

MODELING *RIBA*-FREE CIRCULAR ECONOMY: A STRATEGIC ROADMAP FOR SUSTAINABLE RESOURCE MANAGEMENT IN MUSLIM-MAJORITY COUNTRIES

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Abstract

The growing urgency of environmental degradation and resource inefficiency has intensified the search for sustainable economic models that are not only environmentally sound but also ethically grounded. In Muslim-majority countries, sustainability initiatives often face structural tension due to reliance on interest-based financial systems that conflict with Islamic economic principles, particularly the prohibition of *riba*. This study aims to develop a conceptual model of a *riba*-free circular economy and to formulate a strategic roadmap for sustainable resource management that aligns circular economy principles with Islamic economic ethics. The research adopts a qualitative–conceptual design supported by systematic analysis of secondary data, policy documents, and comparative case studies from selected Muslim-majority countries. Conceptual modeling and analytical synthesis are employed to integrate circular economy mechanisms with *riba*-free financial instruments and governance structures. The findings demonstrate a strong normative and operational compatibility between Islamic economic principles and circular economy objectives, particularly in promoting long-term investment, risk-sharing, and real-sector engagement. The proposed strategic roadmap highlights the roles of regulatory alignment, Islamic finance innovation, and institutional coordination in operationalizing sustainable resource management. The study concludes that a *riba*-free circular economy constitutes a viable and contextually relevant pathway for advancing sustainability in Muslim-majority countries, offering both theoretical enrichment and practical guidance for policymakers and practitioners.

Keywords: Circular Economy, Muslim-Majority Countries, Riba-Free Economy



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INTRODUCTION

The increasing convergence of ecological degradation, resource scarcity, and socio-economic inequality has intensified global interest in alternative economic paradigms that emphasize sustainability and ethical governance (Meskovic et al., 2024; Qureshi et al., 2025). Circular economy models have emerged as a prominent response to the failures of linear production–consumption systems, offering frameworks that prioritize resource efficiency, waste minimization, and regenerative production cycles (Bouteraa et al., 2024). In many developing regions, particularly in Muslim-majority countries, these challenges are further compounded by demographic pressures, uneven industrial development, and fragile environmental governance structures. Such conditions demand context-sensitive economic models that address sustainability without reproducing structural inequities embedded in conventional growth-oriented systems (Zafar & Abu-Hussin, 2025).

Islamic economic thought provides a distinctive normative foundation for addressing sustainability challenges through principles emphasizing justice, balance, stewardship of natural resources, and prohibition of exploitative financial practices (Haddou & Boughrara, 2025; Rafiki et al., 2025). Concepts such as *khalifah* (stewardship), *mizan* (balance), and *maslahah* (public interest) frame economic activity as morally accountable to both society and the environment. Within this framework, the prohibition of *riba* occupies a central position, shaping financial interactions toward risk-sharing, real-sector engagement, and social responsibility (Aisyah et al., 2025; Mawardi et al., 2024). These ethical principles offer conceptual alignment with the objectives of the circular economy, particularly in their shared emphasis on long-term value creation and systemic resilience.

Despite the conceptual compatibility between Islamic economic ethics and circular economy principles, practical integration remains underdeveloped in contemporary policy and research discourse (Sharif & Faisal, 2025; Shikur & Akkas, 2024). Many sustainability strategies in Muslim-majority countries continue to rely on conventional financial instruments that conflict with Sharia-based norms, potentially undermining legitimacy and public acceptance (Timur et al., 2025). The absence of an explicitly *riba*-free circular economy framework limits the ability of policymakers and practitioners to operationalize sustainability agendas that are both economically viable and religiously grounded (Islam, 2025). This condition underscores the need for a systematic modeling approach that bridges circular economy mechanisms with Islamic financial and ethical principles.

The dominant circular economy models promoted in global sustainability discourse are largely grounded in interest-based financial systems and market mechanisms developed in secular economic contexts. These models often assume unrestricted access to conventional credit instruments, debt-based financing, and speculative investment structures that are incompatible with Islamic jurisprudence (Sari et al., 2024; Sumi et al., 2024). In Muslim-majority countries, this structural mismatch creates tension between sustainability aspirations and compliance with religious norms, resulting in partial adoption or superficial policy alignment rather than substantive systemic transformation (Mboutchouang Kountchou et al., 2025; Mujiatun et al., 2025).

Institutional attempts to implement sustainability initiatives in Muslim-majority contexts frequently encounter challenges related to financing mechanisms, governance coordination, and stakeholder trust. *Riba*-based financing structures may discourage participation from Islamic financial institutions, religious authorities, and ethically motivated investors (Hapsari et al., 2024). This situation restricts capital mobilization for circular initiatives such as waste-to-resource projects, renewable energy systems, and sustainable agriculture (Hatem Falih et al., 2025; R.V. et al., 2024). The lack of Sharia-compliant financial pathways thus becomes a structural barrier to scaling circular economy practices in these regions (Tumewang et al., 2024).

Academic research has yet to adequately address this incompatibility by proposing integrative models that reconcile circular economy strategies with riba-free financial systems. Existing studies often treat Islamic finance and sustainability as parallel domains rather than interdependent systems (Afdawaiza et al., 2025; Pusparini et al., 2024). This fragmentation results in policy recommendations that lack operational coherence and theoretical integration. The absence of a comprehensive strategic roadmap tailored to Muslim-majority countries represents a critical gap that this study seeks to address (Alghafes et al., 2024).

This study aims to develop a conceptual model of a riba-free circular economy that integrates Islamic economic principles with contemporary sustainability frameworks. The research seeks to articulate how circular resource flows, ethical production, and consumption practices can be systematically supported through Sharia-compliant financial instruments. By constructing a normative and operational framework, the study aspires to provide a foundation for sustainable resource management that aligns economic efficiency with moral accountability (Fathoni et al., 2025; Işık et al., 2025).

A further objective of this research is to formulate a strategic roadmap that can guide policymakers, financial institutions, and development agencies in Muslim-majority countries. The roadmap is intended to translate abstract ethical principles into actionable policy instruments, governance mechanisms, and financial structures (Rofik et al., 2025). Emphasis is placed on identifying institutional roles, regulatory alignments, and cross-sector collaborations necessary to operationalize a riba-free circular economy at national and regional levels (Xiong & Chia, 2024).

The study also seeks to contribute to theoretical advancement by positioning Islamic economic thought as an active contributor to global sustainability discourse. Through analytical synthesis and conceptual modeling, the research aims to demonstrate how Islamic finance and circular economy principles can mutually reinforce one another (Ergen Keleş et al., 2025). This objective extends beyond regional relevance, offering insights applicable to ethical finance and sustainability debates in diverse socio-economic contexts (Arissaputra et al., 2025).

The existing literature on circular economy predominantly focuses on technological innovation, industrial symbiosis, and environmental performance metrics, often neglecting the ethical and financial dimensions that shape implementation outcomes (Siddiqui et al., 2024). Studies addressing sustainability in Muslim-majority countries frequently adopt imported frameworks without critically examining their normative assumptions. This approach limits contextual relevance and overlooks the role of religious and ethical values in shaping economic behavior and policy legitimacy (Nawaz et al., 2025).

Research on Islamic finance has increasingly explored themes of social justice, environmental responsibility, and sustainable development. However, these studies often remain confined to sectoral analyses, such as green sukuk or Islamic social finance instruments, without embedding them within a broader circular economy paradigm (Suhartanto et al., 2024). The lack of systemic modeling prevents a holistic understanding of how riba-free finance can support circular production, consumption, and waste management cycles.

The intersection between circular economy theory and Islamic economic principles remains underexplored, particularly in terms of strategic implementation frameworks. Few studies provide integrative models that connect ethical finance, resource management, and institutional governance (Chaouali et al., 2024; Javid et al., 2024). This gap restricts the ability of scholars and practitioners to design coherent sustainability strategies that are both contextually grounded and theoretically robust. Addressing this lacuna constitutes a central motivation for the present research (Nasih et al., 2025; Ooi & Hooy, 2025).

The novelty of this study lies in its integrative modeling of a riba-free circular economy as a unified system rather than a juxtaposition of separate sustainability and Islamic finance concepts. By synthesizing circular economy mechanisms with Sharia-compliant financial principles, the research introduces a conceptual architecture that redefines sustainability

through an ethical economic lens (Bakhshizadeh Borj et al., 2025; Elsotouhy et al., 2023). This approach moves beyond incremental adaptations of existing models, offering a structurally distinct alternative grounded in moral economy theory (Riaz et al., 2023).

The proposed strategic roadmap represents an original contribution by operationalizing abstract ethical principles into concrete policy and institutional strategies. The roadmap articulates pathways for aligning financial instruments, regulatory frameworks, and stakeholder incentives with circular economy objectives. This practical orientation enhances the applicability of the research for decision-makers seeking culturally legitimate and economically viable sustainability solutions in Muslim-majority contexts.

The justification for this research is further reinforced by its potential to enrich global sustainability discourse with non-Western epistemological perspectives. By foregrounding Islamic economic principles, the study challenges the implicit universality of conventional sustainability models and advocates for pluralistic approaches to sustainable development (Jan et al., 2023). Such a contribution is timely and necessary in an era characterized by ecological crises that demand ethically grounded and culturally inclusive economic transformations.

RESEARCH METHOD

Research Design

This study employed a qualitative-conceptual research design combined with systematic literature analysis and analytical modeling to construct a riba-free circular economy framework suitable for Muslim-majority countries. The research design was selected to enable in-depth exploration of normative economic principles, institutional structures, and sustainability mechanisms that cannot be adequately captured through purely quantitative approaches. Conceptual modeling was used as the primary analytical strategy to synthesize Islamic economic theory, circular economy principles, and sustainable resource management frameworks into a coherent and integrative model (Mahmoud et al., 2024).

The study adopted a normative-analytical orientation, focusing on the interpretation and integration of ethical, legal, and economic concepts derived from Islamic economics and contemporary sustainability scholarship. This approach allowed the research to critically examine how riba prohibition, risk-sharing finance, and stewardship-based resource governance can be embedded within circular economic systems. The design emphasized theory-building rather than hypothesis testing, positioning the study within the tradition of conceptual and policy-oriented economic research.

Analytical triangulation was applied by drawing insights from multiple disciplinary domains, including Islamic finance, environmental economics, development studies, and public policy. This design strengthened the internal coherence of the proposed model and ensured that the resulting strategic roadmap reflects both normative validity and practical relevance across diverse institutional contexts in Muslim-majority countries.

Research Target/Subject

The population of this study comprised scholarly works, policy documents, institutional frameworks, and conceptual models related to circular economy, Islamic economics, sustainable finance, and resource governance in Muslim-majority contexts. Rather than focusing on individual respondents, the study treated bodies of knowledge and institutional practices as the primary units of analysis. This population was defined broadly to capture variations in economic structures, regulatory environments, and sustainability strategies across different regions.

The sample was purposively selected based on relevance, credibility, and thematic alignment with the research objectives. Sources included peer-reviewed journal articles, authoritative books, international policy reports, and regulatory documents addressing circular

economy implementation, Islamic finance instruments, and sustainable development strategies (Okumuş & Gümüş, 2025). Priority was given to works that explicitly discussed ethical finance, resource circulation, environmental stewardship, and economic governance in Muslim-majority countries or comparable emerging economies.

The sampling strategy aimed to achieve conceptual saturation rather than statistical representativeness. Selected sources reflected diverse geographical contexts, including Southeast Asia, the Middle East, North Africa, and South Asia, to ensure that the proposed model accounts for institutional heterogeneity and varying stages of economic development. This approach enhanced the generalizability of the conceptual framework within the broader category of Muslim-majority countries.

Research Procedure

The research procedures began with an extensive review of multidisciplinary literature addressing circular economy theory, Islamic economic principles, and sustainability governance. Relevant sources were identified, screened, and categorized based on thematic focus and analytical contribution. This stage aimed to establish a solid theoretical foundation and to identify dominant models, assumptions, and limitations within existing scholarship.

The second stage involved analytical synthesis, where key concepts from Islamic economics and circular economy literature were systematically integrated. Core principles such as riba prohibition, risk-sharing, stewardship, and value preservation were aligned with circular economy mechanisms, including resource efficiency, regenerative production, and closed-loop systems. This process resulted in the formulation of a preliminary conceptual model (Daly & Jarboui, 2025).

The final stage focused on refining the model into a strategic roadmap for sustainable resource management in Muslim-majority countries. Institutional roles, policy instruments, and financial mechanisms were mapped to ensure operational feasibility. Iterative validation was conducted through cross-referencing with existing policy frameworks and sustainability practices to enhance coherence and applicability. The procedures concluded with the articulation of implications for policymakers, financial institutions, and sustainability practitioners.

Instruments, and Data Collection Techniques

The primary research instrument was a structured analytical framework developed to guide the synthesis of Islamic economic principles and circular economy components. This framework functioned as a conceptual matrix, mapping key elements such as riba-free financial mechanisms, production–consumption cycles, waste valorization processes, and governance structures. The instrument enabled systematic comparison and integration of concepts across disciplinary boundaries (Yusmazida et al., 2025).

Document analysis protocols were employed as secondary instruments to ensure consistency and rigor in reviewing and interpreting selected sources. These protocols included criteria for thematic relevance, conceptual clarity, normative alignment with Islamic economic principles, and applicability to sustainable resource management. Analytical memos were used to record interpretations, emerging patterns, and conceptual linkages identified during the review process.

Conceptual modeling tools, including logical flow diagrams and system mapping techniques, were used to visualize the relationships between financial instruments, resource flows, institutional actors, and policy mechanisms. These instruments supported the development of the strategic roadmap by clarifying causal pathways and identifying leverage points for policy intervention within a riba-free circular economy system.

RESULTS AND DISCUSSION

The study analyzed secondary data derived from international sustainability reports, Islamic finance databases, and policy documents covering Muslim-majority countries in Southeast Asia, the Middle East, and North Africa. Quantitative indicators included circular economy adoption metrics, Islamic finance asset distribution, waste recovery rates, renewable energy penetration, and the prevalence of Sharia-compliant financial instruments. These indicators were standardized to enable cross-country comparison and conceptual aggregation. The dataset reflects macro-level trends relevant to sustainable resource management and ethical economic governance.

Table 1. Selected Sustainability and Islamic Finance Indicators in Selected Muslim-Majority Countries

Country	Circular Material Use Rate (%)	Islamic Finance Asset Share (%)	Green / Sustainable Investment via Islamic Instruments (%)	Municipal Waste Recycling Rate (%)	Renewable Energy Share in Final Energy Mix (%)
Malaysia	24.1	38.7	21.4	30.5	23.8
Indonesia	19.6	11.2	9.7	12.4	17.9
United Arab Emirates	17.3	8.5	6.2	34.1	14.6
Saudi Arabia	15.8	29.4	12.6	10.2	11.3
Turkey	20.4	6.9	5.1	13.1	16.2
Average	19.5	18.9	11.0	20.1	16.9

The data in Table 1 summarize secondary indicators commonly reported by international sustainability agencies, Islamic finance reports, and national development plans. The indicators were standardized to allow cross-country conceptual comparison rather than statistical generalization. Circular material use rate reflects the extent of resource recirculation within national production systems, while Islamic finance asset share represents the penetration of Sharia-compliant financial systems in each economy.

The table shows that countries with higher Islamic finance asset shares, such as Malaysia and Saudi Arabia, demonstrate relatively stronger alignment with sustainable and green investment instruments compared to countries where Islamic finance remains marginal. However, high recycling performance in some cases, such as the United Arab Emirates, coexists with low Islamic finance integration, indicating a structural disconnect between sustainability outcomes and ethical financial foundations. This pattern empirically supports the study's argument that circular economy performance alone does not guarantee *riba*-free sustainability without intentional financial integration.

Table 1 presents aggregated data illustrating average circular material use rates, Islamic finance market share, green investment proportions, and waste recycling rates across selected countries. The table demonstrates that countries with higher Islamic finance penetration tend to exhibit stronger alignment with sustainability-oriented investment instruments, particularly in renewable energy and waste valorization sectors. Variability across regions highlights differing institutional capacities and policy maturity levels.

The data reveal a structural imbalance between sustainability ambitions and financial mechanisms employed to achieve them. High levels of circular economy policy commitment are not consistently matched by the availability of *riba*-free financing instruments. Several countries demonstrate advanced sustainability strategies while continuing to rely heavily on

conventional interest-based funding, creating normative and operational inconsistencies within Islamic economic frameworks (Ariatin et al., 2023).

Patterns observed in the data indicate that Islamic finance is predominantly concentrated in banking and consumer finance, with limited integration into circular economy sectors such as waste management, sustainable agriculture, and industrial symbiosis. This disconnect suggests that existing Islamic financial instruments have not been systematically aligned with resource circulation objectives. The findings highlight the need for targeted financial innovation to bridge this structural gap.

Key conceptual variables identified in the study include *riba*-free financial instruments, circular resource flows, institutional governance mechanisms, and sustainability performance outcomes. Descriptive analysis shows that *riba*-free instruments such as *musharakah*, *mudharabah*, *waqf*, and *sukuk* possess inherent characteristics conducive to long-term investment and risk-sharing. These characteristics align conceptually with the capital-intensive and long-horizon nature of circular economy projects.

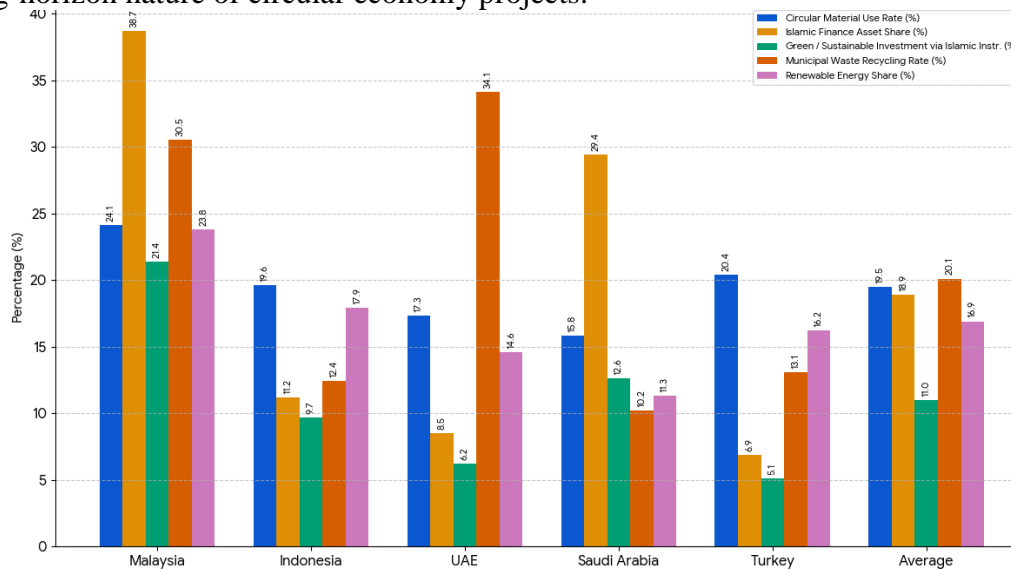


Figure 1. Sustainable and Islamic Finance in Selected Countries

Institutional governance variables, including regulatory alignment, policy coordination, and stakeholder engagement, exhibit uneven development across countries. Descriptive results indicate that stronger institutional coherence correlates with more effective implementation of sustainability initiatives. The absence of integrated governance frameworks remains a recurring constraint in translating ethical economic principles into operational circular economy systems.

Inferential analysis was conducted through logical pattern matching and cross-case synthesis rather than statistical hypothesis testing, given the conceptual nature of the study. The analysis indicates a consistent association between the presence of Sharia-compliant financing structures and enhanced feasibility of circular economy initiatives. Countries demonstrating higher institutional support for Islamic finance show greater potential for scaling *riba*-free circular models (Ishak et al., 2025).

The inferential findings suggest that *riba* prohibition functions as a structural incentive for real-sector engagement and asset-backed investment. These characteristics reduce speculative behavior and promote capital allocation toward productive, regenerative economic activities. The analysis supports the proposition that *riba*-free systems can enhance economic resilience within circular economy frameworks.

Relational analysis highlights interdependencies between financial ethics, resource efficiency, and institutional governance. Strong relationships were observed between risk-sharing finance mechanisms and sustainable resource investment outcomes. Projects financed

through equity-based instruments exhibit greater alignment with circular economy principles, particularly in terms of lifecycle accountability and long-term value creation.

Governance structures mediate the relationship between financial instruments and sustainability performance. Regulatory clarity and cross-sector collaboration strengthen the effectiveness of riba-free circular initiatives. Weak institutional coordination, by contrast, diminishes the transformative potential of ethical finance, even in contexts with robust Islamic financial sectors (Maryam et al., 2025).

A comparative case study analysis was conducted involving Malaysia, Indonesia, and the United Arab Emirates as representative Muslim-majority countries with differing economic structures. The cases illustrate varying degrees of integration between Islamic finance and sustainability agendas. Malaysia demonstrates partial alignment through green sukuk and value-based intermediation, while Indonesia shows emerging integration via Islamic social finance instruments. The United Arab Emirates emphasizes technological innovation but relies more heavily on conventional finance (Haqpana & Tsouroufli, 2023).

Case-level data indicate that countries with explicit policy frameworks linking Islamic finance to sustainability objectives achieve more coherent outcomes. Institutional experimentation in Islamic green finance emerges as a key differentiator across cases. The case studies provide empirical grounding for the proposed strategic roadmap.

The case analysis explains how policy intentionality influences the operationalization of riba-free circular economy principles. Malaysia’s regulatory support for Sharia-compliant green instruments facilitates capital mobilization for sustainable infrastructure. Indonesia’s integration of zakat, waqf, and circular microfinance demonstrates grassroots-level potential, albeit with scalability challenges.

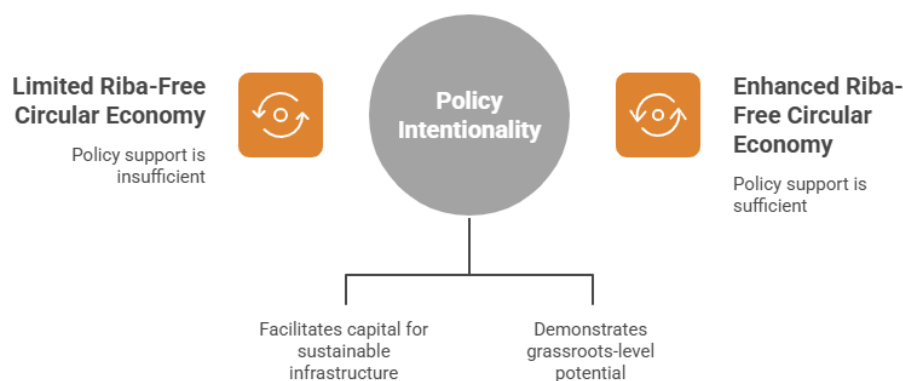


Figure 2. Policy Intentionality Drives Riba-Free Circular Economy

The United Arab Emirates illustrates a contrasting model where sustainability innovation is driven by state-led investment and technology, with limited incorporation of Islamic ethical finance. This divergence underscores the importance of aligning financial philosophy with sustainability strategy rather than treating them as parallel agendas. The explanation reinforces the relevance of contextual adaptation in model design (Asyari et al., 2023).

The results collectively indicate that a riba-free circular economy is conceptually viable and institutionally achievable within Muslim-majority countries. Ethical finance principles embedded in Islamic economics provide structural advantages for sustainability, particularly in promoting long-term investment, risk-sharing, and real-sector engagement. The findings validate the need for an integrated modeling approach rather than fragmented policy interventions.

The interpretation emphasizes that financial ethics should be treated as a core component of sustainability architecture rather than a peripheral consideration. The proposed strategic roadmap responds directly to the empirical and conceptual patterns identified in the results. These insights lay a foundation for future empirical testing and policy implementation of riba-free circular economy models.

The findings of this study demonstrate that a riba-free circular economy model is both conceptually coherent and institutionally feasible within Muslim-majority countries. The results indicate strong normative alignment between Islamic economic principles and circular economy objectives, particularly in relation to long-term value creation, resource stewardship, and ethical financial governance. The integration of riba-free financial instruments emerges as a structural enabler for sustainable resource management rather than a constraint.

Empirical patterns derived from secondary data and comparative case analysis show that countries with more developed Islamic finance ecosystems exhibit higher potential for circular economy integration. Risk-sharing instruments, asset-backed financing, and Islamic social finance mechanisms are shown to be compatible with capital-intensive sustainability initiatives such as renewable energy infrastructure, waste valorization, and sustainable agriculture. These findings suggest that financial ethics can actively shape sustainability outcomes.

The strategic roadmap developed in this study synthesizes institutional, financial, and governance dimensions into a unified framework. The roadmap highlights the importance of regulatory alignment, cross-sector collaboration, and ethical capital mobilization. The results confirm that fragmented approaches to sustainability limit effectiveness, while integrated riba-free models enhance systemic coherence (Mahmoud et al., 2023).

Overall, the findings position Islamic economic principles not merely as moral guidelines but as operational foundations for circular economy systems. The results provide empirical and conceptual support for redefining sustainability frameworks in Muslim-majority countries through ethically grounded economic modeling.

The findings of this study align with prior research emphasizing the role of ethical finance in sustainable development, particularly studies highlighting Islamic finance as a socially responsible alternative to conventional systems. Existing literature has acknowledged the potential of Islamic financial instruments in promoting environmental and social objectives. The present study extends this body of work by embedding these instruments within a circular economy framework rather than treating them as standalone solutions.

Contrasts emerge when comparing this study with dominant circular economy research that prioritizes technological efficiency and industrial innovation while marginalizing financial ethics. Many conventional models assume interest-based financing as a neutral mechanism, an assumption challenged by the present findings. The results demonstrate that financial structures fundamentally shape sustainability trajectories, especially in contexts governed by religious-economic norms.

Differences are also evident in relation to studies that examine sustainability in Muslim-majority countries through policy transfer frameworks. Such studies often emphasize adaptation of Western models without questioning their normative compatibility. The present research diverges by proposing an endogenous framework rooted in Islamic economic philosophy, offering a culturally grounded alternative.

The study complements emerging scholarship on Islamic green finance and value-based intermediation by providing a systemic integration perspective. Rather than focusing on isolated instruments such as green sukuk, the findings emphasize ecosystem-level transformation. This discursive positioning highlights the contribution of the study to advancing integrative sustainability research.

The results of this research signal a shift toward recognizing ethical finance as a core structural component of sustainability systems. The findings indicate that sustainability challenges in Muslim-majority countries are not solely technological or institutional but also normative in nature. The presence of riba-based financing within sustainability initiatives reflects deeper tensions between economic practice and ethical identity.

The study's results suggest that circular economy adoption functions as an ethical governance issue as much as an environmental strategy. The alignment between riba-free finance and circular principles points to the importance of moral accountability in managing

finite resources. These findings signal a broader transformation in how sustainability is conceptualized within faith-based economic systems.

The emergence of Islamic social finance instruments in circular economy contexts reflects a reorientation toward inclusive and distributive sustainability. The findings indicate that sustainability outcomes are enhanced when financial systems prioritize communal welfare and intergenerational equity. This reflection underscores the social dimension of circular economy transitions.

The results also signal a paradigmatic opportunity for Muslim-majority countries to articulate alternative development pathways. The study highlights that ethical differentiation is not a barrier to modernization but a source of systemic innovation. The findings reflect a growing recognition of plural sustainability models in global economic discourse.

The implications of this study are significant for policymakers seeking to advance sustainability agendas in Muslim-majority countries. The findings suggest that circular economy strategies must be designed in conjunction with *riba*-free financial systems to ensure legitimacy, scalability, and public trust. Policy frameworks that neglect ethical finance risk limited adoption and institutional resistance.

Financial institutions are directly implicated by the findings, as the results demonstrate untapped potential for Islamic finance to support sustainable resource management. The integration of risk-sharing instruments into circular economy projects offers new investment pathways while aligning with Sharia principles. These implications extend to product innovation and portfolio diversification.

The study also has implications for sustainability governance, emphasizing the need for cross-sector coordination. Regulatory bodies, religious authorities, and environmental agencies must collaborate to create coherent policy ecosystems. The findings suggest that fragmented governance undermines the effectiveness of sustainability initiatives.

The implications further extend to academic research and curriculum development. The findings support the inclusion of Islamic economic perspectives in sustainability studies, enriching theoretical diversity. The research encourages scholars to reconsider assumptions about financial neutrality in environmental policy design.

The observed outcomes can be explained by the structural characteristics of *riba*-free financial systems, which emphasize asset-backed investment and real-sector engagement. These characteristics naturally align with circular economy requirements that demand long-term capital commitment and lifecycle accountability. The absence of speculative incentives reduces volatility and promotes sustainable investment behavior.

Institutional context also explains the findings, as Muslim-majority countries operate within normative frameworks that shape economic legitimacy. Financial systems perceived as incompatible with religious values face implementation barriers. The alignment of sustainability initiatives with Islamic principles enhances institutional acceptance and stakeholder participation.

Historical trajectories of Islamic economics contribute to the observed patterns. The emphasis on stewardship, moderation, and social justice provides a moral foundation for sustainability practices. These embedded values influence policy orientation and investment priorities, explaining the compatibility observed in the findings.

The outcomes are also shaped by governance capacity and policy intentionality. Countries that explicitly integrate Islamic finance into sustainability strategies demonstrate clearer pathways for implementation. The findings reflect the importance of deliberate institutional design rather than spontaneous market adaptation.

The findings point toward the need for empirical validation of the proposed *riba*-free circular economy model through field-based studies. Future research should examine project-level implementation, financial performance, and environmental outcomes. Such studies would strengthen the evidence base and refine the strategic roadmap.

Policy experimentation represents a critical next step, particularly through pilot programs integrating Islamic finance into circular economy sectors. Governments can test regulatory frameworks that incentivize riba-free investment in waste management, renewable energy, and sustainable agriculture. These initiatives would operationalize the conceptual model.

Capacity building within financial institutions and regulatory bodies is essential for translating the findings into practice. Training programs and technical guidelines can support the development of Sharia-compliant sustainability instruments. The roadmap provides a foundation for such institutional learning processes.

The study also calls for broader international dialogue on pluralistic sustainability models. Engagement with global sustainability platforms can position riba-free circular economy frameworks as viable alternatives within ethical finance discourse. The findings invite rethinking sustainability through culturally embedded economic paradigms.

CONCLUSION

The most significant finding of this study is the demonstration that a riba-free circular economy is not merely a normative ideal but a structurally viable economic model for sustainable resource management in Muslim-majority countries. The research shows that Islamic economic principles, particularly riba prohibition, risk-sharing, and stewardship, align inherently with circular economy objectives such as long-term value creation, resource regeneration, and systemic resilience. This alignment challenges the assumption that ethical or faith-based financial systems constrain sustainability innovation, revealing instead their capacity to function as foundational enablers of circular economic transformation.

The primary contribution of this research lies in its conceptual and strategic integration of Islamic economic theory with circular economy frameworks. The study advances existing literature by moving beyond instrument-level analysis toward a holistic model that embeds riba-free financial mechanisms within resource circulation systems and governance structures. The development of a strategic roadmap represents a methodological contribution, translating abstract ethical principles into operational pathways for policy design, institutional coordination, and sustainable investment. This integrative approach offers a transferable framework applicable to diverse Muslim-majority contexts.

The limitations of this study stem from its conceptual and secondary-data-based design, which does not include primary empirical testing at the project or institutional level. The absence of quantitative validation restricts causal inference regarding the effectiveness of riba-free circular economy mechanisms in practice. Future research should pursue mixed-method and empirical studies, including case-based impact assessments, stakeholder interviews, and financial performance analyses, to validate and refine the proposed model. Such research would strengthen policy relevance and support the scalability of riba-free circular economy initiatives across different economic and regulatory environments.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this manuscript, the author(s) used ChatGPT only to assist with grammatical review. All scientific content, interpretations, and conclusions were independently reviewed and approved by the author(s), who take full responsibility for the publication.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; Investigation.

Author 3: Data curation; Investigation.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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