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Designing a Good Governance Model and Quality Management Systems in Iran's Oil and Gas Industries

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ABSTRACT

The oil and gas industries, as one of the most important economic and strategic resources of the country, play a key role in growth, development, and national security. Considering the breadth of activities, the complexity of processes, and the environmental and social sensitivities, the necessity of having efficient and transparent management frameworks is increasingly evident. Therefore, the purpose of this study was to design a model of good governance and quality management systems in Iran's oil and gas industries using a mixed-methods approach. This research is applied in purpose and exploratory in nature, analyzed with a mixed (qualitative–quantitative) approach. In the first stage, in order to identify the components of the model, a qualitative method and in-depth interviews were used. In the qualitative section, 14 academic experts were selected purposefully. For analyzing the qualitative data, the grounded theory method was applied using MAXQDA software. Subsequently, in order to test the fit of the model designed in the qualitative section, a quantitative method with a structural equation modeling (SEM) approach was employed. The participants in this phase included 384 managers, experts, and employees, selected through simple random sampling. The data collection tool in the quantitative phase was a questionnaire based on the findings of the qualitative section, whose validity and reliability were confirmed. Quantitative data analysis was conducted using LISREL software. The qualitative results indicated that 6 main categories, 34 subcategories, and 64 open codes were identified. In the quantitative section, it was also found that there is a significant relationship between good governance, quality management systems, and the related factors, and that the designed model demonstrates acceptable fitness. The results of this study can assist managers and policymakers in this field in promoting productivity, transparency, and accountability, while providing a model for sustainable development and greater efficiency in the country's oil and gas industries.

Keywords: Good Governance, Quality Management, Fajr Jam Refinery, Mixed-Methods

Introduction

Good governance has emerged as a pivotal concept in the management sciences, serving as a guiding framework for enhancing organizational efficiency, transparency, accountability, and legitimacy in both public and private sectors. As global institutions face increasingly complex challenges—ranging from corruption and resource mismanagement to rapid technological transformations—the importance of adopting governance models rooted in sustainability, equity, and strategic capacity-building has become indispensable [1, 2]. In this context, the oil and gas sector, as well as broader public administration systems, stand at the center of governance debates due to their significant economic, political, and social implications [3-5].

Governance as a theoretical construct has evolved from traditional management paradigms toward a multifaceted framework incorporating legal, cultural, and institutional elements. Alvani [6] emphasized the role of public management theories in shaping governance structures that integrate efficiency with normative values such as justice and transparency. Similarly, Zarei [7] highlighted the delicate balance between sovereignty and governance in the Iranian context, underscoring the challenges of aligning domestic governance frameworks with global standards. From a legal perspective, Heidari [8] and Rahmati Far [9] noted that governance cannot be divorced from the rule-making and anti-corruption structures embedded in constitutional and statutory processes.

The principle of transparency has also received extensive scholarly attention. Taheri and Arasta [10] argued for its centrality in both Islamic jurisprudence and modern governance, while Taheri and Davoodi Garamaroodi [11] examined how strict criminal policy underpins deterrence against corruption and maladministration. In broader terms, Kaufmann [1] deconstructed myths around governance and corruption, stressing the empirical realities of institutional failures and the urgency of rethinking measurement frameworks.

The oil and gas industry provides a paradigmatic case for understanding governance, given its dual role as a driver of economic growth and a source of vulnerability to rent-seeking and corruption. Guriev [12] developed a theoretical model explaining determinants of nationalization in the oil sector, illustrating how states oscillate between privatization and nationalization cycles depending on political and economic incentives. Likewise, Stevens [3] emphasized the recurring cycle of resource nationalism in the Middle East, reflecting tensions between state ownership of national oil companies and the role of international oil corporations.

Kolstad and Søreide [4] and Leite and Weidmann [5] further established how resource rents and weak governance structures exacerbate corruption, thereby undermining long-term development. These insights highlight the necessity of good governance mechanisms—especially transparency, accountability, and stakeholder participation—in resource-based economies. In Iran, Majdzanganeh [13] examined governance within the judiciary, while Gholipour [14] explored good corporate governance maturity in the insurance industry, both offering transferable lessons for oil and gas governance systems.

Iranian scholarship has devoted considerable attention to contextualizing governance models within public administration and sector-specific domains. Amini Shad [15] designed a governance framework for Tehran municipality, integrating participatory mechanisms with managerial efficiency. Ba'eidi Mofardnia [16] and Barati [17] investigated governance in trade and anti-corruption policy domains, respectively, while Badisar [18] evaluated good governance indicators in the water sector. Collectively, these studies reinforce the argument that sectoral governance frameworks are vital to achieving national development and institutional resilience.

Furthermore, Rezazadeh Taloukolaei [19] identified dimensions of good governance and organizational development in medical sciences universities, while Moradi Vahdat [20] assessed the role of transformational leadership in creating sustainable revenue within municipalities. These works demonstrate the adaptability of governance principles across institutional landscapes, suggesting that governance is not a static framework but a dynamic construct that must evolve in line with organizational needs and external pressures.

Beyond the Iranian context, international literature provides complementary insights. Sheng [21] investigated urban governance in Southeast Asia, emphasizing participatory governance as a mechanism for aligning urban management with

citizen demands. Cheema and Maguire [22] proposed a conceptual framework linking democracy, governance, and development, establishing governance as a mediating factor between political systems and socio-economic progress. Shah and Schacter [2] argued that anti-corruption strategies often fail due to misaligned priorities, reinforcing the need for context-specific governance solutions.

In the realm of sustainable development, Masyk [23] advanced criteria for evaluating institutional effectiveness, while Dangal [24] examined governance in Nepal as a mechanism for strengthening public administration. Mathobo [25] analyzed the effectiveness of ethics committees in ensuring governance in South Africa, pointing to institutional checks and balances as essential to public accountability. These perspectives resonate with Azkiya [26], who studied bureaucratic meritocracy in civil service recruitment, positioning governance as a pillar of institutional professionalism.

The nexus between governance and organizational knowledge has also been highlighted in recent studies. Barros-Contreras [27] explored knowledge integration in family firms, emphasizing that effective governance enhances knowledge flows and organizational effectiveness. Saito [28] extended this argument by analyzing decentralized autonomous organizations (DAOs), demonstrating how blockchain technologies can strengthen governance in the non-profit sector by fostering reputation-based trust systems. These technological and organizational innovations broaden the conceptual boundaries of governance, suggesting future pathways for integrating digital transformation into governance practices.

In the academic sphere, Agheli [29] underscored the importance of governance in knowledge production and dissemination, particularly in thesis writing and academic publication systems. Similarly, Eslami [30] introduced a resilient economy approach to governance in Iran's National Water Organization, integrating resilience theory with governance practice. These contributions signal that governance is no longer limited to traditional institutional management but is increasingly intertwined with knowledge, resilience, and innovation.

Another critical dimension of governance lies in its relationship with accountability and social capital. Sadeghi [31] explored how organizational social capital strengthens governance in implementing excellence models in electricity distribution. By fostering trust, cooperation, and reciprocity, social capital acts as a governance enabler, ensuring smoother implementation of policies. Similarly, Rahmati Far [9] highlighted the importance of legal rule creation capacity as the foundation for governance in the globalized era. These insights resonate with Taheri and Arasta [10], who highlighted transparency as the linchpin for institutional accountability, linking cultural and religious values with governance frameworks.

Drawing on these diverse perspectives, the oil and gas industries emerge as a critical testing ground for governance frameworks in Iran. The sector's vast revenues, environmental externalities, and strategic importance necessitate robust governance structures that integrate legal frameworks, transparency mechanisms, managerial competence, and stakeholder participation. Guriev [12], Kolstad [4], and Stevens [3] all underscore the vulnerabilities of resource-based economies to corruption and inefficiency, while Iranian scholars such as Barati [17] and Heidari [8] emphasize the necessity of aligning domestic law and institutional practice with international governance standards.

At the intersection of local reforms and global imperatives, studies such as Rezazadeh Taloukolaei [19], Moradi Vahdat [20], and Eslami [30] show how governance frameworks can be adapted to institutional realities while still striving for sustainability and resilience. Ultimately, good governance in Iran's oil and gas sector must not only address corruption and inefficiency but also foster innovation, resilience, and inclusivity.

Despite significant theoretical and empirical advances, gaps remain in translating governance principles into actionable frameworks for Iran's oil and gas industries. While global studies [5, 23, 25] provide insights into corruption, institutional effectiveness, and ethics, localized frameworks are essential to address the unique political, cultural, and economic characteristics of the Iranian context. Moreover, the intersection of governance with resilience [30], knowledge integration [27], and technological transformation [28] remains underexplored in the sector.

This study aims to fill these gaps by designing a model of good governance and quality management systems tailored to Iran's oil and gas industry.

Methods and Materials

From the perspective of purpose, the study is applied, and the research design is exploratory mixed-method, as the use of a mixed-method approach leads to a more comprehensive picture and a deeper understanding of the studied phenomena in order to achieve research objectives. The target population in the qualitative section included academic experts with knowledge and experience. The sample size was determined using the theoretical saturation method. In this method, the sampling process continues until no new findings emerge from the interviews. In this study, theoretical saturation was reached after interviewing 14 individuals. The sampling technique was purposive non-probability. In this method, researchers consider specific criteria for sample selection. The criteria included holding a PhD in Public Administration or Law, having research experience relevant to the study topic, and possessing executive work experience in the Fajr Jam Refinery. The data collection tool in the qualitative phase was semi-structured interviews. The interviews were conducted as individual sessions with an average duration of 40 minutes. At the beginning of each session, the research objectives were clearly explained, then interview questions were asked, and responses were recorded. After each interview, participants' statements were transcribed and entered into software for coding. Data analysis was conducted using the grounded theory method with MAXQDA software.

According to Boyatzis (1989), grounded theory analysis is able to establish proper connections among researchers from different disciplines. This method enables researchers to facilitate the process of transferring their observations, findings, and interpretations to others. In general, grounded theory analysis is an appropriate method for transferring concepts among researchers in different fields with diverse orientations and for linking various philosophical approaches between theorists and practitioners. To examine the reliability of coding, the test–retest reliability method was applied. In this method, three selected interviews were coded in two three-week time periods (Aqeli et al., 2023). In each coding, similar codes were identified as agreement and dissimilar codes as disagreement, and the reliability between codings was calculated by the formula; the test-retest reliability percentage for the three interviews was determined to be 0.87, 0.82, and 0.85, indicating acceptable reliability of the codings. The participants included 8 law faculty professors and 6 managers in the Iranian oil and gas industries, which was done through purposive sampling using the snowball method. The main criteria for entering the study were having a doctoral degree and specialized knowledge in the field of public administration and law, having work experience, and a history of research activity in the relevant field, which were selected purposefully and according to the information obtained from previous cases.

Findings and Results

In this section, interviews were conducted with 14 individuals. After listening to the interview transcripts and reviewing the notes, the overall meaning of the interviews was extracted. Each participant was assigned a code from I1 to I15. In the stage of selective coding, 6 main categories, 34 subcategories, and 64 open codes were identified. These are presented in Table (1) as follows.

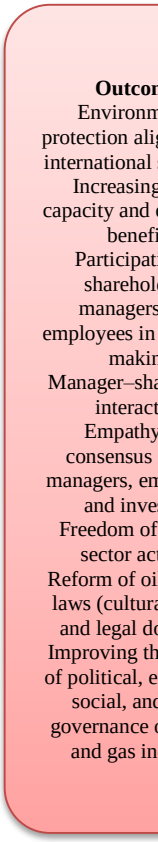
Table 1.

Dimensions and Components Identified from the Qualitative Section

Paradigms	Concepts	Categories
Strategies	Clarity of objectives (developing a strategic vision in the oil and gas sector)	Goal setting, attention to the vision document for improving the quality of laws in the oil and gas industry, proper policymaking
	Attracting the most qualified long-term investors	Encouraging private sector investment through legislation, cooperation of the oil and gas industry with the Chamber of Commerce
Causal Conditions	Maximizing economic returns	Financial integrity, compliance with commercial law, linking universities with the oil industry
	Rule of law in the oil and gas industry	Rule of law in oil and gas industry activities, reform of financial and employment regulations, improving the quality of laws
	Existence of clear and explicit laws	Explicitness in legislation
	Dynamism of the environment and processes	Environmental dynamism
	Removal of monopolies in oil contracts	Elimination of monopolies, reform of laws and regulations in private sector investment, proper selection of companies in private sector activities
	Reduction of bureaucracy in the oil and gas industry	Reducing bureaucracy in the oil and gas sector
Intervening Conditions	Gaining and maintaining public trust and managing public expectations	Transparency in financial statements
	Effective foreign relations	Alignment with international institutions, reform of laws and regulations in foreign investment
	Establishment of competent national organizations for participation and supervision of resource development	Existence of good state governance, establishment of international consulting organizations
	Systematic supervision	Oversight of managerial activities, balanced supervision
	Accountability	Accountability of owners (shareholders), corporate responsibility, accountability of oil and gas companies
	Human resources welfare	Improving the living conditions of oil and gas industry workers
	Rationalization of the government's role	Rationalized management
Outcomes	Environmental protection	Environmental conservation, alignment of domestic laws with international standards in the oil and gas sector regarding environmental protection
	Increasing local capacity and benefits for the economy	Human resource management, establishment of control structures, proper selection of contractors, tax reform
	Participation of shareholders, managers, and employees	Public participation, active involvement of people in decision-making
	Interaction between managers and shareholders	Interaction between managers and shareholders
	Empathy among managers and investors	Consensus and empathy among managers, employees, and investors
	Private sector activity	Freedom of private sector activity, elimination of legal deficiencies
	Reform of oil and gas laws	Legal reform, reform of cultural regulations, reform of press-related laws in the oil and gas industry, establishing proportionality between crime and punishment in oil and gas violations, creation of fair laws
	Improving the quality of political, economic, social, and legal governance of the oil industry	Enhancement of governance quality in the oil and gas industry
Strategies	Legal enforcement guarantees in oil and gas contracts	Legal enforcement guarantees
	Budgeting reform	Budgeting reform, optimal use of expenditures, financing flexibility
	Human resource development	Weakness in specialized managers, culture creation, human resource management
	Risk management in oil contracts and projects	Risk identification and management
Contextual Conditions	Transparency in oil and gas contracts	Transparency, transparency in tenders
	Human dignity	Respect for individual rights
	Organizational justice	Organizational justice, equal opportunities
	Empowerment of individuals, stakeholders, citizens, and civil society	Empowerment of participants
	Creating synergy between formal governance and informal self-governance	Synergy between the public and private sectors
Core Category	Managerial competence	Freedom of managerial activities, managerial competence in reporting
	Shareholder competence	Shareholders' awareness of their duties, authority, and influence of shareholders

Figure 1.

Initial Conceptual Model Derived from the Qualitative Section



Finally, in the sixth step, final analysis and reporting were conducted, leading to the development of the initial research model as shown below. Subsequently, in order to test the fit of the model derived from the qualitative phase and to analyze model relationships, the structural equation modeling (SEM) technique was applied.

In the quantitative section, 89% of respondents were male and 11% were female. In terms of age distribution, 16.4% were between 30–35 years, 29.9% were between 35–40 years, 18.2% were between 40–45 years, 9.4% were between 45–50 years, and 26% were above 50 years. Regarding work experience, 10.15% had 1–5 years, 24.21% had 5–10 years, 41.92% had 10–15 years, and 23.72% had more than 15 years of experience. In terms of educational background, 47.3% held a bachelor's degree, 48.1% held a master's degree, and 4.6% held a doctoral degree.

Table 2.

Bartlett's Test, KMO Test, and Normality Test

Variables	Kaiser-Meyer-Olkin	Kolmogorov-Smirnov Statistic	Kolmogorov-Smirnov Significance	Result
Rule of Law	0.870	0.695	0.719	Confirmed, normal
Reduction of Bureaucracy	0.854	1.115	0.167	
Attention to Economic Returns	0.881	1.146	0.187	
Monopoly Removal	0.875	0.685	0.719	
Transparency	0.857	1.155	0.137	
Organizational Justice	0.821	1.126	0.121	
Human Dignity	0.840	0.652	0.742	
Empowerment	0.860	0.645	0.749	
Increase in Public Trust	0.853	1.145	0.147	
Managerial Accountability	0.883	1.143	0.182	
Investor Attraction	0.865	0.683	0.715	
Human Resource Welfare	0.856	1.135	0.157	
Risk Management in Contracts	0.826	1.156	0.125	
Legal Guarantee	0.846	0.653	0.742	
Supervision of Budgeting	0.860	0.635	0.713	

The structural equation model is a combination of path models (structural relationships) and confirmatory factor models (measurement relationships). The criterion for the appropriateness of factor loading coefficients is 0.40 (Aghili et al., 2023). Validity was assessed using convergent validity (AVE > 0.5), discriminant validity (MSV < AVE; ASV < AVE), and composite reliability (CR > 0.7).

Table 3.

Factor Loadings, Validity, and Reliability

Indicator	Factor Loading	Critical Ratio	Significance Level	CR	AVE	MSV	ASV
Rule of Law	0.71	12.854	***	0.834	0.626	0.483	0.218
Reduction of Bureaucracy	0.48	37.288	***	0.898	0.748	0.480	0.223
Attention to Economic Returns	0.40	15.407	***	0.789	0.739	0.482	0.268
Monopoly Removal	0.38	29.314	***	0.879	0.709	0.489	0.238
Transparency	0.68	33.089	***	0.867	0.793	0.468	0.267
Organizational Justice	0.56	16.411	***	0.804	0.628	0.481	0.215
Human Dignity	0.62	20.045	***	0.894	0.741	0.480	0.225
Empowerment	0.64	26.542	***	0.784	0.731	0.486	0.265
Increase in Public Trust	0.66	23.670	***	0.873	0.719	0.486	0.234
Managerial Accountability	0.51	25.958	***	0.863	0.791	0.467	0.263
Investor Attraction	0.63	26.302	***	0.832	0.621	0.487	0.212
Human Resource Welfare	0.70	21.656	***	0.892	0.742	0.487	0.221
Risk Management in Contracts	0.42	11.651	***	0.781	0.732	0.487	0.261
Legal Guarantee	0.41	19.445	***	0.873	0.729	0.487	0.231

Based on the findings presented in the table above, factor loadings and construct reliability are supported. The condition for convergent validity across the research constructs is also satisfied. Finally, discriminant validity for the research constructs is established. In other words, comparing the results with validity criteria demonstrates that all conditions of reliability and validity are met.

Table 4.

Model Fit Indices

Result	Value	Acceptable Fit	Fit Index Name
Confirmed	2.645	$\chi^2/df < 3$	Chi-square to degrees of freedom ratio
Confirmed	0.046	RMSEA < 0.08	Root Mean Square Error of Approximation (RMSEA)
Confirmed	0.78	PNFI > 0.50	Parsimonious Normed Fit Index (PNFI)
Confirmed	0.88	GFI > 0.80	Goodness of Fit Index (GFI)
Confirmed	0.83	AGFI > 0.80	Adjusted Goodness of Fit Index (AGFI)

Confirmed	0.93	NFI > 0.90	Normed Fit Index (NFI)
Confirmed	0.96	NNFI > 0.90	Non-Normed Fit Index (NNFI)
Confirmed	0.96	CFI > 0.90	Comparative Fit Index (CFI)
Confirmed	0.96	IFI > 0.90	Incremental Fit Index (IFI)

Figure 2.

Structural Model

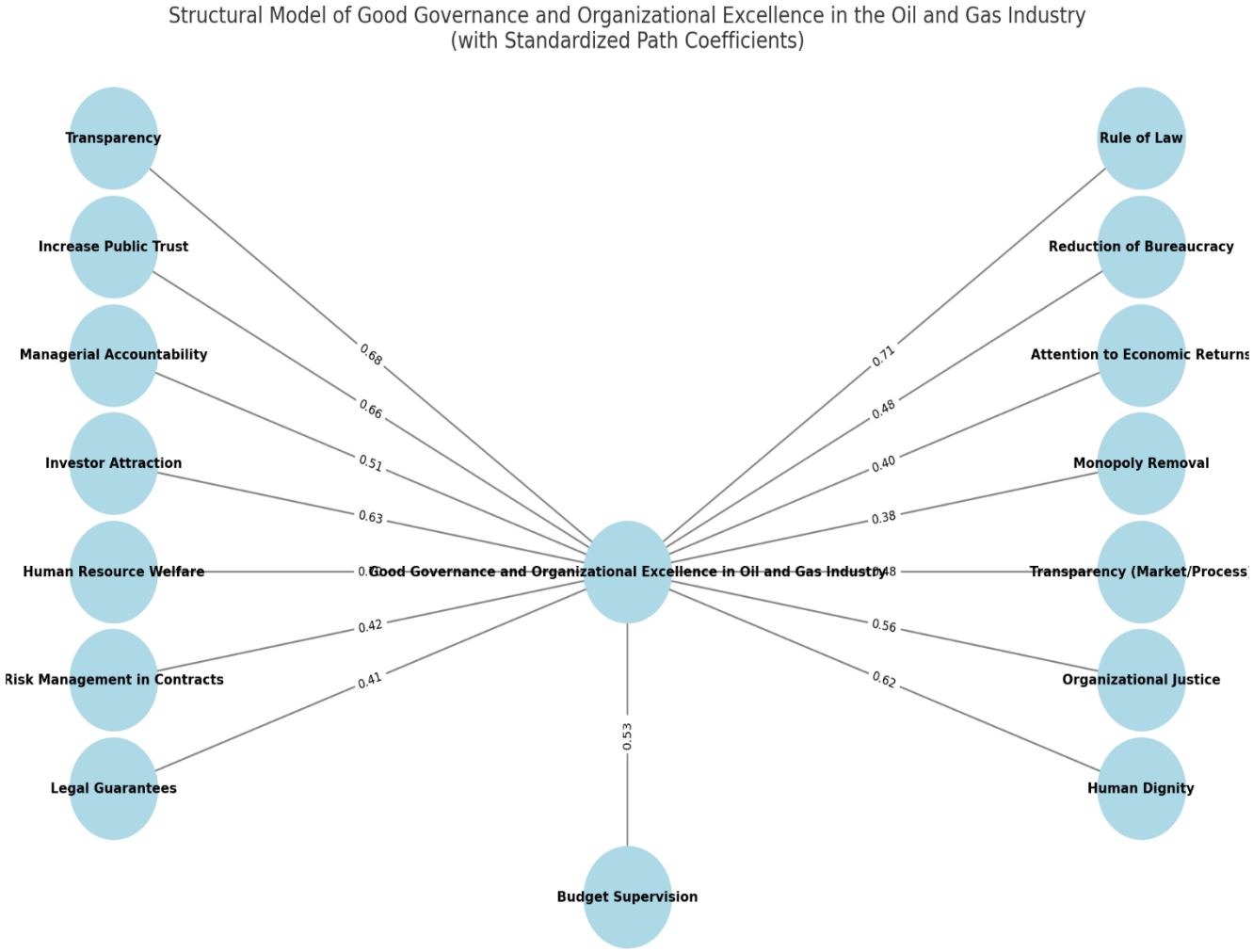


Table 5.

Hypothesis Testing

Hypothesis	Relationship of Components with Independent Variable	Path Coefficient (Factor Loading)	Significance Coefficient	Relationship Type	Hypothesis Rejected or Confirmed
1	Rule of Law	0.71	> 0.30	Highly Desirable	Confirmed
2	Reduction of Bureaucracy	0.48	> 0.30	Acceptable	Confirmed
3	Attention to Economic Returns	0.40	> 0.30	Acceptable	Confirmed
4	Monopoly Removal	0.38	> 0.30	Acceptable	Confirmed
5	Transparency	0.68	> 0.30	Highly Desirable	Confirmed
6	Organizational Justice	0.56	> 0.30	Acceptable	Confirmed
7	Human Dignity	0.62	> 0.30	Highly Desirable	Confirmed
8	Empowerment	0.64	> 0.30	Highly Desirable	Confirmed
9	Increase in Public Trust	0.66	> 0.30	Highly Desirable	Confirmed
10	Managerial Accountability	0.51	> 0.30	Acceptable	Confirmed

11	Investor Attraction	0.63	> 0.30	Highly Desirable	Confirmed
12	Human Resource Welfare	0.70	> 0.30	Highly Desirable	Confirmed
13	Risk Management in Contracts	0.42	> 0.30	Acceptable	Confirmed
14	Legal Guarantee	0.41	> 0.30	Acceptable	Confirmed
15	Budget Supervision	0.53	> 0.30	Acceptable	Confirmed

Discussion and Conclusion

The findings of this study demonstrated that good governance and quality management systems are multidimensional constructs that significantly shape the performance, accountability, and sustainability of the oil and gas industries in Iran. The qualitative phase identified six main categories, 34 subcategories, and 64 open codes, while the quantitative phase confirmed the significance of governance dimensions such as the rule of law, reduction of bureaucracy, transparency, organizational justice, empowerment, and accountability. Structural equation modeling revealed that these governance dimensions not only interact systematically but also display strong explanatory power in improving organizational performance and stakeholder trust.

The confirmation of governance dimensions, including legal guarantees, accountability, transparency, and risk management, highlights the alignment of our findings with prior international and domestic studies. As Masyk [23] argued, governance effectiveness rests upon institutional criteria such as clarity of objectives, accountability structures, and sustainability-driven indicators. Our study corroborates these observations by showing that Iranian oil and gas organizations can significantly enhance efficiency when transparent legal frameworks and accountability mechanisms are embedded within their managerial systems.

Similarly, Rezazadeh Taloukolaei [19] found that good governance dimensions, including transparency, stakeholder participation, and organizational development, play a critical role in academic institutions. The parallels between higher education governance and oil and gas industry governance suggest that governance dimensions are transferable across sectors when adapted to local contexts. The confirmation of organizational justice and human dignity as significant factors also aligns with Dangal [24], who emphasized the role of governance in strengthening public administration and ensuring institutional legitimacy.

The role of transparency as one of the strongest factors in this study confirms earlier scholarship by Taheri and Arasta [10], who highlighted transparency as a central principle in both Islamic and Western theories of good governance. In the oil and gas sector, transparency is indispensable due to the magnitude of financial flows and the vulnerability to rent-seeking. Barati [17] emphasized the importance of anti-corruption legislation in ensuring fair and equitable governance, while Badisar [18] demonstrated how good governance indicators in the water sector reduced corruption risks and enhanced resource management. The present study extends these findings by showing that transparency is not merely a legal requirement but a factor that actively fosters public trust, thereby legitimizing organizational operations.

Moreover, the confirmation of managerial accountability reflects the broader conceptual framework outlined by Cheema and Maguire [22], who established accountability as the bridge between democracy, governance, and development. This dimension was also reflected in Shah and Schacter [2], who argued that anti-corruption measures often fail when accountability mechanisms are weak or misaligned with institutional realities. By demonstrating that accountability had a statistically significant effect in the quantitative phase, our study contributes empirical evidence supporting these theoretical claims.

One of the notable findings of this research was the role of reducing bureaucracy in enhancing governance efficiency. Bureaucratic inefficiency is a longstanding challenge in resource-based economies, particularly in public sectors with complex administrative structures. Guriev [12] and Stevens [3] both highlighted how nationalization and state control of oil industries often result in bureaucratic bottlenecks that reduce operational efficiency. Similarly, Kolstad and Søreide [4] noted that excessive bureaucratic control exacerbates corruption in natural resource management.

The significant effect of bureaucracy reduction observed in this study confirms the arguments by Amini Shad [15], who designed a governance model for Tehran Municipality, and emphasized that streamlining processes and minimizing administrative complexities enhance service delivery and transparency. The results also resonate with Azkiya [26], who argued that bureaucratic meritocracy in civil servant recruitment could improve governance by aligning recruitment processes with merit-based criteria. Together, these findings suggest that reducing bureaucracy is not only a technical reform but also a cultural shift in governance that strengthens efficiency and accountability.

The study confirmed the significance of human resource welfare and empowerment in the governance framework. Empowerment ensures that employees and stakeholders are actively involved in decision-making, which strengthens organizational legitimacy and effectiveness. This aligns with the findings of Sadeghi [31], who highlighted the role of organizational social capital in enhancing the effectiveness of excellence models. Similarly, Moradi Vahdat [20] showed that transformational leadership combined with governance creates sustainable revenue streams, underscoring the link between leadership, empowerment, and organizational outcomes.

Human resource welfare, as identified in this study, also aligns with Mathobo [25], who emphasized the role of ethics committees in ensuring good governance within South Africa's public sector. Ethics, welfare, and empowerment form an interdependent triad that contributes to the legitimacy and effectiveness of governance frameworks. The Iranian oil and gas context particularly benefits from welfare provisions due to the high-risk environment in which employees operate, making governance systems that safeguard worker welfare both a legal and moral necessity.

Another significant result was the confirmation of risk management in contracts and projects as a core governance dimension. The oil and gas industry is highly exposed to financial, environmental, and political risks, making risk governance essential. Leite and Weidmann [5] argued that natural resource rents can destabilize economies when risk governance is absent. The findings of this study show that structured risk management in contracts enhances trust among stakeholders and reduces potential conflicts.

Legal guarantees in contracts were also confirmed as a significant factor. This reflects the findings of Heidari [8], who investigated the legal aspects of administrative corruption, and Majdzanganeh [13], who studied governance in the judiciary. Both emphasized that legal clarity and enforceability are indispensable for ensuring institutional legitimacy. In the context of oil and gas, where contracts often involve international stakeholders, legal guarantees are essential for attracting investors and ensuring stable cooperation. This aligns with Gholipour [14], who highlighted the maturity of governance in the insurance sector, stressing enforceability and trust as key dimensions of corporate governance.

The confirmation of knowledge integration through empowerment and strategic management resonates with Barros-Contreras [27], who showed that effective governance facilitates knowledge flows in family firms. In oil and gas industries, knowledge integration is critical for technological innovation, environmental management, and long-term strategic planning.

In addition, Saito [28] illustrated how blockchain technologies in decentralized autonomous organizations (DAOs) can enhance governance through reputation-based systems. While our study did not focus directly on technological governance, the confirmation of transparency and accountability as core elements suggests that emerging digital technologies could further strengthen governance systems in Iran's oil and gas industry. Eslami [30] also introduced the concept of resilient governance in the water sector, which complements our findings by highlighting the importance of governance systems that can withstand shocks and crises.

Finally, the study demonstrated that good governance is directly linked with broader development outcomes such as sustainability, social equity, and economic growth. Cheema [22] and Sheng [21] emphasized the role of governance in linking democracy and urban development, while Dangal [24] confirmed its role in strengthening administrative capacity. Our findings contribute to this discourse by showing that governance in oil and gas industries can directly contribute to sustainability by embedding transparency, accountability, and empowerment into operational processes.

The results also support the arguments of Guriev [12] and Stevens [3] that governance is a determinant of whether resource wealth translates into economic growth or stagnation. In line with Kolstad [4], our findings demonstrate that governance frameworks with effective accountability and transparency mechanisms reduce corruption and rent-seeking, thereby fostering long-term development.

This study, despite its contributions, has several limitations. First, the scope of the research was limited to the Iranian oil and gas industry, which may constrain the generalizability of the findings to other industries or countries. The political, cultural, and institutional specificities of Iran mean that while the results are locally relevant, they may not directly translate to contexts with different governance structures. Second, the quantitative phase relied on self-reported questionnaires, which may have introduced biases related to social desirability or respondent interpretation. Third, the cross-sectional design of the study limits the ability to capture dynamic changes in governance processes over time, which could be critical in sectors as volatile as oil and gas.

Future research could address these limitations in several ways. Comparative studies across different countries, particularly within the Middle East and other resource-based economies, could provide valuable insights into how governance models vary across institutional contexts. Longitudinal studies tracking governance reforms over time would also be essential for understanding the evolving nature of governance in resource industries. In addition, integrating digital transformation into governance frameworks—for example, blockchain-based transparency systems or artificial intelligence-driven risk assessment—could open new research avenues. Finally, future research should explore the intersection of governance with sustainability, focusing on how governance models can align oil and gas industries with global environmental and social responsibility standards.

For practitioners, the findings highlight several actionable points. Policymakers and managers in the oil and gas industries should prioritize transparency and accountability as the backbone of governance systems. Reducing bureaucratic inefficiencies and embedding clear legal guarantees in contracts will foster investor trust and operational stability. Furthermore, empowering employees and safeguarding human resource welfare should be integral to governance reforms, ensuring that governance is not only about compliance but also about fostering a resilient and motivated workforce. Lastly, integrating risk management into all contracts and projects can enhance both short-term performance and long-term sustainability, positioning the oil and gas industry as a leader in governance innovation.

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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

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

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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