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The impact of governance measures on agency cost reduction, legality, and sustainable growth

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ABSTRACT

This study investigates the role of governance mechanisms — including the Board of Directors, Audit Committee, Compensation Management, Internal Audit, and External Audit — in reducing agency costs and promoting legality and sustainable growth in industrial companies listed on the Amman Stock Exchange. The study included all 53 listed industrial companies as the research sample. Financial reports and statements from the period 2018 to 2022 were analyzed using statistical methods, with a focus on regression analysis to test the research hypotheses. Previous studies have reported mixed results regarding the relationship between governance mechanisms, agency cost reduction, legality, and financial performance. The findings of this study show clear evidence that governance mechanisms have a significant positive effect on reducing agency costs and supporting sustainable growth. These results highlight the importance of strengthening corporate governance practices to achieve better financial outcomes and ensure legal compliance.

1. Introduction

One of the most important modern theories adopted to explain management behavior is the Agency Theory. Corporate governance has been considered among the proposed solutions to limit or mitigate the problems of agency costs (Venugopalan, 2021). It does this through a set of mechanisms and procedures that define the boundaries and responsibilities of parties to agency contracts within a company (Nguyen et al., 2020). The significant expansion of contemporary companies has necessitated the delegation of management responsibility to an agent, which has led to conflicts of interest and the emergence of agency problems and costs among the contracting parties (Bijoy and Mangla, 2023). The separation of ownership and management is considered one of the fundamental factors that led to the emergence of Agency Theory and its resulting costs, whether direct or indirect (Dian and Nova, 2020). Some agents, especially management, may exploit the broad powers granted to them by the principal to achieve their own returns by prioritizing their self-interest over the interests of other parties. For these reasons, attention has been paid to corporate governance mechanisms and the rules that regulate the relationship between parties in companies, highlighting their importance and the commitment to their implementation to mitigate problems that may arise due to the separation of ownership and management (Venugopalan, 2021).

From an accounting perspective and due to conflicting interests among company stakeholders, particularly between management and owners, each party seeks to maximize its own benefits at the expense of the other party (Mayasari and Asyik, 2024). Therefore, it is expected that the selection of accounting policies for dealing with similar financial events is influenced by the self-interests of management, regardless of whether those goals align or conflict with the interests of other stakeholders, even if it sacrifices accurate representation of events and operations in terms of producing and presenting information (Panda and Leepsa, 2017). There are

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other reasons that have contributed to the increased interest of companies and professional organizations in implementing internal and external corporate governance mechanisms, including activating appropriate regulatory systems, which have played a role in reducing conflicts of interest and, consequently, minimizing agency costs and problems (Moez, 2018). Corporate commitment to implementing governance practices reflects significant benefits, including improving revenue growth rates, enhancing the company's brand, increasing its ability to attract additional investments, and expanding opportunities for sustainable growth. Governance and sustainability practices can contribute to the competitiveness and diversified success of companies from multiple perspectives (Machuki and Rasowo, 2018).

In comparison to previous studies, the current study seeks to provide additional knowledge by reaching results regarding the impact of corporate governance mechanisms on limiting or mitigating agency costs. It also aims to identify the most influential corporate governance mechanisms in reducing agency costs and their impact on sustainable growth in the Jordanian industrial sector.

Mayasari and Asyik (2024) indicated that weak implementation of governance mechanisms, particularly in the composition of the Board of Directors, will lead to increased agency problems and conflicts of interest between management and shareholders. This results in increased agency costs, decreased creditor confidence, and higher cost of capital, thereby impacting financial performance sustainability (Moez, 2018). Despite the multitude of studies addressing factors affecting corporate structure and financial growth sustainability, most have focused on the impact of financial, organizational, or behavioral variables on financial growth, with few addressing the impact of governance on companies' financial growth. Positive financial sustainability and growth depend on a company’s ability to form an optimal financing structure and utilize available financial resources to balance resource turnover, ensuring wealth formation and increased financial growth rates. However, conflicts and differences in interests between management and shareholders may negatively affect profit generation, increase risks, and decrease financial growth rates, leading to increased financial risks (Eid et al., 2023; Nguyen et al., 2020).

Many industrial companies have improved their financial performance by implementing governance mechanisms. Previous studies, such as Jordão and Almeida (2017), and Al-Chahadah et al. (2020) have shown that applying governance rules affects all elements of financial performance. A study by Onchieku (2021) concluded that applying governance mechanisms improves companies' financial returns. The industrial sector strives for sustainable financial growth, diversification and expansion of financing sources, and enhancement of economic and financial stability. The Jordanian industrial sector contributes directly or indirectly to 45% of gross domestic product (Vijayakumaran, 2019). There is still a need to better understand factors affecting sustainable financial growth, as there is debate regarding the best indicators to ensure sustainable growth. Some researchers prefer profitability indicators such as operating profit margin and return on assets, while others prefer company returns as a percentage of investor capital and profit-to-equity ratio (Jordão and Almeida, 2017).

Based on this data, the current study aims to narrow the gap in previous research on governance variables, agency costs, and financial growth sustainability, particularly in Jordanian industrial companies listed on the Amman Stock Exchange. It does this by contributing to understanding the impact of governance mechanisms on reducing agency costs and sustainable financial growth. The study problem can be summarized by the following questions:

1. Is there an impact of governance mechanisms on reducing agency costs in industrial companies listed on the Amman Stock Exchange?
2. Is there an impact of reducing agency costs on sustainable growth in industrial companies listed on the Amman Stock Exchange?
3. Is there an impact of governance mechanisms on sustainable growth in industrial companies listed on the Amman Stock Exchange?

2. Literature review

2.1. Governance mechanisms and agency theory

Corporate governance is a contemporary topic that has generated various opinions among scholars and researchers in defining and conceptualizing it, due to multiple intellectual differences resulting from the concept's comprehensive nature, which encompasses economic, legal, administrative, and accounting dimensions (Pillai and Al-Malkawi, 2018). Previous studies have long focused on two fundamental approaches in addressing corporate governance's concept and definition: The agency theory approach, concerned with safeguarding shareholders' rights, and the stakeholder theory approach relying on parties with interests in the company (e.g., directors, customers, employees, suppliers), ensuring and promoting their interests (Bijoy and Mangla, 2023). However, most studies addressing corporate governance content tend to subscribe to traditional governance characteristics like accountability (Mayasari and Asyik, 2024). Therefore, ideas discussing governance content are often based on agency theory, consistently emphasizing management's responsibility towards shareholders (Machuki and Rasowo, 2018).

The concept of corporate governance, based on regulating relationships between the Board of Directors, shareholders, and stakeholders, has evolved from various historical theories advocating mechanisms regulating intra-company relationships (Owusu and Weir, 2018). Agency theory is among the most important theories that led to establishing and adopting corporate governance mechanisms, aiming to design mechanisms governing relationships between managers who tend to consider their self-interest and those of shareholders (Thuan et al., 2025). Despite the accounting complexity accompanying agency theory application, its philosophy has become clear regarding the basic vision for its application - balancing risks and incentives among company stakeholders (Elrefae et al., 2024). Based on the governance concept derived from the ethical perspective (the art of managing a network of relationships among various stakeholders through power and responsibility division) and considering the company as a set of contractual relationships, company objectives are achieved through one or more contractual agreements (Pillai and Al-Malkawi, 2018). Therefore, evaluating goal achievement involves analyzing general characteristics of these contracts, as proposed by agency theory (Panda and Leepsa, 2017).

The legal concept of the corporate governance model emerged through the agency contract evident in a company where the agent is granted responsibilities, enabling them to make decisions and adopt procedures, allocating resources under their control to benefit themselves and stakeholders (Alkaraan et al., 2024). Thus, a challenge arises in achieving balance in the principal-agent relationship, particularly considering the agent's control over information necessary for the principal to oversee the agent's performance and guide their behavior (Jebril et al., 2024; Venugopalan, 2021).

Agency theory arose as an attempt to resolve conflicting interests by considering the company as a series of optional contracts between interested parties, aiming to limit management behavior favoring personal interests over others' interests (Thuan et al., 2025). Agency theory's importance has been highlighted due to potential conflicts between the agent and principal, prompting capital owners (the principal) to use means enabling them to monitor and ensure management's compliance with the specific mandate in the agency contract (Nguyen et al., 2020). External auditing of financial reports and designing administrative incentive systems have been advocated to address interest conflicts, linking management interests with owners' interests based on accounting profit (Bijoy and Mangla, 2023). Moreover, defining performance measurement criteria and indicators ensures owners perceive management actions as aligned with their interests, with criteria including return on invested capital, residual income, and return on sales (Qirem et al., 2023). Additionally, management should prioritize capital owners' interests and build trust by implementing measures enhancing confidence through establishing proper internal/external control systems, prudent resource management, and devising short/long-term objective-achievement plans (Soda et al., 2023).

Agency theory addresses what are known as agency conflicts or conflicts of interest between the principal and agent. These conflicts can be mitigated through corporate governance mechanisms, as the agent does not always act in the principal's interests (Chaudhary, 2022). This problem arises under conditions of information asymmetry and lack of integration between the agent and principal (Jarah et al., 2024). Governance mechanisms, whether internal or external, work to minimize business risks, distribute those risks, and align interests between managers and stakeholders by developing management strategies and supervising/overseeing them (Dian and Nova, 2020).

Corporate governance mechanisms have been developed to mitigate practices that may occur in companies due to conflicts of interest among stakeholders, as clarified below (Chaudhary, 2022; Alkaraan et al., 2024):

1. Board of Directors: Both indicate the Board of Directors as the best tool for monitoring and controlling management behavior (Venugopalan, 2021). It protects invested capital from misuse by management through its legal powers in appointing, dismissing, and rewarding senior management (Mishra and Mohanty, 2018). A strong Board actively participates in setting strategic plans, oversees implementation, evaluates results, aiding company continuity and goal achievement.
2. Audit Committee: The audit committee is a subcommittee of the Board of Directors comprised of non-executive members with suitable academic qualifications and knowledge of financial/accounting aspects, company activities, and ability to interpret reports and statements (Jarah et al., 2024).
3. Internal Controls: Internal controls play a pivotal role in ensuring compliance with laws/regulations, protecting assets, and managing risks (Mishra and Mohanty, 2018). Having appropriate internal control policies and procedures, including segregating duties, authorization controls, and monitoring, increases stakeholders' ability to hold management accountable thus enhancing data credibility (Vijayakumaran, 2019).
4. Compensation Committee: Its main tasks include ensuring independent members' continuous autonomy, establishing reward/benefit/incentive/salary policies and annually reviewing them, establishing succession planning, human resource, and training policies, monitoring implementation, and annual reviews (Vijayakumaran, 2019).
5. External Audit: The external audit process plays a pivotal role in independently verifying financial statements/records to provide an opinion on their fairness, compliance with standards, and freedom from manipulation/material misstatement,

increasing trust and reliance (Alshehadeh and Atieh, 2020).

2.2. Digital tools and governance

Artificial intelligence (AI) tools are anticipated to play an important role in governance mechanisms, risk assessment, compliance monitoring, and decision-making. These tools will help predict risks and automate repetitive tasks, ultimately increasing efficiency. AI integration in governance simplifies compliance monitoring, enables predictive risk analysis, and allows companies to identify vulnerabilities and strengthen risk management strategies proactively (Thuan et al., 2025). AI-powered solutions are poised to transform governance, risk, and compliance by streamlining compliance procedures and seamlessly integrating risk management efforts.

AI's ability to process massive amounts of data and analyze complex information provides valuable insight into corporate regulatory environments, which have a significant impact on corporate strategies and practices related to environmental, social, and governance factors. AI tools can prevent regulatory breaches, align business models with sustainability trends, and increase stakeholder engagement to achieve strategic goals (Ravšelj et al., 2022). In addition, the growing use of blockchain technology in governance guarantees tamper-proof and transparent records, which are crucial for regulatory compliance and auditing, especially in supply chain management, corporate governance, and finance. Cybersecurity and data protection are now essential components of governance, risk, and compliance strategies due to the increasing sophistication of digital threats. To avoid data breaches and adhere to changing data protection laws, businesses are putting advanced encryption methods, ongoing monitoring systems, and frequent security audits into place (Xiao et al., 2023).

Organizations will be able to proactively mitigate threats, anticipate risks, and improve their governance, risk, and compliance strategies with the help of AI-powered modeling and predictive analytics (Ravšelj et al., 2022). Furthermore, cloud computing in governance, risk, and compliance provides the adaptability to change with business requirements and regulatory frameworks, enabling safe data processing, storage, and early identification of data irregularities.

2.3. Agency contract costs

Accountants face a range of alternatives in every accounting measurement process of a company's financial event allowed by generally accepted accounting standards (Mayasari and Asyik, 2024). The use of different accounting policies may lead to financial statements with varying implications for similar financial events across companies (Moez, 2018). Therefore, financial statement users find it challenging to interpret why management (the agent) prefers or selects one accounting policy over another for similar events and the resulting impact of this choice on the qualitative characteristics of disclosed data (Vijayakumaran, 2019). Contemporary organizations can be viewed as a set of explicit and implicit agencies between parties interested in their economics, and from an accounting perspective, agency theory attempts to justify and explain why company managements (agents) choose specific accounting policies or procedures over others for similar events (Abdel-Aziz and Alrabba, 2023). This theory emerged due to rising agency costs and conflicting interests between management and owners (principal and agent) (Almahadin et al., 2022). Thus, it originated as an attempt to mitigate conflicting stakeholder interests and limit management favoring its own interests over others', in addition to reducing agency costs (Moez, 2018).

Agency theory assumes that when choosing an accounting policy for events, management proceeds with the view that managers seek to maximize expected self-benefits directly related to financial rewards, per their agreement, as an influential group on standards/principles allowing means to increase income (Nguyen et al., 2020). This policy choice flexibility allows management to exploit it to influence statements to present a certain direction, achieving specific self-benefiting objectives at the expense of others (Alshehadeh et al., 2022).

One key principal-agent relationship challenge is agency costs - costs incurred by the principal to ensure the agent acts in their best interest. Agency costs arise from information asymmetry, divergent incentives, and agent opportunistic behavior. Agency theory entails the following classification of costs for contract parties:

- Monitoring Costs: Shareholders incur costs to secure supervision over managers' activities, ensuring actions do not serve personal interests, and revealing possibilities of misconduct. Examples include Board, audit, evaluation costs, sacrificed to limit opportunistic behavior and prevent agent benefit from contract flaws (Nguyen et al., 2020).
- Commitment Costs: The agent incurs expenses to ensure no principal-harming actions or to compensate when necessary. To reassure prudent, non-opportunistic behavior, the agent accepts some contract costs, because assuming an opportunistic behavior-allowing environment implies engagement (Dian and Nova, 2020).
- Residual Losses: The residual difference in satisfaction between a non-opportunistic and opportunistic agent state, prompting costly contractual arrangements from the principal (Abdel-Aziz and Alrabba, 2023).

The asset turnover ratio (sales/assets) measures agency cost by assessing investment decision effectiveness and asset productivity directing ability. Low ratios indicate high costs from non-ideal decisions or non-income-generating asset purchases (Chaudhary, 2022).

2.4. Sustainable growth

Financial growth indicators for companies are valuable because they combine financial returns (net profit margin and asset utilization efficiency) and non-financial returns on a unified and comprehensive scale (Alshehadeh et al., 2023a). Sustainable financial growth rate importance stems from investors' use to measure and assess future growth plans compared to current performance (Carp et al., 2020). Companies employ resources efficiently to achieve good returns, enabling market survival (Moussa and Elmarzouky, 2024). The more profits, the more shareholder wealth is maximized through distributing a portion of returns to shareholders, while the rest stimulates investment. But how can shareholders and stakeholders know long-term return growth rates? (Rahim, 2017). Mentioned below are two sustainable growth gap judgment indicators:

1. Actual Growth Rate (ARG): The actual growth rate is the maximum company growth without external financing, relying on internal funding in the absence of necessary needs and ability to expand without external financing, i.e., decreased financial leverage. Ghardallou (2022) pointed out that determining the internal growth and external financing relationship by first determining the actual growth rate through:

$$ARG = \frac{Retained\ earnings\ ratio\ \times\ Return\ on\ equity}{(1\ -\ Retained\ earnings\ ratio\ \times\ Return\ on\ equity)}$$

2. Sustainable Growth Rate (SGR): Sustainability refers to indefinitely maintaining certain behavior (Carp et al., 2020). Corporate sustainability means achieving long-term strategic objectives. Financial sustainability expresses maintaining return on equity and profitability long-term and providing sufficient capital to support operations (Ghardallou, 2022). Financial sustainability means providing sufficient liquidity to face crises, avoiding bankruptcy, and increasing expense coverage ability (Oudat et al., 2019). Xu and Wang (2018) proposed the maximum sales growth while maintaining financial policies as the sustainable growth rate. It helps managers balance operational performance and financial policy. It is the sales growth maintainable through generated sales without additional financing, i.e., the maximum maintainable growth without additional equity or policy change. It provides managers and investors with insight into sustainability and competitive success. The sustainable growth rate is the maximum rate achievable considering the debt-to-equity ratio, maintaining financing policy, and avoiding stock issuance external financing (Chaudhary, 2022). It combines operational activities, such as profit and asset efficiency, with financing, such as capital structure and profit retention (Alshehadeh et al., 2023b; Xu and Wang, 2018). The sustainable growth rate describes optimal financial growth assuming a framework with clear conditions and constraints. It evaluates creditworthiness. Comparing actual and sustainable rates helps us understand external financing needs, reasons, and extent. It allows analysts and investors to know the maximum external financing-free growth rate.

3. Methodology

3.1. Study population

The study population consists of all industrial companies listed on the Amman Stock Exchange, totaling 53 companies; thus, the population equals the sample.

3.2. Data collection method

The descriptive-analytical method was used, which is suitable for the nature of this study. This method relies on collecting, describing, and analyzing data by examining the financial statements of industrial companies listed on the Amman Stock Exchange during the period (2018-2022), reflecting the most recent timeframe available for analyzing the study variables, comprising 265 observations distributed across various sectors of these companies. The data was obtained from the Amman Stock Exchange website and the financial statements of these companies. Appropriate statistical methods were used to analyze the data through simple and multiple regression analysis, to identify the impact of governance mechanisms on agency costs reduction and their impact on the sustainable growth of industrial companies listed on the Amman Stock Exchange.

3.3. Study variables

3.3.1. Independent variable

Governance Mechanisms include the following items (Mishra and Mohanty, 2018):

1. Board Size (SB): The Board of Directors should consist of between 6 and 15 members according to the Jordanian Companies Law of 1997. If this condition is met, the value is given (1); otherwise, the value is given (0). This variable was used in the study by Gogineni et al. (2022), Chaudhary (2022), and Owusu and Weir (2018).
2. Audit Committee (AC): This variable was measured by relying on the presence of at least one person within the internal audit team holding a professional certificate, such as (JCPA), (CPA), (CIA). A value of (1) is given if a member holds one of these certificates or any other professional

certificate; otherwise, a value of (0) is given. This variable was used in the study by Gogineni et al. (2022).

3. Managerial Compensation (CM): It was measured by giving a value of 1 to companies that provide annual bonuses to Board members and a value of 0 to companies that do not provide any bonuses to managers. This variable was used in the study by Owusu and Weir (2018).
4. Internal Audit (IA): This variable was measured by relying on the presence of at least one person within the internal audit team holding a professional certificate, such as (JCPA), (CPA), (CIA). A value of (1) is given if a member holds one of these certificates or any other professional certificate; otherwise, a value of (0) is given. This variable was used in the study by Owusu and Weir (2018).
5. External Audit (EA): This variable was measured by relying on the presence of at least one person within the external audit team holding a professional certificate, such as (JCPA), (CPA), (CIA). A value of (1) is given if a member holds one of these certificates or any other professional certificate; otherwise, a value of (0) is given. This variable was used in the study by Mishra and Mohanty (2018).

3.3.2. Mediating variable

Agency Costs: Measured using the following equation (Owusu and Weir, 2018):

$$Asset\ Turnover\ Rate = \frac{Annual\ Sales}{Total\ Assets}$$

3.3.3. Dependent variable

Sustainable Growth (SG) (Rahim, 2017):

1. Actual Growth Rate (AGR): It was measured using the following formula:

$$ARG = \frac{Retained\ earnings\ ratio \times Return\ on\ equity}{(1 - Retained\ earnings\ ratio \times Return\ on\ equity)}$$

2. Sustainable Growth Rate (SGR): Xu and Wang (2018) proposed its calculation according to the following equation:

$$SGR = Net\ profit\ ratio \times Asset\ turnover\ ratio \times Retention\ rate \times Equity\ multiplier$$

3.4. Study hypotheses

There are two sets of hypotheses. The first set relates to hypotheses that measure the factors influencing sustainable growth indicators in the industrial sector companies listed on the Amman Stock Exchange, while the second set relates to hypotheses measuring the impact of governance mechanisms on reducing agency costs. The study hypotheses are as follows:

H01: There is no significant impact at a level of ($\alpha \leq 0.05$) on governance mechanisms in the industrial sector companies listed on the Amman Stock Exchange on reducing their agency costs.
H02: There is no significant impact at a level of ($\alpha \leq 0.05$) on reducing agency costs in the industrial sector, companies listed on the Amman Stock Exchange, on their actual growth index.
H03: There is no significant impact at a level of ($\alpha \leq 0.05$) for reducing agency costs in the industrial sector companies listed on the Amman Stock Exchange on their sustainable growth index.
H04: There is no significant impact at a level of ($\alpha \leq 0.05$) for governance mechanisms in the industrial sector companies listed on the Amman Stock Exchange on their actual growth index.
H05: There is no significant impact at a level of ($\alpha \leq 0.05$) for governance mechanisms in the industrial sector companies listed on the Amman Stock Exchange on their sustainable growth index.

3.5. Study models

3.5.1. First model

Measuring the Impact of Governance Mechanisms collectively and individually on Agency Costs. The first model of the study represents governance mechanisms as an independent variable in agency costs as a dependent variable in industrial companies listed on the Amman Stock Exchange as follows:

$$Agency\ Cost = \beta_0 + \beta_1 SB + \beta_2 AC + \beta_3 CM + \beta_4 IA + \beta_5 EA + \varepsilon \quad (1)$$

3.5.2. Second model

Measuring the Impact of Agency Costs on Sustainable Growth in industrial companies listed on the Amman Stock Exchange: In this step, the effect of the mediator variable "Agency Costs" on the dependent variable, sustainable growth, in the industrial companies listed on the Amman Stock Exchange is measured according to the following two models:

$$ARG = \beta_0 + \beta_1 Agency\ Costs + \varepsilon \quad (2)$$
$$SGR = \beta_0 + \beta_1 Agency\ Costs + \varepsilon \quad (3)$$

3.5.3. Third model

Measuring the Impact of Governance Mechanisms on Sustainable Growth in Industrial Companies Listed on the Amman Stock Exchange. In this step, governance mechanisms are measured as independent variables in sustainable growth as a dependent variable in industrial companies listed on the Amman Stock Exchange, according to the following two models:

$$ARG = \beta_0 + \beta_1 ARG + \beta_2 SGR + \beta_3 CM + \beta_4 IA + \beta_5 EA + \varepsilon \quad (4)$$

$$SGR = \beta_0 + \beta_1 ARG + \beta_2 SGR + \beta_3 CM + \beta_4 IA + \beta_5 EA + \varepsilon \quad (5)$$

3.5.4. Analysis method

This study aims to examine the impact of corporate governance mechanisms, with their dimensions (Board of Directors, audit committee, compensation management, internal audit, and external audit), on reducing agency costs and their subsequent effect on sustainable growth. To achieve this objective, the study data was analyzed using descriptive statistics, in addition to multiple and simple regression analyses employing Panel Data methodology, which combines Time Series and Cross-Sectional data to estimate the study models and test their hypotheses. The utilization of Panel Data methodology offers numerous advantages, including the provision of a larger quantity of data regarding specific phenomena, increased degrees of freedom, and higher efficiency in estimating parameters. Furthermore, robust standard errors were estimated according to the Huber-White methodology to account for heteroscedasticity in the variance-covariance matrix.

4. Results

Simple and multiple linear regression analyses were utilized to test the study hypotheses. The first main hypothesis examined the effect of corporate governance mechanisms (independent variable), including the Board of Directors, audit committee, compensation committee, internal audit, and external audit, on agency costs reduction (dependent variable) using multiple linear regression. Then, simple linear regression analyses were conducted between each individual governance mechanism (independent variables) and agency costs reduction (dependent variable).

Table 1 displays the results of the multiple linear regression analysis testing the first main hypothesis. The hypothesis examines the impact of corporate governance mechanisms (Board of Directors, audit committee, compensation committee, internal audit, external audit) on reducing agency costs in industrial companies listed on the Amman Stock Exchange. The correlation coefficient R of 0.694 indicates a strong collective effect of the governance mechanisms on agency costs reduction. The R^2 value of 0.521 means that 52.1% of the variation in agency costs can be explained by the governance mechanisms variables. The F-value of 41.486 is statistically significant, p-value <0.05, meaning there is at least one significant variable in the regression model that is not equal to zero. Therefore, we can reject the null hypothesis and accept the alternative hypothesis that corporate governance mechanisms significantly impact agency costs reduction at the $\alpha \leq 0.05$ level in the sampled industrial companies. To further test this effect for each individual governance mechanism, additional simple linear regression analyses were conducted. The detailed results are presented in Table 2.

Table 1: Shows the multiple linear regression test for the first main hypothesis of the study

Dependent variable	R	R^2	F-value	P-value	Independent variable: Governance mechanisms	Beta	T-value	P-value
Agency costs	0.694	0.521	41.486	0.000	Constant	0.736	4.561	0.037
					SB	0.407	8.571	0.043
					AC	0.108	7.902	0.035
					CM	0.046	5.751	0.428
					IA	0.309	4.120	0.003
					EA	0.395	11.296	0.001

Table 2: Shows the simple linear regression test for the five sub-hypotheses of the study

Dependent variable	Independent variable	R	R^2	Beta	T-value	P-value
Agency costs	SB	0.709	0.601	0.726	14.315	0.000
	AC	0.374	0.206	0.571	11.718	0.002
	CM	0.017	0.010	0.012	0.529	0.408
	IA	0.498	0.320	0.673	7.544	0.001
	EA	0.643	0.506	0.825	12.231	0.000

Table 2 shows the results of testing the five sub-hypotheses through simple linear regression analysis. The test results indicate that the correlation coefficient between the Board of Directors and agency costs is 0.709. The R^2 value is 0.601, meaning 60.1% of the variation in agency costs can be explained by changes in the Board of Directors. The positive beta coefficient of 0.726 suggests the Board of Directors has a positive effect on reducing agency costs. The t-value of 14.315 exceeds the critical value of 1.96, with a p-value <0.05. Therefore, we can reject the null hypothesis and accept the alternative hypothesis that the Board of Directors significantly impacts agency costs reduction at the $\alpha \leq 0.05$ level for industrial companies listed on the Amman Stock Exchange. The test results also show the audit committee has a positive correlation of 0.374 with agency costs and an R^2 of 0.206, indicating 20.6% explanatory power over agency costs. The positive beta of 0.571, combined with the significant t-value of 11.718 and p-value of 0.002, provides evidence to reject the null hypothesis and accept the alternative that the audit committee significantly affects agency costs reduction at the $\alpha \leq 0.05$ level.

However, the compensation committee has an insignificant correlation of 0.017 with agency costs, R^2 of 0.010, and p-value of 0.408 above the 0.05 significance level. Therefore, we cannot reject the null hypothesis that the compensation committee has no significant impact on agency costs. In contrast, the internal audit has a 0.498 correlation, 0.320 R^2 value, significant t-value of 7.544, and p-value of 0.001. Hence, the internal audit significantly impacts agency cost reduction at the $\alpha \leq 0.05$ level. Similarly, the external audit indicates a strong 0.643 correlation, 0.506 R^2, and significant t and p-values, allowing rejection of the null hypothesis. To test the secondary hypothesis on the effect of reducing agency costs on actual growth rate, a simple linear regression analysis was conducted (Table 3).

Table 3: Shows the simple linear regression test for the second main hypothesis of the study

Dependent variable	R	R²	F-value	P-value	Mediating variables	Beta	T-value	P-value
ARG	0.229	0. 106	22.173	0.000	Constant:	0.578	8.026	0.003
					Agency costs	0.862	7.183	0.002

Table 3 shows the results of the simple linear regression analysis testing the second main hypothesis. The hypothesis examines the impact of reducing agency costs on the actual growth rate of industrial companies listed on the Amman Stock Exchange. The correlation coefficient R is 0.229, indicating an effect of the agency costs variable on the actual growth rate. The R^2 value is 0.106. This means 10.6% of the variation in the actual growth rate can be explained by changes in agency costs. The calculated F-value is 22.173 with a p-value of 0.002. Since the p-value is less than 0.05, the regression model is statistically significant. Therefore, we can reject the null hypothesis and accept the alternative hypothesis: Reducing agency costs has a significant positive effect on the actual growth rate of industrial companies at the $\alpha \leq 0.05$ level.

To test the third main hypothesis on the impact of reducing agency costs on sustainable growth rate, a simple linear regression analysis was conducted with agency costs as the independent variable and sustainable growth rate as the dependent variable (Table 4).

Table 4: Shows the simple linear regression test for the third main hypothesis of the study

Dependent variable	R	R²	F-value	P-value	Mediating variables	Beta	T-value	P-value
SGR	0.282	0.138	29.183	0.000	Constant:	0.564	5.071	0.000
					Agency costs	0.764	9.534	0.000

Table 4 shows the results of the multiple linear regression analysis testing the fourth main hypothesis. The hypothesis examines the effect of governance mechanisms in industrial companies listed on the Amman Stock Exchange on their actual growth rate. The computed F-value is 29.183 with a p-value of 0.000. Since the p-value is less than 0.05, the regression model is statistically significant, meaning the regression equation is not equal to zero. This allows us to reject the null hypothesis; therefore, there is a statistically significant positive effect of governance mechanisms on the actual growth rate of industrial companies listed on the Amman Stock Exchange. To test this hypothesis, a multiple linear regression analysis was conducted with governance mechanisms as the independent variable and actual growth rate as the dependent variable (Table 5).

Table 5: Illustrates the multiple linear regression test for the fourth main hypothesis

Dependent variable	R	R	F-value	P-value	P-value	Beta	T-value	P-value
ARG	0.318	0.212	36.576	0.000	Constant	0.957	9.053	0.011
					SB	0.543	12.364	0.003
					AC	0.006	8.564	0.735
					CM	0.024	5.845	0.526
					IA	0.437	11.542	0.000
					EA	0.346	10.243	0.002

Table 5 shows the results of testing the fourth main hypothesis through multiple linear regression analysis. The test results indicate that the correlation coefficient between the governance mechanisms variables and the actual growth rate is 0.318, with an R-squared value (R^2) of 0.212. This means that 21.2% of the variance in the actual growth rate can be explained by the governance mechanisms variables. The positive beta coefficients signify that combined governance mechanisms have a positive effect on the actual growth rate of industrial companies listed on the Amman Stock Exchange. The computed F-value is 36.576 with a p-value of 0.000, meaning the overall regression model is statistically significant. Since the p-value is less than 0.05, we can reject the null hypothesis; therefore, there is a statistically significant positive effect of governance mechanisms on the actual growth indicators of industrial companies listed on the Amman Stock Exchange. To test the fifth main hypothesis on the effect of governance mechanisms on sustainable growth rate, a multiple linear regression analysis was conducted with governance mechanisms as the independent variable and sustainable growth rate as the dependent variable (Table 6).

Table 6 indicates testing of the fourth main hypothesis through multiple linear regression analysis. The test results show a correlation coefficient between the governance mechanisms and sustainable growth rate variables of 0.396, with an R^2 of 0.234. This value indicates that 23.4% of the variance in the dependent variable is explained by the independent variables. The positive beta regression coefficients indicate a positive effect of combined governance mechanisms in industrial companies listed on the Amman Stock Exchange on the sustainable growth rate. The computed F-value was 41.362, with a probability value of 0.000. This indicates the regression model is statistically significant, as the regression equation does not equal zero, and there is at least one statistically significant variable. Therefore, the null hypothesis can be rejected, and there is a statistically significant effect on the (α ≤ 0.05) level of governance mechanisms in industrial companies listed on the Amman Stock Exchange on their sustainable growth indicators.

Table 6: Illustrates the multiple linear regression test for the fifth main hypothesis

Dependent variable	R	R^2	F-value	P-value	Independent variable: Governance	Beta	T-value	P-value
SGR	0.396	0.234	41.362	0.000	Constant	0.826	11.186	0.000
					SB	0.479	13.834	0.003
					AC	0.019	9.386	0.648
					CM	0.007	12.345	0.927
					IA	0.309	8.946	0.002
					EA	0.376	11.682	0.002

5. Discussion

The researchers acknowledge that this study's findings have several inherent limitations that must be considered when comparing its results with previous studies conducted in Arab and other environments. One of the primary limitations is the variation in the degree and level of implementing governance mechanisms and their impact on agency costs across companies. The application of these mechanisms differs from one company to another, from sector to sector, and from country to country. Furthermore, the temporal context of the study may have influenced its results, particularly since part of the study data encompasses the companies' performance during the COVID-19 period.

In our assessment, these limitations do not diminish the significance of the study's findings within the context and circumstances in which it was conducted. The study's importance stems from its exploration of a vital topic for all companies being examined in the Jordanian environment. The objective of the implementation of corporate governance mechanisms influences numerous organizational, administrative, and financial aspects, particularly in enhancing companies' financial growth by contributing to improved earnings transparency. Additionally, it helps reduce risks, build trust with shareholders, and protect their investments from losses due to management's misuse of authority.

The study's significance is further demonstrated through its focus on contemporary accounting and financial issues that constitute the backbone of corporate activity in the Jordanian environment, such as sustainable financial growth, governance mechanisms, and agency costs. This study measured the impact of governance mechanisms on reducing agency costs and their combined effect on sustainable financial growth. Based on this study's findings, there is a clear necessity for a regulatory system to govern corporate operations and moderate opportunistic management behavior. This necessity justifies the existence of corporate governance and its sound implementation as a mechanism to mitigate conflicts of interest between agency contract parties and control associated costs. Governance mechanisms, such as internal and external audit controls, the Board of Directors, the audit committee, and others, play a crucial role in limiting agency costs.

The Board of Directors frequently proves to be the most effective instrument for monitoring opportunistic management behavior, as it protects the company's invested capital from potential misuse by executive management through its legal authorities. The audit committee serves as a fundamental supervisory mechanism over executive management behavior, effectively limiting some of the CEO's powers and authority. It assists the Board of Directors in effectively executing their responsibilities and plays a vital role in reducing agency costs through its enhancement of reliability and transparency characteristics in disclosed financial information. This is achieved through the audit committee's review of the financial reporting process, internal and external audit operations, and assessment of corporate compliance with established and Board-approved corporate governance rules and principles. The committee's oversight encompasses the comprehensive review of financial reporting processes, internal and external auditing operations, and monitoring companies' adherence to prescribed corporate governance principles and regulations as stipulated and agreed upon by the Board of Directors.

This study's findings will constitute a serious scientific and knowledge-based contribution to the current debate in literature regarding the impact of governance mechanisms on reducing agency costs, and their subsequent effect on sustainable financial growth in the industrial company sector listed on the Amman Stock Exchange. There are varying and sometimes conflicting results in previous studies concerning the relationship and role of governance mechanisms in reducing agency costs and their impact on financial performance, particularly sustainable financial growth. Numerous studies in both Arab and foreign environments have partially addressed some parameters of the current study, with variations in methodology and variables. Among these studies, Venugopalan (2021) confirmed that corporate governance mechanisms differ from one company to another depending on the company's growth opportunities. They found that under information asymmetry between management and owners, rapidly growing companies experience more agency problems than slow-growing companies.

Mohamed and Atheru (2017) confirmed a significant influence of implementing corporate governance mechanisms and achieving strategic performance. Conversely, Al-Omari et al. (2024) and Mishra and Mohanty (2018) found no impact between Board size, directors' ownership percentage, and agency costs, while identifying an inverse relationship between the separation of duties, administrative compensation, company size, and agency costs.

Mayasari and Asyik (2024) discovered a negative relationship between free cash flow and agency costs, indicating that free cash flow reduces agency costs. They also found a negative relationship between agency costs and company performance, and a positive effect of free cash flows on company value. Onchieku (2021) concluded that sound corporate governance practices provide improvement and mitigation of agency problems inherent in management, thereby maximizing shareholder wealth.

In the same context Vijayakumaran (2019) identified an inverse relationship between debt financing levels and agency costs, noting that agency costs increase in companies with larger Board sizes and decrease with smaller Boards. Administrative compensation was found to have an inverse relationship with agency costs, while no relationship was found between institutional ownership and agency costs. Owusu and Weir (2018) demonstrated a strong positive relationship between the asset utilization ratio and the meetings of the Board of Directors and its committees. Conversely, they identified negative relationships between the asset utilization ratio and Board size, major shareholders, and the duality of the CEO and Board Chairman positions.

The findings of Moez (2018) revealed that agency costs decrease with increases in both managerial ownership and institutional ownership, and that smaller Board sizes contribute more effectively to reducing agency costs. Their results also showed a positive relationship between Board independence and the asset utilization ratio. Furthermore, they found that separating the positions of CEO and Board Chairman, along with increasing administrative compensation, contributes to reducing agency costs.

From the preceding results, we observe the impact of corporate governance mechanisms in mitigating the problems that generally arise between the agent and principal. The conflicts of interest between agent and principal can be alleviated through the implementation of corporate governance mechanisms. This is particularly significant since the agent does not always work to achieve the principal's interests, a problem that occurs under conditions of information asymmetry and incompleteness between agent and principal.

The study affirms that governance mechanisms possess effective capability in limiting opportunistic management behavior and reducing conflicts of interest between principal and agent, thereby decreasing agency costs. These mechanisms serve as crucial controls in ensuring alignment between management actions and shareholder interests, ultimately contributing to more effective corporate oversight and reduced agency costs.

6. Conclusion

Previous studies' findings indicate that improvement in corporate governance quality indicators is a global phenomenon, with decreasing cross-country variations in the quality of corporate governance mechanism implementation. Historical governance studies have identified numerous mechanisms that can be employed to implement corporate governance in ways that help institutions reduce agency costs. Effective implementation of governance mechanisms requires integration among their various components, which are used to address agency problems that arise between management and shareholders in general, and between minority and controlling majority shareholders.

The fundamental strategy of governance mechanisms lies in ensuring that minority shareholders' rights are not violated and in monitoring Directors' performance, replacing them when performance is inadequate, thereby limiting agency costs. Based on these considerations, it is essential to encourage companies to improve their implementation of corporate governance mechanisms through the creation of a regulatory, legislative, and supervisory environment that compels industrial companies listed on the Amman Stock Exchange to properly and comprehensively implement corporate governance mechanisms.

This implementation has a positive effect on reducing agency costs, which in turn reflects positively on raising the level of sustainable growth and market value of companies. It also helps companies avoid financial crises through the establishment of performance standards that strengthen these companies' economic foundations in the Amman Stock Exchange and expose instances of manipulation, corruption, and mismanagement. This leads to gaining stakeholder trust and consequently achieving economic progress and sustainable financial growth for these companies.

List of abbreviations

AC	Audit committee
AGR	Actual growth rate
AI	Artificial intelligence
ARG	Actual growth rate
ASE	Amman Stock Exchange
CEO	Chief executive officer
CIA	Certified internal auditor
CM	Compensation management
EA	External audit
IA	Internal audit
JCPA	Jordanian certified public accountant
R	Correlation coefficient
R^2	Coefficient of determination

SB Board size
SG Sustainable growth
SGR Sustainable growth rate

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Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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