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The transformative role of technology in corporate governance: A conceptual and practical perspective

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Abstract: In recent decades, technological transformation has profoundly affected the way organizations structure, lead, and oversee their strategic functions. Corporate governance, as a fundamental mechanism for maintaining a balance between the interests of shareholders, management, and other stakeholders, is undergoing a profound change as a result of technological developments. Digital technologies, including real-time communication platforms, automated reporting systems, advanced analytics, and artificial intelligence, are reshaping the way companies make strategic decisions, increasing transparency and strengthening accountability mechanisms. This paper aims to systematically analyze the strategic role of technology in the development and consolidation of corporate governance, emphasizing its impact on board structures, decision-making processes, transparency, and internal control. Through a theoretical and analytical approach, the paper reviews relevant literature and contemporary models of corporate governance in the context of digital transformation. It also addresses the challenges encountered in implementing technology in corporate environments, such as cybersecurity, data protection, legal regulation, and the lack of digital skills at leadership levels. The expected results of the study highlight that technology is not just an auxiliary instrument but a strategic factor that can strengthen corporate governance mechanisms, increase trust between stakeholders, and contribute to the sustainable growth of organizations. The paper concludes with practical recommendations for the more effective integration of digital technologies into corporate governance structures, based on international best practices.

Keywords: *Artificial intelligence, Board of directors, Corporate governance, Cybersecurity, Digital technology, Transparency and accountability.*

1. Introduction

This research examines the role and impact of technology on the structure of the corporate governance function, which is essential for understanding how corporations operate and make decisions in a changing technological environment. The use of information and communication technology has brought about significant changes, increasing transparency, shareholder involvement, and the ability of the board of directors to make informed decisions. This has created a more trustworthy and efficient environment for corporations, but has also brought new challenges regarding information security and the ethical use of technology.

1.1. Purpose of the Research

This research paper aims to analyze and explain the role and impact of technology on the structure of the corporate governance function. By identifying the challenges and opportunities presented by this technological transformation, the aim is to contribute to the knowledge and discourse on corporate

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governance and to offer new perspectives on corporate practices and policies in a changing business environment.

1.2. Hypotheses

H_1: Increased use of information technology in corporate governance will lead to increased transparency and efficiency of decision-making processes.

H_2: Changes in corporate governance structure to accommodate technology will bring new challenges and the need for revision of corporate policies and procedures.

1.3. Research Methodology

Qualitative and quantitative methods were used to prepare this research paper. During the drafting of the paper, the methods used include the study of existing documentation and information, interviews, partner analysis, sustainability, technology, and performance evaluation. The study will use a quantitative methodology and will support the research through a questionnaire. The research will focus on the relevant literature on corporate governance and technology. Secondary sources used are research data conducted in the field of corporate governance, such as books, articles, magazines, internationally recognized and prestigious, as well as statistical data from credible institutions.

2. Basic Concepts of Corporate Governance and Technology

Corporate governance is a concept used to describe the structure and management practices of a corporation. Consistency and transparency in the corporation's relationships with shareholders, the board of directors, management, and other stakeholders are essential to its functioning. Corporate governance aims to ensure responsibility and accountability in the management of the corporation, using various instruments and processes to monitor and direct corporate activity [1, 2].

Technology, on the other hand, represents a critical part of today's corporate life. Technology is a crucial factor in the development and functioning of corporations in the digital age. The use of information and communication technology has fundamentally changed the way corporations operate and make decisions. It includes every aspect of the use of techniques and devices to improve or automate information and communication processes within an organization [3]. In this context, technology has changed the way corporations operate and make decisions. The use of digital tools has facilitated transparency, communication, and stakeholder involvement in decision-making processes [4].

2.1. The Connection Between Corporate Governance and Technology

The relationship between corporate governance and technology is deep and complex, having a major impact on how corporations operate and make decisions in an increasingly digitalized business environment. Investments in information technology are also influenced by corporate governance. Kim and McLeod [5] found that good corporate governance has a positive impact on information technology investment decisions. Chen et al. [6] also note that corporate governance is a key factor influencing levels of investment in information technology.

The connection between corporate governance and technology is essential to a company's performance and sustainability. Here are some ways in which technology and corporate governance influence each other:

Transparency and accountability: Technology can be used to increase transparency in corporate processes and ensure their sustainability. The use of performance management software, for example, can provide a clear picture for shareholders and help in better accountability of company performance.

Effective communication with shareholders: Technology offers multiple channels for communicating with shareholders and ensuring that they are informed about developments in the company. Social platforms, websites, and mobile applications are just some of the tools that can be used for this purpose.

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Developing a sustainable culture: Technology can be used to monitor and report on the environmental and social impact of a company's activities. Sustainable performance monitoring systems and real-time data reporting can help improve corporate governance in this regard.

Data security and privacy: Corporate governance also includes data security and privacy. Technology is essential to protect company data and shareholder interests from cyber threats and security breaches [7].

3. The Role of Technology in Corporate Governance

Even as the internet connected the world, bridging distances for people and businesses, the roles of corporations remained largely unchanged. Shareholders' meetings have continued to be held once a year. Their job is still to elect company directors and approve mergers, acquisitions, and other major transactions (and, in certain jurisdictions, to vote on financial statements and dividend distributions). Although the Internet has made it easier to share information and communicate over long distances, shareholders of public corporations have not begun to meet more frequently or become more involved in corporate affairs. While technically feasible, virtual shareholder meetings are rare. What has changed most is perhaps the way corporations disseminate information to the market, both in preparation for the annual general meeting and during the financial year. Information is now available on company websites and in publicly accessible databases [8], with the result that, at least for public corporations, shareholders have easy access to all relevant documents. However, digital tools have not completely replaced paper-based correspondence, and legislators have not really encouraged the exact replication of shareholder meetings on virtual platforms, with some recent notable exceptions due to the COVID-19 pandemic.

The same is true of the role of directors and managers. While internal communications and audit systems have become increasingly digital, key supervisory and managerial functions have been retained. The board of directors plays a monitoring and policy-making role vis-à-vis the company's executives, who are instead responsible for the day-to-day management of the business. Although remote participation in board meetings has become routine, these gatherings continue to be held physically in many cases. Importantly, face-to-face meetings and telephone conversations are still very common forms of private engagement between a company and its institutional investors or controlling shareholders, despite the increased availability of digital tools.

The impact of twentieth-century technologies on corporations has included a substantial, yet not fully developed, digitalization of procedures and communications. However, this shift has not affected the roles and responsibilities of corporate bodies. Shareholders, directors, and managers continue to perform their traditional functions, aided by faster connections and more accessible information. The primary reason for this is that twentieth-century technologies primarily provided more efficient methods of performing existing tasks, without reducing directors' dependence on managerial inputs and information or enabling effective shareholder empowerment. For example, these technologies have not eliminated information asymmetries. Corporate management retains the power to decide what to disclose, to whom, and when, although it can do so through faster and more efficient means of communication. Similarly, twentieth-century technologies facilitated virtual shareholder meetings and increased shareholder participation, but they have not provided sufficiently secure voting procedures and have only slightly reduced the collective costs of decision-making. Identifying, coordinating, and voting shareholders remains laborious, and collecting and processing information continues to be a costly endeavor for many investors. This article argues that recent technological innovations differ significantly; while often analyzed and discussed in isolation, they build on each other to reshape the roles and functions of corporate governance. Recent research has typically addressed either how big data, algorithms, and artificial intelligence influence managerial decisions or how blockchains and smart contracts can be used to make shareholder meetings more efficient. Clearly, since artificial intelligence and algorithms, often working on big data, are decision-making tools, their most immediate application is in those areas of corporations directors, officers, and managers who typically make decisions.

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Similarly, since blockchains are distributed ledgers on which computer programs can execute transactions (so-called "smart contracts"), their most immediate use is in identifying shareholders at corporate meetings, recording share transfers, and administering voting procedures. However, looking at the impact of each new technological tool in isolation risks missing the big picture, as these technologies interact with and intertwine [9], potentially reshaping existing corporate roles and functions. Before delving into the factors that should be used to determine who should be at the helm of a given decision within the corporation and how new technologies can affect this delicate balance, this section describes the major technological innovations of recent decades to shed light on the unique features that make them suitable for application in business organizations and governance.

3.1. The Impact of Technology on Corporate Governance Transparency

Technology has profoundly changed the way corporate governance is conducted and communicated. In this subsection, we will shed light on the ways in which technology has impacted the transparency of corporate governance and how it has made information more accessible to all interested participants. One of the most notable changes is the accessibility of information. Advances in digital platforms and corporate applications have made financial reports, board meeting documentation, and other governance data easier to find and access [10]. Shareholders, investors, and other stakeholders are able to more easily view and review the data needed to make informed decisions.

Another important aspect is the transparency of processes. Similarly, technology has increased transparency in how decisions are made and how corporations are operated. The use of collaboration platforms and corporate social networks has made information flow more freely between all participants, reducing the space for any hidden or manipulated information [11].

Technology has also driven the growth of accountability and corporate governance reporting. By automating processes and using data analytics, corporations can prepare more detailed and reliable reports on their financial and operational performance [12]. This creates a more trustworthy and transparent environment for all participants.

Ultimately, the impact of technology on the transparency of corporate governance is evident in the way information is shared, processes are governed, and reporting is prepared. In a world where information is power, technology has made corporate governance more open and transparent than ever before [13].

3.2. Descriptive Analysis

Table 1.
Frequency and percentage distribution of respondents according to gender.

1. Gender?					
		Frequency	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
Valid	Woman	43	47.3	47.3	47.3
	Male	48	52.7	52.7	100
	Total	91	100	100	

The table shows the results of a questionnaire that asked about the gender of the participants. The interpretation of the table remains the same:

The table shows that there are 48 male individuals (52.7%) and 43 female individuals (47.3%). This indicates that there are more male individuals than female individuals in the studied group.

Valid percentage: Valid percentage represents the percentage of each gender category in relation to the total number of individuals. Here, it shows that 52.7% of all individuals are male and 47.3% are female.

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Table 2.
Descriptive analysis of respondents by age.

2. Age?					
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Under 20 years old	14	15.4	15.4	15.4
	21-30 years old	39	42.9	42.9	58.2
	31-40 years old	18	19.8	19.8	78.0
	41-50 years old	11	12.1	12.1	90.1
	51-60 years old	6	6.6	6.6	96.7
	Over 60 years old	3	3.3	3.3	100.0
	Total	91	100.0	100.0	

The table displays the results of a questionnaire regarding the age of the participants. Here is some information that can be extracted from the table:
The total number of participants in the questionnaire is 91.
Under 20 years old: 15.4% of participants (14 participants) are under 20 years old.
21-30 years old: 42.9% of participants (39 participants) are between the ages of 21-30.
31-40 years old: 19.8% of participants (18 participants) are between the ages of 31-40.
41-50 years old: 12.1% of participants (11 participants) are between the ages of 41-50.
51-60 years old: 6.6% of participants (6 participants) are between the ages of 51-60.
Over 60 years old: 3.3% of participants (3 participants) are over 60 years old.
When the valid percentages of all age groups are combined, the result is 100%, indicating that all participants are included in the specified age groups. This is a simple interpretation of the age table.

Table 3.
Descriptive analysis of respondents by level of education.

3. What is your level of education?					
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Elementary school	6	6.6	6.6	6.6
	High school	25	27.5	27.5	34.1
	Bachelor	39	42.9	42.9	76.9
	Master	11	12.1	12.1	89.0
	Doctorate	10	11.0	11.0	100.0
	Total	91	100.0	100.0	

The total number of participants in the questionnaire is 91.

The level of education "Primary school" has 6 participants, which constitutes 6.6% of the total participants. The level of education "High school" has 25 participants, which constitutes 27.5% of the total participants. The level of education "Bachelor" has 39 participants, which constitutes 42.9% of the total participants. The level of education "Master" has 11 participants, which constitutes 12.1% of the total participants. The level of education "Doctorate" has 11 participants, which constitutes 11% of the total participants.

When the valid percentages of all education levels are combined, the result is 100%, indicating that all participants are classified within one of the specified education levels.

Table 4.
Descriptive analysis of respondents by marital status.

4. Marital status?					
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Married	38	41.8	41.8	41.8
	Single	53	58.2	58.2	100.0
	Total	91	100.0	100.0	

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The table shows that 38 participants (41.8%) declared that they are married, while 53 participants (58.2%) declared that they are single.

Table 5.
Descriptive analysis of respondents by profession.

5. What is your profession?					
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Public sector employee	18	19.8	19.8	19.8
	Private sector employee	28	30.8	30.8	50.5
	Entrepreneurial	5	5.5	5.5	56.0
	Student	32	35.2	35.2	91.2
	commercial	4	4.4	4.4	95.6
	Unemployed	4	4.4	4.4	100.0
	Total	91	100.0	100.0	

The frequencies and percentages for the occupation in the table are as follows:

18 participants have the profession "Public sector employee," representing 19.8% of the total participants. 28 participants have the profession "Private sector employee," representing 30.8% of the total participants. 5 participants have the profession "Entrepreneur," representing 5.5% of the total participants. 32 participants are students, representing 35.2% of the total participants. 4 participants have the profession "Tradesman," representing 4.4% of the total participants. 4 participants are unemployed, representing 4.4% of the total participants.

Table 6.
Descriptive Analysis of Respondents by Monthly Income.

6. Your monthly income?					
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	0-300 euros	24	26.4	26.4	26.4
	301-600 euros	33	36.3	36.3	62.6
	601-900 euros	16	17.6	17.6	80.2
	901-1200 euros	10	11.0	11.0	91.2
	Over 1200 euros	8	8.8	8.8	100.0
	Total	91	100.0	100.0	

The frequencies and percentages for monthly income in your table are as follows:

24 participants have a monthly income in the range of 0-300 euros, representing 26.4% of the total participants. 33 participants have a monthly income in the range of 301-600 euros, representing 36.3% of the total participants. 16 participants have a monthly income in the range of 601-900 euros, representing 17.6% of the total participants. 10 participants have a monthly income in the range of 901-1200 euros, representing 11% of the total participants. 8 participants have a monthly income over 1200 euros, representing 8.8% of the total participants.

Table 7.
Perceptions on the impact of information technology on transparency in corporate financial reports.

PIT1. The use of information technology has significantly improved transparency in corporate financial reports.					
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	I disagree entirely.	4	4.4	4.4	4.4
	I disagree.	6	6.6	6.6	11.0
	Neutral	16	17.6	17.6	28.6
	subscribe	37	40.7	40.7	69.2
	I completely agree.	28	30.8	30.8	100.0
	Total	91	100.0	100.0	

Based on the frequencies and percentages given, here is the interpretation for paragraph PIT1:

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4 participants (4.4%) strongly disagree that the use of information technology has significantly improved transparency in corporate financial reports. 6 participants (6.6%) disagree that the use of information technology has significantly improved transparency in corporate financial reports. 16 participants (17.6%) are neutral and do not have a clear opinion on whether the use of information technology has significantly improved transparency in corporate financial reports. 37 participants (40.7%) agree that the use of information technology has significantly improved transparency in corporate financial reports. 28 participants (30.8%) strongly agree that the use of information technology has significantly improved transparency in corporate financial reports.

This indicates that most participants agreed with the statement that the use of information technology has significantly improved transparency in corporate financial reports.

Table 8.
Perceptions on the role of technology in reducing decision-making time in corporations.

PIT2 . Technology has reduced the time needed to make strategic decisions in corporations.					
		Frequency	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
Valid	I disagree entirely.	2	2.2	2.2	2.2
	I disagree.	10	11.0	11.0	13.2
	Neutral	10	11.0	11.0	24.2
	subscribe	37	40.7	40.7	64.8
	I completely agree.	32	35.2	35.2	100.0
	Total	91	100.0	100.0	

Based on the frequencies and percentages given, here is the interpretation for paragraph PIT2:

2 participants (2.2%) strongly disagree that technology has reduced the time needed to make strategic decisions in corporations. 10 participants (11%) disagree that technology has reduced the time needed to make strategic decisions in corporations. 10 participants (11%) are neutral and do not have a clear opinion on whether technology has reduced the time needed to make strategic decisions in corporations. 37 participants (40.7%) agree that technology has reduced the time needed to make strategic decisions in corporations. 32 participants (35.2%) strongly agree that technology has reduced the time needed to make strategic decisions in corporations.

This indicates that most participants agreed with the statement that technology has reduced the time needed to make strategic decisions in corporations.

Table 9.
Perceptions on the impact of advanced IT systems on the efficiency of the internal audit process.

PIT3. Advanced IT systems have significantly increased the efficiency of the internal audit process.					
		Frequency	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
Valid	I disagree entirely.	3	3.3	3.3	3.3
	I disagree.	10	11.0	11.0	14.3
	Neutral	7	7.7	7.7	22.0
	subscribe	40	44.0	44.0	65.9
	I completely agree.	31	34.1	34.1	100.0
	Total	91	100.0	100.0	

Based on the frequencies and percentages given, here is the interpretation for paragraph PIT3:

3 participants (3.3%) strongly disagree that advanced IT systems have significantly increased the efficiency of the internal audit process. 10 participants (11%) disagree that advanced IT systems have significantly increased the efficiency of the internal audit process. 7 participants (7.7%) are neutral and do not have a clear opinion on whether advanced IT systems have significantly increased the efficiency of the internal audit process. 40 participants (44%) agree that advanced IT systems have significantly increased the efficiency of the internal audit process. 31 participants (34.1%) strongly agree that advanced IT systems have significantly increased the efficiency of the internal audit process.

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This indicates that most participants agreed with the statement that advanced IT systems have significantly increased the efficiency of the internal audit process.

Table 10.
Perceptions on the role of technology in enhancing access to accurate and real-time data for boards of directors.

PIT4 . Technology has improved access to accurate and real-time data for boards of directors.					
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	I disagree entirely.	2	2.2	2.2	2.2
	I disagree.	9	9.9	9.9	12.1
	Neutral	16	17.6	17.6	29.7
	subscribe	24	26.4	26.4	56.0
	I completely agree.	40	44.0	44.0	100.0
	Total	91	100.0	100.0	

Based on the frequencies and percentages given, here is the interpretation for paragraph PIT4:

2 participants (2.2%) strongly disagree that technology has improved access to accurate and real-time data for boards. 9 participants (9.9%) disagree that technology has improved access to accurate and real-time data for boards. 16 participants (17.6%) are neutral and do not have a clear opinion on whether technology has improved access to accurate and real-time data for boards. 24 participants (26.4%) agree that technology has improved access to accurate and real-time data for boards. 40 participants (44%) strongly agree that technology has improved access to accurate and real-time data for boards.

Table 11.
Perceptions on the impact of analytical software on identifying and resolving operational problems.

NSQK1 . The implementation of new technologies requires significant changes in information security policies.					
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	I disagree entirely.	2	2.2	2.2	2.2
	I disagree.	7	7.7	7.7	9.9
	Neutral	11	12.1	12.1	22
	subscribe	31	34.1	34.1	56
	I completely agree.	40	44	44	100
	Total	91	100	100	

This indicates that most participants agreed with the statement that technology has improved access to accurate and real-time data for boards of directors.

Table 12.
Perceptions on the need for changes in information security policies due to new technology implementation.

PIT5. The use of analytical software has helped identify and resolve operational problems more quickly.					
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	I disagree entirely.	5	5.5	5.5	5.5
	I disagree.	7	7.7	7.7	13.2
	Neutral	17	18.7	18.7	31.9
	subscribe	27	29.7	29.7	61.5
	I completely agree.	35	38.5	38.5	100.0
	Total	91	100.0	100.0	

Based on the frequencies and percentages given, here is the interpretation for paragraph PIT5:

5 participants (5.5%) strongly disagree that the use of analytical software has helped identify and resolve operational problems faster. 7 participants (7.7%) disagree that the use of analytical software has helped identify and resolve operational problems faster. 17 participants (18.7%) are neutral and do not have a clear opinion on whether the use of analytical software has helped identify and resolve operational problems faster. 27 participants (29.7%) agree that the use of analytical software has helped

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identify and resolve operational problems faster. 35 participants (38.5%) strongly agree that technology has improved access to accurate and real-time data for boards of directors.

This shows that most participants agreed with the statement that the use of analytical software has helped identify and resolve operational problems more quickly.

Based on the frequencies and percentages given, here is the interpretation for paragraph NSQK1:

2 participants (2.2%) strongly disagree that the implementation of new technologies requires significant changes in information security policies. 7 participants (7.7%) disagree that the implementation of new technologies requires significant changes in information security policies. 11 participants (12.1%) are neutral and do not have a clear opinion on whether the implementation of new technologies requires significant changes in information security policies. 31 participants (34.1%) agree that the implementation of new technologies requires significant changes in information security policies. 40 participants (44%) strongly agree that the implementation of new technologies requires significant changes in information security policies. This shows that the majority of participants agree with the statement that the implementation of new technologies requires significant changes in information security policies.

Table 13.
Perceptions on the need for staff training and development due to new technology incorporation.

NSQK2. The incorporation of new technology often results in the need for training and development of existing staff.					
		Frequency	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
Valid	I disagree entirely.	2	2.2	2.2	2.2
	I disagree.	7	7.7	7.7	9.9
	Neutral	18	19.8	19.8	29.7
	subscribe	36	39.6	39.6	69.2
	I completely agree.	28	30.8	30.8	100.0
	Total	91	100.0	100.0	

Based on the frequencies and percentages given, here is the interpretation for paragraph NSQK2:

2 participants (2.2%) strongly disagree that the inclusion of new technology often results in the need for training and development of existing staff. 7 participants (7.7%) disagree that the inclusion of new technology often results in the need for training and development of existing staff. 18 participants (19.8%) are neutral and do not have a clear opinion on whether the inclusion of new technology often results in the need for training and development of existing staff. 36 participants (39.6%) agree that the inclusion of new technology often results in the need for training and development of existing staff. 28 participants (30.8%) strongly agree that the inclusion of new technology often results in the need for training and development of existing staff. This shows that the majority of participants agree with the statement that the inclusion of new technology often results in the need for training and development of existing staff.

Table 14.
Perceptions on the challenges of protecting personal data due to technological changes.

NQK3 . Technological changes can create new challenges in protecting the personal data of customers and employees.					
		Frequency	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
	I disagree entirely.	3	3.3	3.3	3.3
	I disagree.	4	4.4	4.4	7.7
	Neutral	11	12.1	12.1	19.8
	subscribe	30	33.0	33.0	52.7
	I completely agree.	43	47.3	47.3	100.0
Valid	Total	91	100.0	100.0	

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Based on the frequencies and percentages given, here is the interpretation for paragraph NSQK3:

3 participants (3.3%) strongly disagree that technological changes can create new challenges in protecting the personal data of customers and employees. 4 participants (4.4%) disagree that technological changes can create new challenges in protecting the personal data of customers and employees. 11 participants (12.1%) are neutral and do not have a clear opinion on whether technological changes can create new challenges in protecting the personal data of customers and employees. 30 participants (33%) agree that technological changes can create new challenges in protecting the personal data of customers and employees. 43 participants (47.3%) strongly agree that technological changes can create new challenges in protecting the personal data of customers and employees.

This indicates that most participants agreed with the statement that technological changes can create new challenges in protecting the personal data of customers and employees.

Table 15.
Perceptions on the need to restructure decision-making processes to maximize technological advantages.

NSQK4. To take maximum advantage of technology, corporations must restructure their decision-making processes.					
		Frequency	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
Valid	I disagree entirely.	2	2.2	2.2	2.2
	I disagree.	8	8.8	8.8	11.0
	Neutral	18	19.8	19.8	30.8
	subscribe	33	36.3	36.3	67.0
	I completely agree.	30	33.0	33.0	100.0
	Total	91	100.0	100.0	

Based on the frequencies and percentages given, here is the interpretation for paragraph NSQK4:

2 participants (2.2%) strongly disagree that to get the most out of technology, corporations should restructure their decision-making processes. 8 participants (8.8%) disagree that to get the most out of technology, corporations should restructure their decision-making processes. 18 participants (19.8%) are neutral and do not have a clear opinion on whether to get the most out of technology, corporations should restructure their decision-making processes. 33 participants (36.3%) agree that to get the most out of technology, corporations should restructure their decision-making processes. 30 participants (30%) strongly agree that to get the most out of technology, corporations should restructure their decision-making processes. This shows that the majority of participants agree with the statement that to get the most out of technology, corporations should restructure their decision-making processes.

Table 16.
Perceptions on the need for continuous review of policies and procedures during technology adaptation.

NSQK5 . Technology adaptation requires a continuous review of policies and procedures to ensure compliance with legal regulations.					
		Frequency	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
Valid	I disagree entirely.	1	1.1	1.1	1.1
	I disagree.	8	8.8	8.8	9.9
	Neutral	11	12.1	12.1	22.0
	subscribe	28	30.8	30.8	52.7
	I completely agree.	43	47.3	47.3	100.0
	Total	91	100.0	100.0	

Based on the frequencies and percentages given, here is the interpretation for paragraph NSQK5:

1 participant (1.1%) strongly disagrees that technology adaptation requires a continuous review of policies and procedures to ensure compliance with legal regulations. 8 participants (8.8%) disagree that technology adaptation requires a continuous review of policies and procedures to ensure compliance with legal regulations. 11 participants (12.1%) are neutral and do not have a clear opinion on whether technology adaptation requires a continuous review of policies and procedures to ensure compliance with legal regulations. 28 participants (30.8%) agree that technology adaptation requires a continuous

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review of policies and procedures to ensure compliance with legal regulations. 43 participants (47.3%) strongly agree that technology adaptation requires a continuous review of policies and procedures to ensure compliance with legal regulations.

This indicates that most participants agreed with the statement that adapting technology requires a continuous review of policies and procedures to ensure compliance with legal regulations.

3.3. Reliability Analysis

Table 17.
Reliability analysis of the questionnaire.

Reliability Statistics	
Cronbach's Alpha	**N of Items**
0.805	10

The Reliability Analysis table summarizes the results of the reliability analysis. The Cronbach's Alpha value is 0.805, which indicates a moderate level of reliability for the research conducted, and from this, we can conclude that the questionnaire is reliable.

3.4. Validity Analysis

Table 18.
KMO and Bartlett's Test for sampling adequacy.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.697
Bartlett's Test of Sphericity	Approx. Chi-Square	159.262
	df	36
	Sig.	0.000

KMO indicates the suitability of the data set for performing factor analysis. If the KMO value is greater than 0.50 and ideally greater than 0.70, then we say that the data set is very suitable for performing factor analysis.

In our example, the KMO value 0.697 > 0.50. This indicates that the data set is suitable for factor analysis. This can also be understood from the Bartlett test, whose Sig. value is 0.000. Because this value is less than 0.05 (5%), we can conclude that the data set is appropriate for factor analysis. In other words, there are high correlations between the variables.

Table 19.
Total Variance Explained by Principal Component Analysis.

Total Variance Explained									
	Initial Eigenvalues			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
Component	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	2.963	32.918	32.918	2.963	32.918	32.918	2.141	23.793	23.793
2	1.224	13.601	46.519	1.224	13.601	46.519	1.673	18.591	42.383
3	1.138	12.644	59.163	1.138	12.644	59.163	1.510	16.780	59.163
4	0.906	10.067	69.230						
5	0.804	8.937	78.167						
6	0.666	7.405	85.572						
7	0.509	5.655	91.227						
8	0.433	4.810	96.036						
9	0.357	3.964	100.000						
Extraction Method: Principal Component Analysis.									

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In this case, there are 3 factors identified by Principal Component Analysis (PCA).

The first factor explains 32.918% of the total variation in the data, and the second factor explains 13.601% of the total variation. The third factor explains 12.644% of the total variation in the data. Together, these three factors explain 59.163% of the total variation in the data.

In terms of duration, the first factor explains more variation than the second factor, and the second factor explains more than the third factor.

Table 20.
Rotated Component Matrix of questionnaire items.

Rotated Component Matrix [a]			
	Component		
	1	**2**	**3**
PIT2. Technology has reduced the time needed to make strategic decisions in corporations.	0.713		
PIT4. Technology has improved access to accurate and real-time data for boards of directors.	0.675		
PIT1. The use of information technology has significantly improved transparency in corporate financial reports.	0.615		
PIT3. Advanced IT systems have significantly increased the efficiency of the internal audit process.	0.566		
NQK2. The incorporation of new technology often results in the need for training and development of existing staff.	0.561		
NSQK3. Technological changes may create new challenges in protecting the personal data of customers and employees.		0.823	
NSQK5. Technology adaptation requires a continuous review of policies and procedures to ensure compliance with legal regulations.		0.756	
NSQK4. To take maximum advantage of technology, corporations must restructure their decision-making processes.			0.816
NSQK1. The implementation of new technologies requires significant changes in information security policies.			0.734
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			

The table summarizes the final result of the factor analysis. Using the Varimax method, three factors were obtained. The first factor has five statements: "Technology has reduced the time needed to make strategic decisions in corporations," "Technology has improved access to accurate and real-time data for boards of directors," "The use of information technology has significantly improved transparency in corporate financial reports," "Advanced IT systems have significantly increased the efficiency of the internal audit process," and "The inclusion of new technology often results in the need for training and development of existing staff."

The second factor has statements: "Technological changes can create new challenges in protecting the personal data of customers and employees," "Adapting to technology requires a continuous review of policies and procedures to ensure compliance with legal regulations."

The third factor has two statements: "To get the most out of technology, corporations must restructure their decision-making processes," and "Implementing new technologies requires significant changes in information security policies."

One statement was removed because it had a percentage of less than 50%: "The use of analytical software has helped identify and resolve operational problems more quickly."

3.5. Regression Analysis

H_1: Increased use of information technology in corporate governance will lead to increased transparency and efficiency of decision-making processes.

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Table 21.
Regression analysis summary for the effect of information technology on transparency and efficiency of decision-making.

Model Summary [b]					
pattern	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Durbin-Watson**
1	0.527 [a]	0.278	0.269	0.55591	1.792
a. Predictors: (Constant), PIT					
b. Dependent Variable: NSQK					

Table 22.
ANOVA results for the effect of information technology on transparency and decision-making efficiency.

ANOVA [a]						
pattern		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10,569	1	10.569	34.201	.000 [b]
	Residual	27,504	89	.309		
	Total	38,073	90			
a. Dependent Variable: NSQK						
b. Predictors: (Constant), PIT						

Table 23.
Regression coefficients for the effect of information technology on transparency and decision-making efficiency.

Coefficients [a]						
		Unstandardized Coefficients		**Standardized Coefficients**		
pattern		**B**	**Std. Error**	**Beta**	**the**	**Sig.**
1	(Constant)	2.149	0.328		60552	0.000
	PIT	0.480	0.082	0.527	50848	0.000
a. Dependent Variable: NSQK						

H_2. Changes in corporate governance structure to accommodate technology will bring new challenges and the need for revision of corporate policies and procedures.

Table 24.
Regression analysis summary: Effect of organizational decision-making efficiency (NSQK) on information technology Use (PIT).

Model Summary [b]					
pattern	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Durbin-Watson**
1	0.527 [a]	0.278	0.269	0.60965	2.050
a. Predictors: (Constant), NSQK					
b. Dependent Variable: PIT					

Table 25.
Regression analysis summary for the effect of decision-making efficiency on information technology use.

ANOVA [a]						
pattern		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	12.711	1	12.711	34.201	0.000 [b]
	Residual	33.078	89	0.372		
	Total	45.790	90			
a. Dependent Variable: PIT						
b. Predictors: (Constant), NSQK						
Coefficients [a]						
		Unstandardized Coefficients		**Standardized Coefficients**		
pattern		**B**	**Std. Error**	**Beta**	**the**	**Sig.**
1	(Constant)	1.597	0.404		3.953	0.000
	NSQK	0.578	0.099	0.527	5.848	0.000
a. Dependent Variable: PIT						

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4. Conclusions and Recommendations

Technology has brought about radical changes in the way corporations operate, improving communication, transparency, and process efficiency.

The use of technology has facilitated access to and the exchange of information between managers and shareholders, making corporate governance more transparent and efficient. At the same time, it has brought new challenges, especially in the area of data security, which requires continuous efforts to ensure the protection of company information.

Overall, companies' investment in technology and digital capabilities is essential to reap the benefits of improved corporate governance. Transparency, data security, the use of automation and process monitoring, and the cultivation of a digital culture are important recommendations for companies that want to adapt to the changing technological environment and face the challenges and opportunities that come with it.

Some of the recommendations are:

- *Technological Investments*: Companies need to invest in technological infrastructure and digital capabilities to meet their governance needs.
- *Data Security*: Data security is a key aspect that requires investment in technology and policy development to protect the integrity of company information.
- *Transparency and Reporting*: Transparency and regular reporting are essential to maintain shareholder trust and build a trustworthy corporate culture.
- *Process Automation:* The use of technology to automate corporate governance processes and monitor board performance is another area that requires special attention
- *Cultivating Digital Culture*: Cultivating a digital culture, which encourages innovation and the use of technology to improve corporate governance, is essential for companies to adapt to the changing technological environment.

These recommendations aim to assist companies in using technology to improve the efficiency and effectiveness of their corporate governance in a changing technological environment.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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