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DEMATEL analysis of corporate and public governance: identifying key factors for good governance

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Abstract: This paper aims to clarify the concepts of corporate governance and public governance, the principles and practices of governance, with an emphasis on the role and responsibility of management and on decision-making transparency. An extensive review of scholarly literature has pinpointed ten factors known to exert an influence on good governance. Following this, expert opinions were leveraged to establish the causal interrelationships among these factors, employing the Decision-Making Trial and Evaluation Laboratory (DEMATEL) methodology. The conclusions of the paper show that corporate governance can also be better applied in the field of public affairs, an approach so current under the difficulties and contemporary economic and social changes and under the extraordinary transformational pressure exerted by the new technologies and mentalities that do not bypass the relatively reluctant to change the sector of public administration. The development and diversification of public services, which must ensure a high degree of quality and efficiency under conditions of limiting the financial resources of the administrative-territorial units, obliges the efficiency of the management systems of these institutions, emphasizing their role, responsibility, transparency, and decision-making and credibility in front of the citizens.

Keywords: Corporate governance, DEMATEL, public governance, public administration.

JEL: M10, M14, O10

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Introduction

Good local governance encompasses not only the efficient and effective delivery of local public services but also the preservation of local citizens' freedoms. It involves creating space for democratic participation, fostering social dialogue, and promoting sustainable development. This approach aims to facilitate outcomes that

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significantly enhance citizens' quality of life. Decentralization and the delegation of responsibilities have presented opportunities and vulnerabilities for local public institutions. To address the challenges posed by globalization, decentralization, and technological advancements, these institutions must reconsider their roles in meeting local public needs.

In examining governance in the public sector, parallels and comparisons can be drawn between stakeholders in corporate governance within the private sector and those in the public sector. This analysis extends to evaluating the roles, rights, and obligations of stakeholders within corporations and comparing them with the roles of stakeholders at the local public administration level. The objective is to identify market elements and mechanisms that could be adapted for use in the public sector. Furthermore, it involves assessing the roles of various groups to discern differences in their approach to clients. This comparison highlights the emphasis on equality and equal treatment in the private sector, in contrast to the public sector, where decision-making processes related to the public interest are often influenced by non-economic, political criteria.

Transparency in both public and private systems is a critical aspect explored through comparative analysis. Transparency is deemed essential for facilitating communication regarding community priorities and citizen involvement in planning, decision-making, and results evaluation. While corporate governance in the private sector has received extensive attention in the literature, public sector governance has garnered growing interest as a research topic. This paper posits that investigating corporate governance in the public sector can be enriched through the examination of these parallels and comparisons.

Hence, the primary objectives of this research encompass two key facets: firstly, discerning the factors underpinning effective governance through an extensive review of existing literature and expert consultations to judiciously select pertinent elements. Subsequently, employing the DEMATEL model, this study endeavors to delineate the causal relationships among the factors influencing good governance in the Lebanese context. To accomplish these research goals, the investigation commences with a comprehensive literature review to identify factors associated with sound governance practices. Following this, a series of questionnaires were meticulously devised, drawing insights from experts within the public sector. Ultimately, the DEMATEL methodology is deployed to scrutinize the cause-and-effect dynamics among the pivotal factors (Song, Zhu & Zhao, 2020). Based on the findings obtained through DEMATEL analysis, the factors germane to good governance in Lebanon are categorized into causal and consequential groups. The DEMATEL approach, originally developed in 1976 by the Battelle Memorial Institute within the framework of the science and human relations program in Geneva (Singh, Singh & Khamba, 2020) represents a potent causal analysis tool that enables researchers to classify system criteria into causal and consequential clusters (Abdel-Basset, Atef & Smarandache, 2019). Furthermore, this technique facilitates the construction of a graphical representation elucidating the cause-and-effect

interplay among these factors. This aids in identifying and resolving intricate issues (Kumar & Dixit, 2018).
The significance of this study unfolds on a dual front. Primarily, to the best of our knowledge, it marks the inaugural step in enumerating a compendium of pivotal factors indispensable for the implementation of effective governance practices in Lebanon. Secondly, this ongoing investigation harnesses the DEMATEL technique to furnish an enhanced comprehension of the relative significance attributed by managers and policymakers in the public sector to these factors, while also elucidating the intricate cause-and-effect relationships intertwined within the domain of good governance.

1. Literature review

The analysis aims to establish a parallel between the decision-making and managerial systems of corporate governance and those of local public institutions. It commences by comparing the procedural and structural organization of companies with that of local public administration, considering that organizations represent a means to achieve their respective objectives.
The concept of organization is defined in the literature as "the search for methods to align the interests of various members of an organization to achieve its objectives" (Beckhard & Gallos, 2006). Each entity operates within a specific organizational framework, which encompasses dynamic and complex activities categorized into functions that are interrelated. The integration of these functions allows the entity to respond to environmental demands, develop continuously, and operate efficiently.
Procedural organization is based on understanding how entities function, defining functions within the public sector following the same logic applied to defining functions within companies. The key distinction lies in the fact that the end product of public sector activities is the provision of public services. Consequently, five fundamental functions can be delineated for a modern enterprise: research and development (R&D), production, commercial operations, financial and accounting activities, and human resources management. While the procedural organization shares similarities between economic agents and the public sector, there are particularities in the latter. The components of process organization within local public administration encompass functions, attributions, tasks, and activities. Functions, shaped by the operating mechanism and objectives set by local public administration, encompass research and development, commercial operations, public service provision, financial and accounting functions, and personnel management.
In the context of local public administration, several key functions play distinct roles. The research and development (R&D) function, while relatively rare in this domain, encompasses activities aimed at identifying innovative methods and techniques to modernize public management, ultimately enhancing public interest satisfaction.

Introducing a novel dimension, the commercial function involves establishing relationships with taxpayers, the goods and services market, and external factors, including media and financial institutions. The function of providing public services assumes a paramount role, encompassing activities that assess the quantitative and qualitative resource needs for public service delivery. These services range from socio-cultural offerings like education and health to economically oriented ones such as water supply and thermal energy provision. The financial-accounting function spans activities related to financial resource acquisition and the financial status presentation of local communities, notably developed at this level. Lastly, the human resources' function involves activities ensuring the quantitative and qualitative aspects of human resources to meet predefined objectives, including civil servant selection, appointment, training, promotion, and remuneration. Academic research acknowledges the fundamental role that human resources play in fostering success within public organizations (Potcovaru & Girneata, 2015).

1.1 Plan of objectives and triple reporting in corporate governance versus management of local public institutions

Globalization and rapid economic development are pivotal aspects of the contemporary landscape. Achieving economic growth is essential for fostering social progress and environmental sustainability (Juščius & Snieška, 2008). Reports on an entity's performance must be aligned with the principles of sustainable development. They should consistently emphasize how the organization aims to enhance or adversely impact economic, social, and environmental conditions (Androniceanu, 2019). To gauge an entity's commitment to sustainability, one should examine whether it sets objectives supporting continuous development, communicates performance in terms of economic, social, and environmental impact, and addresses how sustainability aspects relate to the entity's long-term strategy, including associated risks and opportunities.

The information presented in reports should be systematically collected, recorded, analyzed, and made accessible to ensure clarity and ease of understanding. These reports should provide a balanced view of an entity's activities, enabling the assessment of its performance over a defined period and facilitating comparisons with other entities. Additionally, reports should encompass strategic priorities, the influence of political and macroeconomic trends, key events during the reporting period, successes and setbacks, performance evaluations against targets, future challenges, implications, risks, and opportunities affecting the entity's financial performance.

Corporate governance reporting extends to elucidating an entity's governance structures, including high-level committees responsible for strategy formulation. It must detail the presiding authority within the organization's highest governance body, the executive roles held by board members, mechanisms for shareholder and employee input, executive compensation links to performance, conflict of interest avoidance procedures, methods for assessing the qualifications of board members,

and compliance with international standards and codes of conduct. The reports should also explain the development of mission statements, values, and codes of conduct and their relevance to economic, social, and environmental performance. Furthermore, they should delve into how governing bodies oversee economic, social, and environmental performance, risk identification, compliance with standards and principles, and the evaluation of their own performance. Stakeholder engagement is highlighted, specifying the entity's primary stakeholders, interaction frequencies, and key themes emerging from stakeholder consultations.
Finally, economic, social, and environmental aspects should be consistently presented in reports, addressing management's stance, specific goals, achievements in these dimensions, organizational policies and responsibilities, training and education initiatives, monitoring and support activities, and contextual information, among other contextual elements.

1.2 Good governance in the case of local public administrations: The plan of best practices

Defining effective practices within public management necessitates a preliminary exploration of their purpose and contextual relevance. The universality of these practices across various organizational contexts also raises questions. A spectrum of approaches to identifying best practices in public administration management emerges within scholarly literature.
Bendixsen and Guchteniere (2003) conceptualize good practices as successful initiatives or models significantly contributing to addressing specific challenges. Their work emphasizes the identification of such initiatives, comprehending their adaptability across contexts, and offering inspirational guidance for decision-making. Bardach (2007) underscores the importance of evaluating solutions attempted in diverse jurisdictions, agencies, or situations, assessing their efficacy, reasons for success, and suitability for individual scenarios. Peters and Waterman, through their study of high-performing organizations, highlight factors such as simplicity, proximity to clients/taxpayers, and effective leadership (Peters & Waterman, 2012). Osborne and Gaebler (1992) extend this perspective to the public sector, proposing governance characterized by catalytic leadership, decentralized decision-making, and alignment with citizens' interests.
In our assessment, exemplary practices in the public sector often center on efficient budgeting, resource management, and technology integration. The specialized literature establishes foundational principles guiding the organization and functioning of public services universally. These encompass continuity, equality, adaptability, efficiency, equity, neutrality, and quantification (Bovaird & Löffler, 2004; Zaharia & Bilouseac, 2009).
While some "intelligent practices" exhibit universality (Bardach, 2007), generalizing their applicability without regard to time, place, and context is challenging, given the dynamic nature of social and political landscapes. Priorities and values like efficiency, effectiveness, and equity fluctuate over time, rendering the continuity of

good practices uncertain. To ensure ongoing adherence to these practices, public authorities must periodically reassess their governance systems.

In the realm of governance, it is crucial to align purported best practices for policies or management programs with the principles of democratic governance (Jennings, 2007; Androniceanu, 2021). Democratic governance hinges on valuing the process itself as highly as the achievement of favorable outcomes. Good governance implies a government that adheres to laws and regulations, fosters community responsibility, enables equitable stakeholder participation in policy formulation, engages citizens in the functioning of public institutions, operates transparently, upholds the integrity of public administration representatives, and delivers public services effectively (Weiss, 2000; Helliwell et al., 2018; Androniceanu and Georgescu, 2022). Additionally, Trifu et al. (2015) underscore that regulations play a significant role in shaping businesses. International experience demonstrates that active and direct citizen involvement ensures the efficient operation of local authorities, enhancing the prospects for community development. It also contributes to reducing corruption among local officials, promoting both societal development and democratization at the local level. Public participation procedures for citizens can encompass involvement in the development of normative acts and participation in decision-making processes.

The purpose of taxpayers' participation in the decision-making process is to formulate perspectives and different opinions for common issues. The approach to the problems can generate both a constructive and a destructive situation, which will aggravate the problem. In the interest of a positive result, it is recommended to monitor and evaluate at every step of the process of public participation, starting from the setting of goals, defining the objectives to be reached, choosing the most effective participation methods to reach the formulated objectives, objectives that have not been reached.

The assessment of citizen participation in public decision-making often employs the Arnstein scheme to classify relations between local public authorities and citizens (Soos & Zentai, 2005). This classification entails three types of relationships:

- Absence of citizen involvement due to mutual distrust.
- Sustained communication relations where public authorities possess information and citizens are informed.
- Equal control by both public authorities and citizens over communication and relationships.

An analysis of citizen participation levels across several Central and Eastern European countries (Romania, Poland, and Hungary) concluded that Romania had the lowest taxpayer involvement (Soos & Zentai, 2005). Active citizen participation in drafting normative acts and decision-making can yield various benefits, conceptualized as a partnership between public authorities and citizens to achieve common community goals. This partnership can help identify community issues and inspire development priorities.

Democratically responsive governance involves public authorities' responsibility to citizens' needs and obligations, including those of minority groups. Transparency, a key good governance principle, is intertwined with citizen accountability and implies open access to decision-affecting information. Equity and inclusion require neutral state institutions that involve all social groups in community matters, eliminating discrimination and marginalization. Public integrity entails integrity in decision-making, financial management, and personnel actions. The rule of law is central to good governance, ensuring adherence to all laws, including minority rights protection, and preventing potential social conflicts.

Local authorities play a crucial role in demonstrating efficiency in resource utilization, ensuring sustainability, and fostering long-term community development. Efficiency, concerning public services, entails optimal management of resources, continuous alignment of services with local needs, and adaptation to changing community dynamics.

Seeking consensus among community members is another crucial dimension of good governance, aimed at resolving conflicts and aligning citizens' interests and problem-solving strategies. Achieving consensus involves the genuine participation of all local community stakeholders in decision-making. Recommendations to enhance governance at the local level include minority involvement in decision-making beyond mere consultation, promoting real and not just formal participation, fostering alliances between groups to address the interests of all community segments, monitoring the impact of existing legislation, and allocating necessary resources for community program implementation.

In today's society, there's a growing demand for performance-oriented public governance with measurable results. Effective management of public administrations draws inspiration from private sector governance models, emphasizing practical problem-solving. To assess and monitor performance relative to objectives, it's essential to develop qualitative and quantitative indicators that quantify citizen needs and preferences, available resources, policy effects, and feedback. This approach enhances transparency in public governance, empowers policymakers at all levels, and facilitates performance comparison among public authorities providing similar services.

Initiatives to enhance governance have been promoted by bodies like the IFAC Committee, which has published studies on global public sector corporate governance (International Federation of Accountants, 2007). The drive to improve cooperative governance practices is a priority in numerous countries, underpinned by the increasing demand for accountability, transparency, and balanced control. Although public sector governance originates from corporate governance, there are distinct differentiators between the two. One notable distinction pertains to the documents presented to the public, with private organizations issuing financial statements centered on profit, while public entities disclose budgets supporting public policies.

Both corporate and public governance show an evolving trend toward heightened transparency. In the private sector, financial reporting extends beyond profit figures to encompass social impact, while public interest entities emphasize both policy orientation and enhanced reporting. This growing emphasis on transparency fosters stronger governance across both public and private domains.

1.3 Corporate governance versus management of local public institutions: Stakeholder plan

The complex relationship between public administration and citizens has long been marked by mutual grievances. Issues like officials' lack of professionalism, excessive bureaucracy, corruption, cumbersome administrative procedures, and poor communication contribute to the challenges faced in this dynamic. The demand for modern management practices, anchored in corporate governance principles applicable to both private and public sectors, is increasingly recognized in Romania. This stems from the critical role of effectively managing public funds while ensuring the quality of services provided to taxpayers. Modernizing public administration entails addressing these issues, focusing not only on maximizing service efficiency but also on presentation, quality, and delivery.

During periods of public sector reform, a common trend involves borrowing theories and practices from the private sector to enhance public service quality, streamline budgets, bridge gaps between local administration and citizens, and boost overall sector efficiency. Ensuring quality public services, in line with continuity, equality, and adaptability principles, serves as a foundational step for structural reform in the public sector. The theoretical underpinnings of improved governance systems, citizen engagement in public decisions, the infusion of a "managerial culture," and market mechanisms in the public sector are drawn from new public management and public choice theory. By embracing corporate governance principles, local public authorities can foster effective management, oriented toward taxpayers' interests, thus optimizing the delivery of public services. Amid the diversity in corporate governance practices among local public administrations, efforts are directed at identifying "best practices" in public administration.

In our opinion, the good practices in the public sector follow a high degree of performance in the budgetary or financial area, capital, and human resources management and information technology. To ensure continued compliance with good practices, public authorities must periodically review their governance systems. Particularly important in the context of governance is the framing of supposed best practices for policies or for the management program with the needs of democratic governance (Jennings, 2007). Democratic governance assumes that the importance attached to the process itself is equivalent to the importance of obtaining the most favorable results.

2. Research methodology

In the pursuit of academic inquiry, this study sets forth a series of pivotal research inquiries, which shall serve as guiding threads in its comprehensive exploration. The research questions are designed to delve into distinct dimensions of governance within the context of local public institutions and corporate entities. These questions are framed as follows:

- What delineates the disparities between the structural framework governing corporate governance and the management paradigms applied within local public institutions?
- What intricacies and unique attributes characterize the embodiment of good governance when applied to local public administrations?
- How can we discern the interplay and congruence between corporate governance principles and the management approaches governing local public institutions, with a particular focus on stakeholder involvement?
- What are the paramount and discerning factors that exert influence upon the manifestation of good governance within the specific context of Lebanon?

These research inquiries form the foundation upon which this study's methodological framework is built, guiding the empirical investigation into the intricate realm of governance within local public institutions and corporate entities. To accomplish the aims of this study, we employed the DEMATEL approach, which systematically engages public sector experts in a meticulously structured manner to discern the cause-and-effect relationships between factors. This utilization of DEMATEL significantly enhances the internal validity of the study's outcomes (Haleem, Khan & Khan, 2019). The research methodology employed here is predominantly characterized by a three-stage procedural structure (Chen et al., 2021).

Stage 1: In this initial phase, as an integral facet of the rigorous research methodology, typical factors were identified from the existing literature. We gathered insights from 24 public sector experts by disseminating questionnaires. Participants were requested to assess each item on a five-point scale, ranging from "strongly agree" to "strongly disagree," denoted by values of 1, 2, 3, 4, and 5, respectively. We garnered valid responses from 80% of the respondents (20 valid responses), ultimately identifying ten key factors (Table 1). In this current stage, the final step encompassed soliciting feedback from the experts through a series of survey questions to assess the cause-and-effect relationships among these critical factors.

Table 1. List of factors applied in the DEMATEL questionnaire

Factors	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
The legal framework is enforced impartially (F1)										
Citizens have the right to freedom of association and expression (F2)										
Policies are carried out under existing regulations (F3)										

Factors	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Information related to the policy can be accessed by everyone (F4)										
Institutions and processes serve all stakeholders within reasonable time (F5)										
The decisions can be accepted by everyone and do not harm anyone (F6)										
Justice is ensured for the community (F7)										
The decisions meet every community need (F8)										
Community resources are utilized optimally by the government (F9)										
Institutions have full responsibility to the public for improving the quality of society (F10)										

Source: Author's contribution

Stage 2: The DEMATEL method was deployed in this stage to analyze and construct a structured representation of the causal relationships among the identified barriers. DEMATEL is a widely recognized methodology frequently employed for decision problem assessments (Li, Diabat & Lu, 2020). It elucidates the causal linkages among the causes and effects of diverse variables, furnishing a structural framework for the system. DEMATEL offers a significant advantage over alternative models by facilitating the generation of meaningful insights with minimal data input (Kumar & Mathiyazhagan, 2020).

- **Step 1: Generation of the Direct-Relation Matrix (A)**

After compiling the list of pertinent barriers or criteria, in accordance with the DEMATEL scale, each expert was tasked with conducting pairwise comparisons between individual barriers. Subsequently, we derived each expert's initial relation matrix, capturing their individual opinions and evaluations regarding the causality among these barriers using Equation (1). A scale spanning from 0 to 4 was employed, signifying no influence, very low influence, low influence, high influence, and very high influence to illustrate the interrelationships among the identified barriers, as outlined in Table 2. The same procedure was iterated to compile all expert assessments as delineated in Equation (1). It's noteworthy that there are p experts involved, where p = {1, 2, 3… n}. Equation (1) (Maqbool & Khan, 2020; Chen et al., 2021) is articulated as follows:

$$A_p = \begin{bmatrix} 0 & a12 & a13 & \dots & a1n \\ a21 & 0 & a23 & \dots & a2n \\ a31 & a32 & 0 & \dots & a3n \\ \dots & \dots & \dots & \dots & \dots \\ \dots & \dots & \dots & \dots & \dots \\ an1 & an2 & an3 & \dots & 0 \end{bmatrix} \quad (1)$$

A_p = assesses the interaction choices of each expert among the barriers.

Table 2. The equivalence of the DEMATEL scale

Linguistic Descriptors	Numerical quantities
No influence	0
Very low influence	1
Low influence	2
High influence	3
Very high influence	4

Source: Author's contribution

- **Step 2: Standardizing the Direct-Relation Matrix (X)**

During this stage, the normalization of the direct-relation matrix (X) is conducted. This process is achieved by applying the formula presented in the subsequent equation:

$$X = k\,.A \ (2)$$

$$k = \frac{1}{\max\limits_{1\leq i \leq n} \sum_{j=1}^{n} a_{ij}}, \ \ i, j = 1,2, ...n \quad (2)$$

Here, *A* represents the initial-relation matrix as defined in Equation (1), k signifies the average of aij values across all experts, and X stands for the normalized direct-relation matrix. It's essential to note that, for the DEMATEL approach to be applicable, the values within each column of the normalized direct-relation matrix must be less than one (Zhu et al., 2020, Chen et al., 2021).

- **Step 3: Computation of the Total-Relation Matrix (T)**

In this phase, the total-relation matrix (T) is calculated using the subsequent equation:

$$T = X\,(I - X)^{-1} \quad (3)$$

Where *I* denotes the identity matrix, T represents the total-relation matrix, and X corresponds to the normalizing matrix defined in Equation (2). The total-relation matrix T is responsible for determining the summation of the number of rows (D) and columns (R). D and R are computed within the T matrix utilizing the following equations (Song et al., 2020, Chen et al., 2021).

$$(D) = \left[d_{ij}\right]_{n\,x\,1} = \left[\sum_{j=1}^{n} d_{ij}\right]_{n\,x\,1} \quad (4)$$
$$(R) = \left[r_{ij}\right]_{1\,x\,n} = \left[\sum_{j=1}^{n} r_{ij}\right]_{1\,x\,n} \quad (5)$$

Additionally, to ascertain the threshold value (∝), the summation of all elements in the averages present within matrix T is calculated and divided by the total number of elements within the matrix. This computation is conducted using the subsequent equation:

$$\propto = \frac{\sum_{j=1}^{n}\sum_{i=1}^{n} r_{ij}}{n^2} \quad (6)$$

Here, n^2 denotes the total number of elements within the total relation matrix T. Given that the number of barriers is denoted as *n*, the total number of elements in matrix T = n × n = n^2 (Pamučar et al., 2017). Subsequently, a connection diagram is generated by plotting the values of (D + R) and (R − C). In this diagram, the Y-axis corresponds to the values of (D − R), while the X-axis represents the values of (D + R). A directed graph is employed to elucidate the interrelationships between the key barriers. The values within the T matrix that meet or exceed α are considered to possess a significant level of influence. The influential strength matrix is utilized to create the directed graph (Chen et al., 2021).

Stage 3: Formulation of Influence-Relations and Concluding Remarks. Moreover, D and R values were computed utilizing Equations (5) and (6). The outcomes of D and R affirm the extent of relational influence among each key barrier, respectively.

3. Findings and discussions

In this present study, a total of ten significant factors known to exert an influence on good governance in Lebanon were identified. To gain insights into the causal connections among these key factors and to establish their cause-and-effect relationships, the research employed the DEMATEL approach. The average direct-relation matrix (A) presented in Table 3 was constructed based on inputs from experts and was calculated based on Equation (1).

Table 3. Average matrix (A)

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	0	2.3	2.45	2.1	1.95	2.5	2.55	2.4	2.05	2.6
F2	2.45	0	2	2.6	2.1	2.1	2	2.1	2.3	2.45
F3	2.65	2.7	0	2.3	2	2.3	3	2.65	2.3	3
F4	2.65	2	2.3	0	2.55	2.3	2.9	2.5	2.9	3
F5	3	3.2	3	2.95	0	3.2	3.2	3	3.1	3
F6	3	2.95	2.4	3	2.3	0	2.1	2.3	2.2	2
F7	3	2.95	2.45	2.6	2.3	3.1	0	3.2	2.6	2.45

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F8	3.1	3	2.3	2	3.3	3.1	2.9	0	2.4	2.5
F9	2.95	2.1	3.2	2.95	2.9	3	2.95	2.7	0	3.2
F10	3.3	3.2	3.35	2.95	3.05	3.2	3.3	3.25	3.4	0

Source: Author's contribution

Subsequently, in accordance with the second step of the DEMATEL methodology, the normalization process of the direct-relation matrix (X) was performed, as computed in Equation (2), where Equation (2) represents the mean assessments provided by the experts. The outcomes of this direct-relationship matrix are presented in Table 4.

Table 4. Normalized initial direct-relation matrix (X)

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	0	0.083	0.089	0.076	0.071	0.038	0.092	0.087	0.074	0.094
F2	0.089	0	0.072	0.094	0.076	0.076	0.072	0.076	0.083	0.089
F3	0.096	0.098	0	0.083	0.072	0.083	0.108	0.096	0.083	0.108
F4	0.096	0.072	0.083	0	0.092	0.083	0.105	0.090	0.105	0.108
F5	0.108	0.116	0.108	0.107	0	0.116	0.116	0.108	0.112	0.108
F6	0.108	0.107	0.087	0.108	0.083	0	0.076	0.083	0.080	0.072
F7	0.108	0.107	0.089	0.094	0.083	0.112	0	0.116	0.094	0.089
F8	0.112	0.108	0.083	0.072	0.119	0.112	0.105	0	0.087	0.090
F9	0.107	0.076	0.116	0.107	0.105	0.108	0.107	0.098	0	0.116
F10	0.119	0.116	0.121	0.107	0.110	0.116	0.119	0.118	0.123	0

Source: Author's contribution

Furthermore, a relationship matrix is computed following Equation (4), as illustrated in Table 5. The T matrix is constructed through the exclusion of preliminary significant relationships to achieve a meaningful connection. Consequently, the threshold value (α) is established utilizing Equation (7) to formulate the causal diagram. With reference to the threshold value, we can ascertain the significant and insignificant factors (Chen et al., 2021). The computed α value stands at 0.639, and any factor values within the T matrix that fall below this threshold (0.639) were disregarded in the subsequent stages of the DEMATEL analysis. Within Table 5, factor values equal to or exceeding the threshold value are highlighted.

Table 5. Total-relation matrix (T)

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	0.504	0.551	0.539	0.526	0.505	0.492	0.567	0.55	0.522	0.556
F2	0.598	0.486	0.536	0.554	0.52	0.535	0.562	0.552	0.541	0.563

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F3	0.669	0.637	0.527	0.603	0.573	0.6	0.654	0.629	0.599	0.639
F4	0.679	0.623	0.613	0.535	0.599	0.609	0.661	0.633	0.627	0.648
F5	0.788	0.754	0.723	0.722	0.601	0.725	0.764	0.74	0.721	0.741
F6	0.657	0.624	0.587	0.605	0.564	0.502	0.607	0.598	0.578	0.59
F7	0.717	0.68	0.642	0.646	0.616	0.657	0.592	0.68	0.642	0.658
F8	0.72	0.681	0.638	0.628	0.645	0.658	0.687	0.576	0.636	0.659
F9	0.754	0.689	0.7	0.691	0.667	0.689	0.726	0.701	0.591	0.716
F10	0.828	0.783	0.762	0.75	0.727	0.753	0.797	0.777	0.758	0.672

Note: Threshold => 0.639

Source: Author's contribution

Values for D and R were determined through the utilization of Equations (5) and (6), as displayed in Table 5. The outcomes for D and R serve to validate the extent of relational impact associated with each key barrier. Subsequently, the authors derived values for (D + R) and (D − R), as presented in Table 5 below.

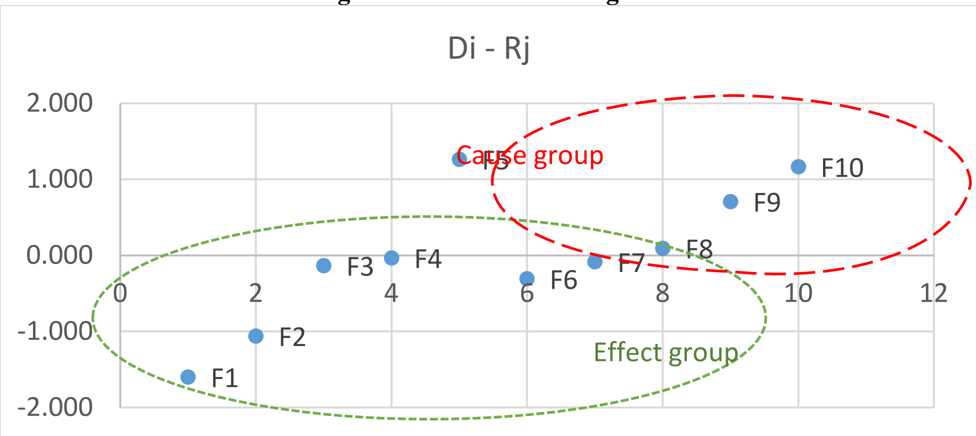
Table 6. Prominence and Relation for each criterion

	Di	Rj	Di + Rj	Di - Rj	Identity
F1	5.312	6.913	12.226	-1.601	Effect
F2	5.447	6.508	11.955	-1.061	Effect
F3	6.130	6.266	12.396	-0.136	Effect
F4	6.227	6.260	12.487	-0.034	Effect
F5	7.278	6.016	13.294	1.262	Cause
F6	5.910	6.219	12.130	-0.309	Effect
F7	6.531	6.617	13.147	-0.086	Effect
F8	6.529	6.436	12.965	0.093	Cause
F9	6.923	6.216	13.139	0.707	Cause
F10	7.606	6.443	14.049	1.164	Cause

Source: Author's contribution

A factor displaying a D–R value below zero is categorized as an effect group, whereas a factor surpassing the D–R value falls within the cause group. Drawing from the DEMATEL outcomes, delineated in Table 5 and Figure 1, the ensuing section expounds upon the causal interactions and the magnitudes of impact among the factors recognized to exert an influence on good governance. Prominence (Di + Rj) represents the sum of the Di and Rj values for each criterion, indicating the overall prominence or influence of a specific factor within the network of factors. Higher positive values suggest that the factor has a more significant impact on other factors in the system. Factors F5, F8, F9, and F10 have the highest positive prominence values, indicating that they play central roles in influencing other factors. Relation (Di - Rj) represents the difference between the Di and Rj values for each criterion, indicating the nature of the relationships between factors. Positive values suggest a factor is more of a "Cause," while negative values imply a factor is more of an "Effect." Factors F5, F8, F9, and F10 have positive Relation values, indicating that they are influential in causing changes in other factors. They are considered "Cause" factors. Factors F1, F2, F3, F4, F6, and F7 have negative Relation values, indicating that they are more influenced by other factors than they influence others. They are considered "Effect" factors.

Figure 1. Cause-effect diagram



Source: Author's contribution

Based on the DEMATEL analysis and the values obtained for each criterion, the following conclusions can be drawn regarding the factors influencing good governance in the Lebanese context:

Impartial Legal Framework (F1) and Freedom of Expression (F2): The factor F1, "The legal framework is enforced impartially," has a noticeable effect on F2, "Citizens have the right to freedom of association and expression." The negative Di - Rj value of -1.061 suggests that an impartial legal framework tends to enhance the freedom of association and expression among citizens. This implies that a fair and just legal system contributes positively to the protection of civil liberties.

Policy Compliance (F3) and Information Accessibility (F4): The factor F3, "Policies are carried out under existing regulations," exhibits an effect on F4, "Information related to the policy can be accessed by everyone." Although the effect is relatively minor (Di - Rj = -0.136), it indicates that compliance with existing regulations can facilitate information accessibility. Policies aligned with regulations may result in greater transparency and accessibility to policy-related information.

Community-Centric Decision-Making (F5, F6, F7, F8): Factor F5, "Institutions and processes serve all stakeholders within a reasonable time," has a causal relationship with other decision-related factors, F6, F7, and F8. This implies that institutions' ability to serve stakeholders within a reasonable timeframe positively influences community-centric decision-making, ensuring that decisions are accepted, just, and meet community needs.

Optimal Resource Utilization (F9) and Institutional Responsibility (F10): Factors F9, "Community resources are utilized optimally by the government," and F10, "Institutions have full responsibility to the public for improving the quality of society," exhibit a causal relationship. The Di + Rj value of 1.164 suggests that optimizing resource utilization contributes to institutions' greater responsibility for societal improvement. This underscores the importance of efficient resource management for achieving institutional accountability.

4. Conclusions

The The paper's primary objective was to elucidate the concepts of corporate and public governance, delving into governance principles and practices while emphasizing the pivotal role and responsibilities of management, along with a strong focus on transparent decision-making processes. By starting with definitions that underscore the oversight, control, and management roles within entities, the study underscored the imperative and benefits of applying corporate governance principles more broadly in the contemporary socio-economic landscape, with a specific spotlight on the public administration domain.

The exploration of governance's theoretical foundations was complemented by a discussion of practical experiences in corporate governance, including the adoption of "best practices" codes. Furthermore, the increasing demand for diversified and high-quality public services, especially when resources are constrained at the local level, underscores the need for efficient management systems within these institutions. This necessity accentuates the roles, responsibilities, transparency, and credibility that local authorities must uphold when managing both financial resources and their allocation. In essence, local authorities face the intricate challenge of addressing the multifaceted issues of their communities while judiciously managing public resources to align with both immediate and long-term community needs, all while operating within the framework of acquired public authority.

The DEMATEL analysis provides valuable insights into the causal relationships among the factors influencing good governance in Lebanon. These findings highlight the interconnected nature of these factors and the ways in which they mutually influence each other. Policymakers and stakeholders can utilize these conclusions to formulate strategies that prioritize impartial legal frameworks, community-centric decision-making, policy compliance, and responsible resource utilization to enhance good governance practices in the Lebanese context.

Conflict of interest

The authors declare that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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