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Presenting a Mission-Oriented University Model and Its Impact on the Development of Sustainable Higher Education in Universities of Mazandaran Province

ABSTRACT

Mission-oriented universities conduct a precise analysis of societal needs and design their educational and research programs based on these needs. Therefore, the primary objective of the present study was to present a model of the impact of mission-oriented universities on the development of sustainable higher education in universities of Mazandaran Province. In terms of purpose, this study was applied research and employed a descriptive-survey method. The statistical population consisted of 5,878 faculty members of universities in Mazandaran Province, from whom 361 participants were selected as the sample based on Cochran's formula using stratified random sampling. Data were collected using a researcher-made Mission-Oriented University Questionnaire containing 45 items and the Sustainable Higher Education Development Questionnaire developed by Arab (2023) consisting of 25 items. The face and content validity of the instruments were confirmed. Structural equation modeling was used for data analysis. The findings indicated that the impact of mission-oriented universities on the development of sustainable higher education in universities of Mazandaran Province was positive and significant, and the proposed model demonstrated an appropriate fit. Considering the impact of mission-oriented universities on the development of sustainable higher education, university managers and policymakers should direct universities toward mission orientation through scientific and coherent planning in order to facilitate the development of sustainable higher education within universities.

Keywords: Mission-oriented university, sustainable higher education development, model

Introduction

The higher education system in the contemporary era has undergone profound transformations due to rapid technological advances, globalization, increasing societal expectations, and the growing complexity of economic, cultural, and environmental challenges. Universities are no longer regarded solely as institutions for teaching and knowledge dissemination; rather, they are expected to play an active role in solving societal problems, promoting innovation, and contributing to sustainable development. In this context, the concept of the mission-oriented university has emerged as one of the most significant

paradigms in higher education policy and governance. Mission-oriented universities attempt to align their educational, research, and social functions with the real needs and priorities of society and direct their capacities toward addressing strategic challenges and sustainable development goals (1, 2).

The emergence of mission-oriented approaches in higher education is closely associated with broader developments in mission-oriented innovation policy and sustainability-oriented governance. Traditional universities often focused primarily on teaching and basic research, while contemporary universities are increasingly expected to contribute directly to social welfare, regional development, industrial advancement, and environmental sustainability. This shift has altered the conceptualization of the university from a knowledge-producing institution into a problem-solving and development-oriented organization capable of creating transformative societal impacts (3, 4). Mission orientation therefore represents an integrated framework through which universities define their strategic priorities according to societal missions and public value creation.

One of the central characteristics of mission-oriented universities is their emphasis on responsiveness to societal needs. Such universities attempt to identify the key economic, environmental, technological, and social challenges facing their communities and design educational and research activities accordingly. This approach requires a transition from passive and bureaucratic structures toward flexible, collaborative, and innovation-driven systems capable of responding to emerging societal demands (5, 6). In this regard, mission-oriented universities act as intermediary institutions linking government, industry, civil society, and the academic community in pursuit of sustainable development objectives.

Sustainable higher education development has become another major concern in contemporary educational systems. Sustainable higher education refers to a model of university development that simultaneously addresses educational quality, social equity, environmental responsibility, economic efficiency, and long-term institutional resilience. Universities play a critical role in preparing future generations for sustainable living and responsible citizenship while also contributing to knowledge production and innovation for sustainable societies (7, 8). Consequently, higher education institutions are increasingly expected to integrate sustainability principles into governance, curricula, research agendas, and community engagement.

The relationship between mission-oriented universities and sustainable higher education development is inherently multidimensional. Mission-oriented universities contribute to sustainability by directing academic resources toward solving practical societal issues and fostering innovation ecosystems that support economic and social development. Furthermore, such universities encourage interdisciplinary collaboration, entrepreneurial thinking, and socially responsible research, all of which are essential components of sustainable higher education systems (9, 10). Through mission-oriented strategies, universities can strengthen their societal legitimacy and improve their effectiveness in responding to complex sustainability challenges.

Research concerning university missions has demonstrated that mission statements and institutional strategies significantly influence organizational behavior, governance structures, and educational priorities. Comparative analyses of university mission statements across countries indicate that contemporary universities increasingly incorporate sustainability, innovation, social responsibility, and societal engagement into their official missions (11, 12). These findings reflect a global transition toward more socially embedded and mission-driven higher education institutions. Universities are now expected to go beyond traditional academic functions and contribute directly to sustainable economic and social transformation.

Mission-oriented innovation policies have also highlighted the importance of organized research and development activities in achieving collective societal goals. Universities occupy a central position within these innovation ecosystems due to their capacity for scientific production, technological development, and human capital formation. Organized research and development activities enable universities to contribute to strategic national priorities while simultaneously strengthening

sustainable development pathways (4, 9). In this regard, mission-oriented universities are increasingly viewed as strategic actors within national and regional innovation systems.

At the same time, implementing mission-oriented approaches in higher education is associated with several challenges. Universities often face contradictions between traditional academic values and external expectations for economic and social impact. Balancing academic autonomy, scientific excellence, commercialization pressures, and sustainability objectives can create tensions within university governance and organizational culture (2, 13). In many cases, universities encounter difficulties in translating mission-oriented policies into operational strategies due to institutional rigidity, limited financial resources, and fragmented policymaking structures.

Another important issue concerns the diversity of mission-oriented models across different national and regional contexts. Studies have shown that mission-oriented innovation and higher education policies vary significantly depending on political systems, governance structures, cultural conditions, and developmental priorities. For instance, experiences in China demonstrate how mission-oriented innovation policies can support regional development and digital transformation through coordinated state-university-industry collaboration (4, 6). Similarly, analyses of Latin American and Gulf Cooperation Council universities reveal that mission statements increasingly emphasize sustainability, social responsibility, and community engagement, although the degree of practical implementation differs across institutions (12, 14).

In the context of Iranian higher education, the concept of mission-oriented universities has gained increasing attention in recent years due to the need for structural reforms and greater alignment between universities and societal demands. Iranian universities have traditionally operated within centralized and academically oriented frameworks that often limited their responsiveness to regional and national development priorities. However, growing economic, technological, and environmental challenges have intensified the need for universities to adopt mission-oriented approaches capable of supporting sustainable development and innovation (1, 5). The transition toward mission-oriented universities is therefore considered an essential step in improving higher education governance and increasing institutional effectiveness.

Studies conducted in Iran emphasize that mission-oriented universities can contribute to sustainable development by strengthening knowledge-based economies, enhancing university-industry collaboration, promoting entrepreneurship, and addressing local community needs. Mission orientation also encourages universities to redefine their educational and research priorities according to regional capacities and societal expectations (2, 7). Nevertheless, several obstacles remain, including insufficient policy coherence, limited institutional autonomy, inadequate financial support, and weak integration between universities and external stakeholders.

The province of Mazandaran possesses unique social, economic, cultural, and environmental characteristics that make the development of mission-oriented universities particularly important. Universities in this province can potentially play a significant role in addressing regional challenges such as environmental sustainability, tourism development, agricultural modernization, cultural preservation, and technological innovation. Given the strategic importance of sustainable higher education development, understanding the impact of mission-oriented universities on sustainability outcomes in Mazandaran's universities becomes highly relevant from both theoretical and practical perspectives.

Despite the growing body of literature on mission-oriented innovation policies and sustainable higher education, there remains a relative lack of empirical studies examining the direct relationship between mission-oriented universities and sustainable higher education development within the Iranian context. Existing studies have often focused either on theoretical discussions of university missions or on broader sustainability frameworks without providing integrated models that explain how mission orientation contributes to sustainable higher education outcomes (5, 8). Furthermore, limited research has investigated this relationship specifically in regional university systems such as Mazandaran Province.

Another research gap concerns the multidimensional nature of sustainable higher education development. Sustainability in higher education encompasses cultural, economic, social, and human dimensions, all of which may be influenced by mission-oriented university structures and policies. However, previous studies have not sufficiently examined how various dimensions of mission orientation—including research and development, internationalization, industry collaboration, innovation, knowledge management, and social services—collectively affect sustainable higher education development (7, 10). Addressing this gap requires comprehensive empirical models capable of analyzing these complex relationships.

Theoretical developments in mission-oriented innovation policy further support the need for such investigations. Mission-oriented organizations are increasingly recognized as key drivers of collective action and long-term societal transformation. Universities, as knowledge-intensive institutions, possess substantial capacities for facilitating innovation, sustainability transitions, and human capital development when guided by mission-oriented principles (3, 9). Therefore, understanding how mission orientation influences sustainable higher education can provide valuable insights for policymakers, university managers, and educational planners seeking to improve institutional performance and societal impact.

Furthermore, the integration of sustainability into university missions has become an international priority in higher education reform agendas. Universities are expected to promote sustainable development not only through teaching and research but also through institutional governance, stakeholder engagement, and community-oriented activities. Mission-oriented universities provide a strategic framework for achieving these objectives by aligning institutional missions with broader societal and sustainability goals (11, 14). Consequently, evaluating the effectiveness of mission-oriented approaches in promoting sustainable higher education is essential for advancing evidence-based higher education policies.

Considering the importance of mission-oriented universities in addressing societal challenges, enhancing innovation, and supporting sustainability, as well as the necessity of sustainable higher education development in contemporary university systems, investigating the relationship between these two concepts is of considerable significance. Therefore, the present study aimed to present a model of the impact of mission-oriented universities on sustainable higher education development in universities of Mazandaran Province.

Methods and Materials

In terms of purpose, this study was applied research, and in terms of method, it employed a descriptive-survey design. The statistical population consisted of all faculty members of universities in Mazandaran Province, totaling 5,878 individuals. Based on Cochran's formula, 361 participants were selected as the statistical sample using stratified random sampling according to academic rank (Table 1).

Table 1. Population and Sample Size by Academic Rank

Academic Rank	Population	Sample	Percentage
Instructor	1,028	63	17.5
Assistant Professor	1,879	116	32.1
Associate Professor	1,954	120	33.2
Professor	1,017	62	17.2
Total	5,878	361	100

The data collection instruments used in this study included the following:

- **Researcher-Made Mission-Oriented University Questionnaire:** This questionnaire consisted of 45 items and 7 dimensions, including “research and development,” “industry collaboration,” “education and learning,” “innovation and entrepreneurship,” “internationalization,” “knowledge management,” and “social services.” The instrument was

designed based on a five-point Likert scale ranging from “strongly disagree” to “strongly agree” and was scored from 1 to 5, respectively.

- **Arab’s Sustainable Higher Education Development Questionnaire (2023):** This questionnaire consisted of 25 items and 4 dimensions, including “cultural,” “economic,” “social,” and “human” dimensions. The instrument was designed using a five-point Likert scale ranging from “very low” to “very high” and was scored from 1 to 5, respectively.

The face and content validity of the instruments were confirmed by experts. The reliability coefficients, calculated using Cronbach’s alpha, were .945 for the Mission-Oriented University Questionnaire and .947 for the Sustainable Higher Education Development Questionnaire. Since both values exceeded .70, the instruments were considered statistically reliable and acceptable. For data analysis, mean and standard deviation were used in the descriptive statistics section, while structural equation modeling (SEM) was employed in the inferential statistics section to examine the research hypothesis. Data analysis was conducted using SPSS version 27 and LISREL version 8.5.

Findings and Results

The findings of the study are presented in two sections: descriptive and inferential. In the descriptive section, demographic findings indicated that 59.3% of the statistical sample were male and 40.7% were female. Regarding age distribution, 6.7% of participants were under 45 years old, 38.5% were between 45 and 50 years old, and 54.8% were over 50 years old. In terms of work experience, 5.2% had less than 10 years of experience, 46.3% had between 10 and 20 years of experience, and 48.5% had more than 20 years of experience. Concerning academic rank, 17.5% were instructors, 32.1% were assistant professors, 33.2% were associate professors, and 17.2% were full professors. Furthermore, the means and standard deviations of the research variables are presented in Table 2.

Table 2. Means and Standard Deviations of Research Variables

Variables	Variable Code	N	Mean	Standard Deviation
Mission-Oriented University	DM	361	3.80	0.526
Research and Development	DM1	361	3.70	0.662
Industry Collaboration	DM2	361	3.59	0.778
Education and Learning	DM3	361	3.73	0.832
Innovation and Entrepreneurship	DM4	361	3.78	0.681
Internationalization	DM5	361	4.13	0.651
Knowledge Management	DM6	361	3.88	0.728
Social Services	DM7	361	3.81	0.931
Sustainable Higher Education Development	TA	361	3.76	0.573
Cultural	TA1	361	3.91	0.760
Economic	TA2	361	3.75	0.692
Social	TA3	361	3.59	0.663
Human	TA4	361	3.80	0.711

According to Table 2, among the dimensions of the mission-oriented university variable, “internationalization” had the highest mean score ($M = 4.13$), while “industry collaboration” had the lowest mean score ($M = 3.59$). In addition, among the dimensions of sustainable higher education development, the “cultural” dimension had the highest mean score ($M = 3.91$), whereas the “social” dimension had the lowest mean score ($M = 3.59$).

In the inferential section, structural equation modeling using LISREL software was employed to investigate the effect of mission-oriented universities on sustainable higher education development in universities of Mazandaran Province.

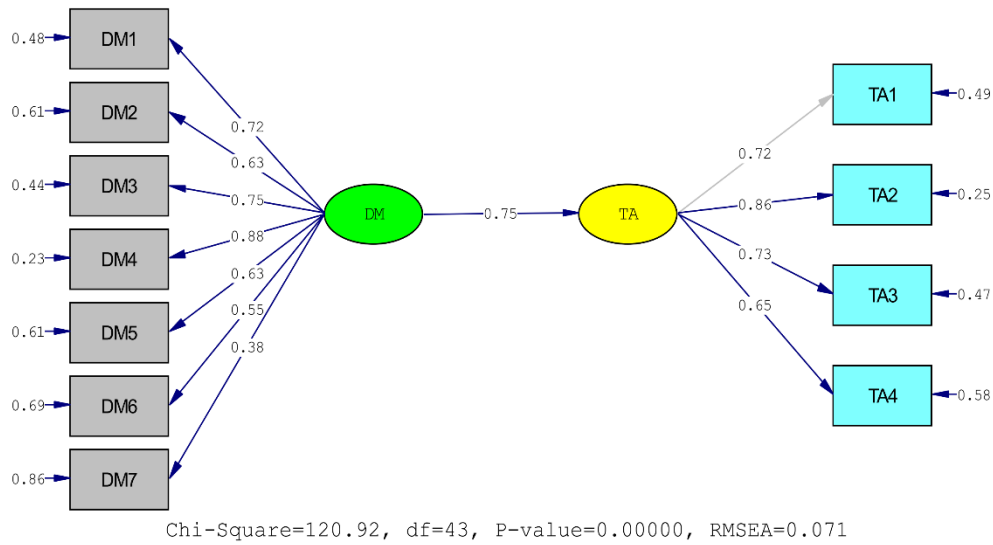


Figure 1. Estimation of Standardized Coefficients in the Model

According to Figure 1, the mission-oriented university variable had a direct and significant effect on sustainable higher education development, with a standardized coefficient of .75.

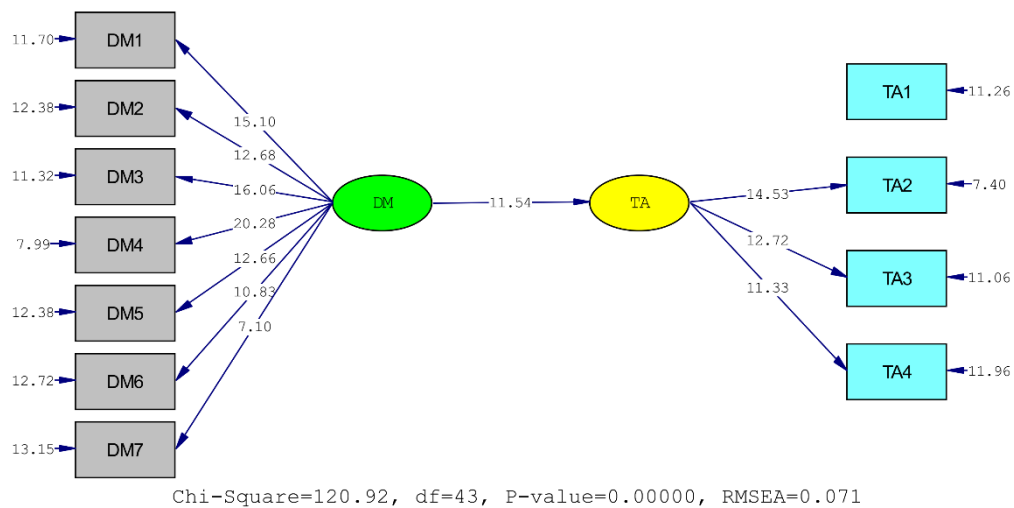


Figure 2. Estimation of t-Values in the Model

According to Figure 2, the calculated t-value between the mission-oriented university variable and sustainable higher education development was 11.54, which is greater than 1.96 and indicates a significant relationship between the variables.

Table 3. Results of Path Analysis Findings

Variables	t-Statistic	Standardized Coefficient	Test Result
Effect of Mission-Oriented University on Sustainable Higher Education Development in Universities of Mazandaran Province	11.54	0.75	Confirmed

Based on Figures 1 and 2 and Table 3, the standardized coefficients indicated that a factor loading of .75 existed between the exogenous latent variable (mission-oriented university) and the endogenous latent variable (sustainable higher education development). Furthermore, at the 95% confidence level and measurement error of $\alpha = .05$, the calculated t-value was greater

than 1.96 ($t > 1.96$). Therefore, it can be concluded that the effect of mission-oriented universities on sustainable higher education development in universities of Mazandaran Province is positive and significant.

The final goodness-of-fit indices of the structural model based on LISREL output are presented in Table 4.

Table 4. Results of Measurement Model Fit Indices at the .05 Significance Level

Index	Acceptable Value	Calculated Value	Test Result
Chi-square to Degrees of Freedom Ratio (χ^2/df)	< 3.00	2.81	Confirmed
Root Mean Square Error of Approximation (RMSEA)	< 0.08	0.071	Confirmed
Goodness-of-Fit Index (GFI)	> 0.90	0.91	Confirmed
Normed Fit Index (NFI)	> 0.90	0.94	Confirmed
Comparative Fit Index (CFI)	> 0.90	0.91	Confirmed
Adjusted Goodness-of-Fit Index (AGFI)	> 0.90	0.92	Confirmed
Incremental Fit Index (IFI)	> 0.90	0.93	Confirmed
Relative Fit Index (RFI)	> 0.90	0.91	Confirmed

The results presented in Figures 1 and 2 and Table 4 demonstrate that the chi-square statistic was 120.92 with 43 degrees of freedom, and the chi-square to degrees of freedom ratio was 2.81. Since values lower than 3 indicate acceptable model fit, the proposed model demonstrated satisfactory fit. Moreover, the RMSEA value was .071, and values lower than .08 indicate appropriate model fit. Other goodness-of-fit indices included GFI = .91, NFI = .94, CFI = .91, AGFI = .92, IFI = .93, and RFI = .91. In all the aforementioned indices, values above .90 indicate acceptable model fit. Therefore, it can be concluded that the proposed model of the effect of mission-oriented universities on sustainable higher education development in universities of Mazandaran Province demonstrated an appropriate level of fit.

Discussion and Conclusion

The findings of the present study demonstrated that mission-oriented universities have a positive and significant effect on sustainable higher education development in universities of Mazandaran Province. The structural equation modeling results indicated that the standardized coefficient between mission-oriented universities and sustainable higher education development was .75, which reflects a strong and meaningful relationship between these variables. In addition, the model fit indices confirmed that the proposed model had an appropriate level of fit and explanatory power. These findings suggest that mission orientation can serve as an effective framework for improving sustainability-oriented performance in higher education institutions and strengthening universities' responsiveness to social, economic, cultural, and human development needs.

One of the important findings of the descriptive analysis was that among the dimensions of mission-oriented universities, the dimension of internationalization had the highest mean score, while collaboration with industry had the lowest mean score. This result indicates that universities in Mazandaran Province have shown relatively greater attention to international interactions, scientific exchanges, and global academic engagement compared to industry collaboration and practical partnerships with economic sectors. This finding may reflect the growing influence of globalization and international academic competition on university policies. Contemporary universities increasingly attempt to enhance their scientific reputation and global visibility through international collaborations, academic mobility, and participation in international research networks (11, 14). However, the relatively lower mean of industry collaboration suggests that stronger mechanisms are still needed to connect universities with labor markets, industries, and regional economic systems.

The findings also revealed that among the dimensions of sustainable higher education development, the cultural dimension had the highest mean score, whereas the social dimension had the lowest mean score. This result indicates that universities in the studied region have placed considerable emphasis on cultural development and value-oriented educational functions. Universities are traditionally recognized as cultural institutions responsible for preserving social values, promoting intellectual

growth, and enhancing ethical awareness within society. Therefore, the higher emphasis on cultural sustainability may reflect the historical and social role of universities within Iranian society. Nevertheless, the relatively lower emphasis on social sustainability may indicate challenges related to social participation, equity, stakeholder engagement, and community-based educational development. Sustainable higher education requires balanced attention to all dimensions of sustainability, including social justice, social responsibility, and community integration (7, 8).

The significant positive relationship between mission-oriented universities and sustainable higher education development can be explained through several theoretical and practical mechanisms. Mission-oriented universities are designed to align their educational, research, and innovation activities with societal priorities and developmental needs. Such alignment enables universities to direct their intellectual and organizational capacities toward solving real-world challenges and supporting sustainable development processes. By emphasizing research and development, innovation, entrepreneurship, and social services, mission-oriented universities create conditions that strengthen educational sustainability and institutional effectiveness (1, 2).

The findings of the present study are consistent with the results reported by Mousavi et al. regarding the role of universities in sustainable development. Their study emphasized that universities can significantly contribute to sustainability through educational transformation, social participation, and innovation-oriented governance structures (8). Similarly, Bagheri Majd et al. highlighted the importance of sustainability-based educational models in higher education institutions and argued that sustainable development requires integrated educational policies that connect academic systems with broader societal objectives (7). The present findings further support these perspectives by demonstrating that mission-oriented structures can strengthen sustainable higher education development in practical and measurable ways.

The present results are also aligned with the findings of Kazemi et al., who identified mission orientation as an effective step toward improving higher education governance (1). Mission-oriented governance allows universities to move beyond traditional bureaucratic models and adopt more dynamic, flexible, and problem-solving approaches. Such governance structures encourage accountability, strategic planning, and institutional responsiveness, all of which are essential for sustainable higher education systems. Universities operating under mission-oriented frameworks are more likely to identify regional priorities, establish stakeholder partnerships, and promote interdisciplinary collaboration for societal development.

In addition, the findings are consistent with the work of Fereydouni, who proposed a mission-orientation framework for Iranian universities based on the Problem-Driven Iterative Adaptation approach (5). According to this perspective, universities should not merely imitate global educational models but rather develop mission-oriented strategies grounded in local problems and contextual realities. The present study confirms that mission orientation can effectively support sustainable higher education development when universities adapt their activities to regional and societal needs. In the context of Mazandaran Province, this means that universities should focus more strongly on addressing local developmental challenges such as environmental sustainability, agricultural innovation, tourism management, and regional economic growth.

The positive effect identified in this study can also be interpreted through the lens of mission-oriented innovation policy. Mission-oriented innovation frameworks emphasize collective action, interdisciplinary collaboration, and long-term societal transformation through coordinated institutional efforts. Universities play a central role within these systems due to their capacities in knowledge production, research, and human capital development (3, 9). The present findings indicate that universities that adopt mission-oriented principles are better positioned to contribute to sustainable educational development because they integrate innovation activities with broader societal missions and public value creation.

The role of research and development in mission-oriented universities is particularly important in explaining the present findings. Organized research and development activities provide universities with the capacity to generate solutions for

economic, environmental, and technological problems while simultaneously promoting educational quality and sustainability. Li et al. argued that mission-oriented innovation depends heavily on organized and collaborative research systems capable of addressing complex societal challenges (9). In the present study, research and development emerged as one of the significant dimensions of mission-oriented universities, suggesting that knowledge production and innovation are fundamental drivers of sustainable higher education development.

The findings are also supported by international studies concerning mission-oriented innovation and higher education transformation. Yang and Hu emphasized that mission-oriented innovation policies in the digital age have become increasingly important for regional and institutional development, especially within innovation ecosystems (4). Similarly, Liefner et al. argued that mission-oriented innovation policies can enhance institutional adaptability and promote coordinated developmental strategies when universities actively collaborate with governments and industries (6). These perspectives align with the present findings by illustrating how mission orientation enables universities to become more responsive and development-oriented institutions.

Another explanation for the findings concerns the increasing integration of sustainability into university mission statements and institutional identities. Contemporary universities increasingly define themselves as socially responsible institutions committed to sustainable development and societal impact. Comparative analyses of university mission statements have demonstrated that sustainability, innovation, and public engagement are becoming central themes in higher education governance and strategy (11, 12). The present findings support this global trend and indicate that universities that incorporate mission-oriented principles into their institutional structures are more capable of advancing sustainable higher education objectives.

The findings concerning model fit indices also carry important implications. The acceptable values of RMSEA, GFI, CFI, NFI, IFI, and AGFI indicate that the proposed conceptual framework provides an appropriate explanation of the relationship between mission-oriented universities and sustainable higher education development. This suggests that the dimensions included in the model, such as research and development, industry collaboration, education and learning, internationalization, innovation, knowledge management, and social services, collectively represent a coherent and theoretically meaningful structure. The strength of the model further demonstrates that sustainable higher education development is not the result of isolated activities but rather emerges from integrated institutional missions and coordinated organizational strategies.

At a broader level, the findings of the study reflect the transformation of universities from traditional educational institutions into strategic developmental actors. Universities are increasingly expected to contribute to economic growth, social welfare, environmental sustainability, and innovation ecosystems. Mission-oriented universities represent an institutional response to these expectations because they seek to align educational and research activities with societal priorities and sustainable development goals (3, 13). Therefore, the positive effect identified in the present study reflects the growing importance of mission-oriented governance within contemporary higher education systems.

Despite the positive findings, the implementation of mission-oriented university models may encounter several challenges. Mouthaan et al. emphasized that mission-oriented policies often involve contradictions between academic autonomy, institutional traditions, market pressures, and societal expectations (13). Universities may face difficulties in balancing scientific independence with external demands for economic and social impact. In addition, insufficient financial resources, weak policy integration, and resistance to organizational change may limit the effectiveness of mission-oriented reforms. Therefore, achieving sustainable higher education development through mission-oriented approaches requires long-term strategic planning, institutional flexibility, and supportive governance structures.

The findings of this study contribute to the theoretical literature by empirically confirming the relationship between mission-oriented universities and sustainable higher education development within the Iranian higher education context. While previous studies mainly focused on theoretical discussions of mission orientation or sustainability separately, the present study provides an integrated empirical framework that demonstrates how mission-oriented university dimensions collectively influence sustainability-oriented educational development. This contribution is particularly important because regional university systems such as those in Mazandaran Province require context-sensitive models capable of addressing local developmental priorities and institutional capacities.

One limitation of the present study was that the research population was limited to faculty members of universities in Mazandaran Province, which may reduce the generalizability of the findings to other provinces or national higher education systems. Another limitation concerns the use of self-report questionnaires, as participants' responses may have been influenced by subjective perceptions or social desirability bias. Furthermore, the cross-sectional nature of the study limited the possibility of examining long-term causal relationships between mission-oriented universities and sustainable higher education development.

Future research is recommended to examine the role of mission-oriented universities in other regional and national contexts in order to compare institutional differences and sustainability outcomes. Researchers may also investigate the mediating role of variables such as organizational culture, innovation capability, leadership style, and stakeholder participation in the relationship between mission-oriented universities and sustainable higher education development. In addition, future studies could employ longitudinal or mixed-method designs to provide deeper insights into the long-term impacts and implementation processes of mission-oriented university models.

University policymakers and managers should develop comprehensive strategic plans to strengthen mission-oriented structures within higher education institutions. Increasing collaboration with industries, governmental organizations, and local communities can enhance universities' contributions to sustainable development. Universities should also invest in innovation ecosystems, interdisciplinary research, internationalization programs, and knowledge management systems to improve sustainability-oriented performance. Furthermore, educational planners should integrate sustainability principles into curricula, institutional governance, and research agendas in order to create universities capable of responding effectively to future societal challenges.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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