriented than any other leadership theory (Hind et al., 2009).

4. THEORETICAL PERSPECTIVES ON SUSTAINABLE LEADERSHIP

This section critically examines the key theoretical perspectives informing sustainable leadership research, analysing their contributions, complementarities, and tensions.

4.1 Systems Theory Perspective and Paradox

Sustainable Leadership Paradox Research Approach Through Systems Theory is a prominent theoretical framework used in sustainable leadership studies (Schad & Bansal, 2018; Schad & Smith, 2019). The framework combines concepts from both Paradox Theory and Complexity Theory to examine how leaders deal with contradictory but intertwined demands.

Paradox Theory: According to Paradox Theory, organisations function in conditions of "contradictory but interrelated elements which coexist and persist over time" (Smith & Lewis, 2011, p. 382). When it comes to sustainability, leaders must deal with paradoxical pressures related to economic success, social benefits, and ecological protection, three desired yet contradictory outcomes (Hahn et al., 2018). The ability to cope with the mentioned paradoxes is becoming an essential skill of a leader (Franken et al., 2020).

Complexity Theory views organisations as complex open dynamical systems which include several variables functioning under non-linear dynamics (Cilliers, 2002; Uhl-Bien et al., 2007). In other words, those systems work in non-equilibrium conditions involving the combination of positive and negative feedback causing contradictions (Van der Byl & Slawinski, 2015). Sustainability leaders must cope with such complexities on several levels and scales.

Integration of Systems and Paradox Perspectives:

The combination of systems and paradox theory provides an interesting theoretical background for sustainable leadership. As argued by Sajjad et al. (2024), sustainable leadership is about "the management of conflict without any attempt to resolve it" (p. 2858). When applying paradoxical thinking, leaders become cognitively complex, have broader views on problem situations, and are prepared to accept ambiguity and different experiences (Waldman et al., 2019). In such a way, leaders can generate new opportunities and gain deeper knowledge about sustainable problems (Marion & Uhl-Bien, 2001).

Critical Evaluation:

Although the systems-paradox approach is theoretically interesting, there are difficulties associated with empirical testing of this approach. One difficulty is that the theoretical constructs of interest are complex and, therefore, hard to measure. In addition, there is the normative aspect of the question concerning whether leaders ought to embrace paradoxes instead of trying to solve them. Future research should explore this area empirically.

4.2 Stakeholder Theory

Stakeholder theory is yet another theoretical approach that can be used in sustainable leadership. According to the theory, value creation is important for all stakeholders, not just shareholders (Freeman et al., 2020). In the context of sustainable leadership, the stakeholder group includes future generations and nature.

In this regard, Hörisch et al. (2014) highlight the relation between stakeholder theory and sustainable management by indicating that value creation for stakeholders plays a major role in both concepts.

Relational Engagement:

Stakeholder engagement in sustainable leadership not only focuses on stakeholder management but involves the practice of democratic and relational approaches to stakeholder engagement (Castelli, 2016). Sustainable leadership calls for dialogue, sharing of knowledge and decision-making processes which acknowledge the interdependencies between organizations, communities and ecosystems (Schad & Smith, 2019). The relational approach is what sets sustainable leadership apart from instrumental approaches to stakeholder engagement.

Complementarities and Tensions:

The stakeholder theory complements the systems theory by specifying the relationship obligations between organizations and larger systems. Conflict occurs where there are conflicting needs on behalf of different stakeholders (e.g., profits for the benefit of investors in contrast to environmental conservation for local community groups).

4.3 Triple Bottom Line Framework

Triple bottom line (TBL), offered by Elkington (1998), offers a structured way of implementing sustainable leadership. The TBL takes social equity and environmental sustainability into account along with economic performance of an organisation (Hallinger & Suriyankietkaew, 2018).

Sustainable leadership is about maintaining this equilibrium between the three during the whole lifespan of the organisation. As pointed out by Avery & Bergsteiner (2011a), "the single most important thing about sustainable leadership is ensuring that there is a balance between people, profits, and the environment throughout the life of the organisation" (p. 6). This means making decisions with consideration of all three perspectives.

TBL requires creating new metrics of performance. Besides defining sustainability goals, sustainable leaders should be able to measure and communicate them along three dimensions of economics, society, and environment (Epstein, 2008).

Critical Evaluation:

Another weakness of the TBL approach is its possibility to make sustainability problems too easy by simplifying them into figures. According to its opponents, TBL can cause an approach to sustainability which consists in fulfilling some boxes without making any changes at all. The TBL approach does not indicate what should be done to reconcile the three pillars, while this problem is solved by paradox theory.

4.4 Rhineland Model of Capitalism

One of the theoretical frameworks for understanding sustainable leadership is the theory of Rhineland capitalism proposed by Albert (1992). In contrast to Anglo-American capitalism that concentrates on maximising shareholder value, Rhineland capitalism values long-term focus, stakeholder involvement, corporate social responsibility, and sustainable environment (Avery & Bergsteiner, 2011a).

Twenty-three sustainable leadership practices were defined by Avery and Bergsteiner (2011a, 2011b) organised into three tiers: the foundation practices (long-term orientation, stakeholder orientation, corporate social responsibility), advanced practices (innovation, quality, employee development), and critical success factors (sustainability culture, leadership development). They represent the opposite of the "locust" strategy.

Complementarities and Contrasts:

The Rhineland approach can be said to be supportive of other theoretical approaches since it offers a complete set of practices. Nevertheless, this approach has faced criticism based on the claim that it is too culturally biased. Furthermore, the division between the Rhineland approach and the Anglo-American approach is also controversial since most organizations use both aspects.

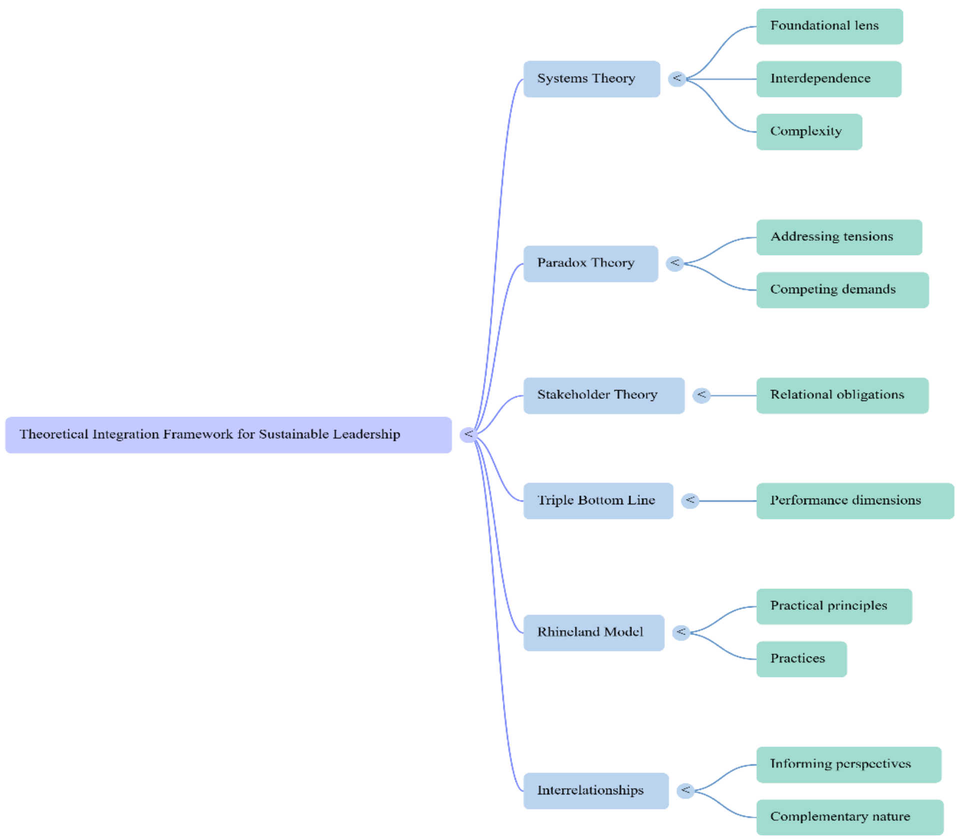
4.5 Theoretical Integration

The following is a potential comprehensive theoretical base to sustainable leadership that could incorporate the above paradigms:

- Systems theory explains the nature of interconnectedness and complexity of sustainability issues
- Paradox theory deals with conflicting pressures within sustainability

- Stakeholder theory recognizes the aspect of relational obligations and engagement
- Triple Bottom Line offers a performance base
- Rhineland capitalism presents several principles and practices

Figure 1: Theoretical Integration Framework for Sustainable Leadership



5. KEY MECHANISMS OF SUSTAINABLE LEADERSHIP

Building on the integrative framework proposed by Sajjad et al. (2024), this section critically examines individual-level and organisational-level mechanisms that underpin sustainable leadership functioning.

5.1 Individual-Level Mechanisms

5.1.1 Ethical Values

Ethical values form the basis of sustainable leadership (Hallinger & Suriyankietkaew, 2018). Sustainable leadership "is a way of being and doing" which requires embedding ethical values and sustainability. The ethical values include environment responsibility, social justice, intergenerational justice, integrity, honesty, and cultural diversity (Iqbal & Ahmad, 2021; Sharma, 2019).

Ethical values assist sustainable leaders in handling the paradoxes between maximising the value of shareholders and creating value for different stakeholders. According to Visser and Courtice (2011), sustainable leaders need to be aware of the complexities within the systems and use their value systems to cope with difficult situations.

In particular, the function of ethical values in facilitating paradoxical thinking is significant. By means of being mindful about ethical values and internalizing them, sustainable leaders can deal with ethical and business paradoxes at once (Sajjad et al., 2024). It is an intersection of ethics and paradoxes management that sets apart sustainable leadership from other approaches in terms of ethics and performance.

Critical Assessment:

Although the significance of ethical values is recognized, there is little information from the literature on the process of development and implementation of these values. Studies have revealed that ethical values could be situation-specific, thereby posing concerns regarding the manifestation of such values in other cultures. There is also a need for exploring the conflict between ethics and context.

5.1.2 Systems Thinking

Systems thinking is defined as "the discipline of seeing wholes and a framework for seeing interrelationships rather than pieces, and for seeing patterns of change rather than snapshots" (Senge, 1990, p. 68). Such cognitive approach is crucial for sustainability leaders because of the capacity to perceive interconnections in organisations (Hind et al., 2009).

Systems thinking offers sustainability leaders skills for assessing and predicting future developments related to their firms and the society, building new mindsets, and helping their organisations achieve sustainable value creation (Tideman et al., 2013). The approach highlights the importance of interconnections between various systems and creating mutual benefits between them (De Haan et al., 2015).

Moreover, systems thinking acknowledges the complex nature of the sustainability issue and the importance of being intellectually flexible and strategically agile (Henriksson & Grunewald, 2020). In addition, it forces decision-makers to understand the complexity of sustainable development problems, give up reductionist thinking, and use holistic thinking (Grewatsch et al., 2021).

Critical Assessment: Systemic thinking is a compelling notion, but an empirical one. Though much has been written about its significance, there are few studies on the development and assessment of systemic thinking in leaders. Moreover, there could be conflicting situations where systemic thinking goes against the demands of reductionist thinking driven by organizational pressures. The future studies should focus on how the leaders keep their systemic thinking under such pressures.

5.1.3 Mindfulness

Mindfulness can be defined as "the awareness that arises through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p. 145). In sustainable leadership, mindfulness helps leaders to refrain from mechanical actions and assists in self-reflection and critical reflection that are necessary for handling sustainability issues (Kurucz et al., 2017; Parkin, 2010).

The practice of mindfulness makes leaders aware of the consequences of organisational activities on the environment and society and also considers social justice issues (Rashkova et al., 2023). According to Corner and Pavlovich (2016), mindfulness is a metacognitive capability development process that helps overcome conflicts that result from the pursuit of contradictory objectives.

According to Burns et al. (2015), sustainability leaders are committed to change agents who participate in the work that is based on "a new way of being that is grounded in interconnectedness, relationship, and mindfulness" (p. 90). This kind of leader operates with transformed consciousness and high commitment to certain principles.

Critical Assessment: Mindfulness research in sustainability leadership has been increasing significantly; however, some gaps exist. Firstly, the connection between personal mindfulness and organisational sustainability outcomes should be empirically studied. Secondly, the mindfulness cultural background from the Buddhism religion requires consideration when implementing mindfulness in diverse organisations. Thirdly, there is insufficient literature regarding the integration of mindfulness into leadership development programs.

5.1.4 Reflective Practice and Reflexivity

Reflective practice and reflexivity are crucial for the understanding of ambiguous or atypical situations (Castelli 2016) and for making sense of socio-economic, ethical, ecological, cultural and political issues (Bolton 2010; Kurucz et al. 2017). Reflective practice, as defined by Craig (2020, p. 1769) is "reflecting on the meaning and significance of recent experiences in one's own life and in the lives of others in one's immediate environment, on a regular basis. Reflexivity is the ability to consider a problem, recognising the influence that one's own assumptions have on perceptions.

Reflection allows sustainability leaders to have purposeful and intentional processes of both self-reflection and critical reflection (Castelli, 2016). Self-reflection is a process that allows people to gain insight into their values, emotions, motivations, assumptions and goals (Burns et al., 2015; Kurucz et al., 2017). Critical reflection requires questioning, analysis, and interpretation of assumptions on a whole global perspective (Burns et al., 2015; Care et al., 2021).

Reflective practice is important for dealing with change and uncertainty and can support the development of an organisational culture where prevailing practices and values can be questioned without risk (Egleton et al., 2017; Raelin, 2002). Reflective practice offers a chance for sustainability leaders to consider ways they can address sustainability paradoxes (Van Neerijnen et al., 2021).

Critical Assessment: The literature on reflective practice in sustainable leadership is conceptually rich but lacks empirical grounding. Research is needed on the specific reflective practices that are most effective for sustainability leaders, the organisational conditions that support or inhibit reflection, and the outcomes of reflective practice for sustainability performance.

5.1.5 Resilience

Resilience, defined as the ability to "bounce back" or thrive amidst adversity (Luthans et al., 2010), is key to the sustainability leaders that operate in the context of VUCA, environments characterised by uncertainty, volatility, complexity and ambiguity (Duchek, 2020).

Resilience in sustainable leadership is seen not only as personal resilience but as collective resilience too (Giustiniano et al., 2020; Hallinger & Suriyankietkaew, 2018), which helps organisations to act resiliently during crises and rebuild from them (Hillmann & Guenther, 2021). Resilient sustainability leaders can operate at a longer time horizon and to transition from reactive to recovery, renewal, reorganisation and development modes (Folke 2006).

Sustainability leadership via resilience solutions involves balancing tensions between opposing elements, such as focus on the present versus the future; preparation versus adaptation; profit versus ethical purpose; and preparedness versus spontaneity (Zheng et al., 2018; Giustiniano et al., 2020).

Critical Assessment: The mechanisms between resilience and sustainability outcomes have yet to be explored, but resilience is becoming a key factor in sustainability leadership. There is limited understanding of the linkage of individual resilience to organisational resilience and organisational sustainability performance. Moreover, there can be conflicts between the two concepts of resilience (bouncing back) and transformation (fundamental change) which are both applicable to sustainability.

5.2 Organisational-Level Mechanisms

5.2.1 Sustainability Standards

Sustainability standards, being voluntary governance mechanisms, foster ethical and socially responsible actions in the face of conflicting sustainability issues (Christensen et al., 2017; Haack & Rasche, 2021; Nava & Tampe, 2022). These standards offer guidance in developing sustainable strategy and help to ensure consistency and transparency in disclosure of sustainability (Epstein, 2008).

Sustainable leadership is a key factor in setting standards for sustainability and to promote the diffusion at inter-organisational and intra-organisational levels (Epstein, 2008). Sustainable leaders create an ethical culture, hold stakeholders accountable and transparent with sustainability reporting and engagement in sustainability index ratings like the Dow Jones Sustainability Index (Robinson et al., 2011).

According to Rainey (2013), leadership for sustainability must include three components: ethics, governance and transparency. If these elements are not considered, sustainable development activities would not produce sufficient results.

Critical Assessment: The linkage between sustainability standards and sustainability impacts is a matter of dispute. Some studies indicate that standards might be symbolic and not actually substantive and are implemented for the purpose of gaining legitimacy and not for change. The goal of sustainable leaders is to manage these conflicts and ensure that standards are not "put on a pedestal" but are put into practice within organisations.

5.2.2 Sustainability-Oriented Corporate Culture

Creating a culture for sustainability within organisations is essential to achieve sustainable outcomes (Galpin et al., 2015). Sustainable leadership is correlated with the creation of communities that share values and norms (Evans, 2018; Skerlavaj, 2022); innovation, creativity and sustainability among the members of the organisation (Baumgartner, 2009; Bernal et al., 2018; Gerard et al., 2017).

It takes a paradigm shift in values and beliefs, openness, and knowledge management to build a culture of sustainability (Armani et al., 2020; Iqbal et al., 2020). This paradigm shift is a shift from a purely economic value base to a value system that includes the three values of people, planet and profit (Burnes, 2017). Fernandez et al (2020) state that sustainable leadership establishes a culture that is inclusive, enabling leadership to be cultivated throughout the organisation by fostering the exchange of views and cognitive diversity.

Organisational sustainability culture influences employee behaviour in a way that encourages them to focus their activities on achieving economic effectiveness, environmental sustainability and social justice (Paraschiv et al., 2012). This change is required to integrate sustainability into organisational core processes and make it the basis for organisational actions.

Critical Assessment: Sustainability culture is often presented in an idealised way and few have mentioned the challenges and obstacles that need to be faced. A lack of interest in cultural change, path dependency and prevalence of dominant paradigms can be barriers to the development of sustainability culture. Future studies should explore the ways leaders surmount these challenges and the prevailing methods for cultural change.

5.2.3 Stakeholder Engagement

Sustainability is driven by the pressure of stakeholders (Herremans et al., 2016; Hörisch et al., 2014), and for sustainable leaders it is necessary to interact with stakeholders. Stakeholder engagement is not about inter-stakeholder conflict, but about common objectives and value co-creation in the interactions among stakeholders (Hörisch et al., 2014; Freeman et al., 2020).

Sustainable leadership is characterized by more interactive and democratic processes of value creation and sustainability issues (Castelli, 2016; Denis et al., 2012; Kurucz et al., 2017; McGhee & Grant, 2017). Consequently, sustainable leaders should not only be interested in crossorganisational collaboration (Schad & Smith, 2019), but also in ideas of shared value and inclusiveness (Henriksson & Grunewald, 2020; Skerlavaj, 2022).

Since sustainability problems are too complex to be solved by only one organisation, industry or country alone, the issues require knowledge, skills and resources from each sector (Gray & Stites, 2013). Sustainable leadership ought to communicate with stakeholders and create knowledge bases in multi-stakeholder network.

Critical Assessment: Although stakeholder engagement is commonplace, there is a lack of literature that guides in the management of conflicting stakeholder demands, especially one that is deeply rooted in values. There is a need to explore what future research could reveal about sustainable leaders as they struggle to accommodate and work in environments where stakeholder interests are truly or essentially irreconcilable; and how they develop trust and collaboration among conflicting stakeholder groups.

5.3 Integrating Individual and Organisational Mechanisms

Individual and institutional aspects of sustainable leadership are interdependent and reinforcing. This integration takes place in a number of ways:

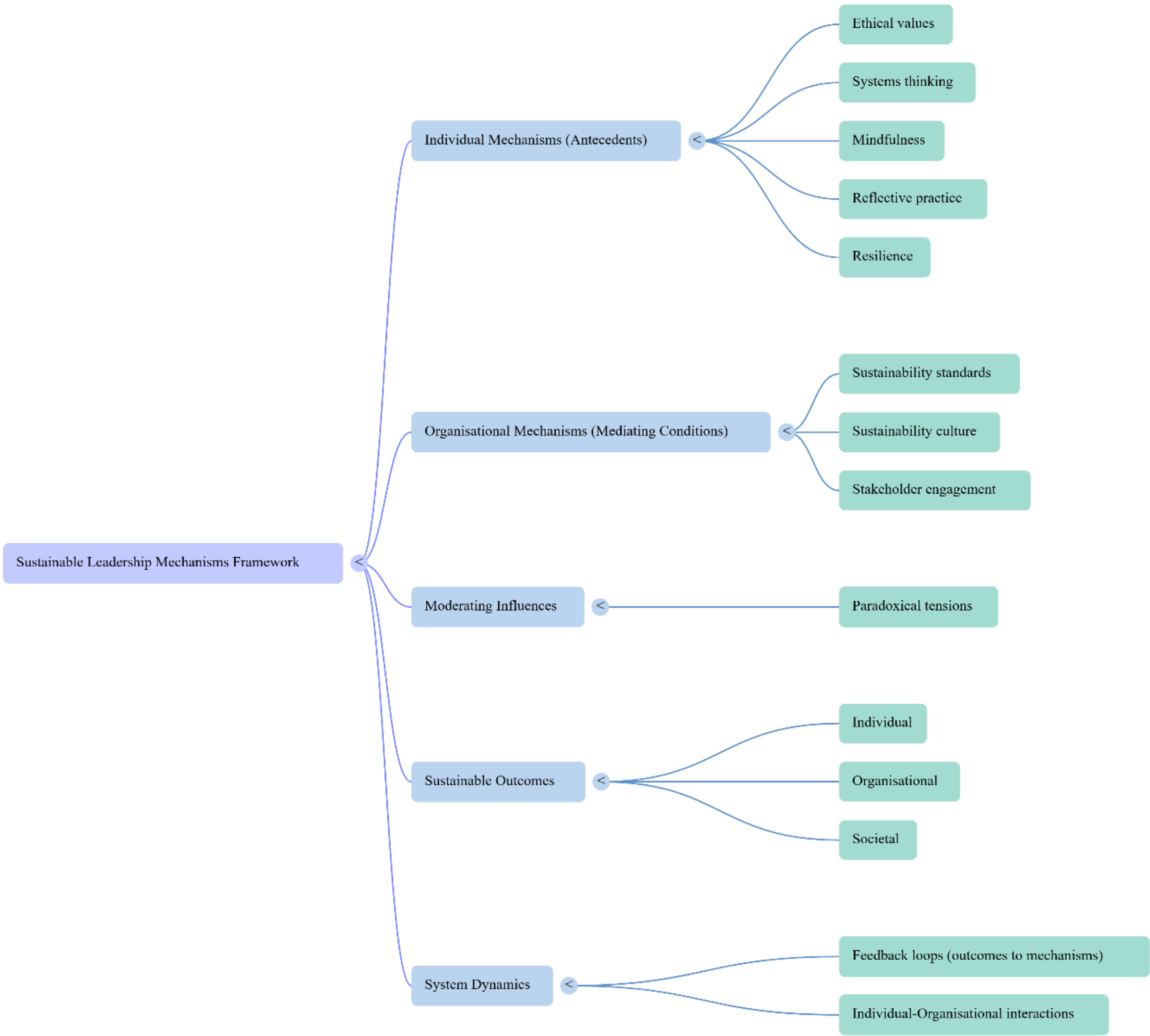
Ethical values influence the quality and nature of stakeholder engagement, firstly. Leaders who are strong on ethics are more likely to engage in authentic relationships with a broad range of stakeholders, and systems thinking will help them to account for the relationships between the interests of different stakeholders and the system-level consequences of the decisions they make about engagement.

Secondly, there is a role for mindfulness and reflexivity in the management of paradox at the individual and at the organisational level. Reflective practice can help to challenge assumptions that might continue unsustainable practices, and mindful leaders are more aware of tensions and contradictions. This individual capability can promote organisations' learning and capability of paradoxical thinking throughout the organisation.

Thirdly, sustainability culture reinforces the impact of one's leadership skills. If sustainability values are entrenched in organisational culture, individual leaders who are trying to apply sustainability will be supported, reinforced and amplified by the culture. However, with a low or non-existent culture of sustainability, individual leaders' sustainability efforts can find resistance and be hard to maintain.

Fourth, stakeholder engagement helps shape and inform individual mechanisms with its feedback. Working with external stakeholders may be a catalyst for challenging assumptions, broadening the system thinking and strengthening the ethical values of the leader. Internal stakeholder engagement can achieve a shared sense of commitment to sustainability and enable the development of sustainability culture.

Figure 2: Integrated Framework of Sustainable Leadership Mechanisms



6. THE INTELLECTUAL STRUCTURE OF SUSTAINABLE LEADERSHIP RESEARCH

This section synthesises their key findings, supplemented by more recent contributions.

6.1 Volume, Growth, and Geographic Distribution

Sustainable leadership knowledge base is small but developing rapidly. Although the first literature related to the topic was published at the beginning of the 1990s, quite an impressive volume of literature has become available recently due to the critical mass of the field. The research on sustainable leadership is carried out mostly in the Western world among highly developed countries such as the USA, Canada, the UK, and Australia, which constitutes more than half (54%) of the total number of literature (Hallinger & Suriyankietkaew, 2018). Nevertheless, the topic is attracting lots of researchers from other parts of the world including Europe, Asia, Africa, and Latin America.

According to Vladić et al. (2024), even though it is discussed academically for about two decades, sustainable leadership seems to be a young research field in terms of both number of papers and authors.

6.2 Schools of Thought

Six communities have been revealed based on the methodology of author co-citation analysis:

1. Managerial Leadership: The Core School is composed of authors belonging to two perspectives: organisational learning and change (Kotter, Drucker, Handy, Schein) and management of complex organisations (Weick, Pfeffer, Mintzberg). This school serves as a theoretical background for the concept of sustainable leadership.
2. Sustainable Leadership: The second community pertains to the Rhineland tradition and includes the value-based perspective which involves three components – social, economic and environmental – as represented by Avery, Kantabutra, and Bergsteiner.
3. Leadership for Sustainable Change: This community includes authors Hargreaves, Fink, Fullan, Argyris, and Schon who investigate sustainable development and change issues.
4. Leadership for Corporate Sustainability: The research conducted by Griffiths, Benn, Freeman, and Dunphy is oriented at the exploration of the role of leaders in stakeholder participation in the process of value generation and social responsibility.
5. Responsible Leadership: This school includes authors Maak, Pless, Waldman, Matten, and Stahl who attempt to promote responsible business conduct.
6. Ethical and Transformational Leadership for Sustainability: This community of authors, including Bass and Avolio, investigates authentic and transformational leadership styles.

6.3 Research Front

The co-word analysis reveals that sustainable leadership, information management, corporate sustainability, transformational leadership, decision-making, risk management, higher education, culture, and professional development are some of the research frontiers (Hallinger & Suriyankietkaew, 2018). This research indicates that the research is concentrated on understanding the capacity building of leaders to achieve sustainable development goals through changes.

7. PARADOXICAL TENSIONS IN SUSTAINABLE LEADERSHIP

Paradoxes are inherent features of the sustainable leadership literature, specifically with respect to paradoxes that may result from the contradictions within the sustainability agenda itself. As stated by Schad et al., "paradox is persistent contradiction between interdependent elements" (2016, p. 6).

7.1 Nature of Paradoxical Tensions

The paradoxes of societal grand challenges arise due to the features of plurality, dynamics, and scarcity of grand challenges. The contradictions between the relations become a great obstacle to solving the conflicting demands of sustainability leaders (Schad et al., 2016; Schad & Smith, 2019).

According to Ferdig (2007), contradiction, conflict, and conflicts are inherent components of any sustainable system. Failure to understand the complex and contradictory nature of a dynamic system becomes an obstacle to solving grand challenges (Schad & Bansal, 2018; Van der Byl et al., 2020).

Types of Paradoxical Tensions:

The various kinds of paradoxes found among sustainability scholars are:

1. Performing Paradox: Paradoxes associated with short-term performance and long-term sustainability (Smith & Lewis, 2011).
2. Belonging Paradox: Paradoxes associated with self and group issues (Smith & Lewis, 2011).
3. Learning Paradox: Paradoxes associated with exploitation and exploration of sustainability (Smith & Lewis, 2011).
4. Organising Paradox: Paradoxes associated with control and flexibility in terms of sustainability (Smith & Lewis, 2011).
5. Economic, Social, Environmental Paradoxes: Paradoxes associated with all the three elements of sustainability (Hahn et al., 2018).

7.2 Managing Paradoxical Tensions

It means that a sustainable leader is capable of addressing contradictions by recognizing, remaining within, resolving, accepting, and navigating paradoxes without getting any immediate organisational benefit from it (Hahn et al., 2018; Luscher & Lewis, 2008; Van Neerijnen et al., 2021). A sustainable leader does not mean overlooking the financial side of sustainability; it means constant searching for solutions to resolve contradictions through iterations of many different options (Smith & Lewis, 2011, p. 392).

The leaders who apply paradoxical reasoning have a high level of cognitive complexity, have a broad scope of solving difficult issues, and are receptive to ambiguity and diverse experiences (Waldman et al., 2019). An application of paradox approach allows sustainable leaders to come up with innovative alternatives as a result of constantly resolving paradoxes (Skerlavaj, 2022; Waldman et al., 2019) and gaining knowledge on complex sustainability issues (Marion & Uhl-Bien, 2001).

Strategies for Managing Paradoxes:

A few methods to handle paradox tensions include:

1. Acceptance: Accepting the tensions as they arise rather than resolving them immediately

2. Differentiation: Being able to differentiate between paradoxes and problems that need solving
3. Integration: Finding synergy between conflicting items
4. Temporal Splitting: Dealing with different elements at different times
5. Spatial Splitting: Handling different elements in different areas of an organization
6. Transcendence: Escaping from lower to higher levels where tensions become complementary

Critical Assessment: The paradoxical method offers many options for conceptualization, but it carries some practical implications connected with the ways in which the leaders apply these methods in reality. This should be considered while studying when each of the approaches is most effective, what skills a leader acquires to deal with paradoxes, and what context promotes such thinking.

8. OUTCOMES OF SUSTAINABLE LEADERSHIP

Empirical research has associated sustainable leadership with positive outcomes at individual, organisational, and societal levels. This section critically evaluates the evidence base for these associations.

8.1 Individual-Level Outcomes

Individually, sustainable leadership correlates positively with the following:

- Job satisfaction: Suriyankietkaew and Avery (2014) discovered that 20 out of 23 sustainable leadership practices increased job satisfaction among workers. Cayak and Cetin (2018) also established positive correlations with employee satisfaction.
- Organizational commitment: Sustainable leadership practices increase employees' emotional connection to the organization (Cayak & Cetin, 2018).
- Organizational trust: Dalati et al. (2017) discovered that there were positive correlations between sustainable leadership and organizational trust.
- innovative behavior: Javed et al. (2021) and Skerlavaj (2022) revealed that sustainable leadership increases innovation among employees.
- Less turnover intention: According to Moreira et al. (2022), sustainable leadership lowers turnover intention because it makes employees feel that the organization invests in their well-being and development.

Work-family balance and other sustainable leadership practices were identified as predictors of employee satisfaction by Lee (2017).

Critical Assessment: The findings related to individual outcomes are encouraging yet limited in many ways. First, most of the research is based on cross-sectional data, making causal inferences difficult. Second, the samples used in the majority of the research come from Western countries, thus limiting the extent of generalization. Lastly, the process through which sustainable leadership impacts the said outcomes needs further exploration.

8.2 Organisational-Level Outcomes

As far as the organisational level is concerned, sustainable leadership is linked to:

- Firm's financial performance: Suriyankietkaew and Avery (2016) established the existence of significant correlations between sustainable leadership and firm's financial performance.
- Learning capacity: Sustainable leadership improves the learning ability of organisations (Iqbal & Ahmad, 2021).
- Stakeholder satisfaction: Suriyankietkaew and Avery (2014) established significant correlations between sustainable leadership and stakeholder satisfaction.
- Customer satisfaction: Suriyankietkaew (2016) found out that sustainable leadership is positively related to customer satisfaction.
- Reputation of organisations: Sustainable leadership improves the reputation of organisations (Iqbal & Ahmad, 2021).
- Sustainability performance: Empirical studies conducted recently have established significant correlations between sustainable leadership and sustainability performance (Burawat, 2019; Iqbal et al., 2020).
- Environmental performance: Javed et al. (2020) and Iqbal et al. (2021) have found out the positive relationships between sustainable leadership and environmental performance.

Table 4: Evidence for Outcomes of Sustainable Leadership

Theme	Key Studies	Method	Context	Main Finding	Limitation
Job Satisfaction	Suriyankietkaew & Avery (2014)	Quantitative survey	Thailand	20 of 23 practices improved satisfaction	Cross-sectional; self-report
Job Satisfaction	Cayak & Cetin (2018)	Quantitative survey	Turkey	Positive association with satisfaction	Cross-sectional; limited generalisability
Organisational Commitment	Cayak & Cetin (2018)	Quantitative survey	Turkey	Positive association with commitment	Cross-sectional

Organisational Trust	Dalati et al. (2017)	Quantitative survey	Syria	Positive relationship with trust	Conflict context may limit generalisability
Innovative Behaviour	Javed et al. (2021)	Quantitative survey	Pakistan	Positive association mediated by creative self-efficacy	Cross-sectional
Turnover Intention	Moreira et al. (2022)	Quantitative survey	Portugal	Reduced turnover intention mediated by engagement	Cross-sectional
Financial Performance	Suriyankietkaew & Avery (2016)	Quantitative survey	Thailand	Positive relationship with financial performance	Cross-sectional; self-report
Sustainable Performance	Burawat (2019)	Quantitative survey	Thailand	Positive relationship in SMEs	Cross-sectional; SME context
Environmental Performance	Iqbal et al. (2021)	Quantitative survey	Asia	Positive relationship moderated by managerial discretion	Cross-sectional
Sustainability Performance	Iqbal et al. (2020)	Quantitative survey	Pakistan	Positive relationship mediated by psychological empowerment	Cross-sectional

Critical Assessment: Even though organisational-level effects have been profusely cited, there is a lack of empirical support for them. There are many cases where the links have not been empirically proven but are only conceptual. Further research is needed to investigate the links between sustainable leadership and organisational performance in terms of factors like organisational culture, innovativeness, and stakeholder relationships.

9. FUTURE RESEARCH DIRECTIONS

Despite significant progress, several gaps remain in sustainable leadership scholarship. This section articulates specific research questions organised by theme, building on prior reviews and adding original contributions.

9.1 Deepening Conceptualisation and Measurement

Although sustainable leadership has been established as multidimensional, it bears similarities to other leadership theories in terms of dimensionality and its measures (Liao, 2022).

Research Questions:

1. What are the unique dimensions of sustainable leadership?
2. How can sustainable leadership be measured accurately and effectively?
3. What is the factor structure of sustainable leadership and how consistent is it across cultures and organizations?
4. How does sustainable leadership hang together and what dimensions are critical to sustainability outcomes?

9.2 Empirical Validation of Frameworks

Considering that sustainable leadership research is still in its early stages, researchers have opportunities to empirically test multilevel sustainable leadership models and their underlying theories (Sajjad et al., 2024).

Research Questions:

1. How do individual and organisational mechanisms interact to produce sustainable outcomes?

2. What are the boundary conditions for sustainable leadership effectiveness?

3. Which sustainable leadership practices are most effective in which contexts?

4. How do sustainable leadership practices combine to create synergistic effects?

9.3 Cross-Cultural and Developing Economy Contexts

Beyond Thailand, there is limited research on sustainable leadership in developing countries (Hallinger & Suriyankietkaew, 2018). Given the importance of Sustainable Development Goals in developing contexts, this gap is significant.

Research Questions:

1. How do sustainable leadership practices vary across emerging economies?
2. What cultural values and institutional factors support or constrain sustainable leadership?
3. How do sustainable leadership practices differ between developed and developing economies?
4. What contextual adaptations are necessary for sustainable leadership to be effective in developing countries?
5. How do sustainable leadership practices address specific sustainability challenges in developing economies (e.g., poverty, inequality, environmental degradation)?

9.4 Paradoxical Tensions and Leadership

Paradoxes and tensions have become integral to leadership dynamics (Pearce et al., 2019; Schad & Smith, 2019), but limited work has explored paradoxical tensions in sustainability leadership (Sajjad et al., 2024).

Research Questions:

1. How do sustainability leaders recognise and respond to paradoxical tensions?
2. What capabilities enable leaders to manage paradoxes effectively?
3. How do leaders navigate trade-offs between competing sustainability goals?
4. What organisational conditions support paradoxical thinking in sustainability leadership?
5. How do leaders build organisational capacity for paradoxical thinking?
6. How do leaders manage trade-offs between short-term financial pressures and long-term environmental goals?

9.5 Dynamic and Longitudinal Studies

Future research should study dynamic antecedent variables, as sustainable leadership behaviour may differ over time (Liao, 2022). Dynamics in sustainable leadership include transformation and growth of leadership behaviour (McClean et al., 2019).

Research Questions:

1. How does sustainable leadership develop and evolve over time?
2. What life experiences and developmental processes shape sustainable leadership?
3. How do leaders learn to manage sustainability paradoxes through experience?
4. What are the trajectories of sustainable leadership development?
5. How do critical incidents (e.g., crises, scandals, regulatory changes) shape sustainable leadership development?
6. How does sustainable leadership evolve over time during crises?

9.6 Mediating and Moderating Mechanisms

Further studies should focus on finding mediators between sustainable leadership and its effects through appropriate theories including AMO theory, similarity-attraction theory, and social learning theory (Liao, 2022). Further, researchers could study the influence of normative and institutional forces on sustainable leadership emergence.

Research Questions:

1. What mechanisms mediate the relationship between sustainable leadership and performance outcomes?
2. How do organisational culture, climate, and systems moderate sustainable leadership effectiveness?
3. What contextual factors enhance or constrain sustainable leadership emergence?
4. How do stakeholder pressures shape sustainable leadership practices?
5. What individual attributes moderate the impact of sustainable leadership on followers?
6. Which mechanisms mediate the relationship between sustainable leadership and employee innovation?

9.7 Methodological Advancements

Research Questions:

1. What are the challenges in operationalising sustainable leadership, and how can they be addressed?
2. How can mixed-methods approaches enhance understanding of sustainable leadership dynamics?

3. What longitudinal designs are appropriate for studying sustainable leadership development?

4. How can qualitative methods (case studies, ethnography, grounded theory) deepen understanding of sustainable leadership processes?

10. PRACTICAL IMPLICATIONS

The review of sustainable leadership literature offers several implications for practice.

10.1 Leadership Development

The leadership development programme must target the cultivation of sustainable leadership qualities such as ethics, systems thinking, mindfulness, reflective practice, and resilience (Sajjad et al., 2024). The development programme must also take into consideration the relationship between these qualities and sustainable strategy implementation.

The development of leadership must target the creation of leaders who can appreciate system dynamics and the value system in handling the external environment (Visser & Courtice, 2011). Some elements to be incorporated in the programme are:

- Ethical reasoning development using case studies and ethical discussion
- Skills in systems thinking using simulation and systems mapping techniques
- Mindfulness techniques using meditation and reflective practice
- Reflective practice using journal writing, peer coaching, and critical incident analysis
- Resilience using stress management and adaptive capacity building
- Skills in paradoxical thinking using exercises in integration of conflicting issues

10.2 Organisational Transformation

The development of sustainable leadership requires a detailed knowledge of the context within which the organisation operates and the realisation of the need for the development of sustainability culture, standards, and stakeholder engagement (Sajjad et al., 2024).

The creation of sustainability culture involves a huge change in attitude and values, as well as a readiness to share information (Iqbal et al., 2020). It implies a change in perspective from the pure pursuit of profitability to a combination of people, planet, and profit (Burnes, 2017).

Practical Recommendations:

1. Embed sustainability in organisational purpose: State an organisational purpose which encompasses economic, social, and environmental aspirations.
2. Grow sustainability leadership capabilities: Engage in leadership development programmes which build sustainable leadership capabilities.
3. Create enabling structures: Design structures such as governance processes, sustainability task forces, and reporting frameworks.

4. Become open to stakeholder engagement: Provide avenues for engaging various stakeholders.
5. Capitalize on sustainability metrics: Implement performance measurement using the three bottom line framework.
6. Build organisational resilience: Build organisational capacity to adapt and transform in the face of sustainability challenges.
7. Emergency reflexivity: Provide room for re-thinking.

10.3 Policy Implications

A clear understanding of the significance and the time-sensitive nature of sustainability leadership and its implementation for tackling grand societal challenges can be helpful for practitioners and policymakers (Sajjad et al., 2024). Policymakers should facilitate the implementation of sustainable leadership through regulatory frameworks that deliver value to stakeholders and help in the protection of the environment. Governments can organize training programs for leaders on sustainability leadership skills.

Policy Recommendations:

1. Regulatory frameworks: Formulate regulatory frameworks that motivate organizations to implement sustainable leadership practices like sustainability reporting, green procurement, and sustainable incentives.
2. Education programs: Help in developing leadership education programs that focus on sustainability competencies in business schools and executive education.
3. Cross-sectoral cooperation: Develop platforms for cooperation among different sectors on sustainability challenges.
4. Research funding: Finance the empirical research on sustainability leadership and related contextual issues.
5. Sustainability standards: Promote voluntary sustainability standards.

RELEVANCE TO ISLAMIC FINANCE AND SUSTAINABLE DEVELOPMENT

The theories of sustainable leadership that have been discussed in this review carry great significance for Islamic finance organizations because these organizations are increasingly being asked to reconcile ESG criteria along with Shari'ah criteria in their operations (Hassan & Aliyu, 2018; Sairally, 2022). Islamic finance is an inherently values-based financial system that places great importance on values like social justice and welfare and non-harm (Kamla & Haque, 2021; Laldin & Furqani, 2021).

Ethical values, stakeholder participation, and paradoxical thinking inherent in the notion of sustainable leadership are congruent with several Islamic principles like khalifah (stewardship), ʻadl (justice), amānah (trust), and maqāṣid al Sharīʻah (higher objectives of Islamic law) that emphasize the safeguarding of faith, life, intellect, progeny, and wealth for both current and future generations (Ahmed, 2023; Saad & Haniffa, 2019). By incorporating sustainable leadership models, Islamic financial institutions may improve their ESG governance as well as develop sustainable products like green sukuk while making their meaningful contribution towards the SDGs of the United Nations (Ali & Quayes, 2022; Laldin & Furqani, 2021).

Additionally, the findings from the review about managing paradoxical tensions provide practical guidance for Islamic finance executives who must deal with paradoxical tensions between profit making, Shari'ah compliance, and sustainability performance, a task which is becoming increasingly difficult as Islamic banks struggle to balance their stakeholders' interests and the long-term environmental and social obligations (Sairally, 2022). Individual-level mechanisms mentioned in this review such as ethical orientation, systems thinking, mindfulness, reflection and resilience are capabilities that can be developed in the Islamic financial institutions through appropriate leadership development programmes based on sustainability science and Islamic ethics (Ahmed, 2023; Sairally, 2022).

11. CONCLUSION: CONTRIBUTIONS AND SYNTHESIS

The above review has presented a detailed analysis of the literature on sustainable leadership with regard to definition, theories, mechanisms, structure, and outcomes. Sustainable leadership has been defined as a unique style of leadership that includes factors such as economics, society, and environment within the organizational process. The uniqueness of sustainable leadership is evident from the fact that paradoxes are identified and managed and many theories are integrated.

Theoretical Contributions:

The review makes several contributions to sustainable leadership research:

1. Definition Synthesis: We contribute an integrated definition of sustainable leadership, reflecting its dynamism, multilevel and processual nature, involving ethical values, systems thinking, mindfulness, reflection, and stakeholder engagement.
2. Theory Typology: We provide a typology of theoretical perspectives – systems-paradox theory, stakeholder theory, triple bottom line, and Rhineland capitalism – analyzing their complementarities and tensions, laying a ground for theory synthesis.
3. Mechanism Synthesis: We synthesize individual and organizational mechanisms and formulate an integrated framework explaining how they interrelate, overcoming the problem of fragmentation of literature.
4. Evidence Base Critique: We critically assess the evidence base supporting sustainable leadership results, separating the well-established facts from those which need further research.
5. Structured Research Agenda: We provide structured research questions related to themes of concept definition, measurement, validity, context, paradox, dynamics, and methodology.

Key Findings:

The review outlines key mechanisms responsible for ensuring sustainable leadership in both individual and organizational context. Individual mechanisms such as ethical values, systems thinking, mindfulness, reflection, and resilience are combined with organizational mechanisms such as sustainability standards, sustainability culture, and stakeholders' engagement to ensure sustainable results. Such mechanisms work under conditions of paradoxes, which are handled through paradox-tolerant thinking.

Limitations:

It is also important to note the restrictions that the current review is subject to. Firstly, the review only includes sources that have been written in English and therefore does not consider any relevant literature that has been written in other languages. Secondly, the search was carried out using such sources as Scopus, Web of Science, and Google Scholar and hence did not include any literature found in other sources. Thirdly, the bibliometric analysis only considered relevant bibliometric indicators without assessing methodology.

Future Outlook:

Studying sustainable leadership is relatively new in the academic field and characterised by the lack of theory development, empirical research and geographically concentrated in western developed nations. For future research, more efforts need to be put into developing a robust framework, testing it empirically, studying paradoxes and trajectories.

Since many of the problems facing society have become highly complex and interconnected, the role of sustainable leadership is going to be increasingly important. Organizations, leaders, policy makers and those in the field of leadership development need to appreciate the significance of sustainable leadership and develop the competencies required to deal with sustainability issues. Sustainable leadership provides a means through which organizations can cope with the conflict between profit, social justice and environmentalism and create sustainable value.

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