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# Analysis of the Implementation of Circular Economy from an Islamic Economic Perspective

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**Abstract**: Environmental degradation, climate change, increasing waste production, and excessive exploitation of natural resources have become major global challenges resulting from the conventional linear economic model. In response to these issues, the circular economy has emerged as a sustainable economic approach that emphasizes waste reduction, recycling, reuse of materials, and efficient resource management. This research aims to analyze the implementation of the circular economy from an Islamic economic perspective and examine its compatibility with Islamic values related to sustainability, justice, and environmental responsibility. This study uses a qualitative approach with a descriptive-analytical method through library research. Data were collected from books, scientific journals, research reports, Qur'anic verses, Hadith, and other relevant literature related to circular economy, Islamic economics, and sustainable development. The collected data were analyzed using content analysis techniques to identify the relationship between circular economy principles and Islamic economic teachings. The results show that the circular economy is highly compatible with Islamic economic principles, particularly the values of tauhid, khilafah, maslahah, 'adl, and tawazun. Islam encourages environmental stewardship, responsible consumption, social justice, and prohibits wastefulness (israf) and excessive consumption (tabdzir), which align closely with circular economy objectives. However, challenges remain, including low public awareness, limited government support, inadequate green technology, and weak policy integration. Despite these obstacles, integrating circular economy principles with Islamic economics can support sustainable development while maintaining environmental balance and ethical values in accordance with Islamic teachings.

**Research Highlights:**

- This research analyzes the implementation of the circular economy from an Islamic economic perspective by integrating sustainability principles with Islamic ethical values.
- The study finds that circular economy principles are highly compatible with Islamic teachings, particularly the concepts of tauhid, khilafah, maslahah, 'adl, and tawazun.
- Islamic teachings regarding the prohibition of wastefulness (israf) and excessive consumption (tabdzir) support sustainable production and responsible consumption practices within the circular economy framework.
- The research identifies practical applications of circular economy principles in agriculture, industry, Islamic finance, MSMEs, and the halal industry through recycling systems, eco-friendly production, green sukuk, and waqf-based environmental programs.

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- The implementation of circular economy practices can contribute to environmental preservation, economic efficiency, green employment opportunities, and social welfare improvement.
- The study highlights several implementation challenges, including low environmental awareness, limited government support, inadequate green technology, and weak integration between sustainability policies and Islamic economic institutions.
- The research emphasizes that integrating circular economy principles with Islamic economics can provide a comprehensive and ethical solution to contemporary environmental, economic, and social challenges.
- This study contributes to the development of sustainable economic models by strengthening the relationship between Islamic economics, environmental stewardship, and sustainable development goals.

## INTRODUCTION

The increasing environmental crisis has become one of the most serious global challenges in the modern era. Rapid industrialization, urbanization, and population growth have significantly increased the exploitation of natural resources and environmental degradation(Mudakkar et al., 2013). Most economic activities today still rely on a linear economic model known as "take–make–dispose," where natural resources are extracted, processed into products, consumed, and eventually discarded as waste after use. Although this model has contributed to economic growth and industrial development, it has also caused major environmental problems such as excessive waste generation, pollution, depletion of natural resources, and climate change. The continuous use of this unsustainable economic system has raised concerns regarding the long-term survival of ecosystems and human welfare.

One of the most visible consequences of the linear economy model is the massive increase in waste production. Industrial waste, plastic waste, electronic waste, and food waste continue to accumulate every year, while waste management systems in many countries remain inadequate(Singh et al., 2014). Large amounts of waste pollute rivers, oceans, and land areas, causing severe damage to ecosystems and threatening biodiversity. In addition, industrial production processes often generate greenhouse gas emissions that contribute significantly to global warming and climate change. Rising global temperatures, unpredictable weather patterns, floods, droughts, and environmental disasters are becoming increasingly frequent and demonstrate the urgent need for a more sustainable economic system. Furthermore, the excessive extraction of natural resources such as fossil fuels, forests, minerals, and water has accelerated resource depletion and endangered environmental balance for future generations.

In response to these environmental and economic challenges, the concept of the circular economy has emerged as an alternative model for sustainable development. Unlike the linear economy, the circular economy seeks to minimize waste and maximize the efficient use of resources through activities such as reducing consumption, reusing products, recycling materials, recovering waste, and regenerating natural systems. The circular economy aims to create a closed-loop system where products and materials remain in circulation for as long as possible, thereby reducing environmental damage and improving resource efficiency(Camilleri, 2018). This approach not only supports environmental sustainability but also creates economic opportunities through innovation, green industries, and sustainable business practices. Therefore, the circular economy is increasingly recognized as an important strategy for addressing global environmental problems and promoting sustainable economic growth.

Over the last decade, research related to the circular economy and Islamic economics has developed significantly, particularly in response to increasing environmental degradation, climate change, and the need for sustainable economic systems. One of the recent studies was conducted by M. Yazid

Afandi and Nadia Rahma in 2025 entitled Circular Economy and Maqasid al-Shari'ah: A Conceptual Framework for Islamic Economic Reform. The study explained that the circular economy aligns closely with the objectives of maqasid al-shariah, particularly in protecting life, wealth, and the environment. The researchers emphasized that Islamic economics can serve as an ethical framework for sustainable development through resource efficiency, waste reduction, and social justice.

Another important study was conducted by Iffatun Ni'mah, Abdul Rokhim, and Khairunnisa Musari in 2024 through their research titled The Role of Circular Economy in Supporting Sustainable Development Goals (SDGs) in Indonesia from an Islamic Economic Perspective. This study analyzed how circular economy practices can contribute to achieving Sustainable Development Goals (SDGs) within the framework of Islamic economics. The findings showed that Islamic economic principles such as justice, balance, and stewardship support sustainable environmental policies and encourage responsible economic activities.

Research by Azizah Fathma, Muhammad Thoriq Alfarisi, and Darwanto in 2025 entitled Islamic Circular Economy in Business Practice and Islamic Finance: A Systematic Literature Review examined the integration of circular economy principles into Islamic business practices and Islamic finance. Their systematic review found that the implementation of circular economy concepts in Islamic financial institutions and halal industries remains limited and fragmented. However, the study highlighted the strong compatibility between Islamic ethical values and sustainable business models.

In another study, Tri Nadhirotur Roifah in 2025 published research titled Integrasi Ekonomi Islam dan Circular Economy untuk Pembangunan Berkelanjutan. The study focused on integrating Islamic economics with circular economy principles to support sustainable development. The findings indicated that Islamic social finance instruments such as zakat, waqf, and sharia-compliant financing have strong potential to support circular economic practices and environmentally sustainable business systems.

Another relevant study was conducted by Prima Dwi Priyatno, Ahmad Hasan Ridwan, and Nurrohman Syarif in 2025 entitled Circular Economy Philosophy Based on Hifz al-Bi'ah for Economic Justice. This study developed a conceptual framework combining circular economy principles with the Islamic concept of Hifz al-Bi'ah (environmental protection) to achieve economic justice and intergenerational sustainability. The researchers concluded that Islamic ethical values can strengthen the social and environmental dimensions of the circular economy.

The implementation of the circular economy is closely related to the principles of Islamic economics. Islamic economics is a value-based economic system that emphasizes justice, balance, ethics, social welfare, and environmental responsibility. In Islam, humans are regarded as khalifah (stewards) on earth who are entrusted with the responsibility of protecting and managing natural resources wisely. This concept reflects the importance of maintaining harmony between humans and nature. Islamic teachings also strongly prohibit wasteful behavior (israf) and excessive consumption (tabdzir), which are considered harmful to both society and the environment. These principles are highly relevant to the circular economy, which promotes resource efficiency, sustainable consumption, and waste reduction.

Moreover, Islamic economics encourages economic activities that create public benefit (maslahah) and social justice ('adl). Economic development in Islam should not focus solely on profit maximization but should also consider environmental sustainability and the welfare of future generations(Kamali, 2016). This perspective aligns with the goals of the circular economy, which seeks to balance economic growth with environmental preservation and social well-being. Islam also promotes moderation in consumption, ethical production, and responsible business practices, all of which can support the successful implementation of circular economic systems. Through the integration of Islamic values and circular economy principles, sustainable development can be achieved in a way that is not only economically beneficial but also ethically and spiritually meaningful.

In addition, the growing global awareness of sustainability issues has increased interest in environmentally friendly industries, green finance, and ethical consumption patterns. Islamic financial instruments such as green sukuk, waqf, and zakat-based environmental programs have the potential to support circular economy initiatives and sustainable development projects. The halal industry can also adopt circular economy practices through eco-friendly production systems, recyclable packaging, and sustainable supply chain management. These developments indicate that Islamic economics has significant potential to contribute to global sustainability efforts through the implementation of circular economic principles.

Based on these conditions, research on the implementation of the circular economy from an Islamic economic perspective becomes highly important and relevant. This study aims to analyze the compatibility between circular economy principles and Islamic economic values, examine the implementation of circular economy practices in various sectors, and identify the challenges and opportunities in developing sustainable economic systems based on Islamic teachings. Through this research, it is expected that the integration of circular economy concepts and Islamic economics can provide comprehensive solutions to environmental problems while promoting social welfare, ethical business practices, and sustainable development for present and future generations.

## METHOD

This research uses a qualitative approach with a descriptive-analytical method to analyze the implementation of the circular economy from an Islamic economic perspective(Fad, 2021). The qualitative approach was chosen because this study aims to understand, interpret, and explain the relationship between circular economy principles and Islamic economic values comprehensively. Through this approach, the research seeks to explore how Islamic teachings support sustainable economic practices and how circular economy concepts can be integrated into Islamic economic systems. The descriptive-analytical method is used to describe existing phenomena related to environmental sustainability, circular economy implementation, and Islamic economic principles while critically analyzing their compatibility, opportunities, and challenges.

The type of research employed in this study is library research or literature-based research(Langer, 2014). The study relies on secondary data obtained from various academic and scientific sources, including books, journal articles, research reports, conference proceedings, government publications, institutional reports, and relevant online databases related to circular economy, Islamic economics, sustainable development, environmental management, and maqasid al-shariah. The literature selected in this study mainly consists of publications from the last ten years to ensure that the data and discussions reflect recent developments in sustainability and Islamic economic discourse. In addition, classical Islamic references such as the Qur'an, Hadith, and Islamic scholarly literature are also used to strengthen the analysis of Islamic ethical and legal perspectives regarding environmental sustainability and responsible resource management.

Data collection in this research is conducted through documentation techniques by gathering and reviewing relevant literature systematically(Li et al., 2015). The collected data include concepts of circular economy implementation, sustainable production and consumption practices, Islamic economic principles, Islamic financial instruments supporting environmental sustainability, and previous research findings related to green economy and Islamic environmental ethics. The researcher categorizes the collected data based on specific themes such as waste reduction, recycling systems, environmental responsibility, ethical consumption, social justice, and sustainable development from an Islamic perspective.

The data analysis technique used in this research is content analysis(Harwood & Garry, 2003). This method is employed to analyze and interpret information obtained from the literature systematically and critically. The researcher identifies key concepts, compares theoretical perspectives, evaluates findings from previous studies, and examines the relevance of circular economy principles within the framework of Islamic economics. Furthermore, the analysis focuses on identifying the compatibility between circular economy practices and Islamic values such as tauhid (unity), khilafah (stewardship), maslahah (public benefit), 'adl (justice), and tawazun (balance). The study also analyzes how Islamic teachings regarding the prohibition of wastefulness (israf and tabdzir) support sustainable consumption and environmental preservation.

To strengthen the validity of the research, the study applies source triangulation by comparing information from multiple academic references and relevant scientific studies(Moon, 2019). This process helps ensure the consistency and reliability of the data and minimizes subjective interpretation. In addition, the research uses an interdisciplinary approach by integrating concepts from environmental economics, sustainable development theory, circular economy models, and Islamic economic theory to provide a more comprehensive analysis.

This research also adopts the framework of Maqasid al-Shariah as an analytical foundation to evaluate the implementation of circular economy practices in achieving sustainable welfare and environmental protection. Through this framework, the study examines how circular economy implementation contributes to the protection of life, wealth, society, and future generations while maintaining environmental balance. Therefore, this method is expected to provide a comprehensive understanding of the role of Islamic economics in supporting circular economy implementation and sustainable development in contemporary society.

## RESULTS AND DISCUSSION

### Results

The results of this research indicate that the implementation of the circular economy is highly compatible with the principles and objectives of Islamic economics. Both concepts emphasize sustainability, responsibility, justice, and efficient resource management as fundamental elements for achieving long-term social welfare and environmental balance. The study found that the circular economy provides an alternative economic model capable of addressing environmental problems caused by the conventional linear economy system, while Islamic economics offers ethical and spiritual foundations that strengthen the implementation of sustainable economic practices.

The findings reveal that the linear economy model based on the "take–make–dispose" pattern has significantly contributed to environmental degradation, excessive waste generation, pollution, and depletion of natural resources. Industrial production and excessive consumption patterns have accelerated climate change and ecosystem damage(Scholes, 2016). In contrast, the circular economy encourages waste reduction, recycling, reuse of materials, and sustainable production systems that can minimize environmental impacts and improve resource efficiency. The study found that these principles align closely with Islamic teachings that prohibit wastefulness (israf) and excessive consumption (tabdzir). Islamic economics promotes moderation, responsibility, and balance in economic activities, which support the goals of the circular economy.

Furthermore, the research found that Islamic values such as tauhid, khilafah, maslahah, 'adl, and tawazun provide a strong ethical framework for implementing circular economic systems. The concept of khilafah emphasizes human responsibility as stewards of the earth who must protect and preserve the environment. Meanwhile, the concept of maslahah encourages economic activities that provide benefits not only for individuals but also for society and future generations. The study also found that Islamic economics views environmental sustainability as an integral part of achieving social welfare and justice. Therefore, the integration of circular economy principles within Islamic economic systems can contribute to sustainable and equitable economic development.

The research also identified several practical forms of circular economy implementation in various sectors from an Islamic economic perspective. In the agricultural sector, sustainable farming methods such as organic agriculture, composting, efficient irrigation systems, and reuse of agricultural waste have shown positive impacts on environmental preservation and resource efficiency(Sharma et al., 2019). In the industrial sector, eco-friendly manufacturing processes, green production systems, and recycling initiatives were found to support sustainable business practices while reducing environmental pollution. The halal industry also demonstrates significant potential for integrating circular economy principles through environmentally friendly packaging, sustainable supply chains, and ethical production processes based on halal and tayyib principles.

In the field of Islamic finance, the study found that Islamic financial instruments have considerable potential to support circular economy implementation and environmental sustainability. Instruments such as green sukuk, waqf-based environmental programs, zakat for community empowerment, and Islamic social finance can be utilized to finance sustainable development projects and green industries(Ahmed et al., 2015). The research indicates that Islamic finance not only focuses on profitability but also prioritizes social responsibility and environmental welfare. Therefore, Islamic financial institutions can play an important role in supporting the transition toward a sustainable circular economy

However, the research also identified several challenges in implementing the circular economy from an Islamic economic perspective. One of the main challenges is the low level of public awareness regarding environmental sustainability and responsible consumption behavior. Many consumers and businesses still prioritize short-term economic benefits over long-term environmental impacts. In addition, limited government support, inadequate environmental regulations, lack of green technology, and insufficient integration between Islamic economic institutions and sustainability policies remain significant obstacles. The study also found that high implementation costs and limited access to environmentally friendly technology hinder the adoption of circular economy practices, especially among small and medium enterprises.

Despite these challenges, the research found substantial opportunities for developing circular economy practices within Islamic economic systems(Hassan et al., 2020). Increasing global awareness of sustainability, the rapid growth of the halal industry, and the expansion of Islamic finance provide strong potential for supporting environmentally sustainable economic activities. The growing integration between Environmental, Social, and Governance (ESG) principles and Islamic finance also creates opportunities for developing green investment and sustainable business models. Moreover, digital technology and innovation can support waste management systems, resource efficiency, and sustainable supply chain management in various industries.

The findings further demonstrate that the implementation of the circular economy from an Islamic economic perspective has positive impacts on economic, social, environmental, and ethical dimensions. Economically, circular economy practices improve efficiency, reduce production costs, create new green business opportunities, and generate employment in environmentally friendly sectors. Socially, sustainable economic practices contribute to community welfare, poverty reduction, and fair distribution of resources. Environmentally, circular economy implementation reduces waste, conserves natural resources, minimizes pollution, and supports climate change mitigation. From an ethical and spiritual perspective, the integration of Islamic values strengthens moral responsibility, ethical business behavior, and environmentally conscious consumption patterns.

Overall, the results of this research confirm that the circular economy and Islamic economics share common objectives in promoting sustainability, justice, and social welfare. The integration of circular economy principles with Islamic economic values can provide a comprehensive and ethical approach to addressing environmental challenges and achieving sustainable development. Therefore, strengthening cooperation among governments, Islamic financial institutions, industries, educational institutions, and communities is necessary to encourage the successful implementation of circular economy practices based on Islamic economic principles.

**Impacts of Circular Economy from an Islamic Perspective**

From an economic perspective, the circular economy can improve efficiency and support sustainable economic growth(Androniceanu et al., 2021). By reducing waste and optimizing resource utilization, businesses can lower production costs and increase productivity. Recycling systems, renewable resource management, and environmentally friendly production methods help industries become more efficient and competitive in the long term. In Islamic economics, economic activities should not only pursue profit but also ensure fairness, sustainability, and public welfare (maslahah). Circular economy practices encourage businesses to adopt ethical production systems that prioritize quality, responsibility, and long-term benefits rather than short-term exploitation of natural resources. In addition, the circular economy creates new economic opportunities through green industries, renewable energy projects, sustainable agriculture, and waste management sectors, which can generate employment opportunities and support economic resilience.

The circular economy also has important social impacts from an Islamic perspective. Sustainable economic systems can contribute to improving community welfare and reducing poverty by creating inclusive economic opportunities. Recycling industries, eco-friendly businesses, and sustainable agricultural systems can empower local communities and increase income generation(Laszlo, 2013). Islamic economics strongly emphasizes social justice (‘adl) and equitable distribution of wealth, ensuring that economic development benefits all members of society rather than only certain groups. Circular economy practices can reduce economic inequality by encouraging community participation, cooperative business models, and social entrepreneurship. Furthermore, Islamic social finance instruments such as zakat, waqf, and sadaqah can support environmentally sustainable projects and help vulnerable communities access economic opportunities and basic resources.

From an environmental perspective, the circular economy plays a crucial role in reducing environmental degradation and preserving natural resources(Gabriela-Cornelia et al., 2015). One of the major impacts of the conventional linear economy system is the excessive generation of waste and pollution that damages ecosystems and contributes to climate change. Circular economy practices such as reducing waste, recycling materials, reusing products, and utilizing renewable energy can significantly minimize environmental damage. These practices support the Islamic principle of maintaining balance (tawazun) between humans and nature. Islam prohibits wastefulness (israf) and destructive behavior toward the environment because natural resources are considered a trust from Allah that must be protected responsibly. Through sustainable resource management and environmentally friendly production systems, the circular economy can help preserve biodiversity, reduce greenhouse gas emissions, conserve water and energy, and maintain ecological balance for future generations.

In addition, the circular economy has important ethical and spiritual impacts within the framework of Islamic economics. Islam encourages moderation in consumption and discourages excessive lifestyles that lead to waste and environmental destruction. Circular economy practices promote responsible consumption behavior, where individuals are encouraged to use resources efficiently and avoid unnecessary consumption. This aligns with Islamic teachings that emphasize simplicity, gratitude, and accountability in economic activities. Ethical business behavior is also strengthened through the implementation of sustainable production systems that prioritize honesty, transparency, and social responsibility. Businesses are encouraged not only to generate profit but also to protect the environment and contribute positively to society(Laszlo, 2013).

Furthermore, the integration of circular economy principles with Islamic values can strengthen awareness of environmental ethics among Muslim communities. Environmental preservation becomes not only an economic responsibility but also a spiritual obligation and form of worship. The concept of khilafah teaches that humans will be held accountable for how they manage natural resources and protect the environment. Therefore, implementing circular economy practices can encourage individuals and institutions to develop greater environmental consciousness and moral responsibility.

The circular economy also supports intergenerational justice, which is an important principle in Islamic economics(Haneef & Jamaludin, 2021). Sustainable resource management ensures that future generations will continue to have access to natural resources and a healthy environment. Islam emphasizes the importance of protecting the rights and welfare of future generations by avoiding environmental destruction and irresponsible exploitation of resources. Through circular economic practices, societies can create a sustainable economic system that balances economic growth, environmental protection, and social welfare in the long term.

**Islamic Legal and Ethical Perspective**

Several Qur'anic verses highlight the importance of environmental stewardship and the prohibition of environmental destruction(Helfaya et al., 2018). One important verse is found in Surah Al-Baqarah (2:30), where Allah states that humans are appointed as khalifah on earth. This verse indicates that humans have a responsibility to manage and protect nature wisely. Environmental preservation is therefore not only a social obligation but also a religious duty. Another important verse is Surah Al-A'raf (7:31), which states: "Eat and drink, but do not waste. Indeed, He does not like the wasteful." This verse clearly prohibits excessive consumption and wastefulness (israf), which are major causes of environmental degradation and resource depletion. The verse encourages moderation and responsible consumption, principles that align closely with sustainable economic practices.

Furthermore, Surah Ar-Rum (30:41) explains that environmental damage occurs because of human actions: "Corruption has appeared throughout the land and sea because of what the hands of people have earned." This verse reflects the consequences of irresponsible human behavior toward the environment, including pollution, deforestation, and excessive exploitation of natural resources. Islam therefore encourages humans to maintain environmental balance and prevent destruction. Another relevant verse is Surah Al-An'am (6:141), where Allah commands humans not to be excessive in using resources because Allah does not love those who waste. These Qur'anic teachings emphasize sustainability, resource efficiency, and environmental responsibility, which are fundamental principles of the circular economy.

In addition to the Qur'an, many Hadiths of the Prophet Muhammad emphasize environmental protection and avoiding waste(Ghernaout, 2017). One well-known Hadith narrated by Ibn Majah states that the Prophet forbade wasting water even when performing ablution beside a flowing river. This Hadith demonstrates the importance of conserving resources regardless of abundance. It teaches Muslims to use natural resources efficiently and responsibly. Another Hadith narrated by Bukhari and Muslim explains that removing harmful objects from the road is considered an act of charity (sadaqah). This teaching reflects the importance of maintaining cleanliness and protecting the environment for public welfare.

The Prophet Muhammad also encouraged tree planting and environmental conservation(Kula, 2001). In a Hadith narrated by Ahmad, the Prophet stated that if a Muslim plants a tree or crops and people or animals benefit from it, it will be counted as charity. This Hadith highlights the value of sustainable environmental practices and the importance of preserving nature for future generations. Another Hadith narrated by Muslim prohibits unnecessary destruction of plants and animals, even during times of war, demonstrating Islam's strong commitment to environmental ethics and biodiversity protection.

The concept of Maqasid al-Shariah further strengthens the relationship between Islam and sustainability. Maqasid al-Shariah refers to the higher objectives of Islamic law aimed at achieving human welfare (maslahah) and preventing harm. Traditionally, Maqasid al-Shariah includes the protection of religion (hifz al-din), life (hifz al-nafs), intellect (hifz al-'aql), wealth (hifz al-mal), and lineage (hifz al-nasl). Contemporary Islamic scholars also emphasize environmental protection (hifz al-bi'ah) as an essential component of sustainable welfare and human survival.

Sustainability is closely connected to the objectives of Maqasid al-Shariah(Al Haq, 2019). Protecting the environment contributes directly to preserving human life, health, wealth, and future generations. Environmental degradation, pollution, and climate change can threaten food security, water availability, public health, and economic stability. Therefore, sustainable management of natural resources becomes necessary to fulfill the objectives of Islamic law. The circular economy supports these objectives by reducing waste, promoting resource efficiency, encouraging recycling and reuse, and maintaining ecological balance.

Moreover, Maqasid al-Shariah emphasizes intergenerational justice, where current generations must protect resources and environmental quality for future generations. This principle aligns with sustainable development and circular economy concepts that prioritize long-term welfare over short-term economic gain. Islam encourages economic systems that are ethical, balanced, and socially responsible while preventing exploitation and environmental destruction.

**Challenges in the Implementation of Circular Economy from an Islamic Economic Perspective**

One of the major challenges is the low level of public awareness regarding environmental sustainability and responsible consumption(Ali et al., 2021). Many individuals and businesses still prioritize short-term economic benefits over long-term environmental preservation. Consumer behavior in modern society is often characterized by excessive consumption, waste generation, and a preference for disposable products. This pattern contradicts the Islamic teachings that prohibit israf (wastefulness) and tabdzir (excessive consumption). Although Islam encourages moderation and responsible use of resources, these values are not always reflected in daily economic activities and consumption patterns. As a result, efforts to implement circular economy practices such as recycling, reuse, and waste reduction often face limited public participation and support.

Another significant challenge is the lack of government support and policy integration related to circular economy implementation. In many countries, environmental regulations and sustainability policies remain weak or inconsistent(Howes et al., 2017). Government programs often focus more on economic growth and industrial expansion without adequately considering environmental sustainability and resource conservation. Furthermore, there is still limited integration between circular economy initiatives and Islamic economic development strategies. Policies that specifically encourage sustainable halal industries, green Islamic finance, and environmentally friendly business practices are still underdeveloped. Without strong regulatory frameworks, incentives, and institutional support, the implementation of circular economy systems becomes difficult to achieve effectively.

Limited access to green technology and infrastructure also represents a major obstacle(Xia et al., 2019). Circular economy implementation requires technological innovation in areas such as waste management, recycling systems, renewable energy, sustainable agriculture, and eco-friendly manufacturing processes. However, many developing countries and small businesses lack access to advanced technology, adequate infrastructure, and technical expertise necessary for sustainable production systems. High investment costs for environmentally friendly technologies often discourage industries and enterprises from adopting circular economic practices. Small and medium enterprises (MSMEs), particularly in developing economies, frequently face financial constraints that limit their ability to implement sustainable business models and environmentally responsible production systems.

In addition, the implementation of circular economy principles within Islamic financial institutions remains relatively limited. Although Islamic finance has strong potential to support sustainability through instruments such as green sukuk, waqf, zakat, and Islamic social finance, practical integration with environmental sustainability initiatives is still developing. Many Islamic financial institutions continue to focus primarily on commercial profitability rather than environmental and social impact. There is also a lack of specific frameworks and standards for integrating circular economy principles into Islamic financial operations and investment strategies. Consequently, the role of Islamic finance in promoting sustainable development and environmental preservation has not yet been fully optimized.

Cultural and behavioral challenges also affect the implementation of the circular economy from an Islamic perspective(Khateeb et al., 2021). Modern lifestyles influenced by consumerism, globalization, and mass production often encourage excessive consumption and materialism. Many consumers prefer convenience and low-cost products without considering environmental consequences. Changing these consumption patterns requires not only economic incentives but also ethical awareness and educational efforts grounded in Islamic teachings. Environmental education based on Islamic values remains limited in many educational institutions and communities. As a result, public understanding of sustainability as a religious and moral responsibility is still relatively low.

Another challenge is the lack of collaboration among stakeholders involved in sustainability and circular economy development. Effective implementation requires cooperation between governments, industries, Islamic financial institutions, educational institutions, religious organizations, and local communities. However, coordination among these stakeholders is often weak, leading to fragmented sustainability initiatives and limited long-term impact. In many cases, environmental programs are implemented separately without comprehensive integration into national economic and development systems(Hazemba & Halog, 2021). The absence of collaborative frameworks and strategic partnerships reduces the effectiveness of circular economy implementation and limits its broader societal impact.

Moreover, measuring the effectiveness and impact of circular economy implementation from an Islamic economic perspective remains difficult. There is still limited empirical research, standardized indicators, and data regarding the relationship between Islamic economic principles and sustainability outcomes. Most existing studies focus on conceptual and normative discussions rather than practical evaluation and measurable implementation. This lack of empirical evidence creates challenges for policymakers, researchers, and institutions in designing effective sustainability strategies based on Islamic economic frameworks.

Global economic pressures and industrial competition also present challenges for sustainable economic transformation(Jovane et al., 2008). Many industries prioritize maximizing production and profits to remain competitive in global markets, often at the expense of environmental sustainability. Implementing circular economy systems may initially increase operational costs, require production adjustments, and reduce short-term profitability. As a result, some businesses hesitate to adopt sustainable practices despite their long-term benefits. Balancing economic growth, environmental protection, and social welfare remains a complex challenge in both conventional and Islamic economic systems.

Despite these obstacles, the challenges identified in this research also highlight the importance of strengthening environmental awareness, improving sustainability policies, expanding green technology access, and enhancing the role of Islamic institutions in promoting sustainable development. Integrating Islamic ethical values with circular economy principles requires comprehensive cooperation, education, and policy support to create a more sustainable, just, and environmentally responsible economic system. Therefore, overcoming these implementation challenges is essential for achieving long-term environmental sustainability and social welfare in accordance with Islamic economic principles.

## CONCLUSION

This research concludes that the implementation of the circular economy is highly compatible with the principles and objectives of Islamic economics. Both concepts emphasize sustainability, justice, balance, responsibility, and efficient resource management as essential foundations for achieving long-term social welfare and environmental preservation. The circular economy offers a sustainable alternative to the conventional linear economic system by encouraging waste reduction, recycling, reuse of materials, and responsible production and consumption practices. These principles are closely aligned with Islamic teachings that prohibit wastefulness (israf) and excessive consumption (tabdzir) while promoting moderation, ethical behavior, and environmental stewardship. The study also confirms that Islamic economics provides a strong ethical and spiritual framework for supporting sustainable development. Islamic values such as tauhid, khilafah, maslahah, ʻadl, and tawazun encourage humans to maintain harmony between economic activities, social welfare, and environmental sustainability. Humans are regarded as stewards of the earth who are responsible for protecting natural resources and preserving environmental balance for present and future generations. Therefore, integrating circular economy principles into Islamic economic systems can contribute significantly to achieving sustainable development goals while maintaining moral and ethical values. Furthermore, the research found that circular economy practices can be implemented effectively in various sectors, including agriculture, industry, Islamic finance, MSMEs, and the halal industry. Sustainable agricultural systems such as organic farming, composting, and reuse of agricultural waste can improve resource efficiency and reduce environmental damage. In the industrial sector, eco-friendly manufacturing processes, green production systems, and recycling initiatives support sustainable business practices and pollution reduction. The halal industry also demonstrates strong potential for adopting sustainable production methods, recyclable packaging, and environmentally friendly supply chains. In the field of Islamic finance, instruments such as green sukuk, waqf, zakat-based empowerment programs, and Islamic social finance have considerable potential to support environmental sustainability and circular economy implementation. These financial mechanisms can help fund renewable energy projects, green industries, and sustainable community-based programs. The application of circular economy principles across these sectors can improve economic efficiency, create green employment opportunities, strengthen social welfare, and support long-term environmental sustainability. However, the research also identified several major challenges in implementing the circular economy from an Islamic economic perspective. These challenges include low public awareness regarding environmental sustainability, limited government support and policy integration, inadequate green technology and infrastructure, and consumer behavior that still tends toward excessive consumption. In addition, the role of Islamic financial institutions in supporting environmental sustainability has not yet been fully optimized. Many industries and communities continue to prioritize short-term economic gains over long-term environmental and social welfare. Despite these obstacles, the study highlights significant opportunities for developing sustainable economic systems based on Islamic principles. The increasing global demand for ethical and environmentally friendly products, the growth of the halal green industry, advancements in green technology, and the expansion of Islamic social finance provide strong potential for supporting circular economy implementation. Integrating sustainability principles into Islamic economic systems can create a more inclusive, ethical, and environmentally responsible model of development. In conclusion, the integration of circular economy principles with Islamic economics can provide a comprehensive solution to contemporary environmental, economic, and social challenges. The circular economy not only supports environmental preservation and resource efficiency but also reflects Islamic values of justice, responsibility, and public welfare. Therefore, strengthening sustainability education, improving environmental policies, encouraging ethical business practices, and enhancing the role of Islamic financial institutions are essential steps toward building a sustainable and balanced economic system in accordance with Islamic teachings.

## AUTHORS' DECLARATION

### Authors' Contributions and Responsibilities

All authors contributed significantly to the completion of this research. The authors jointly participated in the formulation of research ideas, determination of research objectives, literature collection, data analysis, interpretation of findings, and preparation of the manuscript.

### Competing Interests

The authors declare that there are no competing interests regarding the publication of this research. The authors confirm that this study was conducted independently without any financial, commercial, institutional, or personal relationships that could influence the objectivity, interpretation, or presentation of the research findings.

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