Designing and Explaining a Model for Promoting a Circular Economy in the Country's Manufacturing Industries with an Islamic Economic Approach (Mixed Approach)

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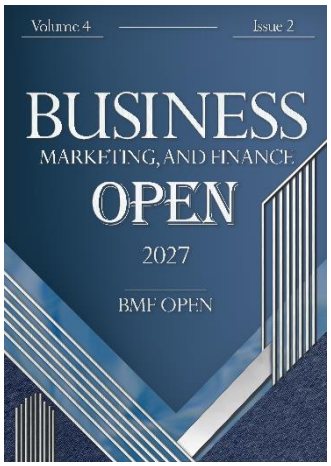

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Abstract: The present study aimed to design and explain a model for promoting the circular economy in the country's manufacturing industries based on an Islamic economic approach. This research was applied in terms of purpose and developmental-exploratory in terms of approach and was conducted using a mixed qualitative–quantitative design. In the qualitative phase, 12 experts, including university professors, senior managers of manufacturing industries, and economic consultants, were selected through theoretical sampling until theoretical saturation was achieved. Data were collected using in-depth semi-structured interviews and analyzed through thematic analysis. In the quantitative phase, the statistical population consisted of senior managers of manufacturing industries in Tehran and Alborz provinces, among whom 338 participants were selected using simple random sampling based on the Krejcie and Morgan table. A researcher-made questionnaire with 21 items on a five-point Likert scale was used for data collection. Validity was confirmed through face validity, content validity, convergent validity, divergent validity, and CVR, while reliability was verified using Cronbach's alpha. Data analysis was conducted using SPSS and SmartPLS software through descriptive statistics, confirmatory factor analysis, and structural equation modeling. The qualitative findings resulted in the extraction of 142 initial codes, which were reduced to 47 basic themes, 21 organizing themes, and 6 overarching themes. The final model included organizational factors, environmental factors, strategic factors for promoting the circular economy, realization of the circular economy, organizational consequences, and social consequences. Structural equation modeling demonstrated that organizational factors significantly influenced strategic factors for promoting the circular economy (β=0.299, t=3.40), and environmental factors also had a significant effect on strategic factors (β=0.471, t=6.053). Furthermore, strategic factors significantly affected the realization of the circular economy (β=0.683, t=13.296). The realization of the circular economy significantly influenced organizational consequences (β=0.677, t=13.047) and social consequences (β=0.460, t=5.884). All proposed hypotheses were confirmed. The findings indicate that promoting a circular economy in manufacturing industries requires simultaneous attention to organizational commitment, supportive environmental conditions, Islamic economic teachings, and strategic institutional cooperation. The proposed model demonstrates that integrating Islamic economic principles with circular economy strategies can improve sustainable resource utilization, reduce waste, enhance profitability and stakeholder satisfaction, create employment opportunities, and contribute to environmental preservation.

Keywords: Circular Economy, Islamic Economy, Manufacturing Industries, Sustainable Development, Structural Equation Modeling, Waste Reduction.

1. Introduction

In recent decades, growing environmental degradation, excessive resource consumption, climate change, and industrial pollution have intensified global concerns regarding the sustainability of prevailing economic systems. The traditional linear economic model, which is based on the "take-produce-dispose" pattern, has been widely criticized for generating significant environmental damage, resource depletion, and unsustainable development outcomes [1, 2]. This model prioritizes rapid industrial growth and mass consumption while paying insufficient attention to environmental preservation and intergenerational justice. Consequently, policymakers, scholars, and industrial practitioners have increasingly emphasized the necessity of transitioning toward more sustainable and regenerative economic systems capable of balancing economic growth with environmental and social well-being [3, 4].

The circular economy has emerged as one of the most prominent paradigms proposed to address these global challenges. Unlike the linear economy, the circular economy seeks to maximize resource efficiency through reuse, recycling, remanufacturing, sustainable product design, and waste reduction [5, 6]. In this system, products, materials, and resources are maintained within economic cycles for as long as possible, thereby minimizing waste generation and environmental degradation [7]. The circular economy is not limited to industrial production processes; rather, it encompasses broader dimensions such as sustainable consumption, green innovation, eco-industrial collaboration, and responsible governance [8, 9]. Consequently, it has become a strategic framework for achieving sustainable development goals and promoting environmental resilience across different sectors and societies.

Recent empirical studies have demonstrated the substantial benefits of circular economy practices for industries and national economies. Research has shown that the implementation of circular economy strategies can improve resource productivity, reduce production costs, increase profitability, strengthen supply chain resilience, and enhance sustainable organizational performance [7, 10]. In addition, circular economy entrepreneurship and technological capabilities have been identified as critical drivers of circular economy performance in manufacturing industries [11]. Circular economy practices also contribute to environmental sustainability through reductions in waste generation, carbon emissions, and excessive consumption of raw materials [6, 12]. Furthermore, the development of innovative circular business models has enabled organizations to create sustainable value while simultaneously improving competitiveness and customer satisfaction [13, 14].

Despite the growing global acceptance of the circular economy paradigm, the successful implementation of circular economy practices depends heavily on contextual, cultural, organizational, and institutional factors. Research has shown that social values, cultural norms, and environmental awareness significantly influence the effectiveness of circular economy initiatives [15]. In many developing countries, structural barriers such as weak environmental regulations, lack of managerial awareness, limited technological infrastructure, and insufficient organizational support continue to hinder the transition toward circular economic systems [16]. In manufacturing industries, these barriers are often intensified by short-term profit orientation, resistance to organizational change, and inadequate integration between production systems and recycling mechanisms [17, 18]. Therefore, designing localized and context-sensitive models for promoting the circular economy has become an important academic and practical necessity.

In the Iranian context, manufacturing industries play a central role in economic growth, employment generation, and industrial development. However, many of these industries continue to rely on inefficient production systems

characterized by high resource consumption, substantial waste generation, and inadequate environmental management practices. Studies have indicated that the lack of sustainable production strategies and weak environmental governance have contributed to growing ecological and economic challenges within Iranian industries [17, 19]. Moreover, the existing industrial structure often lacks effective mechanisms for recycling, sustainable product design, and circular resource utilization [20]. Under such conditions, promoting circular economy principles within manufacturing industries can significantly contribute to environmental protection, economic efficiency, and sustainable industrial development.

At the same time, one of the unique dimensions of the Iranian socio-economic environment is the strong influence of Islamic values and principles on economic activities and policymaking. Islamic economics emphasizes justice, moderation, social responsibility, ethical production, and avoidance of wastefulness and extravagance [21, 22]. These principles share important conceptual similarities with the core foundations of the circular economy, particularly regarding sustainable resource utilization, environmental stewardship, and balanced consumption patterns [23]. Islamic teachings strongly condemn wastefulness and encourage responsible utilization of natural and economic resources. Consequently, integrating Islamic economic principles into circular economy frameworks may provide a culturally compatible and socially acceptable pathway for promoting sustainability in manufacturing industries.

Islamic economic philosophy differs fundamentally from capitalist economic systems in its emphasis on moral values, collective welfare, and social justice alongside economic development [21]. In Islamic thought, economic activities should not merely pursue profit maximization but should also contribute to human welfare, environmental preservation, and ethical social relations [22]. Concepts such as moderation, social responsibility, stewardship of resources, and prohibition of extravagance are deeply rooted in Islamic teachings and can provide strong ethical foundations for circular economy practices [23]. Therefore, combining the principles of the circular economy with Islamic economic approaches may create a more holistic and culturally grounded framework for sustainable industrial development in Islamic societies.

Recent studies have also highlighted the compatibility between Islamic economics and sustainability-oriented economic systems. Research on resistance economy and Islamic economic systems has shown that Islamic economic principles extend beyond conventional circular economy frameworks by emphasizing endogenous growth, social resilience, ethical entrepreneurship, and sustainable governance [24]. Similarly, studies have emphasized the importance of integrating social values, cultural norms, and spiritual dimensions into sustainable economic models [4]. Such findings suggest that an Islamic approach to the circular economy can strengthen organizational commitment, social participation, and environmental responsibility within manufacturing industries.

Technological innovation and digital transformation have further expanded the opportunities for implementing circular economy practices in industries. Technologies such as the Internet of Things (IoT), digital platforms, smart manufacturing systems, and FinTech solutions have been identified as important facilitators of circular economy performance [8, 25]. These technologies enable industries to optimize resource consumption, monitor production processes, improve waste management, and create sustainable value chains. In addition, digital platforms have facilitated the diversification of business models and enhanced circular value creation across industries [5]. Therefore, the successful realization of the circular economy increasingly depends on the integration of technological innovation with sustainable organizational and cultural strategies.

Another important aspect of the circular economy is its relationship with entrepreneurship, innovation, and organizational capabilities. Studies have demonstrated that circular economy entrepreneurship significantly

contributes to technical capability development and sustainable organizational performance [10]. Similarly, entrepreneurial ecosystems and innovative business models have been recognized as essential mechanisms for accelerating the transition toward circular economic systems [13, 26]. These findings indicate that achieving a successful circular economy requires not only technological infrastructure but also supportive organizational cultures, strategic leadership, and effective collaboration among industries, governments, universities, and research institutions.

Furthermore, socio-cultural dimensions play a vital role in determining the success or failure of circular economy initiatives. Public awareness, social pressure, consumer behavior, and cultural acceptance can significantly influence organizational willingness to adopt sustainable practices [15, 17]. In societies where waste reduction, environmental responsibility, and sustainable consumption are culturally valued, organizations are more likely to embrace circular economy principles. Therefore, promoting a culture of sustainability and environmental responsibility is essential for institutionalizing circular economy practices in manufacturing industries.

Although numerous studies have examined different dimensions of the circular economy, most previous research has focused primarily on technological, economic, or environmental aspects of the concept. Limited attention has been paid to the integration of cultural, religious, and ethical dimensions into circular economy frameworks, particularly within Islamic societies. In addition, few studies have attempted to design a comprehensive model for promoting the circular economy in manufacturing industries using a mixed-method approach that simultaneously considers organizational, environmental, strategic, and socio-cultural factors [16, 18]. Consequently, there remains a significant theoretical and practical gap regarding the development of localized circular economy models grounded in Islamic economic principles.

Considering the increasing environmental challenges facing manufacturing industries, the strategic importance of sustainable industrial development, and the cultural relevance of Islamic economic values in Iran, designing a model for promoting the circular economy with an Islamic economic approach appears both necessary and timely. Such a model can provide policymakers, industrial managers, and researchers with a comprehensive framework for integrating sustainability principles into manufacturing systems while remaining compatible with the socio-cultural and religious foundations of Iranian society. Therefore, the present study aimed to design and explain a model for promoting the circular economy in the country's manufacturing industries based on an Islamic economic approach.

2. Methodology

The present study was applied in terms of purpose and employed an applied-exploratory mixed-method design. The research was conducted in two complementary phases, including a qualitative phase and a quantitative phase. In the first phase, a qualitative approach based on theme analysis was used to design a conceptual model for promoting the circular economy in the country's manufacturing industries with an Islamic economic approach. In the second phase, a quantitative approach based on structural equation modeling was employed to evaluate and validate the conceptual model developed in the qualitative phase. The qualitative population consisted of experts, including university professors, senior managers of manufacturing industries, and experienced economic consultants. To be considered an expert in this study, participants were required to possess at least three of the following characteristics: familiarity with Islamic economics, familiarity with circular economy concepts, familiarity with the processes of manufacturing industries, managerial experience in manufacturing industries, and at least a master's degree. In the qualitative phase, participants were selected using theoretical sampling, and the

interview process continued until theoretical saturation was achieved. Ultimately, 12 in-depth interviews were conducted. In the quantitative phase, the statistical population consisted of senior managers of manufacturing industries in Tehran and Alborz provinces. According to official statistics collected in May 2025, the total population size was estimated at 2,800 individuals. Based on the Krejcie and Morgan sampling table, a sample size of 338 participants was determined, and participants were selected using a simple random sampling method.

In the qualitative phase, data were collected through in-depth semi-structured interviews with experts. The interviews were conducted in a flexible and interactive manner to facilitate the development of trust and encourage participants to openly express their views regarding the promotion of a circular economy in manufacturing industries from an Islamic economic perspective. The researcher attempted to guide the interviews indirectly toward identifying the conceptual dimensions and foundational themes associated with the phenomenon under investigation. To ensure the credibility and reliability of the qualitative findings, convergent interview techniques were employed, and at least two researchers conducted interviews independently but simultaneously to confirm consistency in coding and interpretation.

In the quantitative phase, data were gathered using a researcher-made questionnaire developed based on the conceptual model extracted from the qualitative findings. The questionnaire consisted of 21 items designed to measure the dimensions of organizational factors, environmental factors, strategic factors for promoting the circular economy, realization of the circular economy, organizational consequences, and social consequences. Responses were scored using a five-point Likert scale ranging from strongly disagree to strongly agree. Several methods were employed to establish the validity and reliability of the instrument. Face validity and expert validity were confirmed through consultation with specialists in the fields of management, Islamic economics, and circular economy studies. Content validity was assessed using confirmatory factor analysis, while convergent validity was evaluated through the Average Variance Extracted (AVE) index and divergent validity through the Fornell–Larcker criterion. Reliability was confirmed using Cronbach's alpha coefficients, which demonstrated acceptable internal consistency for all questionnaire dimensions.

Data analysis was conducted separately in the qualitative and quantitative phases of the study. In the qualitative phase, thematic analysis was used to identify, categorize, and interpret the concepts extracted from the interviews. Initially, open coding was performed to extract primary concepts, followed by the identification of basic themes, organizing themes, and overarching themes. The final qualitative analysis resulted in the development of a conceptual model for promoting the circular economy in manufacturing industries with an Islamic economic approach.

In the quantitative phase, both descriptive and inferential statistical methods were used to analyze the collected data. Descriptive statistics, including mean, standard deviation, and frequency distribution, were calculated to summarize participant characteristics and variable distributions. Inferential analyses were performed using SPSS and SmartPLS software. Structural equation modeling was employed to evaluate the relationships among the research variables and test the proposed hypotheses. In addition, construct validity, confirmatory factor analysis, path analysis, and reliability analyses using Cronbach's alpha were conducted to assess the adequacy of the measurement and structural models.

3. Findings and Results

In the present study, a total of 12 interviews were conducted. Following the coding process, 142 initial codes were extracted. After reviewing, merging similar concepts, and removing duplicate codes, 47 basic themes were

identified. Subsequently, by examining the similarities and differences among the extracted basic themes, broader categories referred to as "constructive themes" were developed. This process resulted in the identification of 21 constructive themes. In the next stage, more comprehensive categories known as "overarching themes" were formed through a detailed analysis of the relationships and conceptual similarities among the constructive themes. The results of this classification process are presented in Tables 1 and 2.

Table 1. Identification of Constructive Themes

No.	Constructive Themes	Basic Themes
1	Sustainable use of the country's production resources and waste reduction	The country's production resources are limited and valuable, and their proper utilization is essential. The more waste manufacturing industries reduce, the greater the benefits for the national economy. Senior managers of industries should be trained in sustainable utilization of production resources.
2	Commitment of senior managers of manufacturing industries to realizing the circular economy	In improvement projects, the commitment and follow-up of senior managers are decisive. The commitment of senior managers to the circular economy can serve as guidance and inspiration for subordinate sectors.
3	Promoting and valuing Islamic teachings related to the circular economy in manufacturing industries	Islamic teachings are associated with the indicators and dimensions of the circular economy. Islamic principles related to the circular economy should be extracted and promoted among manufacturing industry managers.
4	Establishing and promoting joint working groups between the government and the private sector to achieve a circular economy	The government plays a decisive role in promoting the circular economy. Collaboration between manufacturing industries and governmental institutions can accelerate the promotion of the circular economy.
5	Studying and modeling the world's leading economies in the field of circular economy	Proper modeling can reduce trial and error. Detailed examination of leading countries' experiences in institutionalizing the circular economy is beneficial.
6	Creating new job opportunities	Realization of the circular economy can create new job titles and increase labor demand in recycling industries.
7	Increasing the satisfaction of manufacturing industry stakeholders	Moving toward a circular economy enhances social and shareholder satisfaction in manufacturing industries.
8	Aligning the macro goals of manufacturing companies with the circular economy	Companies with long-term development goals are more inclined to promote the circular economy. Organizational strategies are largely shaped by corporate goals and objectives.
9	Creating cooperation networks between manufacturing industries, universities, and religious research institutes	Systematic cooperation among industries, universities, and religious institutes is necessary to promote a circular economy with an Islamic economic approach. Industrial problems should be addressed through academic and research institutions.
10	Sustainable design and increasing product lifespan in manufacturing industries	Product design is crucial for durability, longevity, and resource conservation. Sustainable design has been largely neglected in manufacturing industries.
11	Promoting a culture of combating waste and wastefulness in manufacturing industries	Wastefulness should be recognized as an anti-value in manufacturing industries. Wasteful use of resources negatively affects the circular economy.
12	An organizational culture that supports the circular economy	Organizational culture can either facilitate or hinder the circular economy. Manufacturing industries should strengthen a culture aligned with circular economy requirements.
13	Holding training and skills courses for senior and middle managers on the circular economy	Many managers are unaware of the necessity and implementation methods of the circular economy despite theoretical familiarity with the concept.
14	Upstream requirements governing manufacturing industries regarding the circular economy	Upstream regulations are necessary for moving industries toward new paradigms. Existing requirements concerning waste reduction and resource optimization are insufficient.
15	Economic savings on a national scale	The circular economy can reduce resource consumption and generate substantial national savings through recycling and reuse.

16	Reducing costs and increasing profitability in manufacturing industries	Realization of the circular economy can reduce raw material costs and increase industrial profitability.
17	Manufacturing companies' commitment to social responsibilities	Companies committed to social responsibility are more sensitive to waste reduction, recycling, and optimal resource utilization.
18	Integrating the country's recycling system and product design in manufacturing industries	Effective realization of the circular economy requires integration between recycling systems and product design science.
19	Social pressures toward realizing the circular economy	Social institutions can act as drivers of industrial transformation toward the circular economy.
20	Improving the country's environment	One of the primary goals of the circular economy is environmental preservation and sustainable use of natural resources.
21	Increasing customer satisfaction in manufacturing industries	Increasing product lifespan and reducing production costs can improve customer satisfaction.

Table 2. Identification of Overarching Themes

Overarching Themes	Constructive Themes
Strategic factors for promoting the circular economy	Promoting a culture of combating waste and wastefulness; establishing joint working groups between government and the private sector; integrating recycling systems and product design; promoting Islamic teachings related to the circular economy; creating cooperation networks between industries and research institutions; holding training courses for managers; studying and modeling leading economies in the field of circular economy
Organizational consequences	Reducing costs and increasing profitability; increasing stakeholder satisfaction; increasing customer satisfaction
Realization of the circular economy	Sustainable product design and increased product lifespan; sustainable utilization of production resources and waste reduction
Environmental factors	Upstream requirements governing manufacturing industries; social pressures toward realizing the circular economy
Organizational factors	Commitment of senior managers; organizational culture supporting the circular economy; alignment of macro organizational goals with the circular economy; commitment to social responsibility
Social consequences	Improving the country's environment; creating new job opportunities; achieving economic savings at the national level

Subsequently, based on the identified overarching themes and the hypothetical relationships among them, the conceptual research model was developed.

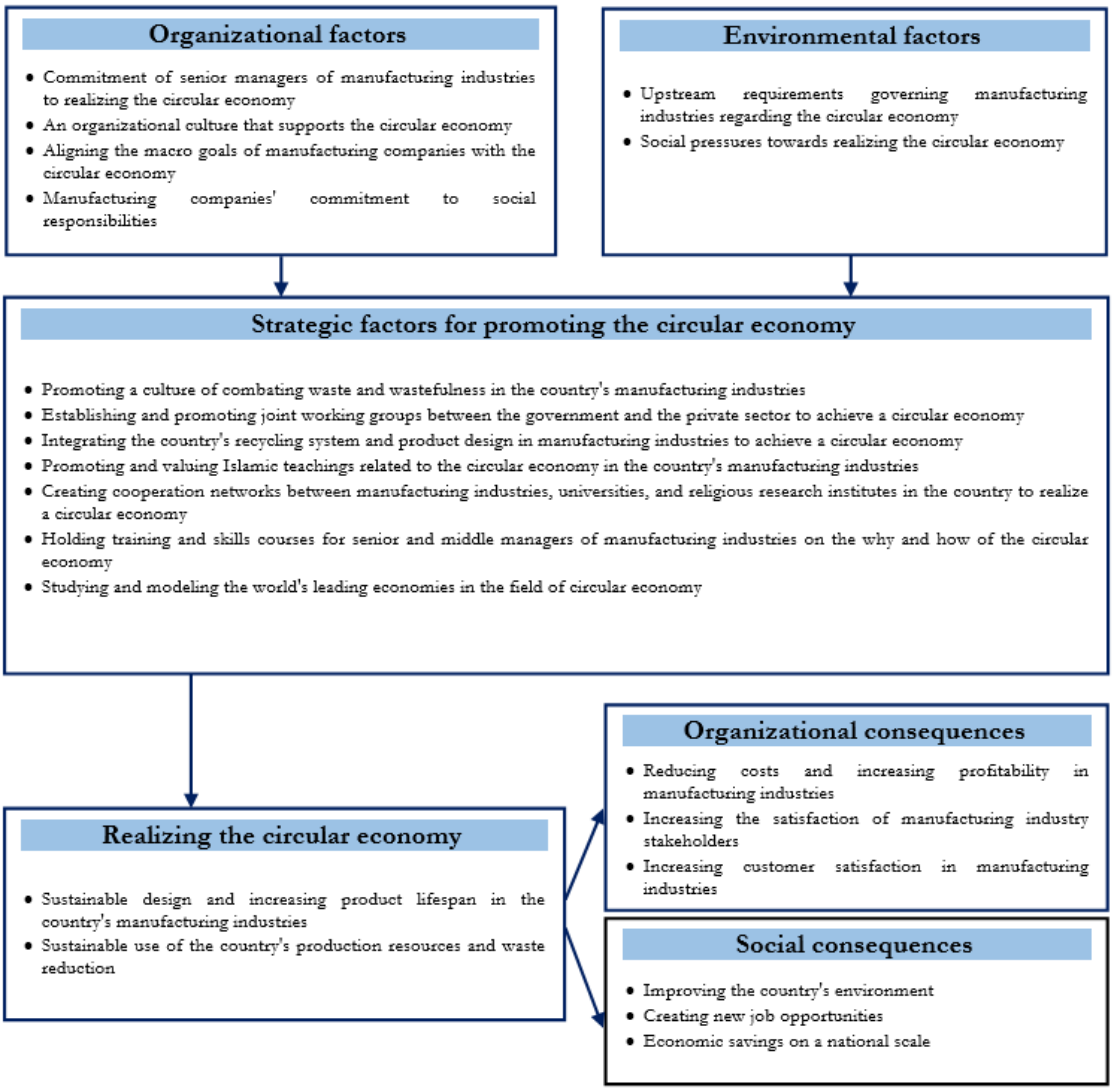

Figure 1. Conceptual Research Model

Based on the conceptual model, the following research hypotheses were formulated:

- Organizational factors have a significant effect on strategic factors for promoting the circular economy.
- Environmental factors have a significant effect on strategic factors for promoting the circular economy.
- Strategic factors for promoting the circular economy have a significant effect on the realization of the circular economy.
- The realization of the circular economy has a significant effect on organizational consequences.
- The realization of the circular economy has a significant effect on social consequences.

In the quantitative phase, Wong's test was employed to examine the homogeneity of the variables. The results are presented in Table 3.

Table 3. Wong's Test for Homogeneity

Wong's Test Statistics	Sig.	Area Under the Curve
-2.799	0.000	0.811

As shown in Table 3, the significance level was lower than 0.05, and the area under the curve exceeded 0.70, indicating a significant difference among the variables included in the model.

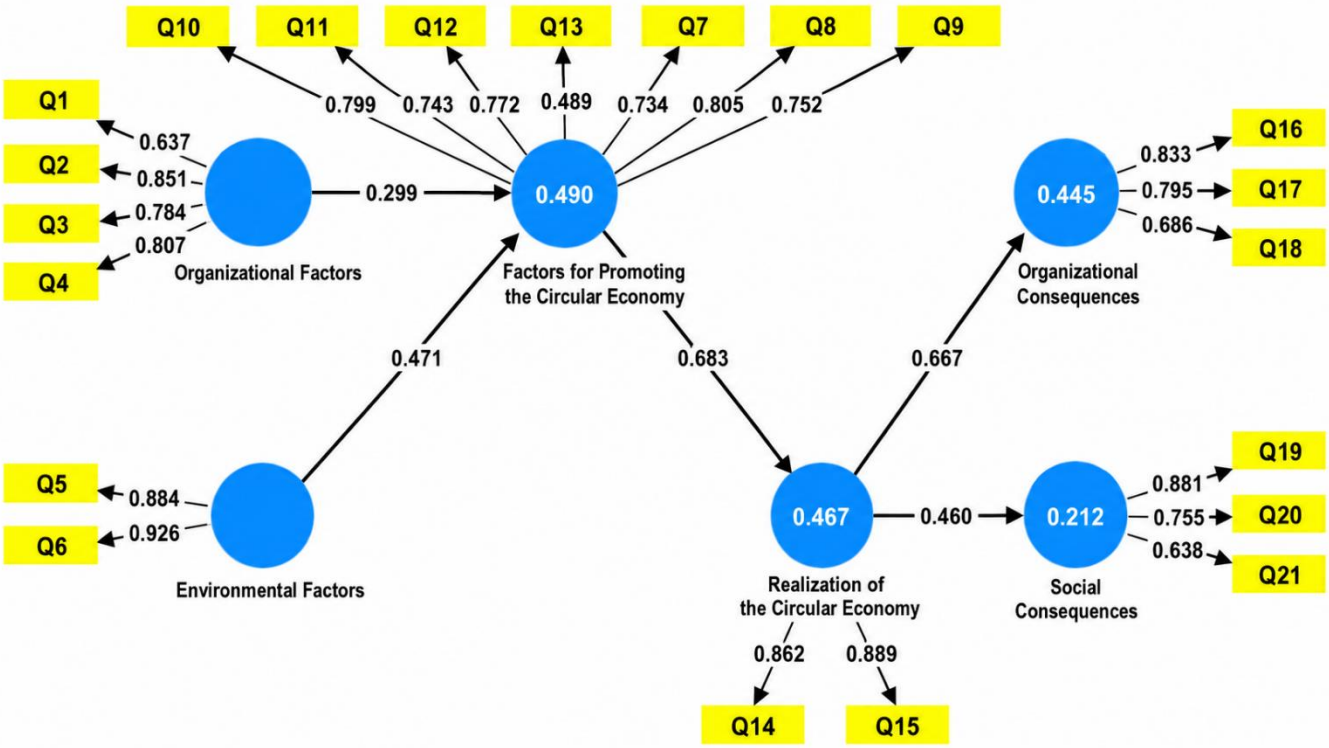

Figure 2. Path Coefficients of the Structural Research Model

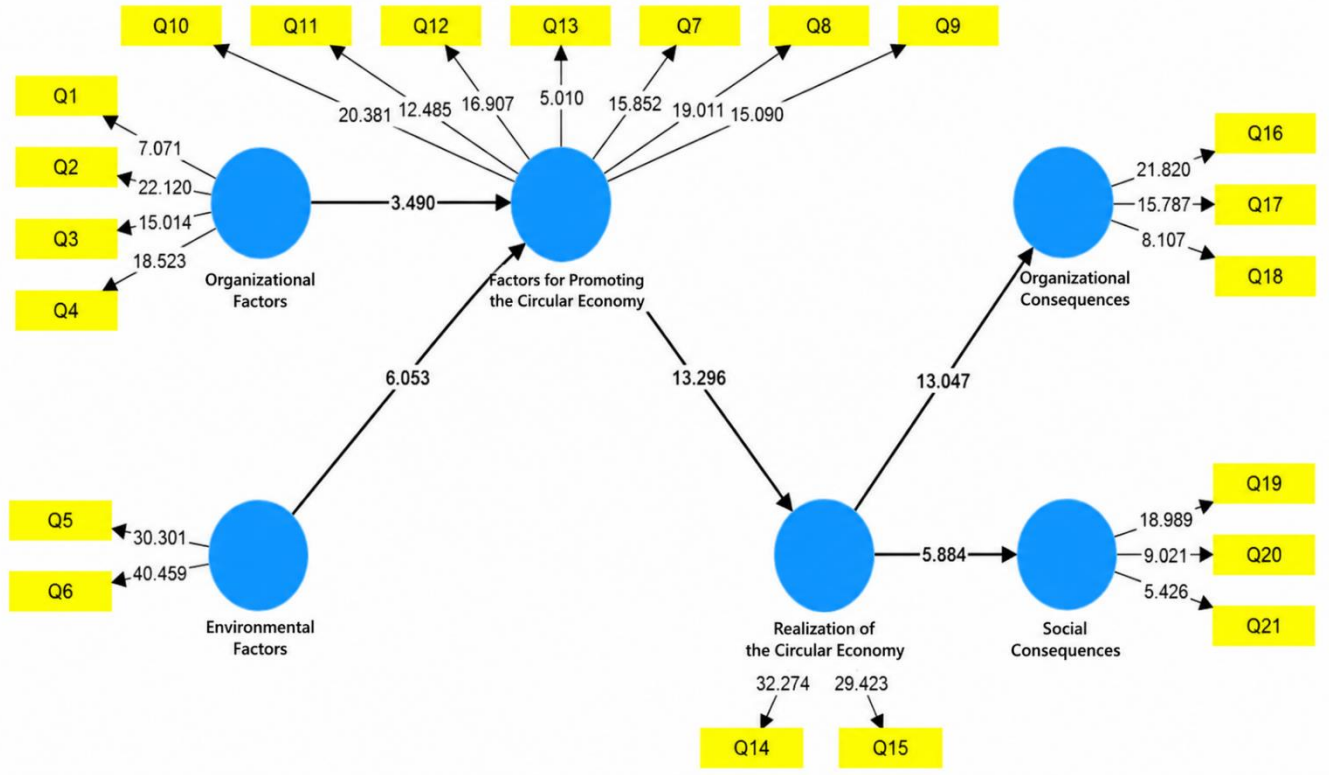

Figure 3. Significance Values of the Structural Research Model

Figure 2 presents the path coefficients among the research variables, indicating the magnitude and direction of the relationships. Coefficients ranging between 0 and +1 indicate positive and direct relationships, whereas coefficients between 0 and −1 indicate negative and inverse relationships.

Figure 3 illustrates the significance values of the structural relationships among the research variables. At the 95% confidence level, t-values greater than ±1.96 indicate statistically significant relationships and provide the basis for confirming or rejecting the research hypotheses.

The results of hypothesis testing are summarized in Table 4.

Table 4. Results of Testing the Research Hypotheses

Hypotheses	Path Coefficient (β)	t-value	Result
Organizational factors have a significant impact on strategic factors for promoting the circular economy.	0.299	3.40	Approved
Environmental factors have a significant impact on strategic factors for promoting the circular economy.	0.471	6.053	Approved
Strategic factors for promoting the circular economy have a significant impact on the realization of the circular economy.	0.683	13.296	Approved
The realization of the circular economy has a significant impact on organizational consequences.	0.677	13.047	Approved
The realization of the circular economy has a significant impact on social consequences.	0.460	5.884	Approved

4. Discussion and Conclusion

The present study aimed to design and explain a model for promoting the circular economy in the country's manufacturing industries based on an Islamic economic approach. The findings demonstrated that organizational factors and environmental factors significantly influence the strategic factors required for promoting the circular economy. Furthermore, the results indicated that strategic factors significantly contribute to the realization of the circular economy, which in turn leads to both organizational and social consequences. The extracted model emphasized the importance of managerial commitment, organizational culture, social responsibility, environmental pressures, Islamic teachings, cooperation networks, sustainable product design, and waste reduction in achieving circular economy objectives within manufacturing industries.

One of the major findings of the study was the significant effect of organizational factors on strategic factors for promoting the circular economy. This finding suggests that organizational readiness, managerial commitment, and internal cultural alignment are fundamental prerequisites for the successful implementation of circular economy practices. In particular, the commitment of senior managers, the alignment of organizational goals with sustainability principles, and the existence of a supportive organizational culture were identified as essential drivers for moving industries toward circular economy practices. This finding is consistent with previous studies emphasizing the role of leadership and organizational capabilities in circular economy implementation [7, 10]. Baah et al. demonstrated that technical capabilities and entrepreneurial orientation significantly improve circular economy performance, particularly under dynamic environmental conditions [10]. Similarly, Le et al. found that sustainable organizational practices and managerial support strengthen the relationship between circular economy initiatives and long-term organizational performance [7]. The findings of the present study also align with Shahdkar et al., who emphasized the importance of organizational structure, stakeholder integration, and value creation in developing circular business models [13]. Therefore, organizational culture and leadership commitment can be considered foundational elements for institutionalizing sustainability-oriented industrial practices.

Another important finding was the significant effect of environmental factors on strategic factors for promoting the circular economy. The results indicated that upstream regulations, social pressures, and environmental

expectations play a decisive role in motivating industries toward sustainable production systems. This finding reflects the growing influence of environmental governance and public awareness on industrial behavior. Previous research has similarly shown that external environmental conditions and institutional pressures significantly affect organizational willingness to adopt circular economy practices [11, 15]. Rijal et al. emphasized that collaborative supply chain relationships and environmental dynamism can strengthen circular economy performance in manufacturing industries [11]. Likewise, Zebardast highlighted the importance of socio-cultural dimensions and environmental awareness in determining the success of circular economy implementation [15]. In addition, Panahi Moghadam identified planning weaknesses, organizational incoherence, and lack of institutional support as major barriers to circular economy realization in manufacturing industries [16]. The present findings therefore suggest that external pressures and regulatory frameworks can act as catalysts for industrial transformation toward sustainable and circular production systems.

The results also demonstrated that strategic factors significantly influence the realization of the circular economy. Among the identified strategic factors were promoting a culture of combating wastefulness, establishing government-private sector cooperation, integrating recycling systems with product design, promoting Islamic teachings related to sustainability, creating cooperation networks between industries and academic institutions, and holding training programs for managers. This finding indicates that achieving a circular economy requires an integrated and multidimensional strategy involving cultural, educational, technological, and institutional dimensions. This result is highly consistent with previous studies that emphasized the necessity of collaborative and systemic approaches in promoting circular economy practices [4, 6]. Kalemkerian et al. highlighted the role of circular value stream mapping and production process optimization in unlocking circular economy potential within manufacturing industries [6]. Similarly, Maguire and Robson emphasized that sustainable development through circular economy practices requires coordinated collaboration among industries, governments, and social institutions [4]. The current findings also correspond with the work of Mehrotra and Jaladi, who showed that emerging businesses and startups successfully adopt circular business models through stakeholder partnerships and innovative value creation mechanisms [26]. Consequently, the realization of the circular economy appears to depend on a combination of organizational learning, institutional support, technological innovation, and social cooperation.

One of the distinctive contributions of the present study is the integration of Islamic economic principles into the circular economy framework. The findings revealed that promoting and valuing Islamic teachings related to sustainability and resource conservation constitutes an important strategic factor in the proposed model. This finding reflects the compatibility between Islamic economic philosophy and circular economy principles. Islamic economics emphasizes moderation, avoidance of wastefulness, social responsibility, environmental stewardship, and ethical economic behavior [21, 23]. The concept of avoiding extravagance and preserving resources is deeply embedded in Islamic teachings and aligns closely with the objectives of the circular economy. Khateeb et al. argued that Islamic perspectives on economic behavior can provide ethical and spiritual foundations for circular economy systems [23]. Similarly, Izadi and Baluchzehi highlighted the differences between Islamic economics and capitalist economic systems, emphasizing that Islamic economics prioritizes justice, sustainability, and social welfare over unlimited consumption and profit maximization [21]. Furthermore, Ajang et al. demonstrated that resistance economy principles derived from Islamic thought encompass many circular economy concepts while extending them through endogenous growth, social resilience, and ethical governance [24]. Therefore, integrating Islamic

economic principles into circular economy frameworks can strengthen cultural legitimacy, social acceptance, and ethical commitment toward sustainable industrial development.

The findings further showed that the realization of the circular economy significantly affects organizational consequences such as increased profitability, stakeholder satisfaction, and customer satisfaction. This finding indicates that circular economy implementation not only contributes to environmental sustainability but also generates substantial economic and competitive benefits for organizations. Previous studies have similarly reported positive relationships between circular economy practices and organizational performance [5, 7, 10]. Chen et al. found that digital platforms and diversified business models enhance circular value creation and improve organizational sustainability [5]. Likewise, Le et al. demonstrated that circular economy practices positively affect sustainable organizational performance through improved resource efficiency and strategic management [7]. These findings suggest that manufacturing industries can achieve both environmental and economic advantages by adopting circular production systems, sustainable product design, and recycling-oriented business models.

The study also found that realizing the circular economy significantly influences social consequences, including environmental preservation, national economic savings, and job creation. This result demonstrates that circular economy implementation extends beyond organizational boundaries and contributes to broader societal welfare. This finding is consistent with prior research emphasizing the social and environmental benefits of circular economy systems [9, 12]. Sharma et al. identified resource efficiency, energy conservation, and waste reduction as major outcomes of remanufacturing industries operating within circular economy frameworks [12]. Similarly, Skare et al. showed that circular material use contributes positively to sustainable development and economic stability within European economies [9]. The present findings also align with Lobova et al., who argued that circular economy systems reduce ecological costs while supporting sustainable economic growth [3]. Therefore, promoting circular economy practices within manufacturing industries can generate substantial societal benefits through environmental improvement, efficient resource utilization, and long-term economic sustainability.

Another important aspect of the findings relates to the role of technological innovation and digital transformation in enabling circular economy practices. Although technology was not identified as an independent overarching theme, several extracted strategic factors indirectly reflected the importance of innovation, sustainable design, and production optimization. Previous research has consistently emphasized the role of advanced technologies such as IoT, FinTech, digital platforms, and smart manufacturing systems in supporting circular economy initiatives [8, 25]. Vijayabaskar and Manjushree explained that IoT technologies enable industries to monitor resource consumption, optimize production efficiency, and reduce waste generation within smart cities and industrial systems [8]. Similarly, Aref Manesh et al. highlighted the role of FinTech solutions in improving sustainability performance through circular economy practices [25]. These findings suggest that technological innovation can significantly accelerate the transition toward sustainable and circular industrial systems.

Overall, the findings of the present study indicate that promoting the circular economy in manufacturing industries requires an integrated framework involving organizational commitment, environmental support, strategic planning, technological innovation, cultural transformation, and ethical-economic foundations derived from Islamic teachings. The proposed model contributes to the literature by providing a localized and culturally grounded framework for implementing circular economy principles in manufacturing industries within Islamic societies. The model also highlights the interconnected relationships among organizational, environmental, strategic, and social dimensions of sustainable industrial development. Consequently, the study provides valuable

theoretical and practical insights for policymakers, industrial managers, and researchers seeking to promote sustainability and circular economy practices in manufacturing industries.

One of the limitations of the present study was that the statistical population of the quantitative phase was limited to senior managers of manufacturing industries in Tehran and Alborz provinces, which may reduce the generalizability of the findings to other regions or industrial sectors. In addition, the use of self-report questionnaires may have increased the likelihood of response bias and socially desirable responses. Another limitation was the cross-sectional nature of the quantitative phase, which limited the possibility of examining causal relationships over time. Furthermore, because the study focused specifically on manufacturing industries, the findings may not fully apply to service industries or other economic sectors.

Future studies are recommended to examine the proposed model in different industrial sectors and geographical regions to evaluate its generalizability and contextual adaptability. Researchers may also employ longitudinal designs to investigate the long-term effects of circular economy implementation on organizational and social outcomes. Comparative studies between Islamic and non-Islamic economic contexts may further clarify the role of cultural and religious values in promoting sustainable economic systems. In addition, future research could explore the role of emerging technologies such as artificial intelligence, blockchain, and advanced digital platforms in facilitating circular economy practices within manufacturing industries.

From a practical perspective, policymakers should develop clear regulatory frameworks and incentive systems to encourage industries to adopt circular economy practices. Manufacturing companies should strengthen organizational cultures that support sustainability, social responsibility, and environmental stewardship. Training programs and educational workshops should be designed for senior and middle managers to increase awareness regarding the importance and implementation methods of the circular economy. Moreover, stronger cooperation networks should be established among industries, universities, research centers, and governmental institutions to support innovation and knowledge sharing in the field of sustainable industrial development. Finally, integrating Islamic ethical principles related to moderation, resource conservation, and social responsibility into industrial policymaking can facilitate the institutionalization of circular economy practices in Islamic societies.

Authors' Contributions

Authors equally contributed to this article.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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