Designing a Model for Evaluating Managers' Compensation Based on Financial Reporting Transparency (Case Study: National Iranian Oil Products Distribution Company)

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Abstract

Managers' compensation and its evaluation, particularly in state-owned enterprises, constitute one of the major challenges in the economies of developing countries, and the application of approaches such as financial reporting transparency in this regard can be beneficial. Accordingly, the present study was conducted with the aim of designing a model for evaluating managers' compensation based on financial reporting transparency in the National Iranian Oil Products Distribution Company. The research employed a mixed-methods approach (qualitative–quantitative). In the qualitative phase, the required data were collected through interviews with 20 academic and organizational experts. In the quantitative phase, in order to design the model, the relationships and interactions among the extracted indicators were initially determined using a self-interaction matrix with the assistance of experts. The quantitative data were analyzed using MATLAB software. Following the qualitative data analysis, 21 indicators for evaluating managers' compensation based on financial reporting transparency were identified and extracted. Subsequently, the analysis of the quantitative results led to the development of a five-level model comprising these 21 indicators, in which training for enhancing reporting transparency and the alignment of financial reporting with international financial reporting standards were identified as the most influential indicators. The originality and contribution to knowledge: The findings of the study demonstrated that, within the proposed model for evaluating managers' compensation based on financial reporting transparency in the National Iranian Oil Products Distribution Company, two indicators function as the most influential factors, nine indicators are the most influenced factors, and ten indicators serve as linkage variables within the model.

Keywords: *Managers' compensation, financial transparency, financial reporting.*

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1. Introduction

Managers' compensation has long been recognized as a critical component of organizational governance, strategic alignment, and performance optimization, particularly within complex institutional environments such as state-owned enterprises and large public organizations. In contemporary management literature, compensation systems are not merely mechanisms for remuneration but are increasingly conceptualized as multidimensional governance tools that shape managerial behavior, align interests between stakeholders, and enhance organizational transparency and accountability [1-3]. The growing complexity of economic systems, coupled with heightened expectations for transparency and accountability, has intensified the need for scientifically grounded models that can accurately evaluate managerial compensation in alignment with financial reporting quality and organizational performance outcomes.

In developing economies, the issue of managers' compensation becomes even more critical due to structural inefficiencies, governance challenges, and the prevalence of

information asymmetry. Empirical evidence suggests that poorly designed compensation systems can exacerbate agency problems, encourage opportunistic behavior, and reduce overall organizational efficiency [4, 5]. Conversely, well-structured compensation mechanisms, particularly those integrated with transparent financial reporting frameworks, can mitigate agency conflicts and promote value creation. In this context, financial reporting transparency emerges as a fundamental pillar that supports the integrity and effectiveness of compensation systems, enabling stakeholders to assess managerial performance more accurately and objectively [6, 7].

The relationship between financial reporting transparency and managerial compensation is deeply rooted in agency theory and corporate governance frameworks. According to agency theory, the separation of ownership and control necessitates the implementation of monitoring and incentive mechanisms to align managers' interests with those of shareholders. Transparent financial reporting serves as a critical monitoring tool that reduces information asymmetry and enhances the effectiveness of compensation contracts [8, 9]. Studies have shown that higher levels of transparency are associated with more performance-sensitive compensation structures, which in turn improve managerial accountability and organizational outcomes [10, 11].

Furthermore, the integration of environmental, social, and governance (ESG) considerations into compensation frameworks has added another layer of complexity to managerial evaluation systems. Recent research indicates that social and governance dimensions significantly influence compensation design, particularly in terms of linking managerial rewards to broader organizational and societal outcomes [7, 12]. This shift reflects a growing recognition that financial performance alone is insufficient for evaluating managerial effectiveness, and that transparency in reporting non-financial indicators is equally important. In this regard, financial reporting transparency acts as a bridge between financial and non-financial performance metrics, enabling a more holistic assessment of managerial contributions.

Another important dimension in the study of managerial compensation is the role of organizational and institutional factors. In public and quasi-public organizations, such as national oil distribution companies, compensation systems are often influenced by political, regulatory, and institutional pressures. These factors can distort incentive structures and undermine the alignment between performance and rewards [13, 14]. Moreover, the presence of government ownership introduces additional complexities related to accountability, oversight, and transparency. Research has demonstrated that in such contexts, the adoption of transparent financial reporting practices can enhance governance quality and improve the effectiveness of compensation systems [15, 16].

The methodological approaches used to design and evaluate compensation systems have also evolved significantly in recent years. Traditional approaches based on financial metrics alone are increasingly being replaced by integrated models that incorporate both qualitative and quantitative indicators. These models often utilize advanced analytical techniques, such as structural modeling, metaheuristic algorithms, and multi-criteria decision-making frameworks, to capture the complex interrelationships between variables [8, 17]. In particular, interpretive structural modeling (ISM) has emerged as a powerful tool for identifying hierarchical relationships among factors and constructing comprehensive evaluation frameworks. Such approaches are especially valuable in contexts where multiple interdependent variables influence managerial performance and compensation outcomes.

In addition to methodological advancements, recent studies have emphasized the importance of behavioral and psychological factors in shaping the effectiveness of compensation systems. For example, research on motivation and job satisfaction highlights the role of compensation as a key driver of employee engagement and organizational commitment [3, 18]. Similarly, studies on executive behavior have shown that compensation structures can influence risk-taking, ethical decision-making, and whistleblowing behavior [19, 20]. These findings underscore the need for compensation models that not only align financial incentives with performance outcomes but also promote ethical and responsible managerial behavior.

Moreover, the increasing reliance on accounting information systems and digital technologies has transformed the landscape of financial reporting and compensation evaluation. Advanced information systems enable real-time monitoring of performance metrics, enhance the accuracy and reliability of financial data, and facilitate the implementation of transparent reporting practices [6, 21]. The integration of such technologies into compensation models can significantly improve their effectiveness by providing timely and accurate information for decision-making. In this regard, transparency is not only a conceptual requirement but also a technological capability that must be embedded within organizational systems.

From a practical perspective, the design of compensation systems in organizations requires careful consideration of multiple factors, including organizational strategy, performance metrics, governance structures, and stakeholder expectations. Studies in the field of human resource management have identified various components of effective compensation systems, such as fairness, transparency, flexibility, and alignment with organizational goals [22, 23]. These components are particularly important in public sector organizations, where accountability and transparency are critical for maintaining public trust and legitimacy.

Despite the extensive body of research on managerial compensation, there remains a significant gap in the development of integrated models that explicitly incorporate financial reporting transparency as a central component. Most existing studies focus on either compensation design or financial reporting quality in isolation, without adequately addressing the interaction between these two domains. This gap is particularly evident in the context of developing countries, where institutional constraints and governance challenges necessitate more comprehensive and context-specific approaches [24, 25]. Therefore, there is a clear need for research that bridges this gap by developing models that integrate compensation evaluation with financial reporting transparency.

In light of the above discussion, the present study seeks to address this gap by designing a comprehensive model for evaluating managers' compensation based on financial reporting transparency in the National Iranian Oil Products Distribution Company. This context provides a unique opportunity to examine the interaction between compensation systems and transparency in a large, state-owned enterprise operating within a complex institutional environment. The findings of this study are expected to contribute to both theoretical and practical knowledge by providing a structured framework for improving compensation evaluation and enhancing financial reporting transparency.

Accordingly, the aim of this study is to design a model for evaluating managers' compensation based on financial reporting transparency in the National Iranian Oil Products Distribution Company.

2. Methodology

This study aims to design a model for evaluating managers' compensation based on financial reporting transparency in the National Iranian Oil Products Distribution Company using a mixed-methods approach (qualitative–quantitative). In terms of purpose, this research is classified as applied, as its primary application is for managers and policymakers of the aforementioned company. In the qualitative phase, semi-structured interviews and thematic content analysis were employed to understand, identify, and extract variables. For conducting content analysis, data were systematically collected from the corpus of interview texts. Content analysis is typically used to identify underlying categories in expert interviews. In the quantitative phase, Interpretive Structural Modeling (ISM) was employed to develop the research model. The data required to complete the self-interaction matrix were derived from the opinions of experts familiar with ISM and the self-interaction matrix. ISM is capable of identifying relationships among indicators that are interdependent individually or collectively (Nadali, 2015).

The statistical population of the qualitative phase consisted of academic experts (associate professors and above in accounting and financial management) and organizational experts (managers and senior specialists of the National Iranian Oil Products Distribution Company holding at least a master's degree and having more than 10 years of managerial experience) in the field of managers' compensation and financial reporting. These included faculty members from the departments of accounting and financial management at the University of Tehran, Allameh Tabataba'i University, and Shahid Beheshti University. In the qualitative phase, the sample size criterion was theoretical adequacy, meaning that no new indicators or variables emerged during expert interviews. Therefore, the sampling adequacy criterion was theoretical saturation. Using purposive sampling, initially 12 experts were selected as the primary sample, and data collection commenced. During the interview process, additional participants were identified, resulting in a total of 20 interviews and the achievement of theoretical saturation.

The characteristics of the expert sample indicate that 57% had academic and research experience (including multiple national and international publications and involvement in research projects), 21% had managerial and executive experience within the National Iranian Oil Products Distribution Company (including participation in specialized financial committees with the Islamic Consultative Assembly or other ministries), and 22% had experience as financial and accounting consultants involved in preparing and validating financial reports. The average

professional experience of academic and executive experts ranged between 14 and 17 years, while consultant experts had an average of 13 years of experience, indicating substantial expertise and familiarity with the research domain.

To enhance validity and reliability in the qualitative phase, feedback was provided to interviewees to improve validity, while ensuring that they were informed about the research process without influencing their responses, thereby strengthening internal validity. After each interview, the emerging model was presented to participants, and their feedback was incorporated. This iterative process ensured that interviews remained free from bias and preconceived assumptions. Furthermore, reliability was enhanced through the use of dual coding and structured procedures for convergent interviews, as well as systematic documentation, recording, and interpretation of extracted data. The inter-coder reliability for the interviews conducted in this study was 0.81, indicating acceptable reliability of the interview analysis. In the quantitative phase, 16 experts from the qualitative phase who were familiar with ISM were selected using purposive sampling. Data analysis in the modeling phase was conducted using ISM MATLAB software.

3. Findings and Results

Given that the objective of the present study is to describe the phenomenon of social loafing in the most comprehensive manner within the framework of a localized model, a criterion known as data saturation or theoretical saturation was used to determine the endpoint of the qualitative phase. In other words, at this stage, new data entering the study no longer altered the existing understanding of the phenomenon. In the first stage of content analysis, after coding the interview data, 156 initial codes were generated, from which variables were subsequently extracted. A sample of these initial codes derived from field interviews is presented in Table 1.

Table 1. Initial Coding Derived from Field Interviews

No.	Initial Coding
1	Methods of responding to detected errors in the past and recording them within the company
2	Managers' use of a participatory approach in formulating internal control policies and procedures
3	Managers' serious attention to systems thinking in internal controls
4	Preparation of periodic reports on how past errors and violations were handled
5	Setting short-term objectives for internal controls within the company
6	Application of structural analysis in designing and implementing internal controls in the National Iranian Oil Products Distribution Company
7	Review and documentation of internal control activities in previous periods
8	Legitimization of internal control policies by managers
9	Attention to the functional composition of internal controls in the National Iranian Oil Products Distribution Company by managers
10	Evaluation of established internal control policies through managerial follow-up

In the second stage, sub-themes were extracted from the initial codes. A sample of these sub-themes is presented in Table 2.

Table 2. Concepts and Sub-Themes Extracted from Qualitative Interview Data

Initial Codes	Sub-Themes
Methods of responding to detected errors in the past and recording them within the company	Development of internal control performance records
Preparation of periodic reports on how past errors and violations were handled	Development of internal control performance records
Review and documentation of internal control activities in previous periods	Development of internal control performance records
Managers' use of a participatory approach in formulating internal control policies and procedures	Formulation of appropriate internal control policies and procedures
Setting short-term objectives for internal controls within the company	Formulation of appropriate internal control policies and procedures

Legitimization of internal control policies by managers	Formulation of appropriate internal control policies and procedures
Evaluation of established internal control policies through managerial follow-up	Formulation of appropriate internal control policies and procedures
Managers' serious attention to systems thinking in internal controls	Systematic managerial approach to internal controls
Application of structural analysis in designing and implementing internal controls in the National Iranian Oil Products Distribution Company	Systematic managerial approach to internal controls
Attention to the functional composition of internal controls in the National Iranian Oil Products Distribution Company by managers	Systematic managerial approach to internal controls

Subsequently, in the final step, the main codes were extracted from the sub-themes. Some instances of this process are presented in Table 3 below. At this stage, the main themes, which represent the variables of the research model, were identified.

Table 3. Main Concepts and Codes Extracted from Sub-Themes

Sub-Themes	Main Themes (Indicators)
Development of internal control performance records	Quality of internal controls
Formulation of appropriate internal control policies and procedures	Quality of internal controls
Systematic managerial approach to internal controls	Quality of internal controls

In total, 21 main codes were extracted from the qualitative phase, as presented in Table 4 below, which formed the basis for the quantitative modeling stage.

Table 4. Indicators Extracted from the Qualitative Phase of the Study

Code	Variable Title	Code	Variable Title
1	Information quality	12	Transparency of return on assets and return on investment
2	Information credibility	13	Profit margin
3	Disclosure of information related to board compensation	14	Application of information technology and advanced financial and accounting software
4	Determination of financial constraints	15	Training for financial reporting transparency
5	Actual profitability status	16	Alignment of financial reporting with international reporting standards
6	Level of government ownership and control	17	Disclosure of information related to board compensation
7	Quality of internal controls	18	Documentation of financial leverage
8	Updated accounting information systems	19	Integration of financial reporting
9	Disclosure of fixed assets	20	Quality of independent auditing
10	Application of accounting standards	21	Voluntary disclosure of financial flows
11	Transparency in cash flows		

At this stage, in the quantitative phase of the study, the levels as well as the driving and dependence power of the factors were evaluated using the Interpretive Structural Modeling (ISM) method with the assistance of ISM MATLAB software. In the first step, the Structural Self-Interaction Matrix (SSIM) was constructed based on the responses of experts participating in the quantitative phase. To construct the SSIM, experts compared the criteria pairwise and provided responses based on the following symbols: V indicates that the factor in row i leads to the achievement of the factor in column j; A indicates that the factor in column j leads to the achievement of the factor in row i; X indicates that both factors influence each other (bidirectional relationship); and O indicates that there is no relationship between the factors. The SSIM is presented in Table 5.

Table 5. Structural Self-Interaction Matrix (SSIM)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

1	V	X	V	V	A	X	V	A	A	O	V	V	V	X	A	X	X	X	V	A
2		X	V	V	O	V	V	A	A	O	O	V	A	V	A	A	X	V	V	A
3			A	V	V	X	A	A	A	V	A	A	A	A	A	V	A	V	V	A
4				V	A	X	A	V	V	V	O	A	V	A	A	V	A	V	V	A
5					A	A	A	A	V	V	O	V	V	A	A	V	A	V	V	V
6						V	V	V	V	V	V	V	A	V	V	V	V	V	V	V
7							X	V	A	V	V	A	V	A	A	A	X	V	V	A
8								V	V	V	V	A	V	A	V	V	V	V	V	V
9									V	A	V	V	A	A	A	A	A	A	V	V
10										V	V	A	V	A	V	V	V	V	V	V
11											V	A	V	A	A	A	A	V	V	V
12												A	V	A	A	A	A	A	V	A
13													V	A	V	A	V	V	V	A
14														A	V	V	V	V	V	V
15															V	V	V	V	V	V
16																A	V	V	V	A
17																	V	V	V	O
18																		V	V	A
19																			V	V
20																				V
21																				

Subsequently, based on Table 5, the initial reachability matrix was formed using binary values (0 and 1), and after incorporating transitive relationships, the final reachability matrix was obtained, as presented in Table 6. All entries marked as *1 in this table had a value of zero in the initial matrix.

Table 6. Final Reachability Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Driving Power
1	1	1	1	1	1	*1	1	1	*1	*1	*1	1	1	1	1	*1	1	1	1	1	*1	21
2	*1	1	1	1	1	*1	1	1	*1	*1	*1	*1	1	*1	1	*1	*1	1	1	1	*1	21
3	1	1	1	*1	1	1	1	*1	*1	*1	1	*1	*1	*1	*1	*1	1	*1	1	1	*1	21
4	*1	*1	1	1	1	*1	1	*1	1	1	1	*1	*1	1	0	*1	1	*1	1	1	*1	20
5	*1	*1	*1	*1	1	0	*1	*1	*1	1	1	*1	1	1	0	*1	1	*1	1	1	1	19
6	1	*1	*1	1	1	1	1	1	1	1	1	1	1	1	*1	1	1	1	1	1	1	21
7	1	*1	1	1	1	*1	1	1	1	*1	1	1	*1	1	*1	*1	*1	1	1	1	*1	21
8	*1	*1	1	1	1	*1	1	1	1	1	1	1	*1	1	0	1	1	1	1	1	1	20
9	1	1	1	*1	1	*1	*1	*1	1	*1	1	1	*1	*1	*1	0	*1	*1	1	1	*1	20
10	1	1	1	*1	*1	*1	1	*1	1	1	1	1	*1	1	*1	1	1	1	1	1	1	21
11	*1	*1	*1	*1	0	0	*1	0	*1	0	1	1	*1	1	0	*1	*1	*1	1	1	1	16
12	*1	*1	1	0	*1	*1	*1	0	*1	0	*1	1	0	1	0	*1	*1	*1	*1	1	*1	16
13	*1	*1	1	1	*1	*1	1	1	1	1	1	1	1	1	0	1	*1	1	1	1	*1	20
14	*1	1	1	*1	*1	*1	*1	*1	1	0	*1	*1	*1	1	*1	1	1	1	1	1	1	20
15	1	*1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	21
16	1	1	1	1	1	*1	1	*1	1	*1	1	1	*1	*1	*1	1	*1	1	1	1	*1	21
17	1	1	*1	*1	*1	0	1	*1	1	*1	1	1	1	*1	*1	1	1	1	1	1	*1	20
18	1	1	1	1	1	*1	1	*1	1	*1	1	1	*1	*1	*1	0	*1	1	1	1	*1	20
19	1	*1	*1	*1	*1	0	*1	*1	*1	0	0	1	*1	*1	*1	*1	*1	*1	1	1	1	18
20	*1	*1	*1	*1	0	0	*1	0	*1	0	0	*1	*1	0	0	*1	0	*1	0	1	1	12
21	1	1	1	1	*1	*1	1	*1	1	*1	*1	1	1	*1	*1	1	*1	1	*1	*1	1	21
Dependence	21	21	21	20	19	16	21	18	21	16	19	21	20	20	14	19	20	21	20	21	21	

Then, based on the final reachability matrix and in accordance with the fourth step, the reachability set and antecedent set were extracted, and the criteria were leveled, as presented in Table 7.

Table 7. Determination of Indicator Levels

No.	Reachability Set	Antecedent Set	Intersection	Level
1	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1
2	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1
3	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1
4	1-2-3-4-5-6-7-8-9-10-11-12-13-14-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-13-14-16-17-18-19-20-21	2
5	1-2-3-4-5-7-8-9-10-11-12-13-14-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-12-13-14-15-16-17-18-19-21	1-2-3-4-5-7-8-9-10-12-13-14-16-17-18-19-21	4
6	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-6-7-8-9-10-12-13-14-15-16-18-21	1-2-3-4-6-7-8-9-10-12-13-14-15-16-18-21	5
7	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1
8	1-2-3-4-5-6-7-8-9-10-11-12-13-14-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-13-14-15-16-17-18-19-21	1-2-3-4-5-6-7-8-9-10-13-14-16-17-18-19-21	4
9	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-17-18-19-20-21	1
10	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-13-15-16-17-18-21	1-2-3-4-5-6-7-8-9-10-13-15-16-17-18-21	4
11	1-2-3-4-7-9-11-12-13-14-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-21	1-2-3-4-7-9-11-12-13-14-16-17-18-21	3
12	1-2-3-5-6-7-9-11-12-14-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-5-6-7-9-11-12-14-16-17-18-19-20-21	1
13	1-2-3-4-5-6-7-8-9-10-11-12-13-14-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-13-14-16-17-18-19-20-21	2
14	1-2-3-4-5-6-7-8-9-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-21	1-2-3-4-5-6-7-8-9-11-12-13-14-15-16-17-18-19-21	2
15	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-6-7-9-10-14-15-16-17-18-19-21	1-2-3-6-7-9-10-14-15-16-17-18-19-21	5
16	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-10-11-12-13-14-15-16-17-19-20-21	1-2-3-4-5-6-7-8-10-11-12-13-14-15-16-17-19-20-21	2
17	1-2-3-4-5-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-21	1-2-3-4-5-7-8-9-10-11-12-13-14-15-16-17-18-19-21	2
18	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-17-18-19-20-21	1
19	1-2-3-4-5-7-8-9-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-21	1-2-3-4-5-7-8-9-12-13-14-15-16-17-18-19-21	2
20	1-2-3-4-7-9-12-13-16-18-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-7-9-12-13-16-18-20-21	1
21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21	1

After the level of each indicator was determined and the final reachability matrix was taken into account, the interpretive structural model was drawn. The final model is presented in Figure 1. This model consists of five levels, in which the first level is the most dependent level and the fifth level is the most influential level.

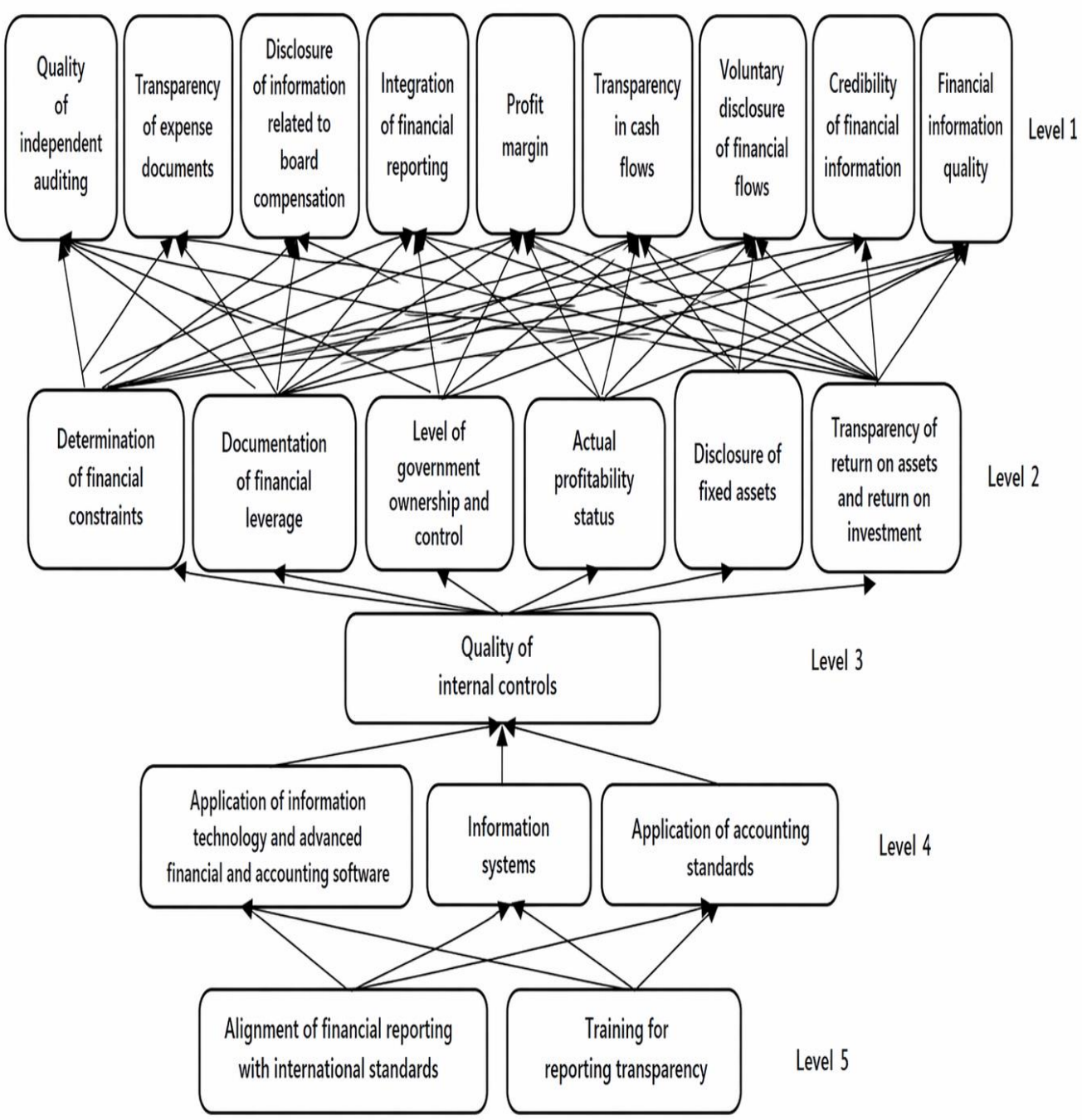

Figure 1. Model for Evaluating Managers' Compensation in the National Iranian Oil Products Distribution Company Based on Financial Reporting Transparency

Using MICMAC analysis, the components of the research model can be illustrated in terms of driving power and dependence, as shown in Figure 2. Based on this analysis, all criteria are classified as linkage variables, meaning that these variables possess both high dependence and high driving power. In other words, the influence and susceptibility of these criteria are very high, and any minor change in these variables leads to fundamental changes in the system.

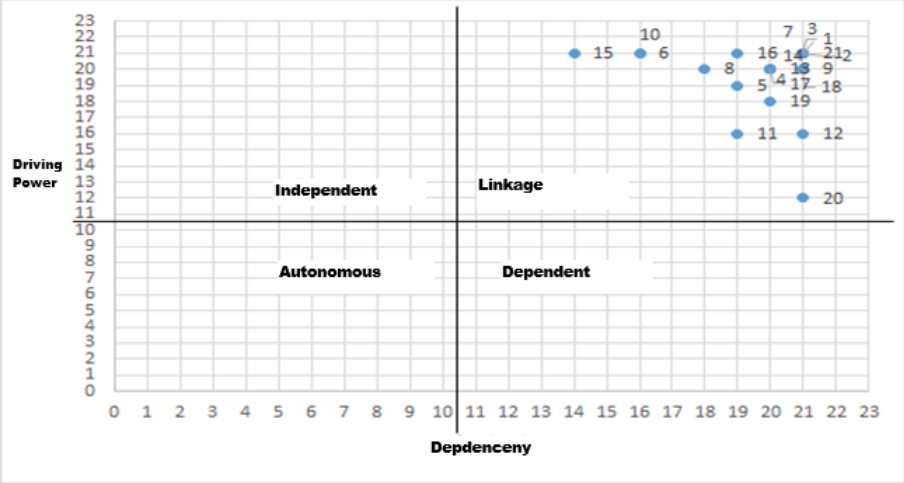

Figure 2. Driving Power–Dependence Matrix

4. Discussion and Conclusion

The findings of the present study led to the development of a five-level interpretive structural model for evaluating managers' compensation based on financial reporting transparency in the National Iranian Oil Products Distribution Company. The results demonstrated that the identified indicators are hierarchically structured, with "training for reporting transparency" and "alignment of financial reporting with international standards" positioned at the highest level of influence, while variables such as financial information quality, credibility of financial information, voluntary disclosure, and transparency in cash flows were located at the most dependent level. Additionally, the MICMAC analysis indicated that all variables fall within the category of linkage factors, characterized by high driving power and high dependence, suggesting a highly dynamic and interdependent system. These findings highlight that even minor changes in one component of the model can produce substantial systemic effects across the entire compensation evaluation framework.

The positioning of training for reporting transparency and alignment with international financial reporting standards as the most influential variables underscores the foundational role of institutional capacity-building and regulatory harmonization in shaping effective compensation systems. This result is consistent with prior studies emphasizing that transparent and standardized reporting frameworks reduce information asymmetry and enhance the reliability of performance-based compensation mechanisms [5, 6]. In line with these findings, Khalajestani et al. demonstrated that advanced modeling approaches to compensation sensitivity are more effective when grounded in robust and transparent data structures [8]. Similarly, Panahi et al. highlighted that the effectiveness of CEO compensation in influencing risk-taking behavior is significantly moderated by governance transparency and board independence [9]. Therefore, the prominence of these variables in the present model confirms that the institutionalization of transparency practices is a prerequisite for designing effective compensation evaluation systems.

At the intermediate levels of the model, variables such as the application of accounting standards, information systems, and the use of advanced financial and accounting technologies were identified as critical enablers that mediate the relationship between structural transparency and operational outcomes. This finding aligns with the literature suggesting that digitalization and the implementation of standardized accounting systems enhance the quality, timeliness, and comparability of financial information, thereby improving decision-making processes related to compensation [6, 21]. Moreover, the integration of information systems into financial reporting processes facilitates continuous monitoring and performance evaluation, which are essential for aligning managerial incentives with organizational objectives. These results also support the argument that technological infrastructure is a key determinant of transparency and accountability in modern organizations.

The central position of "quality of internal controls" as a bridging variable in the model further emphasizes its pivotal role in linking higher-level strategic drivers with lower-level operational outcomes. Internal controls serve as the backbone of financial reporting systems, ensuring the

accuracy, reliability, and integrity of financial information. The significance of this variable is consistent with the findings of Assenso-Okofo et al., who demonstrated that strong governance mechanisms, including internal controls, enhance the alignment between earnings management and CEO compensation [15]. Additionally, Gaertner's study on tax-related compensation incentives highlighted the importance of robust internal monitoring systems in mitigating opportunistic behavior and ensuring compliance with regulatory requirements [16]. Therefore, the placement of internal control quality at the core of the model reflects its critical function as an integrative mechanism that supports both transparency and performance-based compensation.

At the lower levels of the model, variables such as financial information quality, credibility, voluntary disclosure, and transparency in cash flows were identified as the most dependent factors. These findings suggest that these outcomes are largely influenced by higher-level structural and institutional variables. This is consistent with the broader literature on financial reporting, which emphasizes that the quality and credibility of financial information are contingent upon the effectiveness of governance structures, regulatory frameworks, and organizational practices [7, 12]. Furthermore, studies have shown that enhanced disclosure practices are associated with improved stakeholder trust and more efficient capital allocation, which in turn influence compensation outcomes [10, 11]. Thus, the model confirms that financial transparency is not an isolated outcome but rather the result of a complex interplay of multiple organizational and institutional factors.

Another important finding of this study is the identification of all variables as linkage factors in the MICMAC analysis. This indicates that the system is highly sensitive to changes, and that each variable simultaneously influences and is influenced by others. Such a configuration reflects a complex adaptive system in which feedback loops play a critical role in shaping outcomes. This finding is in line with the work of Hendriks et al., who highlighted the reciprocal relationship between CEO compensation and employee engagement, suggesting that changes in one dimension can have cascading effects across the organization [11]. Similarly, Rath et al. emphasized the interconnectedness of ESG factors and compensation structures, demonstrating that governance and social variables are mutually reinforcing [7]. Therefore, the results of the present study contribute to the understanding of compensation systems as dynamic and interdependent frameworks rather than linear cause-and-effect relationships.

The findings also provide important insights into the role of contextual and institutional factors in shaping compensation systems in public sector organizations. The inclusion of variables such as government ownership and control, financial constraints, and profitability status reflects the unique characteristics of state-owned enterprises. These results are consistent with the findings of Heydarpoor and Sahat Barmajeh, who showed that ownership structure and institutional factors significantly influence CEO compensation [13]. Similarly, Sepahvand et al. highlighted the impact of political sensitivity and institutional pressures on managerial compensation in government organizations [14]. The present study extends this line of research by demonstrating how these contextual factors interact with financial reporting transparency to shape compensation evaluation models.

In addition, the emphasis on variables such as profit margin, return on assets, and return on investment highlights the continued importance of financial performance indicators in compensation evaluation. However, the model also demonstrates that these indicators are influenced by broader transparency and governance mechanisms, suggesting that financial performance alone is insufficient for determining compensation. This finding is consistent with the work of Biddle et al., who showed that compensation incentives are closely linked to investment efficiency and capital allocation decisions [17]. Moreover, the integration of non-financial indicators, such as transparency and disclosure, aligns with the growing trend toward multidimensional performance evaluation frameworks.

Overall, the findings of this study contribute to the literature by providing a comprehensive and structured model that integrates financial reporting transparency with managerial compensation evaluation. The use of interpretive structural modeling allowed for the identification of hierarchical relationships among variables, while MICMAC analysis provided insights into their relative importance and interdependence. By combining these methodological approaches, the study offers a nuanced understanding of the complex dynamics underlying compensation systems in public sector organizations. Furthermore, the results have practical implications for policymakers and managers seeking to design more effective and transparent compensation systems.

One of the main limitations of this study is related to the scope of the research context, which was limited to a single state-owned enterprise. Although this context provided valuable insights into the dynamics of compensation and transparency in public sector organizations, the generalizability of the findings may be constrained. Additionally, the reliance on expert judgment in the qualitative and quantitative phases introduces the possibility of subjective bias, despite efforts to ensure validity and reliability. Another limitation is the cross-sectional nature of the study, which does not capture the dynamic evolution of compensation systems over time.

Future research is recommended to extend the present model to other organizational contexts, including private sector firms and multinational corporations, in order to enhance its generalizability. Longitudinal studies could provide deeper insights into the temporal dynamics of compensation systems and their relationship with financial reporting transparency. Furthermore, the integration of advanced analytical techniques, such as machine learning and big data analytics, could improve the precision and predictive power of compensation models. Researchers may also explore the role of cultural and institutional differences in shaping compensation practices across different countries.

From a practical perspective, the findings of this study suggest that organizations should prioritize the development of transparent and standardized financial reporting systems as a foundation for effective compensation evaluation. Managers and policymakers should invest in training programs that enhance reporting transparency and align financial practices with international standards. Additionally, the implementation of robust internal control systems and advanced information technologies can significantly improve the quality and reliability of financial information. Finally, organizations should adopt a holistic approach to compensation design that integrates both financial and non-financial performance indicators, ensuring alignment with organizational goals and stakeholder expectations.

Authors' Contributions

Authors equally contributed to this article.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

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

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