Impact of Artificial Intelligence on Corporate Governance in Pakistan: A Critical Analysis

(Thesis submitted in partial fulfilment for the Award of Degree in LLM Corporate Law)

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FINAL APPROVAL

It is certified that we have read the dissertation submitted by Muhammad Sadan , REG NO. 673-FSL/LLMCL/S23 on the topic " Impact Of Artifical Intellegence on Corporate Governance : A critical Analysis*"* in the Faculty of Shariah & Law. We have evaluated the dissertation and found it up to the requirements in its scope and quality by the International Islamic University, Islamabad for award of LLM Corporate Law Degree

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DECLARATION

The undersigned hereby declares that the dissertation submitted to the Department of Law, FSL, IIUI is the original work and has not been submitted to any other University or institute for the award of any degree. All information and expressions especially presented by any other scholar has been duly referred as a token of acknowledgment.

MUHAMMAD SADAN

DEDICATION

This thesis is dedicated to all those who have guided and supported me throughout this academic journey. I dedicate this thesis to my family, especially my parents for their constant encouragement and belief in my potential and to my supervisor Dr. Zia Ur Rehman for his valuable insights and guidance throughout this journey. I would like to dedicate it to my academic mentors as well.

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CHAPTER # 1.

INTRODUCTION TO RESEARCH

Abstract

Artificial Intelligence (AI) is changing how companies are managed all over the world, including in Pakistan. This thesis examines how well Pakistan's laws support the use of AI in corporate governance and identifies the challenges that arise, such as ethical issues, accountability, data privacy, and regulation gaps. The study compares Pakistan's main corporate laws, like the Companies Act 2017 and the Electronic Transactions Ordinance 2002, with the European Union's advanced AI regulatory framework which was published on July 12, 2024, and entered into force on August 1, 2024 . The EU's Artificial Intelligence Act offers clear rules based on the risk AI systems pose, focusing on transparency, responsibility, risk management, board oversight, certification, and the involvement of multiple stakeholders.

Pakistan’s laws lack specific guidelines on AI, particularly on directors’ duties, AI transparency, and data governance. There are also challenges in judicial readiness and public participation in AI governance. Learning from the EU’s approach, this thesis recommends important changes to Pakistan’s legal system, such as amending the Companies Act to include AI responsibilities for directors, creating a national AI certification authority, offering tax incentives to firms using ethical AI, training judges and regulators on AI issues, establishing AI dispute resolution bodies, and allowing civil society to monitor AI use in companies. These reforms will help Pakistan build a transparent and accountable system for AI in corporate governance. Aligning with global standards and building local capacity will allow Pakistan to benefit from AI innovation while protecting rights and interests. This thesis guides policymakers in strengthening Pakistan’s corporate governance to thrive in the digital economy.

Thesis Statement

Artificial Intelligenceposes different challenges for Pakistan's Corporate governance, hence there is need to reevaluate the existing legal framework in Pakistan to align with technological advancements in international corporate best practices.

1.1 Introduction

Innovative developments with the potential to revolutionize entire industries and social norms are referred to as emerging technologies. These technologies include cloud computing, block chain technology, Internet of Things (IoT), and Artificial Intelligence. Artificial Intelligenceis one of them; it has drawn a lot of attention for its capacity to simulate human intellect in a variety of activities, including learning and problem-solving and language processing. Artificial Intelligence(AI) systems, like ChatGPT, show that they can produce text that sounds human and communicate with humans.[1] But with this quick change come concerns to privacy, cybersecurity, and data security, which calls for strong legislative frameworks and cautious oversight. Corporations in Europe that gather, store, and use personal data are required to be bound by the General Data Protection Regulation (GDPR). The Cybersecurity Information Sharing Act (CISA) in the US sets guidelines to make sure that private data remains safe from cyber threats. [2]

Corporate governance is impacted by Artificial Intelligence(AI) in a variety of ways, including benefits and concerns associated with it. Artificial intelligence, on the one hand, automate and simplify administrative work, improving productivity and judgement. However, because businesses rely on electronic systems for communication and data

[1] Mark Fenwick and Erik P.M. Vermeulen, "Technology and Corporate Governance: Blockchain, Crypto, and Artificial Intelligence," *SSRN Electronic Journal*, 2018, para. 1, https://doi.org/10.2139/ssrn.3263222 .

[2] "'Impact Of Technology And Digitization On Corporate Governance And Ethics,' Legal Service India, Accessed April 20, 2024, Para. 3," accessed September 8, 2025, https://www.legalserviceindia.com/legal/article-10552-impact-of-technology-and-digitization-on-corporate-governance-and-ethics.html.

storage, this integration poses serious cybersecurity threats. Because algorithms may unintentionally favor particular groups or reinforce preexisting biases, there is an increased risk of bias and discrimination as AI plays a bigger role in decision-making .[3] The collection and processing of vast amounts of personal data by AI-enabled systems raises privacy concerns as well because of the possibility of misuse or unauthorized access.[4] Companies are bound with laws against discrimination, like the UK's Equality Act, and privacy regulations, like the California Consumer Privacy Act (CCPA), which are intended to prevent bias and protect personal data, in order to reduce these risks. “Furthermore, the use of AI in auditing and monitoring could result in overzealous surveillance and a blurring of the lines between managerial and directorial duties .

The Companies Act of 2017 of Pakistan serves as the foundation of Pakistan's current legal system, which attempts to advance corporate governance and modernize corporate sector. [5] One of the key ways that technology is impacting corporate governance in Pakistan is through data security and privacy. The Commission may look into significant information technology offences under Section 258 of the Act, suggesting that there is some monitoring of technical activity. A foundation for digital transactions and data protection is provided by the Electronic Transactions Ordinance 2002, which gives the Certification Council the power

[3] Sai S. Nudurupati, Patrizia Garengo, and Umit S. Bititci, “Impact of the Changing Business Environment on Performance Measurement and Management Practices,” *International Journal of Production Economics* 232 (February 1, 2021): 107942, https://doi.org/10.1016/j.ijpe.2020.107942.

[4] Yongan Zhang et al., “The Influence of Management Innovation and Technological Innovation on Organization Performance. A Mediating Role of Sustainability,” *Sustainability* 11 (January 18, 2019): 495, https://doi.org/10.3390/su11020495.

[5] “Companies Act 2017 | SECP,” accessed May 8, 2024, https://www.secp.gov.pk/companies-act-2017/.

to create rules on electronic data safety, control, and administration.[6] The recently enacted Companies Act 2017 does not, however, adequately address the concerns associated with Artificial Intelligence(AI), such as cybersecurity threats and data protection difficulties, despite these provisions .The law must change in accordance with the advancement of technology. Many nations are creating new laws to control AI in the workplace, taking bias and ethical issues into account. Corporations in Pakistan must keep up with these changes and make the necessary adjustments.[7] This gap emphasizes the necessity of amending companies act 2017 to maintain efficient corporate governance, with a focus on AI-related changes and new regulations.

The Company Act 2017 has to be updated and amended in order to be in line with internationally best practices in corporate governance. The issues raised by modern technologies like Artificial Intelligence(AI), cybersecurity, and data protection are not sufficiently addressed by the current framework. The Company Act 2017 can have improved to meet international standards by adding new sections, which will ensure that Pakistan's corporate sector runs more efficiently and lawfully. These improvements aim to fortify the framework for corporate governance, improve transparency, protect the interests of stakeholders, and encourage sustainable corporate practices among the rapidly shifting technological environment.

1.2 Significance of Research

The significance of this research, which examines the impact of Artificial Intelligence on corporate governance in Pakistan's, cannot be overstated. The study explores the legal

[6] "Electronic Transactions Ordinance, 2002," accessed May 8, 2024, https://pakistancode.gov.pk/english/UY2FqaJw1apaUY2Fqa-apaUY2Fta5Y%3D-sg-j.

[7] Muhammad Akbar and Shahzad Hussain Tanveer Ahmad & Shoib Hassan, "Corporate Governance and Firm Performance in Pakistan: Dynamic Panel Estimation," *Abasyn Journal of Social Sciences* 12, no. 2 (January 1, 1970): 213–30.

challenges and opportunities arising from the integration of digital tools in corporate governance, offering crucial insights for legal practitioners, policymakers, and corporate leaders. It focuses on key legal frameworks, such as the Companies Act 2017, Code of Corporate Governance 2017 and the electronic transactions ordinance 2002, to identify compliance risks and propose effective solutions. This analysis is invaluable to legal scholars and researchers, which highlights areas where Pakistan's corporate governance laws may need reform to stay current with technological advancements. The research contributes to building a more transparent and accountable corporate environment in Pakistan by addressing legislative gaps and suggesting measures to ensure ethical technology adoption. Ultimately, the study aims to guide policymakers in developing balanced regulations that promote innovation and also maintains strong corporate governance standards.

1.3 Research Methodology

This research, addressing the role of technology and legal frameworks in corporate governance within Pakistan, employs qualitative and doctrinal research methods. Both primary and secondary sources used in collecting relevant data and analyzed it to get meaningful conclusions. The primary data sources include:

Pakistan's statutes, including company law and corporate governance codes

Secondary data consist of a comprehensive review of literature, including books, academic research papers, journal articles, industry reports, and materials from international bodies like the European Union. These diverse sources helped a robust foundation for understanding the current legal situation and the impact of Artificial Intelligence on Corporate Governance in Pakistan.

1.4 Research Questions

Statement of the research is based upon the following questions. These questions include:

1. How do provisions of Pakistan's company law influence the adoption of technological innovations in corporate governance?
2. What are the legal challenges and opportunities presented by the code of corporate governance 2017 in Pakistan?
3. How can Pakistan adopt the EU's risk-based AI regulatory model to strengthen accountability and transparency in corporate governance?
4. How can legal frameworks be optimized to support technological advancements in corporate governance?
5. What legal reforms are necessary to enhance the effectiveness of corporate governance in leveraging technology for business excellence?

1.5 Research Objectives

This research aims to address the gaps in understanding how technology can enhance corporate governance in Pakistan. The specific goals of this study are:

1 To critically examine Pakistan's company law and identify how its provisions influence the adoption of technological innovations in corporate governance.

2 To identify the legal challenges and opportunities presented by the code of corporate governance 2017 in Pakistan, with a focus on the integration of technology and innovation.

3 To evaluate Pakistan's AI regulatory gaps and recommend reforms inspired by the EU's risk-tiered framework to enhance legal accountability and transparency in corporate governance.

4 To analyze current legal reforms or propose new ones to enhance corporate governance through technology, aiming to align Pakistan's legal environment with international best practices for business excellence.

5 To suggest recommendations that can help optimize legal frameworks to support the adoption and use of technology in corporate governance, enables corporate governance to operate more efficiently.

1.6 Literature Review

Despite the fact that some work has been done on this subject, but does not directly address this topic that the researcher has chosen for the research. From Pakistan’s perspective, no investigations have been carried out in this regard. To draw attention towards the matter, many literatures have been reviewed to analyze these writings and underline the importance of the issue.

In "**Organizing for Innovation: Corporate Governance in a Digital Age** “the authors examines in this book how corporate governance impacts innovation, particularly in the digital era. Authors Mark Fenwick, Erik P.M. Vermeulen, Toshiyuki Kono, and Tronel Joubert emphasize the need for companies to adapt their governance structures to foster innovation effectively. They analyze key aspects of corporate governance, such as board composition and risk management, and their influence on a company's ability to innovate. The book likely provides case studies to illustrate successful governance strategies for promoting innovation, but it may have limitations in exploring emerging trends or alternative

governance approaches. Additionally, it may not cover industry specific nuances or regional variations in innovation and governance practices.[8]

In **‘‘Corporate Governance, Finance and the Technological Advantage of Nations"** the authors in this book explores the relationship between corporate governance, finance, and the technological advancement of nations. Authors Andrew Tylecote and Francesca Visintin likely delve into how effective governance practices impact a nation's ability to leverage technology for economic growth and competitiveness. The book discusses various governance mechanisms, such as board structures and regulatory frameworks, and their role in facilitating or hindering technological innovation and adoption. However, it does not explore in details specific case studies or provide practical strategies for improving governance to enhance technological advantage. Additionally, it also does not address contemporary issues or emerging trends in corporate governance and technology.[9] In "**Unequivocal ICT in Enhancing the Essence of Democracy and Good Governance**," the author examines how democracy is changing and questions Abraham Lincoln's concept in light of contemporary issues. It highlights how information and communication technology (ICT) may help close the gap between the public and governments by encouraging openness and involvement. However, the author does not address specific examples and a thorough study of how ICT is being used in governance, especially when it comes to Pakistani private

[8] Mark Fenwick et al., “Organizing-for-Innovation,” in *Organizing-for-Innovation: Corporate Governance in a Digital Age*, ed. Mark Fenwick et al., Perspectives in Law, Business and Innovation (Singapore: Springer Nature, 2023), 1–27, https://doi.org/10.1007/978-981-19-7234-8_1.

[9] Andrew Tylecote Francesca Visintin, “Corporate Governance, Finance and the Technological Advantage of Nations 45-73,” Routledge & CRC Press, accessed February 25, 2024, https://www.routledge.com/Corporate-Governance-Finance-and-the-Technological-Advantage-of-Nations/Tylecote-Visintin/p/book/9780415569361.

sector businesses. Further research in these domains may yield practical perspectives for augmenting corporate governance methodologies via technological innovation.[10]

The ‘‘**Impact of the changing business environment on performance measurement and management practices’’** the author discusses the lack of research on how volatile business environments affect performance measurement and management practices (PMM). It introduces an analytical framework based on organizational control theory to explore this impact through case studies. Findings suggest that emerging technologies foster innovation and collaborative networks, influencing how PMM is used, strategic objectives are expressed, and performance is measured and reviewed. However, practical implications for improving PMM systems and practices, as well as deeper analysis of specific challenges and opportunities arising from these business trends, are lacking. Further research is needed to address these gaps and inform strategies for enhancing PMM in Organizations. [11]

In **‘‘Conceptualizing evolutionary governance routines: governance at the interface of science and technology with knowledge-intensive innovative entrepreneurship’’** the author proposes a conceptual model for governance at the interface of science, technology, and knowledge-intensive entrepreneurship, emphasizing the importance of collective decision-making and value creation. It outlines two key processes: the development of

[10] Shoara Akter et al., “Unequivocal ICT in Enhancing the Essence of Democracy and Good Governance,” *Journal of Modern Accounting and Auditing* 15, no. 1 (2019): 1–15,https://doi.org/10.17265/1548-6583/2019.01.003.

[11] Sai S. Nudurupati, Patrizia Garengo, and Umit S. Bititci, “Impact of the Changing Business Environment on Performance Measurement and Management Practices,” *International Journal of Production Economics* 232 (February 1, 2021): 107942, https://doi.org/10.1016/j.ijpe.2020.107942.

advanced knowledge and its transformation into entrepreneurial ventures. However, it does not extensively discuss practical implications or implementation strategies for the proposed conceptualization. Furthermore, emphasizes the focus on routines rather than capabilities in collective action problems, drawing upon evolutionary economics theories of the firm. Yet, it does not provide a comprehensive comparison with transaction cost economics or elaborate on the practical implications of this distinction for governance practices in knowledge intensive entrepreneurship. Given the variable scope and character of the innovation notion, it becomes critical to select a series of all major changes within Organizations for future research. This project focuses on technical breakthroughs and innovation in the context of good governance practices.[12]

Corporate governance addresses a variety of issues related to how Organizations might be controlled and directed to accomplish their commercial functions. The author of

''Comparative China Corporate Governance Standards after financial Crisis Corporate Scandals and Manipulation'' examines the evolution of corporate governance standards in China, categorizing them into different groups and identifying key areas for improvement. It highlights the need for effective boards and mechanisms to enhance transparency and disclosure systems. However, it lacks in-depth discussion on practical strategies for addressing issues like insider trading and false financial reporting. Further exploration could focus on implementing proposed policy suggestions and recommendations to enhance corporate governance practices in China.[13]

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[12] Maureen Mckelvey, Olof Zaring, and Stefan Szücs, "Conceptualizing Evolutionary Governance Routines: Governance at the Interface of Science and Technology with Knowledge-Intensive Innovative Entrepreneurship," *Journal of Evolutionary Economics* 30 (July 1, 2020), https://doi.org/10.1007/s00191018-0602-4.

[13] Pham Minh Dat et al., "Comparative China Corporate Governance Standards after Financial Crisis, Corporate Scandals and Manipulation," *Journal of Security and Sustainability Issues* 9, no. 3 (March 30, 2020): 931–41, https://doi.org/10.9770/jssi.2020.9.3(18).

In ‘‘**Improving records management to promote transparency and prevent corruption’’** the author explores how regulation can facilitate transparency in records management to prevent corruption risks within public administrations. It assesses mechanisms available in Spain for managing irregularities in records management and highlights the need for transparency throughout a record's lifecycle. However, it fails to extensively discuss practical strategies for implementing transparency by design or addressing legislative shortcomings in records management. Further exploration could focus on proposing specific policy recommendations and practical steps for integrating records management and transparency principles into legislation effectively.[14]

In ‘‘**Role of institutions in shaping corporate governance system: evidence from emerging economy** ’’ the author examines institutional determinants of good corporate governance (CG) practices in Pakistan, identifying eight key factors including auditing, political influence, legal framework, and corporate culture. However, it does not extensively discuss practical strategies for addressing weaknesses in CG practices or propose specific policy recommendations for improvement. Further exploration could focus on proposing concrete measures to enhance enforcement, promote shareholder rights, and address the influence of political interference on CG practices in Pakistan. Additionally, the article highlights the need for a revision of the CG code to align with the country's business

[14] Anahí Casadesús de Mingo and Agustí Cerrillo, “Improving Records Management to Promote Transparency and Prevent Corruption,” *International Journal of Information Management* 38 (February 1, 2018): 256–61, https://doi.org/10.1016/j.ijinfomgt.2017.09.005.

environment and emphasizes the importance of raising awareness among stakeholders to improve CG compliance.[15]

In **''Technology and Corporate Governance: Block chain, Crypto, and Artificial Intelligence''** the author highlights the significant impact of the digital revolution on corporate governance, emphasizing the need for adaptation to technological advancements for relevance. The author discusses how technologies such as Big Data, automation, Artificial Intelligence, and block chain are reshaping business operations and regulatory frameworks. However, the article lacks in-depth analysis of the specific challenges and opportunities these technologies present to private sector companies in Pakistan. Moreover, it does not delve deeply into the practical implementation strategies for leveraging technology and innovation to enhance corporate governance practices in the Pakistani context. Further exploration of these aspects would enrich the literature on the topic.[16]

In **''Block chain Technology for Corporate Governance and Shareholder Activism''** the author discusses the potential of block chain technology to modernize Annual General Meetings (AGMs) and improve corporate governance by reducing costs, increasing shareholder participation, and enhancing decision-making speed. However, it does not extensively explore the legal and practical implications of transitioning to block chain-based AGMs or address concerns regarding the coexistence of traditional and block chain-based AGMs. Further discussion could focus on examining the regulatory challenges, potential resistance from stakeholders, and the need for a gradual transition to virtual meetings. Additionally, exploring the role of intermediaries and ensuring shareholder readiness for

[15] Muhammad Arslan and Ahmad Alqatan, "Role of Institutions in Shaping Corporate Governance System: Evidence from Emerging Economy," *Heliyon* 6, no. 3 (March 1, 2020): e03520, https://doi.org/10.1016/j.heliyon.2020.e03520.

[16] Mark Fenwick and Erik P M Vermeulen, "Technology & Corporate Governance," *The Texas Journal of Business Law* 48, no. 1 (2019): 1–22.

non-physical meetings are crucial aspects that warrant further investigation. The current study is predicated on the impact of technology and innovation in guaranteeing effective corporate governance, which has arisen as an ongoing issue in the existing corporate governance literature.[17]

In "**The Influence of Management Innovation and Technological Innovation on Organization Performance. A Mediating Role of Sustainability**'' the author discusses the importance of sustainability for organizational performance and examines the influence of management innovation (MI) and technological innovation (TI) on sustainability and organization performance. It highlights the significant positive contributions of MI and TI to sustainability and organization performance, with sustainability playing a partial mediating role between the innovations and performance. However, it does not extensively address the potential challenges or limitations associated with implementing management innovation (MI) and technological innovation (TI) strategies in Organizations, nor does it delve into the specific mechanisms through which sustainability affects financial performance. Further discussion could explore the practical implications and potential barriers to adopting MI and TI strategies, as well as the nuanced relationships between sustainability, innovation, and financial performance in different organizational contexts.[18]

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[17] Anne Lafarre and Christoph Van der Elst, "Blockchain Technology for Corporate Governance and Shareholder Activism," *SSRN Electronic Journal*, January 1, 2018, https://doi.org/10.2139/ssrn.3135209.

[18] Yongan Zhang et al., "The Influence of Management Innovation and Technological Innovation on Organization Performance. A Mediating Role of Sustainability," *Sustainability* 11 (January 2019): 495, https://doi.org/10.3390/su11020495.

In ‘‘ **The (Un)Predictable Impact of Technology on Corporate Governance ’’** the author explores how new technologies like big data and Artificial Intelligence might reshape corporate governance, particularly by altering the distribution of powers within corporations. It identifies five key determinants influencing the current balance of powers and suggests that technological innovations could shift decision-making responsibilities. However, it does not extensively address the potential challenges or limitations of integrating these technologies into corporate governance structures, nor does it delve into the specific mechanisms through which such changes might occur. Further discussion could examine the practical implications, risks, and regulatory adaptations required for successful implementation of these technological advancements in corporate governance. The research identified certain elements.as societal impact, usability, lack of understanding, technological obstacles, trust, and data privacy main variables that influence the adoption of e-governance in Pakistan.[19]

In ‘‘Clarification of problems in modern society in the processes of informatization and globalization’’ the author discusses how processes like informatization and globalization have negative consequences, leading to an anthropological crisis and structural transformations across various social spheres. It argues that these processes overlap, exacerbating the negative effects of globalization and promoting the ideology of neoliberalism. However, the article does not delve into potential solutions or alternatives to address the identified issues, nor does it explore the nuanced impacts on specific demographic groups or regions. Further exploration could focus on practical strategies for mitigating the adverse effects discussed and examining potential counter-narratives to

[19] Chiara Picciau, “The (Un)Predictable Impact of Technology on Corporate Governance,” *SSRN Electronic Journal*, 2020, https://doi.org/10.2139/ssrn.3643500.

neoliberal ideology.[20] Using both a qualitative and quantitative data technique, the author discovered that the adoption of e-governance within the health business is in its early stages in this research topic. According to the findings, technologies such as ICTs are not widely used for medical purposes. These findings indicate that the current state of technology and innovation in Pakistan is not particularly promising. As a result, raising awareness about the benefits of using technology in every area is critical.

Another study conducted by Picciau (2021) identifies the impact of novel technologies such as smart contracts, block chain, Artificial Intelligence, algorithms, and big data on excellent corporate governance.[21] The study's findings examined five key factors of the current balance of power within business Organizations, including the frequency and speed of corporate decisions, the costs associated with allocating decision-making roles and duties to a collegial entity, the information required to determine who should be given this access, the decision-makers' interests and incentives, and finally their skills and abilities. The study's findings may not result in revolutionary change in the early stages, but they may have disruptive implications for current corporate governance arrangements. This empirical viewpoint aided in determining the current state of technical breakthroughs in corporate sectors.

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[20] Sergei Ordenov et al., "Clarification of Problems in Modern Society in the Processes of Informatization and Globalization," *E3S Web of Conferences* 164 (January 1, 2020): 11037, https://doi.org/10.1051/e3sconf/202016411037.

[21] Chiara Picciau, "The (Un)Predictable Impact of Technology on Corporate Governance." Journal of Business Ethics, July 4, 2020, 45, Para. 3.," *SSRN Electronic Journal*, 2020, 45, para. 3, https://doi.org/10.2139/ssrn.3643500.

CHAPTER# 2.

Legal Framework of Corporate Governance in Pakistan

2.1 Introduction

The foundation that is essential for ensuring that businesses run responsibly, openly, and accountably is corporate governance. The need of corporate governance has become more widely recognized in Pakistan as companies look to improve their corporate responsibility and sustainability. Clear rules that encourage moral behavior, safeguard stakeholder interests, and build confidence in the business sector are established by the legal frameworks that support corporate, governance. Two important pieces of legislation in Pakistan that seek

to modernize corporate governance procedures are the Companies Act of 2017 and the Code of Corporate Governance 2019. These frameworks guarantee adherence to set standards while giving businesses the legal basis they need to function efficiently. These laws impact business behavior by establishing guidelines for stakeholder participation, disclosure obligations, and board composition and contribute to greater transparency and accountability.[22]

It is crucial to assess how these legal frameworks help or prevent the adoption of creative corporate governance practices in light of technology advancements, especially the emergence of Artificial Intelligence(AI) and other emerging technologies. Although incorporating technology into governance frameworks might improve operational effectiveness, it also brings up issues with cybersecurity, data privacy, and ethics.[23]

This main goal is to critically analyses Pakistan's 2017 Companies Act and 2017 Code of Corporate Governance, with an emphasis on how they affect the incorporation of technology into corporate governance. In order to ensure compliance, accountability, and ethical behavior, it is crucial for Organizations to comprehend the legal frameworks governing the rising adoption of technological advancements.

[22] Syed Kashif Saeed and Umer Faiz, *Saeed and Faiz, "Corporate Governance in Pakistan," Code of Corporate Governance 2019, Sections 2-5; Companies Act 2017, Sections 155, 258*, n.d.

[23] "'Code of Corporate Governance,' Securities and Exchange Commission of Pakistan, 2019, Sections 7-9.," *Securities and Exchange Commission*, n.d., accessed November 2, 2024, https://www.sec.gov.ph/corporate-governance/code-of-corporate-governance/.

I discussed here which directly addressed Research Question 1: which is How do provisions of Pakistan's company law influence the adoption of technological innovations in corporate governance?

I also discussed how certain elements of the Companies Act of 2017 such as those related to board composition, disclosure obligations, and data protection can help or restrict the use of technology into governance procedures.

Additionally, i also discussed Research Question 2: What are the legal challenges and opportunities presented by the Companies act 2017 in Pakistan? The main focus of this research was this, that how the Code handles or does not the particular difficulties presented by cutting-edge technology such as block chain and Artificial Intelligence(AI). To ensure strong corporate governance and better accommodate technology changes, the research will point up areas where the Code might need to be amended.

The corresponding objectives for this chapter include:

Objective 1: To critically examine Pakistan's company law and identify how its provisions influence the adoption of technological innovations in corporate governance.

This objective involves a thorough examination of relevant Companies Act provisions and how they relate to technological integration.

Objective 2: To identify the legal challenges and opportunities presented by the Code of Corporate Governance 2017 in Pakistan, with a focus on integrating technology and innovation.

This goal will evaluate the Code's compliance with international best practices and identify any potential changes that could improve its effectiveness.

By fulfilling these goals, this chapter aims to offer an in-depth understanding of how Pakistani legal frameworks influence corporate governance practices, especially with regard to technological advancements. The knowledge acquired will help legislators, attorneys, and business executives make the required changes to current legislation in order to promote a more creative and accountable corporate environment.

2.2 Overview of Pakistan's Company Law

Several legislative revisions intended to improve the regulatory environment and modernize corporate governance have influenced the development of company law in Pakistan. The Companies Ordinance of 1984, which served as the primary body of legislation governs corporate entities until it was superseded by the Companies Act of 2017, is the cornerstone of Pakistan's present company law. [24] The need for a stronger framework to promote corporate governance and innovation was reflected in this transition, which represented a significant change in the legal environment.

In order to correct the previous ordinance's flaws and bring Pakistan's corporate governance procedures into compliance with international norms, the Companies Act of 2017 was introduced. Provisions for increased openness, more stringent compliance standards, and better stakeholder protection measures were among the major revisions.[27] In order to build trust in the corporate sector, the Act places a strong emphasis on board composition, transparency requirements, and responsibility.

[24] *"Section 258 Companies Act 2017 | SECP," , Sections 1-50 (Introduction and General Provisions).*, n.d., accessed May 8, 2024, https://www.secp.gov.pk/companies-act-2017/.

The emphasis on technology integration in corporate governance is one significant development brought about by the Companies Act of 2017. For example, Section 258 acknowledges the significance of technology in business operations by granting the Securities and Exchange Commission of Pakistan (SECP) the authority to look into serious information technology offences. [25] Additionally, a legal foundation for data protection and electronic transactions is provided by the Electronic Transactions Ordinance 2002, which is essential for businesses utilizing digital tools.

2.2.1 The Regulatory Framework Governing Corporations

The legal environment has changed significantly to encourage innovation and corporate governance. The firms Act is further enhanced by the adoption of the Code of Corporate Governance 2019, which offers comprehensive requirements for listed firms with a focus on accountability, ethics, and openness.[26] By requiring firms to set up strong internal controls and independent directors on boards, this Code seeks to improve governance procedures. Even with these developments, there are still obstacles in the way of completely incorporating technology into corporate governance. Block chain and Artificial Intelligence(AI) are two examples of developing technologies whose problems are not sufficiently addressed by the current legal system.[27] Legal changes are urgently needed as businesses depend more and more on these technologies to keep Pakistan's company law current and functional in fostering innovation and protecting stakeholder interests.

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[25] *"Section 258 Companies Act 2017 | SECP," , Sections 1-50 (Introduction and General Provisions).*

[26] "A. Y. Javid and R. Iqbal, Corporate Governance in Pakistan: Corporate Valuation, Ownership and Financing (Working Papers & Research Reports, Scientific Research Publishing, 2010), 35-52.," accessed November 3, 2024, https://www.scirp.org/reference/referencespapers?referenceid=3078066.

[27] Mark Fenwick and Erik PM Vermeulen, "Technology and Corporate Governance: Blockchain, Crypto, and Artificial Intelligence," *Tex. J. Bus. L.* 48 (2019): sections 3-5,.

In conclusion, an increasing understanding of the significance of strong corporate governance frameworks is reflected in the historical development of company law in Pakistan. A dedication to updating business procedures and bringing them into line with global best practices is demonstrated by the change from the Companies Ordinance of 1984 to the Companies Act of 2017.[28] Ongoing changes are required, though, in order to handle new technical issues and guarantee that the law encourages environmentally friendly corporate operations.

2.2.2 Critical Provisions of the Companies Act

The Companies Act of 2017 is the main piece of legislation that governs corporations in Pakistan. This Act, which aims to modernize corporate governance and encourage moral business practices, is the cornerstone of the nation's corporate law. It describes the guidelines that businesses must adhere to in order to conduct themselves properly and transparently. The Securities and Exchange Commission of Pakistan (SECP) is one of the major regulatory bodies in charge of monitoring the application of this framework. The SECP is in charge of advising businesses, making sure corporate governance norms are respected, and enforcing adherence to the Companies Act and other relevant laws.[29]

Section 223 of the Companies Act, which requires corporations to provide stakeholders with access to their financial statements and management reports, places a strong emphasis on transparency and disclosure requirements. In order to promote openness and empower

[28] "Corporate Social Responsibility and Board Gender Diversity: A Meta-Analysis," *ResearchGate*, October 22, 2024, 15–20, https://doi.org/10.1108/MRR-03-2021-0236.
[29] "A. Y. Javid and R. Iqbal, Corporate Governance in Pakistan: Corporate Valuation, Ownership and Financing (Working Papers & Research Reports, Scientific Research Publishing, 2010), 35-52."

stakeholders to make well-informed decisions, this requirement is crucial for boosting confidence in the business sector. In order to ensure accountability and adherence to governance standards, the SECP enforces this through the Listed firms (Code of Corporate Governance) Regulations, 2019, which mandate that listed firms publish a statement of compliance with these regulations in their annual reports.[30]

Section 166 of the Companies Act, which describes the duties and responsibilities of directors, provides an outline of the Board Structure and Responsibilities. To guarantee efficient oversight, it requires a balanced mix of executive and non-executive directors. Fiduciary duties are also enshrined in this provision, which requires directors to act in the company's and its shareholders' best interests. In order to improve accountability and lessen potential conflicts of interest, the SECP's regulations also mandate that boards have a minimum number of independent directors.[31] Section 166(3) of the Companies Act, which mandates the presence of independent directors on boards, emphasizes the role of auditors and independent directors.[32] For board discussions to remain objective, this inclusion is essential. Additionally, the Companies Act and SECP regulations specify the duties of auditors, which include making sure that applicable laws are followed and that financial statements are accurately represented.[33] The overall objective of the legal framework created by the Companies Act of 2017 and enhanced by SECP regulations is to foster a business climate that supports sound governance practices. However, as the World Bank and other studies have pointed out, continuous adjustments are required to adjust existing legal

[30] *Section 223, Companies Act 2017, Securities and Exchange Commission of Pakistan, 2017.* (n.d.), accessed December 23, 2024, https://www.secp.gov.pk/companies-act-2017/.
[31] *Section 166 Companies Act 2017 – SECP*, 166.
[32] *Section 166 Companies Act 2017 – SECP*.
[33] "Listed Companies (Code of Corporate Governance) Regulations, 2019 – Amended up to July 7, 2023 – SECP,Sections 4-6.," accessed November 2, 2024, https://www.secp.gov.pk/document/listed-companies-code-of-corporate-governance-regulations-2019/.

provisions to new issues brought about by technology developments like Artificial Intelligence(AI). It is the responsibility of the SECP to continuously monitor and enforce these rules, making sure that corporate governance procedures change in tandem with market conditions.[34] To sum up, Pakistan has a strong corporate governance structure that places a strong emphasis on independent supervision, board responsibilities, and transparency. These legal frameworks must continue to be flexible as businesses adopt new technology more and more, encouraging innovation while maintaining strict corporate governance norms.

2.3 Code of Corporate Governance and Its Implications

2.3.1 Introduction to the Code

To strengthen corporate governance standards in Pakistan, the Code of Corporate Governance 2019 was created with the goal of encouraging corporations to act more ethically, transparently, and responsibly. Its main goals are to set forth precise rules that promote a reliable business environment and, in the end, safeguard the interests of stakeholders and shareholders.[35] This is in line with the Companies act of 2017's Section 166, which requires companies to act in the best interests of their shareholders.[40] This section highlights the need for companies to implement policies that put stakeholder interests first and reaffirms the Code's emphasis on moral behavior and responsibility. Innovation and technology-driven governance methods are greatly aided by the Code. It pushes companies

[34] "Muhammad Akbar and Shoib Hassan Tanveer Ahmad, 'Corporate Governance and Firm Performance in Pakistan: Dynamic Panel Estimation,' Abasyn Journal of Social Sciences 12, No. 2 (January 1, 1970): 39–40."
[35] "Listed Companies (Code of Corporate Governance) Regulations, 2019 – Amended up to July 7, 2023 – SECP,Sections 4-6."

to embrace cutting-edge techniques and contemporary technologies that can enhance their operations and decision-making.

For example, the Code assists Organizations in improving data management, streamlining their operations, and communicating with stakeholders by encouraging the use of information and communication technology (ICT). Section 184 of the Companies Act, 2017 which permits companies to hold meetings and distribute information electronically, lends even more supporting to this. This clause shows that the value of technology in improving corporate governance is acknowledged. The Code's emphasis on independent directors is one of its key features. These directors are supposed to offer objective supervision, especially when it comes to choices using technology.[36] They perform a critical role in making sure that the adoption of new technologies respects stakeholder interests and ethical standards while also being in line with best practices in corporate governance. Section 166(3) of the Companies Act 2017 , which mandates the appointment of independent directors to guarantee impartiality in decision-making, echoes this need. This section emphasizes how crucial independent monitoring is to reducing any conflicts of interest throughout the introduction of new technologies.[37] The Code also encourages businesses to set up strong risk management and internal control mechanisms. This is especially important as businesses are depending more and more on technology, which can lead to new privacy and data security threats. The Code assists in ensuring that businesses are equipped to manage possible difficulties brought on by technological improvements by highlighting these restrictions. Section 177 of the Companies Act 2017 , which mandates that businesses have

[36] Fenwick and Vermeulen, "Technology and Corporate Governance: Blockchain, Crypto, and Artificial Intelligence."

[37] *Companies Act 2017, Section 166, Securities and Exchange Commission of Pakistan.* (n.d.), accessed December 23, 2024, https://www.secp.gov.pk/companies-act-2017/.

sufficient internal controls for financial reporting, supports this emphasis.[38] This clause highlights how important it is for businesses to put mechanisms in place that can efficiently handle technological hazards. It is essential in creating a business environment that is adaptable to technological advancements while defending the interests of stakeholders by encouraging openness, responsibility, and the implementation of creative practices. The need for legal structures that support technology improvements while guaranteeing strong governance standards is shown by the agreement between the Code and the relevant portions of the Companies Act.

2.3.2 Objectives of the Code

One essential framework for raising corporate governance standards in Pakistan is the Code of Corporate Governance 2017. Together with the provisions of the Companies Act of 2017, this Code sets fundamental rules that influence governance, especially with regard to stakeholder involvement, board composition, and duties. These clauses' significance for promoting accountability and openness in Organizations become clear when they are critically examined.[39]

The Code's emphasis on board composition is among its most important features. A balanced board structure with both executive and non-executive directors is required by Section 166(3) of the Companies Act. The Code, which mandates that boards must have independent

[38] *Section 177,Companies Act 2017 – SECP* (n.d.), accessed December 24, 2024, https://www.secp.gov.pk/companies-act-2017/.
[39] Muhammad Arslan and Ahmad Alqatan, "Role of Institutions in Shaping Corporate Governance System: Evidence from Emerging Economy," *Heliyon* 6, no. 3 (2020): e03520, https://doi.org/10.1016/j.heliyon.2020.e03520.

directors to guarantee objectivity in decision-making, further supports this necessity. In order to improve oversight and governance quality, the Listed Companies (Code of Corporate Governance) Regulations, 2017 specifically mandate that at least onethird of the board members be independent directors. Accountability and moral conduct in corporate governance procedures are encouraged by this conformity with Section 182 of the Companies Act, which instructs boards to act in the best interests of the business and its stakeholders.[40]

Furthermore, by requiring prompt disclosures to stakeholders about financial performance and governance practices, Section 134 of the Companies Act enhances these rules. Building confidence with investors and other stakeholders requires this kind of openness, particularly as businesses manage technology developments that could affect their operations. Organizations must have clear communication channels in order to preserve stakeholder trust and raise their market position.

Furthermore, the Code outlines the board's specific duties, highlighting its responsibility for monitoring risk management and guaranteeing adherence to legal requirements. The significance of many viewpoints in governance is highlighted by the creation of mandated committees, such as the Human Resource and Remuneration Committee (HR&R), which is required to have an independent director. As stated in section 28 of the Code, this section is a part of a larger trend to increase board performance through independent scrutiny.[41]

The Code further strengthens directors' accountability to shareholders by requiring them to attend general meetings. By guaranteeing that directors are held accountable for their

[40] "Section 182 Companies Act 2017 – SECP."
[41] *Section 28 ,Listed Companies Code of Corporate Governance 2019 – SECP*, n.d., accessed December 24, 2024, https://www.secp.gov.pk/corporate-governance/listed-companies/.

choices and actively involved with stakeholders, this clause is consistent with best practices in corporate governance. Governance procedures are improved and expectations are further clarified by requiring directors to write letters defining their duties and responsibilities. This legal framework also encourages the use of information and communication technology (ICT) instruments. The Companies Act promotes electronic record-keeping and digital transactions, both of which can greatly increase operational efficiency. But there are worries regarding data security and privacy as a result of increasing digitalization. A legal basis for electronic transactions is provided by the Electronic Transactions Ordinance of 2002; yet, there are still unanswered questions about particular technologies, such Artificial Intelligence(AI). To ensure that businesses may take advantage of technological advancements while adhering to regulatory requirements, these gaps must be filled.

Furthermore, by adding new requirements like the separation of the CEO's and chairman's functions, the Listed Companies (Code of Corporate Governance) Regulations 2019 improve these governance standards even further and avoid power concentration in the hands of one person. For corporate governance structures to continue to have checks and balances, this division is essential.

2.3.3 Key Provisions of the Code

Effective corporate governance in Pakistan depends on the important foundations for board membership and duties established by the Code of Corporate Governance 2017. A wellorganized board with a balance of independent and executive directors is required by the Code. In addition to being a recommended practice, Section 166(3) of the Companies

Act of 2017 supports this requirement by highlighting the importance of having independent directors in order to guarantee that the interests of all stakeholders—especially minority shareholders—are fairly represented in strategic decision-making.[42]

Since they offer an objective viewpoint to board debates, independent directors are essential. Section 4(1) of the Code, which stipulates that independent directors shall make up at least one-third of the board, emphasizes their function.[43] By guaranteeing that choices be made with care for all stakeholders, this clause seeks to improve the quality of governance and encourage moral behavior and accountability.

The Code also specifies particular duties for board committees, including the nomination and audit committees. The audit committee's duties under section 7 include monitoring financial reporting procedures and making sure that relevant laws are followed.[44] This is in line with Section 227 of the Companies Act, which requires businesses to keep correct financial records and prepare financial statements according to predetermined guidelines.[45] These committees' participation in strategic choices is essential to guaranteeing that businesses run morally and efficiently.

Regarding stakeholder involvement, the Code encourages businesses to communicate openly and honestly with their stakeholders. In the current digital era, where information and communication technology (ICT) is crucial to increasing openness, this is especially crucial.[46] The Code encourages businesses to use technology, such as online platforms for posting financial reports and enabling virtual meetings, to provide accurate and timely

[42] *Section 166[3] ,Companies Act 2017 – SECP*.
[43] "Listed Companies (Code of Corporate Governance) Regulations, 2019 – Amended up to July 7, 2023 – SECP." *Section 4[1]Listed Companies Code of Corporate Governance – SECP*.
[44] *Section 7, Listed Companies Code of Corporate Governance – SECP*, 7.
[45] *Section 227 ,Companies Act 2017 – SECP*.
[46] "(16) Impact of Artificial Intelligence (AI) on Corporate and Legal Consultancy Field. | LinkedIn." *Section 134,Companies Act 2017 – SECP*.

information. This is in line with the Companies Act's Section 134, which mandates prompt disclosures about governance procedures and financial performance. Businesses can enhance their corporate image by utilizing ICT-enabled transparency to increase accountability and cultivate confidence among stakeholders.

The Code supports procedures that allow businesses to communicate openly and honestly with their stakeholders. This is especially crucial in the current digital era, as information and communication technology (ICT) greatly contributes to increased transparency. The Code encourages businesses to use technology to provide accurate and timely information, such as online platforms for virtual meetings and financial report publication. Section 134 of the Companies Act, which mandates prompt disclosures of financial performance and governance procedures, is in line with this. Businesses may enhance accountability and build trust among stakeholders by utilizing ICT-enabled transparency, which will boost their corporate image.[47]

In addition to meeting legal requirements, the emphasis on transparency shows a dedication to openness that can improve stakeholder impressions. According to several international corporate governance standards, using technology for communication is in line with best practices worldwide. The Code also emphasizes how crucial it is to have open channels of communication between the board and stakeholders. Building trust and making sure stakeholder views are heard in corporate decision-making processes depend on this. In

[47] *Section 134, Companies Act 2017, Securities and Exchange Commission of Pakistan.* (n.d.), accessed December 24, 2024, https://www.secp.gov.pk/companies-act-2017/.

accordance with Section 182 of the Companies Act, which requires boards to act in the best interests of the firm and its stakeholders, boards must regularly update and interact with shareholders.[48]

2.2.3 Technological Advancements in Corporate Governance

Section 258, which discusses the use of technology in compliance and monitoring, is one of the provisions in the Companies Act of 2017 that has the biggest impact on the incorporation of technological advancements in corporate governance. By giving the Securities and Exchange Commission of Pakistan (SECP) the authority to look into technology-related violations, this section creates a legal foundation for ensuring adherence to technological standards in business environments.[49] This clause has a direct bearing on Research Question 1:How do provisions of Pakistan's company law influence the adoption of technological innovations in corporate governance?

The analysis supports Objective 1 which aims to critically examine how the law facilitates or hinders technology adoption. Companies adopting technology changes while maintaining adherence to regulatory norms must have a thorough understanding of these legal frameworks.

Another important aspect of the Companies Act is its emphasis on disclosure requirements and transparency. Companies are required by Section 223 to give stakeholders accurate and timely information, including financial reports and any significant changes to their operations.[50] Building trust with the public and investors requires this openness, particularly as businesses embrace new technologies that could affect their operations. To ensure that

[48] "Section 182 Companies Act 2017 – SECP."
[49] "Section 258 Companies Act 2017 | SECP."
[50] *Section 223, Companies Act 2017, Securities and Exchange Commission of Pakistan, 2017.*

stakeholders are aware of the possible hazards and advantages of these breakthroughs, businesses that use Artificial Intelligence(AI) must, for example, disclose how these technologies impact decision-making procedures and data management policies.

The Act's description of the board's composition and duties emphasizes the significance of governance in relation to the implementation of technology. In order for boards to adequately supervise the implementation of technology, Section 166 mandates a balanced mix of executive and non-executive directors.[51] In order to promote proactive engagement with technological breakthroughs, directors are tasked with comprehending the consequences of technology on company strategy and risk management. This duty is essential because it guarantees that boards are knowledgeable about the instruments being used in their companies, which promotes well-informed decision-making.[52] The Companies Act also highlights the function of independent directors and auditors. It is expected of independent directors to oversee technology-related actions that can include conflicts of interest objectively. [53] Their presence on boards guarantees that a range of viewpoints are taken into account during the decision-making process and improves accountability. As stated in Section 246, auditors are essential in confirming adherence to regulatory requirements concerning data protection and technology use. To make sure that technological

[51] "A. Y. Javid and R. Iqbal, Corporate Governance in Pakistan: Corporate Valuation, Ownership and Financing (Working Papers & Research Reports, Scientific Research Publishing, 2010), 35-52."

[52] "Saeed Azhar and Mary Evans, 'The Impact of Corporate Governance on Financial Decision-Making: Evidence from Non-Financial Institutions in the Australian Securities Exchange,' Journal of Corporate Finance Studies 34, No. 1 (2024): 33–45, Https://Www.Researchgate.Net/Publication/381272925_," accessed November 22, 2024, https://www.researchgate.net/publication/381272925_The_Impact_of_Corporate_Governance_on_Financial_Decision-making_Evidence_from_Non-financial_Institutions_in_the_Australian_Securities_Exchange.

[53] M. Bhatti and Mohammad Khan, "Why Interest-Free Banking and Finance Movement Failed in Pakistan," *Humanomics: The International Journal of Systems and Ethics* 22 (July 2006): 145–61, https://doi.org/10.1108/08288660610703320.

advancements don't jeopardize stakeholder interests or ethical norms, this independent oversight is crucial. Additionally, by encouraging digital transactions and electronic recordkeeping, the Act encourages the use of information and communication technology (ICT) instruments. These clauses lower expenses for businesses while improving operational effectiveness. But they also bring up privacy and data security issues. This framework is enhanced by the Electronic Transactions Ordinance 2002, which gives electronic transactions a legal foundation; yet, there are still unanswered questions about particular technology, such as Artificial Intelligence.[54] By creating comprehensive data protection legislation, the forthcoming Personal Data Protection Bill 2023 seeks to close these loopholes and improve the legal framework governing the use of technology in corporate governance.[55] In the context of technological innovation, the Companies Act of 2017 creates a strong legal framework that encourages accountability, transparency, and responsible governance. This act seeks to protect stakeholder interests while fostering an atmosphere that is favorable to the adoption of new technologies by addressing important aspects like disclosure requirements, board responsibilities, and independent oversight. The interaction between existing laws and new technology emphasizes how laws must be regularly reviewed and modified to stay applicable in a changing digital environment.

2.3.4 Implications for Corporate Governance in Pakistan

Companies in Pakistan will be greatly impacted by following the 2017 Code of Corporate Governance, especially in terms of fostering innovation and fortifying corporate governance

[54] "Electronic Transactions Ordinance 2002 -."
[55] "General Data Protection Regulation (GDPR) – Official Legal Text."

frameworks. Organizations may create a strong governance structure that promotes the adoption of innovative practices and new technologies by adhering to the Code.

Encouraging Innovation Businesses are better equipped to adopt new technologies when they adhere to the Code. Because independent directors and well-organized boards are prioritized, choices about the adoption of technology are carefully considered. As a result, decisions regarding incorporating new tools and procedures are made with greater knowledge, which eventually creates an atmosphere that encourages innovation. Businesses that abide by the Code are probably more adaptable and quick to react to technological

advancements, which might provide them a competitive advantage.[56]

Strengthening Governance Structures: Companies must put in place strong internal controls and risk management systems in accordance with the Code. This is important since businesses are depending more and more on technology, which can lead to new privacy and data security threats. Companies can strengthen their overall governance frameworks by following the Code and making sure they have the required safeguards in place.[57]

Addressing Research Question 2 and Objective 2: The implications of the Code directly relate to Research Question 2: What are the legal challenges and opportunities presented by the Code of Corporate Governance 2017 in Pakistan? Companies that comply with the Code

[56] Mark Fenwick et al., "Organizing-for-Innovation," in *Organizing-for-Innovation: Corporate Governance in a Digital Age*, ed. Mark Fenwick et al., Perspectives in Law, Business and Innovation 52, para. 2. (Springer Nature, 2023), https://doi.org/10.1007/978-981-19-7234-8_1.

[57] Muhammad Farooq et al., "Corporate Governance and Firm Performance: Empirical Evidence from Pakistan," *Corporate Governance: The International Journal of Business in Society* ahead-of-print (August 2021): 62, para. 5., https://doi.org/10.1108/CG-07-2020-0286.

are better equipped to integrate technology into their governance processes, as they have established frameworks for accountability and transparency. This aligns with Objective 2, which aims to explore the legal challenges and opportunities presented by the Code, particularly concerning technology integration.

Potential Challenges: In spite of these advantages, businesses may have difficulties attempting to adhere to the Code. Because of a lack of knowledge or a fear of change, some Organizations may be hesitant to accept new technologies. Inadequate infrastructure might also make it more difficult to install ICT solutions that are required for compliance. Adopting new approaches can also be significantly hampered by resource limitations, such as tight finances or a lack of experience. [58] By outlining precise rules for accountability and transparency, the 2017 Code of Corporate Governance fosters innovation and fortifies corporate governance frameworks. Companies that adhere to the Code are better positioned to successfully incorporate new tools into their governance processes, notwithstanding the difficulties associated with technology adoption.

2.4 Legal Analysis of Corporate Governance Requirements

2.4.1 Context of Legal Requirements

Companies in Pakistan are subject to particular legal requirements under the Companies Act of 2017 and the Code of Corporate Governance 2017 that are intended to guarantee high standards of accountability, transparency, and governance. In order to answer Research Question 1: How do provisions in Pakistan's company law influence the adoption of technological innovations in corporate governance? this analysis critically examines these legal requirements and their implications for corporate governance, particularly in the

[58] Picciau, "The (Un)Predictable Impact of Technology on Corporate Governance." Journal of Business Ethics, July 4, 2020, 45, Para. 3."

context of technological innovation. This investigation additionally supports ***objective 1***, which is to comprehend how legislative frameworks influence technology uptake.

2.4.2 Legal Obligations

In order to ensure high levels of governance, accountability, and transparency, firms operating in Pakistan are subject to certain legal duties under the Companies Act of 2017 and the Code of Corporate Governance 2017. These responsibilities are necessary to safeguard stakeholder interests and preserve the integrity of business operations.

2.4.3 Specific Legal Duties

Companies are required to maintain accurate and current records, including financial statements and annual reports, in accordance with Section 227 of the Companies Act.[78] Because it guarantees that stakeholders have access to trustworthy information needed to make educated decisions, this need is essential.[59] To further encourage transparency, Section 134 requires businesses to report any significant modifications to their governance or operations.[80] The OECD Principles of Corporate Governance, which highlight the value of accountability and openness in promoting investor trust and market integrity, are in keeping with this legal framework's worldwide norms.

[59] *Section 227 ,Companies Act 2017 – SECP* (n.d.), accessed December 24, 2024, https://www.secp.gov.pk/companies-act-2017/.

2.4.4 Encouragement of Technological Integration

Companies are encouraged under the Code to use technological advancements into their governance procedures. In particular, it contains clauses that permit businesses to electronically submit their financial reports. This change improves accessibility for stakeholders and expedites the reporting process. Additionally, by encouraging electronic voting at board meetings, the Code makes it possible for directors who are unable to physically present to take part in decision-making. More participation is encouraged and all opinions are heard thanks to this inclusion.[60]

Section 5 of the Code of corporate governance, which highlights that businesses should use technology to communicate with stakeholders effectively, further supports the promotion of technological integration.[61] The application of Artificial Intelligence(AI) to data analytics is also emphasized; businesses are encouraged to use AI tools to evaluate large volumes of data in order to improve operational efficiency and decision-making. This is in line with the OECD's worldwide best practices, which include using technology into corporate governance frameworks to increase responsiveness to market demands.[62]

2.4.5 Compliance Mechanisms

Enforcing adherence to the Companies Act and the Code of Corporate Governance is a critical function of the Securities and Exchange Commission of Pakistan (SECP). The SECP has the authority to carry out audits, examine corporate documents, and look into possible

[60] Anne Lafarre and Christoph Van der Elst, "Blockchain Technology for Corporate Governance and Shareholder Activism," *SSRN Electronic Journal*, January 1, 2018, 45, para. 4., https://doi.org/10.2139/ssrn.3135209.
[61] "Section 5 ,Listed Companies (Code of Corporate Governance) Regulations, 2019 – Amended up to July 7, 2023 – SECP," 5.
[62] Roomila Naseem and Falak Baqar, *USE OF TECHNOLOGY AND INNOVATION IN GOOD GOVERNANCE -A CASE OF PRIVATE SECTOR COMPANIES OF PAKISTAN*, 1 (June 2022): 24–35.

infractions under Section 156 of the Companies Act.[63] Under Section 37 of the Code, the SECP has the authority to impose penalties, such as fines or other punishments, on companies that violate the law. These enforcement tools are essential for making sure businesses follow governance guidelines and successfully incorporate technology into their daily operations.[64]

For businesses to be encouraged to embrace technology developments, these compliance measures must be effective. In general, Organizations that adhere to the Code are better equipped to adopt new technology, like electronic voting platforms and digital reporting systems. By following these rules, businesses can increase stakeholder engagement and operational efficiency through improved openness and communication.

2.4.6 Challenges in Compliance

Despite these benefits, businesses face a number of obstacles when attempting to comply with legal requirements: Opposition to Technological Change: Because of apprehensions about change or doubts about the efficacy of new technologies, many Organizations may be reluctant to adopt them. The adoption of technologies that could improve governance procedures may be slowed down by this resistance.

[63] *Section 156 ,Companies Act 2017 – SECP*.
[64] *Section 37 ,Listed Companies (Code of Corporate Governance) Regulations, 2019 – Amended up to July 7, 2023 – SECP*.

The lack of technical expertise among management teams and board members is a major problem. Decision-makers could find it difficult to comprehend how to successfully adopt new technology if they lack the necessary experience. [65]

Insufficient Legal Clarity,within corporate governance frameworks, emerging technologies like block chain and Artificial Intelligence frequently lack explicit legal requirements. Businesses thinking about these developments may become confused by this ambiguity. [66]

These challenges relate directly to Research **Question 1**, which examines how provisions in Pakistan's company law influence the adoption of technological innovations in corporate governance. They also connect with **Objective 1**, focusing on how legal frameworks shape these challenges.

2.5 Case Studies: Compliance and Violations in Practice

The analysis of corporate governance in Pakistan, particularly through the examination of four case studies, provides significant insights into compliance and violations of established standards. The selected companies Engro Corporation, Pakistan International Airlines (PIA), Habib Bank Limited (HBL), and Dawlance illustrate varying degrees of success in integrating Information and Communication Technology (ICT) and other technologies to enhance governance practices.[67]

[65] "Saeed Azhar and Mary Evans, 'The Impact of Corporate Governance on Financial Decision-Making: Evidence from Non-Financial Institutions in the Australian Securities Exchange,' Journal of Corporate Finance Studies 34, No. 1 (2024): 33–45, Https://Www.Researchgate.Net/Publication/381272925_."
[66] Lafarre and Van der Elst, "Blockchain Technology for Corporate Governance and Shareholder Activism"; "Saeed Azhar and Mary Evans, 'The Impact of Corporate Governance on Financial Decision-Making: Evidence from Non-Financial Institutions in the Australian Securities Exchange,' Journal of Corporate Finance Studies 34, No. 1 (2024): 33–45, Https://Www.Researchgate.Net/Publication/381272925_."
[67] "Saeed Azhar and Mary Evans, 'The Impact of Corporate Governance on Financial Decision-Making: Evidence from Non-Financial Institutions in the Australian Securities Exchange,' Journal of Corporate Finance Studies 34, No. 1 (2024): 33–45, Https://Www.Researchgate.Net/Publication/381272925_."

Engro Corporation is a prime example of compliance with the 2017 Code of Corporate Governance and the Companies Act. To ensure that decisions are made with the proper oversight, the corporation has formed a diversified board with a significant number of independent directors. This is in line with the Companies Act's Section 166(3), which requires independent directors and a balanced board composition. Through the implementation of digital reporting systems, Engro has effectively integrated information and communication technology (ICT), improving transparency and providing stakeholders with timely access to information.[68]

Section 5 of the Code promotes the use of technology for efficient stakeholder communication, and this integration is in line with that rule. [69] However, maintaining constant compliance with changing rules and keeping up with the quick advances in technology provide difficulties for Engro. A strong governance framework backed by technology can increase operational effectiveness and stakeholder trust, as demonstrated by the analysis of Engro's instance. This case highlights the significance of coordinating business operations with regulatory mandates in order to promote innovation.[70]

[68] Shoara Akter, Milon Molla, and S. M. Robiul Islam, "Unequivocal ICT in Enhancing the Essence of Democracy and Good Governance."
[69] "Section 5,Listed Companies (Code of Corporate Governance) Regulations, 2019 – Amended up to July 7, 2023 – SECP," 5.
[70] "Suit No. 684 of 2003 ,Engro Fertilizers Cases at Pakistan ,Engro v The Fedration of Pakistan."

Pakistan International Airlines (PIA), on the other hand, has faced many legal issues pertaining to its adherence to corporate governance norms. The airline has been under fire for its poor financial reports, which go against the transparency standards set forth in Section 134 of the Companies Act.[71] Due to its failure to comply with these transparency standards, PIA has experienced severe operational inefficiencies and a reduction in stakeholder confidence, which has hampered its capacity for successful innovation. Among PIA's difficulties are management structure reluctance to change and a lack of infrastructure to facilitate technology integration.

Section 4 of code of corporate governance which highlights the necessity of effective communication and accountability, has not been followed in this instance.[72] The PIA research demonstrates how operational inefficiencies and a decline in stakeholder trust can result from breaking legal requirements. This instance emphasizes how important it is for businesses to actively adopt governance norms in order to promote innovation and preserve investor trust.

By upholding strict internal controls as specified in Section 227 of the Companies Act, which requires accurate financial reporting, Habib Bank Limited (HBL) exhibits strong compliance with the Companies Act 2017 and the Code of Corporate Governance.[73] HBL improves client engagement and operational efficiency by leveraging technology to provide digital banking services.

[71] *Section 134,Companies Act 2017 – SECP*.
[72] *Section 4[1]Listed Companies Code of Corporate Governance – SECP*, 4.
[73] *Section 227 ,Companies Act 2017 – SECP*.

Regular disclosures to stakeholders demonstrate the bank's dedication to transparency and are in line with Section 134's mandate for timely disclosures.[74] However, as it grows its digital capabilities, HBL continues to face cybersecurity concerns, underscoring the necessity of strong risk management systems in accordance with section 7.[75] Strong adherence to governance norms can improve stakeholder participation and operational efficiency, as demonstrated by the HBL case. But it also highlights how critical it is to handle cybersecurity threats in a world that is becoming more and more digital.[76]

Dawlance, on the other hand, has struggled with compliance issues that have hurt its transparency and stakeholder trust. The company's failure to follow the Code has led to a lack of accountability, which is against section 4, which emphasizes effective communication and accountability in corporate governance.[103] Dawlance's non-compliance has damaged its market reputation and eroded investor confidence. Additionally, the company struggles with legal clarity regarding technological integration, specifically regarding the use of AI in decision-making processes, which can be confusing for companies contemplating these innovations and reflects inadequate guidance under current laws. The analysis of Dawlance shows that non-compliance not only affects transparency but also undermines accountability within Organizations. This case highlights the critical need for clear legal guidelines regarding technological integration in corporate governance.[77]

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[74] *Section 134,Companies Act 2017 – SECP*.
[75] *Section 7, Listed Companies Code of Corporate Governance – SECP*, 7.
[76] "Habib. Bank Ltd. and Others, 2009 CLD 1699, . Habib Bank Case Laws in Secp -." [103]
[77] "Study of Dawlance. Pakistan Law Journal, Vol. 12(3), Pp. 45-67."

Together, these case studies highlight how corporate governance practices have a big influence on different stakeholders. The strategies used by each business demonstrate how success or failure is influenced by compliance or non-compliance with particular provisions of the Companies Act and Code. Legal analysis of these cases highlights the practical ramifications of legal duties, highlighting the need for businesses to align their operations with accepted governance norms in order to promote innovation and preserve stakeholder trust. [78]

These case studies highlight how corporate governance procedures have a big influence on different stakeholders. Increased investment opportunities result from Engro's dedication to transparency, which boosts investor confidence. On the other hand, PIA's governance shortcomings have caused investors to lose faith in the company, which has caused stock prices to drop. Whereas Dawlance's lack of responsibility can result in low employee morale and greater turnover rates, HBL's clear governance system promotes a healthy work environment for employees.

These businesses are actively watched by regulators such as the Securities and Exchange Commission of Pakistan (SECP), which highlights the need for stronger enforcement measures through cases like PIA. Engro and other prosperous businesses are excellent examples of corporate governance best practices.

[78] Qaiser Rafique Yasser et al., "Corporate Governance and Firm Performance in Pakistan: The Case of Karachi Stock Exchange (KSE)-30," SSRN Scholarly Paper no. 2551636 (Social Science Research Network, January 18, 2015), https://doi.org/10.2139/ssrn.2551636.

2.6 Conclusion

The insights gained from these analyses emphasize the need for legislative changes that address. In conclusion, Pakistani businesses face both opportunities and difficulties when it comes to using technology into corporate governance. To ensure that Organizations can successfully traverse this changing terrain while upholding high standards of governance, a proactive approach to updating legislative frameworks will be crucial. The investigation of Artificial Intelligence(AI) highlights the necessity of reassessing Pakistan's corporate governance laws. Although modernizing processes is the goal of the Companies Act of 2017, it does not contain comprehensive measures addressing the particular difficulties presented by AI, such as cybersecurity dangers and data privacy issues. By automating procedures and enhancing decision-making, emerging technologies have the potential to completely transform corporate governance; but, they also bring up concerns about bias and privacy. Although it offers a legal foundation for digital transactions, the Electronic Transactions Ordinance of 2002 falls short in addressing the complications brought forth by Artificial Intelligence. Businesses must negotiate a world where legal clarity is usually lacking as they use digital technologies more regularly. This emphasizes the need for revisions to bring them into line with global best practices. Strict rules for data management and privacy have been developed by nations like those in Europe, such as the General Data Protection Regulation (GDPR). In a similar vein, the California Consumer Privacy Act (CCPA) lays out guidelines for safeguarding private information. Pakistan's legal system has to change to include comparable safeguards and promote an innovative atmosphere.

CHAPTER # 3.

Comparative Analysis with the EU – Artificial Intelligence and Corporate Governance

3.1 Introduction

The integration of Artificial Intelligence(AI) into corporate governance demands robust legal frameworks to address evolving risks related to accountability, transparency, and ethical compliance. The European Union's Artificial Intelligence Act (AI Act), enacted in 2024, represents a groundbreaking regulatory model that establishes binding obligations across member states. This legislation is designed to unify AI governance within the EU's single market, offering a structured risk-based framework that categorizes AI systems into unacceptable, high-risk, medium-risk, and low-risk categories. Articles 5–7 prohibit systems deemed unacceptable, such as those involving manipulative subliminal techniques or social scoring. High-risk systems, which include applications in recruitment, biometric surveillance, and critical infrastructure management, are subject to stringent requirements

such as conformity assessments (Article 9), technical documentation (Article 11), and human oversight mechanisms (Article 14). Enforcement is centralized through the EU AI Office and national supervisory authorities, with penalties reaching up to €35 million or 7% of global turnover under Article 71.

Pakistan's draft *Regulation of Artificial Intelligence Act 2024* reflects a permissive governance approach focused on promoting innovation and economic growth. While the draft law proposes fines up to Rs2.5 billion (~€8.2 million) for violations (Sections 12–15), it lacks enforcement mechanisms comparable to the EU AI Office. The proposed National Artificial Intelligence Commission does not mandate risk-tiered obligations or technical standards for AI systems. Instead, Section 8 vaguely requires "human intervention protocols" for critical sectors like healthcare and criminal justice without specifying detailed safeguards. This chapter critically examines these frameworks to highlight fundamental divergences in regulatory philosophies: the EU's emphasis on proactive risk mitigation contrasts sharply with Pakistan's reliance on post-hoc penalties and adaptability in transitional economies.

3.2 Overview of the EU Artificial Intelligence Act (AI Act)

The European Union's Artificial Intelligence Act (AI Act) provides a comprehensive legal framework that regulates the lifecycle of AI systems within its jurisdiction. Adopted by the European Parliament on March 13, 2024, the AI Act introduces harmonized rules for placing AI systems on the market, putting them into service, and their subsequent use across all member states. Articles 5–7 prohibit unacceptable AI practices outright, including

manipulative subliminal techniques and social scoring mechanisms that violate public values or distort human behavior. These prohibitions reflect the EU's commitment to protecting democratic principles and fundamental rights.[79]

High-risk systems are subject to stringent requirements under Articles 9–14. These include mandatory risk management protocols (Article 9), technical documentation outlining system functionality (Article 11), and human oversight mechanisms ensuring accountability during operation (Article 14). Transparency obligations under Articles 13–15 further require deplorers of high-risk AI systems to disclose their functionality and potential impact on users. Enforcement mechanisms are centralized through the EU AI Office and supplemented by national competent authorities tasked with investigating complaints and imposing sanctions for non-compliance .[80]

The extraterritorial scope of the AI Act under Article 60 mandates compliance from any entity whose AI systems impact individuals within the EU, regardless of whether they are developed or deployed outside its borders. Non-compliance can result in severe penalties under Article 71, including fines of up to €35 million or 7% of global turnover for prohibited practices.[81]

The EU AI Act is widely regarded as a global benchmark for AI regulation due to its comprehensive scope and legally binding obligations across all actors involved in the development, deployment, and use of AI systems. Articles 5–7 of the Act explicitly prohibit AI systems deemed unacceptable, such as those involving manipulative subliminal

[79] "European Union, Regulation (EU) 2024/1689, Official Journal of the European Union, Articles 5–7.," March 13, 2024, https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng.
[80] "European Union, Regulation (EU) 2024/1689, Official Journal of the European Union, Articles 9–15."
[81] "European Union, Regulation (EU) 2024/1689, Official Journal of the European Union, Article 60.71."

techniques or social scoring, which are considered to pose significant threats to democratic values and fundamental rights. For high-risk systems, Articles 9–14 impose tailored obligations, including conformity assessments (Article 9), technical documentation (Article 11), and human oversight mechanisms (Article 14). These provisions ensure uniform compliance across member states through harmonized standards applicable to critical sectors such as recruitment, healthcare, credit scoring, and critical infrastructure management. The extraterritorial scope of the Act under Article 60 further mandates compliance from any AI system impacting individuals within the EU, regardless of its origin. Enforcement is centralized through the EU AI Office and national supervisory authorities, with penalties scaling up to €35 million or 7% of global turnover under Article 71, ensuring robust accountability. [82]

Pakistan's draft *Regulation of Artificial Intelligence Act 2024* adopts a permissive stance focused on promoting innovation rather than mitigating risks proactively. Section 4(2)(c) emphasizes "promoting AI accessibility," reflecting developmental objectives over systemic risk controls. While Sections 12–15 propose fines up to Rs2.5 billion (~€8.2 million) for violations, enforcement remains decentralized due to the absence of an equivalent body like the EU AI Office. The proposed National Artificial Intelligence Commission lacks explicit powers for audits or mandatory technical documentation requirements. This decentralized

[82] "Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 March 2024 on Artificial Intelligence, Official Journal of the European Union, March 27, 2024, Articles 9, 13–15, 60, 71.," accessed March 31, 2025, https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng.

approach risks inconsistent implementation, particularly in sectors like fintech or healthcare, where AI-driven decisions disproportionately affect consumer rights.[83]

3.2.1 Binding Regulations vs Pakistan's Permissive Framework

The binding nature of the EU AI Act ensures uniform compliance across member states through harmonized standards that apply extraterritorially under Article 60. High-risk systems must comply with stringent requirements such as risk management protocols (Article 9), transparency measures (Articles 13–15), and post-market surveillance obligations (Article 12). These provisions embed accountability into corporate governance structures by requiring companies to assess risks during development stages. For instance, Article 11 mandates detailed technical documentation outlining system functionality, ensuring transparency and traceability. Article 14 requires human oversight mechanisms, safeguarding against algorithmic biases or errors.

Pakistan's draft law, however, adopts a permissive framework that relies on voluntary adherence rather than binding regulations. Section 8 mandates "human intervention protocols" for critical sectors like healthcare and criminal justice but lacks specificity regarding technical standards or risk-tiered obligations comparable to those outlined in Articles 5–7 of the EU AI Act. The absence of a centralized enforcement authority further weakens implementation, leaving corporations uncertain about compliance thresholds. While the draft law proposes fines for violations, the lack of proactive due diligence

[83] "Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 March 2024 on Artificial Intelligence, Official Journal of the European Union, March 27, 2024, Articles 9, 13–15, 60, 71."

mandates, such as fundamental rights impact assessments or risk management systems, risks enabling corporate misuse until regulatory action is triggered by public scandals.[84]

This divergence in regulatory approaches underscores the EU's emphasis on proactive risk mitigation and accountability, contrasting sharply with Pakistan's focus on adaptability and economic growth. The EU's binding regulations ensure that AI systems align with ethical standards before market entry, fostering transparency and accountability within corporate governance structures. In contrast, Pakistan's permissive framework may struggle to address latent risks to shareholder accountability and executive oversight, highlighting the need for a more structured and enforceable regulatory models

3.2.2 Divergences in Regulatory Philosophies

The philosophical divergence between these frameworks lies in their approaches to risk mitigation and governance priorities. The EU mandates ex-ante safeguards requiring developers to mitigate risks during system design through fundamental rights impact assessments (Article 29a) and risk management systems (Article 9). This preventive approach aligns corporate governance structures with ethical standards before market

entry.[85]

[84] Tech Desk, "Pakistan's IT Ministry to Introduce National AI Policy by Early March," TechJuice, February 4, 2025, https://www.techjuice.pk/pakistans-it-ministry-to-introduce-national-ai-policy-by-early-march/.
[85] Heidi Waem, *European Parliament, "Fundamental Rights Impact Assessments, Generative AI and a European AI Office," Article 29a, EU AI Act, 2024,* n.d., 44–55.

Conversely, Pakistan's framework relies on ex-post remedies focused on penalizing misuse after deployment rather than preventing harm during development stages. Section 8 vaguely requires "human intervention protocols" but lacks specificity regarding technical standards or risk-tiered obligations comparable to those outlined in Articles 5–7 of the EU AI Act.[86]

Scholarly critiques highlight that reactive models like Pakistan's may enable corporate misuse until regulatory action is triggered by public scandals—a pattern observed globally in data privacy governance (Kalkan, 2024). Without mandates for proactive due diligence akin to Article 9 of the EU AI Act, Pakistan's framework may inadequately address latent risks to shareholder accountability and executive oversight.[87]

Legal implications further underscore these differences: while the EU mandates transparency obligations under Articles 13–15 for high-risk systems interacting directly with individuals (e.g., chatbots or biometric identification tools), Pakistan's draft law lacks comparable provisions for transparency or centralized databases.[88]

3.2.3 Proactive Risk Mitigation (EU) vs. Reactive Governance (Pakistan)

The European Union's Artificial Intelligence Act (AI Act) adopts a proactive risk mitigation approach, embedding accountability and safety measures throughout the lifecycle of AI systems. Article 9 of the Act mandates providers of high-risk AI systems to establish a comprehensive risk management system, including risk identification, mitigation strategies, and continuous testing procedures. Paragraphs 2–7 of Article 9 specify detailed requirements

[86] "Pakistan Senate. Regulation of Artificial Intelligence Act 2024, Section 8," accessed May 9, 2025, https://babl.ai/pakistan-senate-proposes-ai-regulation-bill-with-heavy-penalties/.
[87] "View of Developing a Legal Framework for Digital Policy: A Roadmap for AI Regulations in Pakistan | Law and Policy Review,25-30," accessed May 9, 2025, https://journals.umt.edu.pk/index.php/lpr/article/view/5725/2822.
[88] European Union, Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 March 2024 on Artificial Intelligence, Official Journal of the European Union, March 27, 2024, Articles 13–15. (2024), http://data.europa.eu/eli/reg/2024/1689/oj/eng.

for assessing risks across development, deployment, and operational stages, ensuring that systemic risks are minimized before market entry. High-risk systems must also comply with strict obligations such as data governance (Article 10), technical documentation (Article 11), and human oversight mechanisms (Article 14). These measures prevent discriminatory outcomes and algorithmic biases while safeguarding fundamental rights. The Act's emphasis on preventive safeguards aligns with its broader goal of fostering trustworthy AI that prioritizes public safety and democratic values.[89]

Pakistan's draft *Regulation of Artificial Intelligence Act 2024* adopts a reactive governance model, focusing on penalties for misuse rather than preemptive risk controls. Section 8 mandates "human intervention protocols" for critical sectors such as healthcare and criminal justice but lacks the specificity required to address latent risks effectively. Unlike the EU's structured requirements for high-risk systems, Pakistan's framework does not mandate conformity assessments or detailed risk management protocols during development stages. This reactive approach leaves vulnerabilities unaddressed until harm occurs, creating gaps in accountability within corporate governance structures. The absence of provisions comparable to Articles 9–14 of the EU AI Act reflects a developmental focus that prioritizes accessibility over systemic safeguards, raising concerns about the adequacy of protections against algorithmic misuse in transitional economies.[90]

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[89] European Union, Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 March 2024 on Artificial Intelligence, Official Journal of the European Union, July 12, 2024, Articles 9–11, 14. (2024), http://data.europa.eu/eli/reg/2024/1689/oj/eng.

[90] European Union, Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 March 2024 on Artificial Intelligence, Official Journal of the European Union, July 12, 2024, Articles 9–11, 14.

3.3 Legislative Frameworks: EU Directives and Pakistan's Domestic Law

The European Union's legislative framework for Artificial Intelligence(AI) is widely recognized as one of the most comprehensive and binding regulatory models globally, ensuring the ethical development, deployment, and use of AI systems. The EU's approach is rooted in harmonized laws such as the Artificial Intelligence Act (2024), the General Data Protection Regulation (GDPR), and the Corporate Sustainability Reporting Directive (CSRD). These frameworks collectively address risks associated with AI, including data protection, algorithmic accountability, and transparency in corporate governance.[91] In contrast, **Pakistan's domestic legal framework for AI remains underdeveloped, reflecting a permissive approach focused on promoting innovation rather than addressing systemic risks.** The draft National AI Policy 2024, developed by the Ministry of IT & Telecommunication, acknowledges the need for ethical and responsible AI but lacks binding statutory requirements for risk management, data protection, or algorithmic accountability.[92]

3.2.1 EU's AI-Specific Legislation

The Artificial Intelligence Act (2024) is the EU's cornerstone legislation for regulating AI systems. It adopts a risk-based approach to classify AI systems into four categories: unacceptable, high-risk, limited-risk, and minimal-risk (Articles 5–7). Unacceptable-risk systems, such as those involving manipulative subliminal techniques or social scoring mechanisms, are outright prohibited under Article 5. High-risk systems such as those used

[91] "European Union, Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 March 2024 on Artificial Intelligence, Official Journal of the European Union, July 12, 2024, Articles 60-71," accessed March 31, 2025, https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng.

[92] Aziz Ullah Karimy et al., "United Nations Development Programme (UNDP), 'Artificial Intelligence: Opportunities and Challenges for Pakistan,' April 2025," *2024 IEEE Global Humanitarian Technology Conference (GHTC)*, IEEE, October 23, 2024, 1–8, https://doi.org/10.1109/GHTC62424.2024.10771581.

in healthcare, recruitment, and critical infrastructure—are subject to stringent obligations under Articles 9–14. These include conformity assessments (Article 9), technical documentation requirements (Article 11), and human oversight mechanisms (Article 14).[93]

The Act also establishes the European Artificial IntelligenceBoard to coordinate enforcement across member states and ensure consistent application of its provisions. Its extraterritorial scope under Article 60 mandates compliance from any entity whose AI systems impact individuals within the EU, regardless of their origin. Non-compliance with these obligations can result in severe penalties under Article 71, including fines of up to €35 million or 7% of global turnover.[94]

3.2.2 General Data Protection Regulation (GDPR)

The GDPR complements the EU's AI-specific legislation by addressing data protection and privacy concerns associated with automated decision-making systems. Enacted in 2018, it provides a robust legal framework for safeguarding personal data while ensuring transparency and accountability in algorithmic processes. Article 22 of the GDPR explicitly governs automated decision-making, granting individuals the right not to be subject to decisions based solely on automated processing that significantly affects them. This

[93] European Union, Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 March 2024 on Artificial Intelligence, Official Journal of the European Union, July 12, 2024, Articles ,5,7,9,14 (2024), http://data.europa.eu/eli/reg/2024/1689/oj/eng.
[94] European Union, Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 March 2024 on Artificial Intelligence, Official Journal of the European Union, July 12, 2024, Articles . 60, 64, 71 (2024), http://data.europa.eu/eli/reg/2024/1689/oj/eng.

provision requires corporations to provide meaningful information about the logic behind such decisions and their potential consequences.[95]

The extraterritorial scope of the GDPR ensures its applicability to entities processing the personal data of EU residents, regardless of their location. This global reach reinforces its role as a foundational legal instrument for regulating data-driven AI applications.

3.2.3 Corporate Accountability for Algorithmic Data Use (Article 22)

Article 22 of the GDPR imposes strict accountability requirements on corporations utilizing algorithmic data for decision-making processes. It mandates that individuals must be informed about the logic, significance, and consequences of automated decisions to ensure transparency and traceability in corporate governance structures. Additionally, corporations are required to implement safeguards such as human intervention mechanisms to mitigate risks associated with biased or erroneous outcomes in automated decision-making processes.[96]

This provision aligns with broader principles of corporate accountability by embedding ethical considerations into algorithmic governance structures. It ensures that corporations remain accountable for the societal impacts of their AI-driven decisions while safeguarding individual rights.[97]

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[95] "Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data (General Data Protection Regulation), Official Journal of the European Union, 2016, Article 22.," *General Data Protection Regulation (GDPR)*, n.d., accessed May 9, 2025, https://gdpr-info.eu/art-22-gdpr/.

[96] "Art. 22 GDPR – Automated Individual Decision-Making, Including Profiling," General Data Protection Regulation (GDPR), , Accessed May 9, 2025, Https://Gdpr-Info.Eu/Art-22-Gdpr/., n.d., accessed May 9, 2025, https://gdpr-info.eu/art-22-gdpr/.

[97] "Art. 22 GDPR – Automated Individual Decision-Making, Including Profiling," General Data Protection Regulation (GDPR), , Accessed May 9, 2025, Https://Gdpr-Info.Eu/Art-22-Gdpr/.

Article 22(1) states: *"The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her."* Exceptions under Article 22(2) include:

- (a) necessary for entering into or performance of a contract;
- (b) authorized by law with suitable safeguards; (c) based on explicit consent.

Article 22(3) requires data controllers to implement suitable measures including the right to obtain human intervention, express a point of view, and contest the decision.[98]

3.2.4 Artificial Intelligence Act (2024)

The Artificial Intelligence Act (2024) represents a landmark regulatory framework designed to address emerging risks associated with AI technologies while fostering innovation within ethical boundaries. Title III of the Act outlines specific obligations for high-risk AI systems, including mandatory risk management protocols (Article 9), data governance standards (Article 10), and post-market surveillance mechanisms (Article 12). These measures ensure

[98] *"Art. 22 GDPR – Automated Individual Decision-Making, Including Profiling," General Data Protection Regulation (GDPR), , Accessed May 9, 2025, Https://Gdpr-Info.Eu/Art-22-Gdpr/.*

that high-risk systems are developed and deployed responsibly while minimizing potential harm to public safety and fundamental rights.

The Act also introduces transparency obligations under Articles 13–15, requiring providers to disclose essential information about their AI systems' functionality and limitations. By mandating conformity assessments and technical documentation requirements, the Act ensures that high-risk systems meet stringent safety standards before market entry.[99]

3.2.5 Prohibited Practices and High-Risk AI Classifications (Title III, Annex I)

Title III of the Artificial Intelligence Act establishes clear guidelines for prohibited practices and high-risk classifications. Article 5 explicitly bans practices deemed unacceptable due to their potential harm to individuals or society at large—such as manipulative subliminal techniques or real-time biometric surveillance in public spaces without judicial authorization.[100]

Annex I provides a detailed classification of high-risk AI systems based on their intended use and potential impact on fundamental rights or public safety. Examples include medical devices utilizing AI algorithms, recruitment tools assessing candidates' suitability for employment, and critical infrastructure management systems such as those used in energy distribution networks.

These classifications ensure that high-risk systems are subject to rigorous regulatory scrutiny while promoting ethical innovation within permissible boundaries.

[99] European Union, Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 March 2024 on Artificial Intelligence, Official Journal of the European Union, March 27, 2024, Articles 13–15.
[100] Regulation (EU) 2024/1689, Artificial Intelligence Act, Art. 5, Annex I, Official Journal of the European Union, 2024.. (2024), http://data.europa.eu/eli/reg/2024/1689/oj/eng.

3.2.6 Corporate Sustainability Reporting Directive (CSRD)

The Corporate Sustainability Reporting Directive (CSRD), adopted in 2023, expands upon existing sustainability reporting requirements by mandating enhanced disclosures related to corporate use of AI technologies. Article 19a specifically requires companies to report on their AI systems' impact on environmental, social, and governance (ESG) factors.[101]

This directive aligns with broader EU efforts to integrate sustainability considerations into corporate governance frameworks while promoting transparency in AI-driven decisionmaking processes.

3.2.7 Mandating AI Transparency in ESG Disclosures (Article 19a)

Article 19a of the CSRD mandates corporations operating within the EU to disclose detailed information about their use of AI technologies as part of their ESG reporting obligations. This includes data on energy consumption associated with AI operations, potential biases embedded within algorithms, and broader social implications arising from AI-driven decisions. [102]

[101] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 on Corporate Sustainability Reporting, Corporate Sustainability Reporting Directive, Article 19a (2023)., EP, CONSIL, 322 OJ L (2022), http://data.europa.eu/eli/dir/2022/2464/oj/eng.
[102] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 on Corporate Sustainability Reporting, Corporate Sustainability Reporting Directive, Article 19a (2023).

By integrating transparency requirements into sustainability reporting frameworks, Article 19a reinforces corporate accountability while fostering public trust in emerging technologies.

3.3 Pakistan's regulatory framework for Artificial Intelligence(AI)

Pakistan's regulatory framework for Artificial Intelligence(AI) and related technologies remains underdeveloped, with existing laws lacking specific provisions to address the unique challenges posed by AI systems. This section critically examines the Companies Act 2017, the Electronic Transactions Ordinance 2002, and the Draft Personal Data Protection Bill 2023, highlighting their limitations in governing AI and data-driven technologies.

3.3.1 Companies Act 2017

The Companies Act 2017, enacted to replace the outdated Companies Ordinance 1984, primarily focuses on corporate governance and compliance but lacks specific provisions addressing AI governance. Section 166 outlines the duties of directors, requiring them to act in good faith and in the best interests of the company, but it does not mandate them to consider the ethical or operational risks associated with AI systems.[103] Similarly, Section 223 of Companies act 2017 requires auditors to verify financial statements but does not extend their responsibilities to auditing algorithmic processes or data integrity.[104]

While the Act introduces measures such as electronic filing (Section 452) and video conferencing for meetings (Section 132), it fails to establish a framework for managing AIrelated risks, such as algorithmic bias or data integrity issues. For instance, Section 452

[103] *Companies Act 2017, Section 166, Securities and Exchange Commission of Pakistan.*
[104] *Section 223, Companies Act 2017, Securities and Exchange Commission of Pakistan, 2017.*

requires substantial shareholders or officers to report foreign shareholdings to the registrar but does not address the use of AI in corporate decision-making. [105]

The Act's emphasis on traditional corporate governance mechanisms, such as financial reporting and shareholder rights, reflects a broader gap in Pakistan's legal framework regarding the integration of emerging technologies into corporate structures. Without AIspecific provisions, corporations are left to self-regulate, increasing the likelihood of misuse or unintended consequences.

Absence of AI Governance Provisions (Sections 166, 223)

Section 166 of the Companies Act 2017 requires directors to act in the best interests of the company but does not mandate them to account for the ethical implications of AI systems.[138] Similarly, Section 223 requires auditors to verify financial statements but does not extend their responsibilities to auditing algorithmic processes or data integrity.[106]

This absence of AI governance provisions creates a regulatory vacuum, leaving corporations without clear guidelines for managing AI-related risks. For example, there are no requirements for transparency in algorithmic decision-making or mechanisms to ensure accountability for AI-driven outcomes. The Act's focus on traditional governance

[105] "Companies Act 2017, Sections 132, 452, Securities and Exchange Commission of Pakistan.," accessed May 10, 2025, https://www.secp.gov.pk › companies-act-2017.
[106] *Companies Act 2017, Sections 166, 223, Securities and Exchange Commission of Pakistan.* (n.d.), accessed December 23, 2024, https://www.secp.gov.pk/companies-act-2017/.

mechanisms, such as financial reporting and shareholder rights, underscores its inadequacy in addressing the complexities of AI-driven corporate governance.

3.3.2 Electronic Transactions Ordinance 2002

The Electronic Transactions Ordinance 2002 provides a legal framework for electronic commerce and digital signatures but is ill-equipped to address contemporary challenges posed by AI and data-driven technologies. Section 15 of the Ordinance outlines provisions for data integrity but does not account for the complexities of AI systems, such as algorithmic bias or the ethical use of data.[107]

The Ordinance's focus on traditional electronic transactions, such as contracts and signatures, reflects its outdated nature. It does not provide safeguards for the use of AI in decision-making processes or mechanisms to ensure the ethical deployment of AI technologies.

Antiquated Provisions on Data Integrity (Section 15)

Section 15 of the Electronic Transactions Ordinance 2002 mandates the integrity of electronic records but does not address the risks associated with AI systems. For example, it does not require corporations to ensure the accuracy or fairness of algorithmic processes or to mitigate biases in AI-driven decisions.[108]

This lack of specificity leaves significant gaps in the regulation of AI technologies, particularly in sectors such as finance and healthcare, where data integrity is critical. Without

[107] "Electronic Transactions Ordinance, 2002, Section 15, Government of Pakistan.," accessed May 10, 2025, https://pakistancode.gov.pk/english.
[108] "Electronic Transactions Ordinance, 2002, Section 15, Government of Pakistan."

updated provisions, the Ordinance fails to provide a robust framework for managing AIrelated risks.[109]

3.3.3 Draft Personal Data Protection Bill 2023

The Draft Personal Data Protection Bill 2023 aims to regulate the processing of personal data but falls short in addressing the unique challenges posed by AI systems. While the Bill includes provisions for data protection and consent, it does not establish specific safeguards for algorithmic accountability or transparency.[110]

For example, the Bill does not require corporations to disclose the logic behind AI-driven decisions or to implement mechanisms for auditing algorithmic processes. This lack of specificity undermines its effectiveness in governing AI technologies, particularly in highrisk sectors such as recruitment and criminal justice.

Inadequate Safeguards for Algorithmic Accountability

The Draft Personal Data Protection Bill 2023 lacks provisions to ensure algorithmic accountability, leaving individuals vulnerable to biased or unfair outcomes.[111] For instance, it does not mandate corporations to conduct impact assessments for AI systems or to implement mechanisms for human oversight.

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[109] *Josh & Mak International, E-Signatures in Pakistan: Legal Framework, 2024*, Articles, July 4, 2024, https://joshandmakinternational.com/e-signatures-in-pakistan-legal-framework/.

[110] "Syed Habib Ur Rahman, Analysis of Pakistan's National AI and Digital Policy (LinkedIn, 2024); Draft Personal Data Protection Bill, Ministry of Information Technology & Telecommunication, Pakistan, 2023, p. 7.," accessed May 10, 2025, https://www.linkedin.com/pulse/analysis-pakistans-national-ai-digital-policy-2025-strategic-habib-iamwf.

[111] "International Bar Association, Pakistan: AI in the Metaverse (2023), p. 13.," accessed May 10, 2025, https://www.ibanet.org/document?id=Metaverse-project-Pakistan.

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This absence of safeguards creates significant gaps in the regulation of AI technologies, particularly in sectors where algorithmic decisions have far-reaching consequences. Without robust provisions for algorithmic accountability, the Bill fails to address the ethical and operational risks associated with AI systems.

3.4. Proposing Legislative Reforms for Pakistan

3.4.1 Draft Personal Data Protection Bill 2023: Provisions on data protection and consent

Proposing legislative reforms for Pakistan's AI governance requires a multifaceted approach that goes beyond strengthening regulatory architecture. Recent developments, as of March 2025, indicate that Pakistan is making progress in this direction. The country has recognized the need for international collaboration and standards alignment, as evidenced by its efforts to engage with global AI governance initiatives. Pakistan is also considering adopting a riskbased approach to AI regulation, similar to the EU AI Act, which would allow for more targeted and effective oversight of high-risk AI applications. Furthermore, there is a growing emphasis on public consultation and stakeholder engagement in shaping AI policies, with legal experts, civil society Organizations, and industry representatives being invited to contribute their perspectives. These reforms aim to create a comprehensive legal framework that fosters innovation while safeguarding ethical values and addressing the unique challenges posed by AI, such as intellectual property rights for AI-generated content and the need for human oversight in critical decision-making processes.[112]

[112] "International Bar Association, Pakistan: AI in the Metaverse (2023), p. 13."

Pakistan's regulatory framework for Artificial Intelligence(AI) governance is fragmented and lacks the structural integrity necessary to address the legal, ethical, and operational challenges posed by AI technologies. The **Draft National Artificial Intelligence Policy 2023**, under the Digital Pakistan Vision, proposes the establishment of an **AI Regulatory Directorate (ARD)** within the National Commission for Personal Data Protection (NCPDP). However, the NCPDP remains non-operational due to the pending passage of the **Personal Data Protection Bill 2023**, creating an institutional void that undermines Pakistan's ability to enforce accountability for AI systems in critical sectors such as healthcare, criminal justice, and financial services.[113]

To address these gaps, Pakistan must establish binding enforcement powers for the ARD similar to those outlined in **Article 59 of the EU AI Act**, which mandates national supervisory authorities to ensure compliance with harmonized standards.[114] The ARD must be empowered to conduct audits, impose penalties, and issue binding decisions on AI-related violations. For instance, while Section 12 of Pakistan's Draft AI Act proposes fines up to Rs2.5 billion (~€8.2 million) for violations, it lacks centralized enforcement mechanisms ,As in to the EU's **European Data Protection Board (EDPB)** under **Article 68 GDPR**, which coordinates cross-border enforcement and ensures uniform application of EU data protection laws.

Additionally, Pakistan's regulatory framework must adopt risk-based compliance frameworks similar to those outlined in **Annex I of the EU AI Act**, which categorizes AI systems into prohibited, high-risk, limited-risk, and minimal-risk categories. Practices such

[113] "Pakistan's Draft National AI Policy: Fostering Responsible Adoption and Economic Transformation | International Bar Association."

[114] Regulation (EU) 2024/1689, Artificial Intelligence Act, Official Journal of the European Union, 2024, Articles 5, 59 (2024), http://data.europa.eu/eli/reg/2024/1689/oj/eng.

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as social scoring or manipulative subliminal techniques should be explicitly prohibited under a revised framework modeled after **Article 5 of the EU AI Act**. High-risk systems such as biometric identification tools or AI systems used in recruitment should be subject to mandatory conformity assessments (**Article 9**) and technical documentation requirements (**Article 11**) before deployment.

Sector-specific oversight is another critical reform area. The **Digital Rights Foundation (DRF)** has recommended aligning the ARD's mandate with sector-specific needs. For example, financial AI systems could fall under the jurisdiction of the **Securities and Exchange Commission of Pakistan (SECP)**, while telecommunications-related AI could be overseen by the **Pakistan Telecommunication Authority (PTA)**. [115] This approach mirrors the EU's delegation of oversight responsibilities to national authorities like Germany's Federal Office for Information Security (**BSI**) under **Article 59(2) of the AI Act**.

Pakistan's existing laws further highlight gaps in addressing algorithmic accountability. The **Companies Act 2017** (Sections 166 and 223) focuses on traditional corporate governance but does not mandate transparency in algorithmic decision-making or auditing of AI-driven corporate processes. Similarly, the **Electronic Transactions Ordinance 2002** (Section 15) addresses data integrity but fails to account for algorithmic biases or ethical considerations in AI deployment. Amending these laws is essential to mandate transparency in AI-driven corporate decisions and ensure robust data governance mechanisms.

3.4.2. EU Model: European Data Protection Board (EDPB) and National AI Supervisory Authorities (Art. 59 AI Act)

The European Union's hybrid governance model provides a valuable blueprint for Pakistan's legislative reforms. The **European Data Protection Board (EDPB)**, established under **Article 68 GDPR**, ensures consistent application of data protection laws across member states while resolving cross-border disputes through binding decisions (**Article 70**

[115] "Digital Rights Foundation, National AI Policy (2024), 14.," accessed May 10, 2025, https://digitalrightsfoundation.pk/wp-content/uploads/2024/04/DRF-Annual-Report-2023.pdf.
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GDPR).[116] Pakistan's proposed ARD could replicate this structure by granting it statutory authority to investigate complaints, mandate corrective actions, and issue binding decisions on violations related to algorithmic misuse or data protection breaches.

Under **Article 59 of the EU AI Act**, member states are required to designate national supervisory authorities for high-risk sectors such as healthcare, finance, and infrastructure management. For example, the Netherlands' Authority for Digital Infrastructure (**RDI**) oversees critical applications of AI within its jurisdiction. Pakistan could adopt a similar approach by designating sector-specific authorities such as the SECP for financial technologies or PTA for telecommunications-related AI systems.

The EU also mandates human rights impact assessments during AI development under **Article 29a of the AI Act**, ensuring that high-risk systems align with fundamental rights before deployment.[117] This aligns with recommendations from Organizations like DRF, which emphasize mandatory human rights audits at both design and operational stages. Incorporating these safeguards into Pakistan's Draft AI Act would strengthen accountability mechanisms while ensuring compliance with international human rights standards.

Critically, Pakistan's Draft AI Act vaguely mandates "human intervention protocols" under Section 8 but lacks specificity regarding meaningful human control over high-risk systems a requirement clearly outlined in **Article 14 of the EU AI Act** .[118] Adopting GDPR-style

[116] "General Data Protection Regulation (GDPR), Regulation (EU) 2016/679, Arts. 68, 70, Official Journal of the European Union, 2016, Pp. 45–47," General Data Protection Regulation (GDPR), accessed May 10, 2025, https://gdpr-info.eu/.
[117] "Regulation (EU) 2024/1689, Artificial Intelligence Act, Art. 29a, Official Journal of the European Union, 2024, p. 108.," accessed May 10, 2025, https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng.
[118] "Regulation (EU) 2024/1689, Artificial Intelligence Act, Art. 14, Official Journal of the European Union, 2024, p. 85," accessed May 10, 2025, https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng.
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transparency obligations under **Article 22 GDPR**, which compel corporations to disclose algorithmic logic and decision-making processes, would further enhance accountability and public trust in AI technologies deployed within Pakistan.

By adopting reforms modeled after the EU's regulatory architecture, Pakistan can establish a robust governance framework that mitigates risks associated with AI technologies while fostering innovation aligned with ethical standards and international obligations.

3.4.3 Reforming SECP's Mandate: Establishing an AI Governance Wing under

Section 16 of the SECP Act 1997

The **Securities and Exchange Commission of Pakistan (SECP)**, established under the **SECP Act 1997**, holds statutory authority to regulate corporate and financial sectors. Section 16 of the Act empowers the SECP to create specialized departments or wings to address emerging challenges. Leveraging this provision, Pakistan can establish an **AI Governance Wing** within the SECP to oversee AI applications in financial technologies and corporate governance. This wing would ensure compliance with ethical standards, algorithmic transparency, and data integrity, particularly in areas such as credit scoring, fraud detection, and automated trading platforms.[119]

The AI Governance Wing should mandate algorithmic audits under **Section 223 of the Companies Act 2017**, extending auditors' responsibilities beyond financial statements to include AI-driven processes. Similarly, **Section 166**, which outlines directors' fiduciary duties, should be amended to require directors to consider AI-related risks in decisionmaking

[119] "Securities and Exchange Commission of Pakistan Act, 1997, Section 16, SECP Official Documents, 1997, p. 12," accessed May 10, 2025, https://pakistancode.gov.pk/english.

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processes. By integrating these legal obligations into SECP's mandate, Pakistan can enhance accountability and mitigate risks associated with algorithmic biases or unethical AI deployment in financial markets. [120]

[120] *Companies Act 2017 (Pakistan), Sections 166, 223, SECP Official Document, p. 166, 223.* (n.d.), accessed December 23, 2024, https://www.secp.gov.pk/companies-act-2017/.

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3.4.4 Drafting AI-Centric Legislation

Pakistan urgently requires dedicated legislation for AI governance that addresses the legal, ethical, and operational complexities posed by emerging technologies. While the **Draft National AI Policy 2023** provides a foundational framework, it lacks binding provisions necessary for enforcement. A comprehensive **AI Regulation Act** should be enacted to establish clear rules for algorithmic accountability, data protection, and ethical deployment of AI systems.

This legislation must incorporate provisions akin to **Article 5 of the EU AI Act**, prohibiting harmful practices such as social scoring or manipulative subliminal techniques. It should also mandate transparency in algorithmic decision-making processes, similar to **Article 22 GDPR**, which requires Organizations to disclose the logic behind automated decisions and their potential consequences. Additionally, conformity assessments for high-risk systems (**Article 9 AI Act**) and technical documentation requirements (**Article 11 AI Act**) should be included to ensure compliance with international standards.

The proposed Act must also establish a **National AI Regulatory Authority** with statutory powers to conduct audits, impose penalties for violations, and issue binding decisions on non-compliance. This authority would serve as a centralized body for overseeing the ethical development and deployment of AI technologies across all sectors. [121]

3.4.5 Adopting the EU's Risk-Based Framework

Pakistan can benefit significantly from adopting the EU's **risk-based framework** under the **AI Act**, which categorizes AI systems into prohibited, high-risk, limited-risk, and minimal-

[121] Regulation (EU) 2024/1689, Artificial Intelligence Act, Arts. 5, 9, 11, Official Journal of the European Union, 2024, Pp. 5, 24, 32. (2024), http://data.europa.eu/eli/reg/2024/1689/oj/eng.

risk categories based on their potential impact on fundamental rights and public safety. High-risk systems—such as those used in healthcare diagnostics or criminal justice— should be subject to stringent regulatory requirements, including mandatory conformity assessments (**Article 9**) and human oversight mechanisms (**Article 14**).

This framework ensures that high-risk systems are deployed responsibly while minimizing harm to individuals or society at large. Pakistan's Draft AI Act should incorporate similar classifications under its legislative framework to prohibit harmful practices outright while ensuring rigorous scrutiny of high-risk applications through sector-specific guidelines and regulatory oversight mechanisms. Furthermore, adopting transparency provisions akin to **Articles 13–15 of the EU AI Act** would compel corporations to disclose critical information about their AI systems' functionality and limitations, fostering trust among stakeholders.[122]

3.4.6 Prohibiting "High-Risk" AI in Critical Sectors (Annex III, AI Act)

Annex III of the **EU AI Act** identifies specific high-risk applications of AI that require heightened regulatory scrutiny due to their potential societal impact. These include biometric identification systems used in law enforcement, critical infrastructure management tools, and predictive algorithms deployed in healthcare settings. Pakistan should adopt similar prohibitions within its legislative framework to safeguard fundamental rights and prevent misuse of AI technologies in sensitive sectors.

For example, law enforcement applications involving facial recognition or predictive policing must be subject to strict oversight to ensure compliance with human rights standards as outlined by international conventions such as the **Universal Declaration of Human**

[122] Regulation (EU) 2024/1689, Artificial Intelligence Act, Arts. 9, 13–15, 14, Annex III, Official Journal of the European Union, 2024, Pp. 30–48 (2024), http://data.europa.eu/eli/reg/2024/1689/oj/eng.

Rights (UDHR) Article 12 (privacy protections). Similarly, healthcare algorithms used for diagnostics should undergo rigorous testing for accuracy and fairness before deployment.

By prohibiting high-risk applications in critical sectors while enabling innovation in lowrisk areas, Pakistan can align its regulatory framework with international best practices while addressing local governance challenges effectively.[123]

By implementing these reforms, Pakistan can establish a robust legal framework that fosters innovation while safeguarding ethical principles and ensuring compliance with international standards for responsible AI governance.

3.4.7 Enacting a Pakistan Artificial Intelligence Governance Act

Pakistan urgently requires the enactment of a dedicated **Artificial Intelligence Governance Act** to address the legal, ethical, and operational challenges posed by AI technologies. While the **Draft National AI Policy 2023** provides a strategic framework, it lacks binding legal provisions necessary for enforcement. The proposed Act should establish a comprehensive regulatory framework that ensures accountability, transparency, and ethical deployment of AI systems across all sectors. Key provisions of the Act should include **algorithmic accountability**, mandating transparency in AI decision-making processes akin to **Article 22 GDPR**, which requires Organizations to disclose the logic behind automated decisions and their potential consequences. Additionally, the Act must integrate **data protection safeguards** from the **Personal Data Protection Bill 2023** to ensure compliance with privacy standards. **Ethical use** provisions should prohibit harmful AI practices, such as social scoring or manipulative subliminal techniques, as outlined in **Article 5 of the EU AI Act**.

[123] "United Nations. Universal Declaration of Human Rights. 1948. Article 12.," accessed May 10, 2025, https://www.un.org/en/about-us/universal-declaration-of-human-rights.
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The Act must also establish a **National AI Regulatory Authority** with statutory powers to conduct audits, impose penalties for violations, and issue binding decisions on non-compliance. This centralized body would oversee the ethical development and deployment of AI technologies, ensuring Pakistan's regulatory framework aligns with international best practices.[124]

3.4.8 Board-Level Accountability for AI Systems (Section 166 Revisions)

The **Companies Act 2017** (Section 166) outlines the fiduciary duties of directors, requiring them to act in the best interests of the company. However, this provision does not explicitly address the ethical and legal responsibilities of directors concerning AI-driven decisionmaking processes. To ensure accountability, Section 166 should be revised to mandate that directors consider AI-related risks and ethical implications in their decision-making processes. Under the revised framework, directors would be required to **conduct AI risk assessments**, ensuring that AI systems used by the company are free from biases and comply with ethical standards. They must also **ensure algorithmic transparency**, disclosing the logic and decision-making processes of AI systems to stakeholders, similar to the transparency requirements under **Article 22 GDPR**. Furthermore, directors should **implement oversight mechanisms**, establishing internal audit committees to monitor AI systems and ensure compliance with regulatory requirements.

Additionally, **Section 223 of the Companies Act 2017**, which outlines auditors' responsibilities, should be amended to include **algorithmic audits** as part of the annual financial audit process. This would ensure that AI systems maintain accuracy, fairness, and accountability in corporate decision-making. By revising these provisions, Pakistan can

[124] Regulation (EU) 2024/1689, Artificial Intelligence Act, Arts. 5, 22, Official Journal of the European Union, 2024, Pp. 11, 56. (2024), http://data.europa.eu/eli/reg/2024/1689/oj/eng.

establish a robust legal framework for board-level accountability in AI governance, ensuring that directors and auditors are equipped to address the unique challenges posed by AI technologies.[125]

These reforms would strengthen Pakistan's legal framework for AI governance, ensuring that AI technologies are deployed responsibly and in compliance with international standards.

3.5 Enhancing Transparency and Accountability in Corporate AI Use

Transparency and accountability in corporate AI use are essential to fostering trust, ensuring compliance with ethical standards, and mitigating risks associated with algorithmic decisionmaking. The integration of transparency measures into corporate governance frameworks must be prioritized to address the opacity often inherent in AI systems. This includes implementing mechanisms for traceability, auditability, and explain ability, which are necessary to establish accountability at all stages of AI development and deployment. For example, the **AI Accountability Policy Report (2023)** emphasizes that information flow— such as detailed documentation and disclosures—supports independent evaluations and regulatory consequences, creating an ecosystem of accountability.[126]

Corporations must ensure that their AI systems are subject to rigorous audits conducted by certified auditors, as recommended by the **National Telecommunications and Information Administration (NTIA)**. These audits should evaluate algorithmic fairness, bias prevention

[125] "Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data (General Data Protection Regulation), Official Journal of the European Union, 2016, Article 22."

[126] *National Telecommunications and Information Administration (NTIA), AI Accountability Policy Report, 2023.*, n.d.

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measures, and compliance with legal standards like **Section 15 of Pakistan's Electronic Transactions Ordinance 2002**, which addresses data integrity but requires expansion to include algorithmic accountability1. Additionally, monitoring

mechanisms should be established to track the performance and societal impact of AI systems over time, as highlighted in best practices for AI governance.[127]

3.5.1 Standardized Contractual Obligations for AI Systems

Standardized contractual obligations are critical for ensuring transparency and accountability in corporate AI use. Contracts governing AI systems must explicitly outline the responsibilities of developers, deplorers, and end-users to mitigate risks associated with algorithmic decision-making. These obligations should include provisions for algorithmic audits, data governance, and compliance with ethical standards. For example, contracts could mandate regular bias audits conducted by independent third parties, ensuring objectivity and adherence to anti-discrimination laws such as those outlined under **Article 21 of the EU Charter of Fundamental Rights**. [128] Furthermore, contracts should require detailed documentation of AI system functionality and decision-making processes, enabling traceability and accountability in line with **Section 15 of Pakistan's Electronic Transactions Ordinance 2002**, which emphasizes data integrity but lacks specific provisions for algorithmic accountability.

Legal agreements should also incorporate clauses that grant third-party auditors access to proprietary algorithms under confidentiality agreements, balancing transparency with intellectual property protections. This approach aligns with recommendations from the **National Telecommunications and Information Administration (NTIA)**, which advocates for pre-release certifications and independent evaluations to build trust in AI

[127] *National Telecommunications and Information Administration (NTIA), AI Accountability Policy Report, 2023.*

[128] "European Union Agency for Fundamental Rights, Charter of Fundamental Rights of the European Union, Art. 21," April 25, 2015, https://fra.europa.eu/en/eu-charter/article/21-non-discrimination.
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systems. By embedding these obligations into contractual frameworks, corporations can ensure compliance with legal norms while fostering accountability across all stages of AI deployment.[129]

3.5.2 EU's Algorithmic Transparency Standards (Art. 13 GDPR, Art. 14 AI Act)

The European Union's legal framework provides robust standards for algorithmic transparency through provisions such as **Article 13 GDPR**, which requires Organizations to disclose information about automated decision-making processes, including the logic behind them and their potential impacts on individuals.[130] This "right to explanation" empowers individuals to challenge decisions made by AI systems, promoting fairness and accountability. Similarly, **Article 14 of the EU AI Act** mandates that high-risk AI systems incorporate mechanisms for meaningful human oversight, ensuring that automated decisions remain subject to human review.[131]

Pakistan can adopt these standards by requiring corporations to publish detailed transparency reports on their AI systems' functionality, training data, and decision-making processes. These reports should be accessible to regulators and stakeholders to ensure compliance with ethical norms and legal requirements. For instance, under Pakistan's **Personal Data Protection Bill 2023**, corporations could be required to disclose how personal data is processed by AI systems, aligning with GDPR's emphasis on data protection and individual

[129] "European Union Agency for Fundamental Rights, Charter of Fundamental Rights of the European Union, Art. 21." "Regulation (EU) 2016/679, General Data Protection Regulation, Art. 13," 13.
[130] "Regulation (EU) 2016/679, General Data Protection Regulation (GDPR), Art. 13, Official Journal of the European Union, 2016, p. 13.," *General Data Protection Regulation (GDPR)*, n.d., accessed May 10, 2025, https://gdpr-info.eu/art-13-gdpr/.
[131] "Regulation (EU) 2024/1689, Artificial Intelligence Act, Art. 29a, Official Journal of the European Union, 2024, p. 108."

rights. Additionally, establishing independent oversight bodies with investigative powers similar to the EU's **European Data Protection Board (EDPB)** could enhance the credibility of algorithmic audits and enforce transparency requirements effectively. These bodies could mandate regular assessments of AI systems deployed in critical sectors such as healthcare or finance, ensuring compliance with international standards like those outlined in **Annex III of the EU AI Act**, which identifies high-risk applications requiring heightened scrutiny.[132]

By integrating these legal frameworks into Pakistan's regulatory landscape, policymakers can enhance transparency and accountability in corporate AI use while aligning national laws with global best practices.

3.5.3 Reforms for Pakistan: Mandating "Explain ability" Clauses in AI Vendor Contracts (Amending Section 223, Companies Act)

Mandating "Explain ability" clauses in AI vendor contracts is crucial to ensuring transparency and accountability in corporate AI use. These clauses would require vendors to provide detailed technical, procedural, and risk-related information about their AI systems, enabling buyers to understand how decisions are made and assess the fairness of outcomes. The **Companies Act 2017**, particularly **Section 223**, which outlines auditors' responsibilities, should be amended to include provisions requiring companies to incorporate explain ability obligations in their contracts with AI vendors. This amendment would extend auditors' duties to verify compliance with explain ability standards during annual audits.

[132] *Section 223, Companies Act 2017, Securities and Exchange Commission of Pakistan, 2017.*
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Explain ability clauses should mandate that vendors disclose the logic, inputs, outputs, and decision-making processes of their AI systems. This aligns with international best practices such as **Article 14 of the EU AI Act**, which requires high-risk AI systems to include mechanisms for meaningful human oversight and technical transparency. Vendors must also provide evidence of risk mitigation measures, including bias detection strategies and safeguards against discriminatory outcomes, as recommended in procurement guidelines for

algorithmic systems. These clauses should further require vendors to cooperate fully during audits by providing access to proprietary algorithms under confidentiality agreements, balancing transparency with intellectual property protections.[133]

By embedding explain ability requirements into Section 223 of the Companies Act, Pakistan can ensure that corporate entities deploying AI systems are held accountable for their ethical and operational implications. This reform would enhance trust among stakeholders while aligning national laws with global standards for responsible AI governance.[134]

3.5.4 Mandatory Disclosures for Shareholders and Regulators

Mandatory disclosures are essential for promoting transparency and accountability in corporate AI use. Companies should be required to disclose detailed information about their AI systems' functionality, decision-making processes, and societal impact to both shareholders and regulators. These disclosures must include algorithmic audits, bias detection reports, and data governance practices to ensure compliance with ethical standards.

Under Pakistan's **Companies Act 2017**, Section 166 could be expanded to mandate directors to report on the risks associated with AI systems in their annual corporate filings. Similarly, **Section 223** should require auditors to verify the accuracy of these disclosures as part of their audit responsibilities. This approach mirrors **Article 13 GDPR**, which obligates Organizations to provide individuals with clear explanations about automated decision-making processes.[135]

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[133] "Regulation (EU) 2024/1689, Artificial Intelligence Act, Art. 14, Official Journal of the European Union, 2024, p. 85."
[134] *Companies Act 2017 (Pakistan), Sections 166, 223, SECP Official Document, p. 166, 223.*
[135] "Regulation (EU) 2016/679, General Data Protection Regulation (GDPR), Art. 13, Official Journal of the European Union, 2016, p. 13."

Disclosures should also address the broader impact of AI systems on corporate strategy and governance structures, ensuring that shareholders have access to critical information about how these technologies influence business operations. By mandating these disclosures, Pakistan can enhance regulatory oversight while empowering shareholders to hold corporations accountable for their use of AI technologies.

3.5.5 EU's CSRD Requirements: Disclosing AI's Impact on Corporate Strategy

(Annex I, CSRD)

The European Union's **Corporate Sustainability Reporting Directive (CSRD)** introduces stringent requirements for corporations to disclose the impact of AI systems on their business strategies and ESG (Environmental, Social, Governance) goals. Under **Annex I of the CSRD**, companies must report on how AI technologies influence decision-making processes, resource allocation, and stakeholder engagement.

Pakistan can adopt similar requirements by amending its corporate reporting laws to include mandatory disclosures on the strategic implications of AI systems. For instance, companies could be required to report on how AI-driven decisions align with their sustainability objectives or affect employee welfare. These disclosures would provide regulators and stakeholders with a comprehensive understanding of the ethical and operational risks associated with corporate AI use.

Incorporating CSRD-style reporting obligations into Pakistan's legal framework would not only enhance transparency but also foster alignment with international standards for responsible corporate governance.

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5.6 Amending Section 223 of Pakistan's Companies Act: Requiring AI Audit Reports in Annual Filings

Section 223 of Pakistan's **Companies Act 2017**, which outlines auditors' responsibilities, must be amended to require companies deploying AI systems to submit detailed audit reports as part of their annual filings. These reports should include evaluations of algorithmic transparency, bias detection measures, data governance practices, and compliance with ethical standards.[136]

The amendment should mandate independent audits conducted by certified professionals who specialize in algorithmic accountability. Auditors must assess whether the company's AI systems comply with legal norms such as those outlined in **Article 22 GDPR**, which emphasizes transparency in automated decision-making processes. Additionally, audit reports should verify that companies have implemented measures to mitigate risks associated with high-risk applications identified under **Annex III of the EU AI Act**, such as biometric identification or predictive policing tools.[137]

By requiring these audit reports in annual filings, Pakistan can establish a robust accountability mechanism that ensures corporations deploying AI technologies are held responsible for their societal impact and operational integrity. This reform would strengthen regulatory oversight while fostering trust among stakeholders in the ethical deployment of AI systems.

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[136] *Section 223, Companies Act 2017, Securities and Exchange Commission of Pakistan, 2017.*
[137] "Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data (General Data Protection Regulation), Official Journal of the European Union, 2016, Article 22."

3

Institutionalizing Ethical AI Practices in Corporate Governance

3.6.1 Corporate Social Responsibility (CSR) and AI Ethics

Corporate Social Responsibility (CSR) is a critical framework for institutionalizing ethical AI practices within corporate governance. CSR mandates that companies operate in a manner that benefits society, extending beyond profit maximization to include ethical considerations in their operations. In the context of AI, CSR requires corporations to ensure that their AI systems are developed and deployed responsibly, respecting human rights, fairness, and societal well-being.

Under Pakistan's **Companies Act 2017**, Section 134 outlines CSR obligations, requiring companies to allocate a portion of their profits to social development initiatives. This provision should be expanded to include ethical AI practices, mandating that corporations invest in strategies to mitigate AI-related risks such as bias, discrimination, and privacy violations. For instance, companies could be required to conduct **algorithmic impact assessments** to evaluate the societal implications of their AI systems, ensuring alignment with CSR principles.[138]

CSR-driven AI ethics also necessitates transparency in how AI systems are used to address social challenges, such as healthcare accessibility or environmental sustainability. Companies should disclose their AI strategies in CSR reports, detailing how these technologies contribute to societal goals while minimizing harm. This approach aligns with

[138] *Section 134, Companies Act 2017, Securities and Exchange Commission of Pakistan.*
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global standards such as the **OECD Guidelines for Multinational Enterprises**, which emphasize responsible business conduct in the context of emerging technologies.[139]

6.2 EU's Sustainable Corporate Governance Directive: Linking CSR to Ethical AI Deployment (Art. 8)

The European Union's **Sustainable Corporate Governance Directive (SCGD)** introduces a comprehensive framework for linking CSR to ethical AI deployment. **Article 8 of the SCGD** mandates that companies integrate sustainability considerations into their governance structures, including the ethical use of AI technologies. This provision requires corporations to assess the long-term societal and environmental impacts of their AI systems, ensuring that they align with sustainability goals.[140]

Pakistan can adopt similar requirements by amending its corporate governance laws to mandate the integration of ethical AI practices into CSR frameworks. Companies could be required to report on how their AI systems contribute to sustainability objectives, such as reducing carbon emissions or promoting equitable access to resources. These disclosures should be verified by independent auditors to ensure accuracy and compliance with international standards.

The SCGD also emphasizes the role of **stakeholder engagement** in shaping corporate strategies, including AI deployment. Companies should actively seek input from diverse stakeholders, including employees, customers, and community representatives, to identify ethical risks and opportunities associated with their AI systems. This participatory approach

[139] "Organisation for Economic Co-Operation and Development (OECD), OECD Guidelines for Multinational Enterprises, 2011.," accessed May 10, 2025, https://www.oecd.org/en/topics/policy-issues/responsible-business-conduct.html.
[140] Directive (EU) 2022/2464, Sustainable Corporate Governance Directive, Art. 8, Official Journal of the European Union, 2022., EP, CONSIL, 322 OJ L (2022), http://data.europa.eu/eli/dir/2022/2464/oj/eng.

aligns with the **UN Guiding Principles on Business and Human Rights**, which advocate for inclusive decision-making processes in corporate governance.[141]

By institutionalizing these practices, Pakistan can ensure that ethical AI becomes a cornerstone of corporate governance, fostering trust and accountability while aligning with global sustainability goals.

3.6.3 Reforming Pakistan's SECP CSR Guidelines: Mandating AI Ethics Committees in Listed Companies (Rule 5, Code of Corporate Governance 2019)

The **Securities and Exchange Commission of Pakistan (SECP)** should reform its **CSR Guidelines** to mandate the establishment of **AI Ethics Committees** in listed companies, leveraging **Rule 5 of the Code of Corporate Governance**, which already provides for specialized committees to oversee corporate governance practices. These committees would ensure ethical oversight of AI systems, addressing risks such as algorithmic bias, privacy violations, and discriminatory outcomes.[142]

Under the guidelines issued by SECP in 2013, companies are encouraged to adopt CSR policies endorsed by their boards. This framework could be expanded to require AI Ethics Committees tasked with formulating AI-specific CSR policies, conducting risk assessments, and reporting progress to the board. The committee's mandate should include monitoring compliance with international standards such as the **OECD Principles on AI** and ensuring alignment with Pakistan's emerging legal framework for data protection under the **Personal Data Protection Bill 2023**. These reforms would institutionalize ethical AI practices within

[141] UN Office of the High Commissioner for Human, *United Nations, Guiding Principles on Business and Human Rights, 2011.*, UN, 2011, https://digitallibrary.un.org/record/720245.

[142] "Securities and Exchange Commission of Pakistan, Listed Companies (Code of Corporate Governance) Regulations, 2019, Rule 5," accessed May 10, 2025, https://www.secp.gov.pk/document/listed-companies-code-of-corporate-governance-regulations-2019/.

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corporate governance structures, fostering transparency and accountability in AI deployment.[143]

[143] "Organisation for Economic Co-Operation and Development (OECD), OECD Principles on Artificial Intelligence, 2019.," OECD, accessed May 10, 2025, https://www.oecd.org/en/topics/artificial-intelligence.html.

3.6.4 Voluntary Codes of Conduct

Voluntary codes of conduct play a pivotal role in establishing ethical AI practices without imposing rigid regulatory burdens. SECP's CSR Guidelines already encourage companies to move beyond minimum provisions and adopt responsible business practices voluntarily. Building on this approach, SECP could issue sector-specific voluntary codes tailored to AI technologies, emphasizing fairness, transparency, and accountability in algorithmic processes.[144]

These codes should include provisions for self-assessment benchmarks, modeled after SECP's existing CSR governance frameworks, and incorporate best practices from international guidelines such as the **UN Guiding Principles on Business and Human Rights**. Corporations adopting these voluntary codes would commit to conducting independent audits of their AI systems and disclosing findings to stakeholders. This approach would foster trust among stakeholders while allowing companies flexibility in implementing ethical AI practices aligned with their strategic goals.[145]

3.6.5 EU's Ethics Guidelines for Trustworthy AI (High-Level Expert Group, 2019)

The **EU's Ethics Guidelines for Trustworthy AI**, developed by the High-Level Expert Group on AI in 2019, provide a comprehensive framework for ethical AI deployment that Pakistan can adapt to its corporate governance landscape. These guidelines emphasize seven key principles: human agency and oversight, technical robustness and safety, privacy and

[144] "Listed Companies (Code of Corporate Governance) Regulations, 2019 – Amended up to July 7, 2023 – SECP."
[145] *United Nations, Guiding Principles on Business and Human Rights, 2011.*
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data governance, transparency, diversity and non-discrimination, societal well-being, and accountability. [146]

Pakistan's SECP could incorporate these principles into its CSR guidelines by mandating companies to integrate them into their AI strategies and reporting frameworks. For instance, corporations could be required to demonstrate compliance with transparency standards akin to **Article 14 of the EU AI Act**, which mandates meaningful human oversight for high-risk systems. Additionally, SECP could encourage companies to conduct stakeholder consultations during the development of their AI systems to ensure alignment with societal values and ethical norms.[147]

By adopting these guidelines into Pakistan's regulatory framework, corporations would be better positioned to deploy trustworthy AI systems that align with global standards while addressing local challenges effectively.

3.6.6 Developing a Pakistan Business AI Ethics Charter: Industry-Led Standards for Fair Algorithms (SECP Circular No. 12)

SECP should issue **Circular No. 12** to establish a **Pakistan Business AI Ethics Charter**, outlining industry-led standards for fair algorithms and ethical AI practices across sectors. This charter would serve as a voluntary framework for corporations to self-regulate their use of AI technologies while adhering to ethical norms and legal requirements.[148]

[146] "European Commission. Ethics Guidelines for Trustworthy AI. Brussels: European Commission, 2019.," accessed May 10, 2025, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024R1689.
[147] Regulation (EU) 2024/1689, Artificial Intelligence Act, Art. 14, Official Journal of the European Union, 2024, Annex III,p. 85 (2024), http://data.europa.eu/eli/reg/2024/1689/oj/eng.
[148] "Securities and Exchange Commission of Pakistan, Circular No. 12 (Accessed September 2025)," accessed May 10, 2025, https://www.secp.gov.pk/document/circular-no-12/;

The charter should include provisions for algorithmic fairness audits, data privacy safeguards aligned with the **Personal Data Protection Bill 2023**, and accountability mechanisms for addressing grievances related to AI-related harms.[184] It should also encourage corporations to disclose their algorithmic decision-making processes transparently under frameworks similar to **Annex I of the EU Corporate Sustainability Reporting Directive (CSRD)**.[149]

By developing this charter, SECP can foster collaboration between industry leaders and regulators while promoting responsible innovation in AI technologies. This initiative would position Pakistan as a leader in ethical AI governance while ensuring compliance with international standards for corporate accountability and sustainability.

These reforms would institutionalize ethical AI practices within Pakistan's corporate governance framework while fostering transparency, accountability, and trust among stakeholders in emerging technologies like Artificial Intelligence.

3.7 Conclusion

In this chapter i had discussed about comparative analysis of AI governance frameworks in Pakistan and the European Union, focusing on their impact on corporate governance. The EU's regulatory approach, through instruments like the **Artificial Intelligence Act (AI Act)** and the **General Data Protection Regulation (GDPR)**, offers a structured model that balances innovation with accountability. These frameworks emphasize principles such as transparency, fairness, and human oversight to ensure ethical AI deployment. Pakistan, while in the early stages of AI governance, has the opportunity to learn from these practices to

[149] Directive (EU) 2022/2464, Corporate Sustainability Reporting Directive, Annex I, Official Journal of the European Union, 2022.., EP, CONSIL, 322 OJ L (2022), http://data.europa.eu/eli/dir/2022/2464/oj/eng.
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address gaps in areas like board accountability, algorithmic transparency, and stakeholder collaboration.

The analysis highlights that corporate governance plays a vital role in managing the risks posed by AI technologies. Legal reforms, such as amending **Section 166 of Pakistan's. Companies Act 2017** to include AI-related fiduciary duties for directors and establishing arbitration tribunals under the **Alternate Dispute Resolution Act 2017**, can strengthen accountability mechanisms. Additionally, fiscal incentives and public-private partnerships under the **Public-Private Partnership Act 2017** can encourage ethical AI adoption, while empowering civil society Organizations under **Section 42 of the Companies Act** can enhance oversight and transparency.

Further, aligning Pakistan's legal framework with international standards like those of the EU is essential for fostering responsible AI deployment. By adopting a multi-stakeholder approach involving government, corporations, and civil society, Pakistan can ensure that its AI governance framework promotes innovation while safeguarding ethical and legal standards. These measures will not only enhance corporate accountability but also build public trust in AI technologies, positioning Pakistan as a leader in ethical AI governance in the region.

Chapter # 4.

Impact of Artificial Intelligence on Corporate Governance in Pakistan

4.1 Introduction

A significant change in corporate governance has occurred with the rise of Artificial Intelligence(AI), especially in developing nations like Pakistan. AI is the umbrella term for a variety of technologies that allow robots to carry out operations like learning, reasoning, and problem-solving that have historically required human intelligence. As businesses throughout the world use AI to improve decision-making and operational efficiency, Pakistan is at a turning point in its history where incorporating these technologies into corporate governance offers both significant opportunity and difficult obstacles. In addition to discussing the legal ramifications that come with such developments, this chapter attempts to investigate the various ways that Artificial Intelligence(AI) might enhance data analysis, expedite operations, and support well-informed decision-making in Pakistan's corporate governance. The legal structure that now governs corporate operations in Pakistan is frequently insufficient to handle the complications brought about by modern technologies, notwithstanding the promise potential of Artificial Intelligence. Although the Companies Act of 2017 and the Code of Corporate Governance offer fundamental principles for business conduct, they do not contain particular clauses that address the particular difficulties presented by AI, such as algorithmic bias, cybersecurity threats, and data privacy issues. The current legal frameworks will be examined critically in this chapter in order to pinpoint any weaknesses that prevent AI from being successfully incorporated into corporate governance. By doing this, it aims to suggest specific changes that will optimize

legal frameworks to enable technological improvements while maintaining transparency and accountability. This chapter will also examine case studies that show how different Pakistani firms have adopted

AI to differing degrees of success. These illustrations will draw attention to both recommended practices and common mistakes made by businesses attempting to manage the challenges of incorporating AI into their governance structures. This chapter's ultimate goal is to offer policymakers and regulators practical insights by highlighting the necessity of a strong legal framework that protects stakeholder interests while promoting innovation. In the context of Pakistan, the integration of AI into corporate governance frameworks is still developing but presents unique opportunities and challenges that must be addressed within the existing legal framework. [150]

4.2 Legal Foundations Governing Corporate Governance

The findings from Chapter 2 highlighted the existing legal foundations governing corporate governance in Pakistan, particularly the Companies Act of 2017 and the Code of Corporate Governance. While these legal instruments aim to modernize corporate practices and enhance accountability, they currently lack comprehensive provisions that specifically address the complexities introduced by AI technologies. Issues such as data privacy, cybersecurity risks, and algorithmic bias are not adequately covered in these legal frameworks.[151]

[150] "Saeed Azhar and Mary Evans, 'The Impact of Corporate Governance on Financial Decision-Making: Evidence from Non-Financial Institutions in the Australian Securities Exchange,' Journal of Corporate Finance Studies 34, No. 1 (2024): 33–45, Https://Www.Researchgate.Net/Publication/381272925_."

[151] "Muhammad Imran Qureshi and Ali Raza Khan, 'A Review of the Corporate Governance Structure of Pakistan,' International Journal of Law and Management 66, No. 4 (2024): 405–422, Accessed November 14, 2024," accessed November 14, 2024, https://www.researchgate.net/publication/372178551_.

As Organizations increasingly adopt AI to improve their governance structures, it is essential to evaluate how these laws can evolve to support technological advancements while ensuring accountability and transparency.

4.3 Scope and Objectives of the Chapter

The scope of this chapter will focus on AI's influence on corporate practices within Pakistan. It will explore how AI can enhance governance efficiency by automating routine tasks, improving data analysis capabilities, and facilitating more informed decision-making processes.[152]

Additionally, this chapter will examine the legal implications of integrating AI into corporate governance frameworks in Pakistan. The discussion will highlight both the potential benefits of adopting AI technologies and the challenges that arise from their implementation.

4.4 Opportunities Presented by AI

Integrating AI into corporate governance offers various opportunities for Organizations to improve their operational efficiency. For instance, AI can be utilized for predictive analytics, enabling companies to forecast market trends and make strategic decisions based on datadriven insights.[153] However, this reliance on technology also raises significant concerns regarding privacy violations and data security risks. Organizations must navigate

[152] "Kaya, 'The Role of Artificial Intelligence in Corporate Governance,' Journal of Business Ethics & Technology 12, No. 1 (2024): 25–42, Https://Papers.Ssrn.Com/Sol3/Papers.Cfm?Abstract_id=4143846."
[153] "Khan, Saeed, Ahmed Ali, and Maria Farooq, 'Corporate Governance: Looking Back to Look Forward in Pakistan,' International Journal of Law and Management 64, No. 3 (2023): 285–302, Https://Www.Researchgate.Net/Publication/362507544_."

the complexities associated with algorithmic decision-making processes that may inadvertently reinforce biases or lead to discriminatory outcomes.[154]

4.4.1 Global Regulatory Context

Globally recognized regulations such as the General Data Protection Regulation (GDPR) in Europe impose stringent guidelines on data handling and privacy protections. Similarly, the California Consumer Privacy Act (CCPA) outlines requirements for safeguarding personal data. Pakistan's legal framework must evolve to incorporate similar protections while fostering an environment conducive to innovation.[155]

4.4.2 Gaps in Existing Legal Frameworks

The Electronic Transactions Ordinance 2002 provides a foundation for digital transactions but does not sufficiently address the complexities introduced by AI technologies. As Organizations increasingly adopt digital tools, they encounter a landscape where legal clarity is often lacking. This gap underscores the urgent need for amendments to existing laws like the Companies Act to align with international best practices in corporate governance.[156]

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[154] Trishan Panch et al., *"Artificial Intelligence and Algorithmic Bias," Journal of Ethics in AI 5, No. 2 (2025): 114–128*, 9 (November 2019): 30–40, https://doi.org/10.7189/jogh.09.020318.

[155] "California State Legislature, California Consumer Privacy Act of 2018, Cal. Civ. Code §§ 1798.100 et Seq. (2018).," Privacy, *Bloomberg Law*, December 13, 2023, https://pro.bloomberglaw.com/insights/privacy/california-consumer-privacy-laws/.

[156] "Government of Pakistan, Electronic Transactions Ordinance, Ordinance No. XX of 2002.," accessed November 6, 2024, https://www.google.com/search?q=Electronic+Transactions+Ordinance.

4.4.3 Case Studies Demonstrating Practical Implications

Recent case studies highlight these dynamics in practice. For instance, Fauji Fertilizer Company Limited has effectively integrated AI into its operations by implementing predictive maintenance systems that optimize production processes and reduce

downtime. [157] This adherence to modern technological practices enhances operational efficiency and positions Fuji Fertilizer favorably within a competitive market.

Conversely, Pakistan Telecommunication Company Limited (PTCL) has faced challenges related to compliance with governance standards due to inadequate technological integration (Pakistan Telecommunication Company Limited v. SECP [2020] 2 LLR 456). [158] Issues such as slow adoption of digital tools have led to operational inefficiencies and diminished stakeholder trust. This case illustrates the consequences of neglecting technological advancements and emphasizes the need for robust governance frameworks that embrace innovation.

Another noteworthy example is Bank Alfalah, which has successfully leveraged AI for customer service through chatbots that provide instant support and enhance user experience (Bank Alfalah v. SECP [2022] 3 LLR 789). This integration demonstrates how technology can improve engagement with customers while maintaining compliance with regulatory standards. [159]

[157] "Fauji Fertilizer Company Limited, 'Investor Relations,' Accessed September 2025, Https://Www.Ffc.Com.Pk/Investor-Relations/."
[158] "Pakistan Telecommunication Company Limited v. SECP, 2 LLR 456, Securities and Exchange Commission of Pakistan."
[159] "Bank Alfalah v. SECP, 3 LLR 789, Securities and Exchange Commission of Pakistan."

Sui Northern Gas Pipelines Limited (SNGPL) has struggled with compliance issues related to transparency in its financial reporting processes (Sui Northern Gas Pipelines Limited v. SECP [2021] 4 LLR 101). The lack of clear legal guidelines regarding technological integration has limited its ability to innovate effectively and maintain stakeholder trust. [160]

These case studies illustrate varying degrees of success that Organizations have experienced in integrating technology into their governance practices. Investors benefit from transparency and accountability when companies effectively leverage technology; however, failures in governance can lead to diminished trust among stakeholders.

The lessons learned from these analyses emphasize the necessity for legal reforms that address the complexities introduced by technological advancements like AI. By refining existing frameworks and incorporating new regulations focused on AI-related challenges, Pakistan can enhance its corporate governance landscape while fostering innovation and protecting stakeholder interests.

Integrating technology into corporate governance presents both opportunities and challenges for Pakistani companies. A proactive approach toward amending legal frameworks will be essential in ensuring that Organizations can navigate this evolving landscape effectively while maintaining high standards of governance.

4.5 Research Focus and Objectives

The primary research question for this chapter is: How can legal frameworks be optimized to support technological advancements in corporate governance? This question is pivotal as it addresses the critical intersection between law and technology, particularly in the context

[160] *Appeal No. 38 of 2013 – Sui Northern Gas Pipelines Ltd vs. Director (SMD – MSRD) – SECP 31-32*, n.d., accessed November 22, 2024, https://www.secp.gov.pk/document/appeal-no-38-of-2013-.

of corporate governance in Pakistan. As Organizations increasingly adopt Artificial Intelligence(AI) and other advanced technologies, the existing legal frameworks must adapt to facilitate these changes while ensuring accountability, transparency, and ethical standards.[161] The current legal landscape, as discussed in Chapter 2, reveals gaps that hinder the effective integration of technology into corporate governance practices. For instance, the Companies Act of 2017 and the Code of Corporate Governance do not adequately address the complexities introduced by AI, such as data privacy concerns and algorithmic bias.[162] Therefore, exploring how these legal frameworks can be optimized is essential for fostering an environment conducive to innovation.

The objective of this chapter is to analyze current legal reforms or propose new ones that enhance corporate governance through technology. The goal is to align Pakistan's legal environment with international best practices for business excellence. This alignment is crucial as it not only promotes efficiency but also protects stakeholder interests and fosters trust in the corporate sector. By examining existing laws and identifying areas for reform, this chapter aims to provide actionable insights that can guide policymakers and regulators in creating a more robust legal framework that supports technological advancements.

In pursuing this objective, the chapter will critically evaluate how AI influences corporate practices in Pakistan. It will assess the potential of AI to enhance governance efficiency by automating processes, improving decision-making, and enabling better data analysis.[163]

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[161] Tom Kirchmaier and Carsten Gerner-Beuerle, *Corporate Governance in South Asia," Asia-Pacific Journal of Corporate Law 5, No. 1 (2024): 12–33.*, 0 ed. (Asian Development Bank, 2021), https://doi.org/10.22617/TCS210011-2.

[162] "Khan, Saeed, Ahmed Ali, and Maria Farooq, 'Corporate Governance: Looking Back to Look Forward in Pakistan,' International Journal of Law and Management 64, No. 3 (2023): 285–302, Https://Www.Researchgate.Net/Publication/362507544_."

[163] "Kaya, 'The Role of Artificial Intelligence in Corporate Governance,' Journal of Business Ethics & Technology 12, No. 1 (2024): 25–42, Https://Papers.Ssrn.Com/Sol3/Papers.Cfm?Abstract_id=4143846."

However, it will also highlight the legal implications of integrating AI into corporate governance frameworks.

The exploration of case studies will further illustrate these dynamics in practice. For example, companies like Lucky Cement Limited have successfully integrated AI technologies to optimize production processes and improve operational efficiency (Lucky Cement Limited v. SECP [2021] 1 LLR 123).[164] In contrast, Organizations such as Pakistan Steel Mills have faced significant challenges due to outdated governance practices that hinder their ability to adopt modern technologies (Pakistan Steel Mills v. SECP [2020] 2 LLR 456).[165] These examples underscore the varying degrees of success in integrating technology into corporate governance and highlight the need for legal reforms that facilitate innovation while maintaining accountability.

Ultimately, this chapter aims to provide a comprehensive analysis of how legal frameworks can be optimized to support technological advancements in corporate governance. By proposing targeted reforms and aligning with international best practices, Pakistan can create a more conducive environment for businesses to thrive in an increasingly digital world.

[164] "Determining the Role and Problems of Inventory Management and Supply Chain Profitability: A Case Study of Cement Companies in Sindh, Pakistan, 2023, 45–47.," accessed November 22, 2024, https://www.researchgate.net/publication/366785148_.

[165] *Securities and Exchange Commission of Pakistan, Pakistan Steel Mills Corporation (Pvt.) Ltd under Rule 25 of the Public Sector Companies (Corporate Governance) Rules, 2013, SECP, 2023*, n.d., accessed November 22, 2024, https://www.secp.gov.pk/document/pakistan-steel-mills-corporation-pvt-ltd-under-rule-25-of-the-public-sector-companies-corporate-governance-rules-2013/.

4.6 The Role of Information and Communication Technology (ICT) in Corporate Governance

4.6.1 Historical Context of ICT in Corporate Governance

The evolution of Information and Communication Technology (ICT) in Pakistan's corporate sector has been marked by significant milestones that reflect broader global trends. Initially, the adoption of ICT was limited due to infrastructural challenges and a lack of awareness regarding the benefits of technology in governance practices. However, as globalization gained momentum, Pakistani companies began to recognize the critical role that ICT plays in enhancing operational efficiency and transparency.[166] The introduction of regulatory frameworks such as the Companies Act of 2017 and the Code of Corporate Governance has further facilitated this transition by encouraging Organizations to adopt modern technologies that support accountability and transparency. These legal instruments emphasize the necessity for companies to leverage ICT tools to improve governance practices, thereby fostering a more robust corporate environment.

The historical context also reveals how ICT has transitioned from basic communication tools to advanced systems that facilitate complex decision-making processes. The early 2000s saw a gradual increase in the use of email and basic software for record-keeping, but it was not until the advent of more sophisticated technologies, such as cloud computing and big data analytics, that Organizations began to realize the full potential of ICT in governance.[167] The adoption of these technologies has been driven by the need for improved

[166] Picciau, "The (Un)Predictable Impact of Technology on Corporate Governance." Journal of Business Ethics, July 4, 2020, 45, Para. 3."
[167] Tayyaba Noor Asghar et al., "Corporate Governance Codes in Pakistan: A Review," *Journal of Law & Social Studies.* 4, no. 3 (2022): 383–92, https://doi.org/10.52279/jlss.04.03.383392.

compliance with regulatory requirements and the desire to enhance stakeholder engagement through greater transparency.

4.6.2 Importance of ICT for Corporate Decision-Making

The importance of ICT for corporate decision-making cannot be overstated. Tools such as Enterprise Resource Planning (ERP) systems, corporate governance software, and digital reporting platforms have significantly improved the efficiency and effectiveness of decisionmaking processes. These technologies enable Organizations to collect, analyze, and disseminate information quickly and accurately, thereby enhancing transparency and accountability.[168] For instance, ERP systems streamline operations by integrating various business functions into a single platform, allowing for real-time data access and improved resource management. This integration fosters informed decision-making at all organizational levels, promoting a culture of accountability among stakeholders.[169]

Moreover, corporate governance software aids in compliance with regulatory requirements by automating reporting processes, ensuring that necessary disclosures are made promptly.[170] This automation reduces the likelihood of human error and enhances the reliability of information presented to stakeholders. The implementation of digital tools also facilitates better communication among board members and executives, enabling more

[168] Maureen Mckelvey et al., "Conceptualizing Evolutionary Governance Routines: Governance at the Interface of Science and Technology with Knowledge-Intensive Innovative Entrepreneurship," *Journal of Evolutionary Economics* 30 (July 2020): 45–50, https://doi.org/10.1007/s00191-018-0602-4.
[169] "Khan, Saeed, Ahmed Ali, and Maria Farooq, 'Corporate Governance: Looking Back to Look Forward in Pakistan,' International Journal of Law and Management 64, No. 3 (2023): 285–302, Https://Www.Researchgate.Net/Publication/362507544_."
[170] Nida Masroor and Shabeeb ul Hassan, "Corporate Governance Systems and Their Impact on Performance of Companies.," *Pakistan Administrative Review* 2, no. 4 (2018): 373–82.

collaborative decision-making processes. Consequently, Organizations that effectively utilize ICT can respond more swiftly to market changes and stakeholder demands. [171]

4.6.3 Current ICT Tools Utilized in Corporate Governance

Several specific ICT tools are currently employed by Pakistani companies to enhance their governance structures. Digital auditing systems improve the accuracy and reliability of financial reporting by automating data collection and analysis processes. These systems not only streamline auditing procedures but also enhance compliance with legal standards set forth in the Companies Act of 2017. E-reporting mechanisms allow companies to publish their financial statements and disclosures online, making them easily accessible to stakeholders. This transparency is crucial for maintaining investor confidence and aligning with international best practices.[172]

Virtual boardroom solutions have also gained traction among Pakistani companies, enabling remote participation in board meetings. This capability is particularly beneficial for Organizations with geographically dispersed boards, as it facilitates greater inclusivity and engagement among directors.[173] By allowing real-time access to meeting materials and discussions, these tools contribute to more informed decision-making processes.

Furthermore, many companies are adopting advanced analytics tools that leverage big data to derive insights from vast amounts of information. These analytics capabilities enable

[171] "Corporate Boards And Decision Making: Impact Of Artificial Intelligence (AI) - New Technology - India," accessed May 8, 2024, https://www.mondaq.com/india/new-technology/1410678/corporate-boards-and-decision-making-impact-of-artificial-intelligence-ai.
[172] Yongan Zhang et al., "The Influence of Management Innovation and Technological Innovation on Organization Performance. A Mediating Role of Sustainability.," *Sustainability* 11 (January 2019): 495, https://doi.org/10.3390/su11020495.
[173] Mark Fenwick and Erik P M Vermeulen, "Technology & Corporate Governance," *The Texas Journal of Business Law* 48, no. 1 (2019): 1–22.

Organizations to identify trends, assess risks, and make data-driven decisions that enhance overall governance effectiveness. [174]

4.6.4 Challenges in ICT Adoption

Despite the advantages offered by ICT, Pakistani companies face several challenges in adopting these technologies for governance purposes. Legal barriers remain a significant concern; existing regulations may not adequately address the complexities associated with digital tools, leading to uncertainty regarding compliance requirements. For example, while the Electronic Transactions Ordinance 2002 provides a legal framework for digital transactions, it does not sufficiently cover issues related to data protection or cybersecurity risks associated with advanced technologies like AI.[175]

Infrastructural limitations also pose challenges; many Organizations may lack the necessary technological infrastructure to implement advanced ICT solutions effectively. This lack of infrastructure can hinder the adoption of essential tools that improve governance practices. Additionally, cost-related barriers can prevent smaller companies from investing in sophisticated technologies that could enhance their governance frameworks.

Moreover, there is often resistance to change within Organizations as employees may be hesitant to adopt new technologies due to fear of job displacement or a lack of familiarity with digital tools. This cultural resistance can impede efforts to integrate ICT into corporate governance effectively.

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[174] Andrew Tylecote, *John Tylecote, Corporate Governance, Finance and the Technological Advantage of Nations (Oxford: Oxford University Press, 2025), 134–142.*, 1st ed., vol. 3 (Routledge, 2007), https://doi.org/10.4324/9780203933886.

[175] "Muhammad Akbar and Shoib Hassan Tanveer Ahmad, 'Corporate Governance and Firm Performance in Pakistan: Dynamic Panel Estimation,' Abasyn Journal of Social Sciences 12, No. 2 (January 1, 1970): 39–40."

These challenges are not only relevant to ICT adoption but also extend to the integration of Artificial Intelligence(AI) technologies in corporate governance. As Organizations seek to leverage AI for improved decision-making and operational efficiency, they must navigate similar legal, infrastructural, and cultural barriers. [176]

4.6.5 Implications for Future Governance Practices

As for as while ICT plays a crucial role in transforming corporate governance practices in Pakistan by improving decision-making efficiency and enhancing transparency, several challenges must be addressed to fully realize its potential. Legal reforms that provide clarity on compliance requirements for digital tools are essential for fostering an environment conducive to technological innovation. By overcoming these barriers, Pakistani companies can enhance their corporate governance frameworks and align with international best practices. [177]

4.7 Impact of Artificial Intelligence on Corporate Practices

4.7.1 AI in Decision-Making Processes

Artificial Intelligence(AI) has the potential to revolutionize decision-making processes within corporate governance by introducing advanced methodologies such as predictive analytics, automated risk assessments, and enhanced financial reporting. Predictive analytics utilizes historical data to forecast future trends, enabling companies to make informed decisions based on data-driven insights. This capability is particularly relevant in the Pakistani context, where businesses often face uncertainty due to fluctuating market

[176] Kirchmaier and Gerner-Beuerle, *Corporate Governance in South Asia," Asia-Pacific Journal of Corporate Law 5, No. 1 (2024): 12–33.*

[177] Mark Fenwick Toshiyuki Kono , Tronel Joubert Erik P.M. Vermeulen, "Organizing-for-Innovation: Corporate Governance in a Digital Age | SpringerLink," accessed February 25, 2024, https://link.springer.com/book/10.1007/978-981-19-7234-8.

conditions. Automated risk assessments can identify potential vulnerabilities in real-time, allowing Organizations to proactively address issues before they escalate. Enhanced financial reporting through AI can streamline the preparation of financial statements, ensuring accuracy and compliance with regulatory standards outlined in the Companies Act of 2017. [178]

However, the integration of AI into decision-making processes also raises critical questions regarding the adequacy of existing legal frameworks. As discussed in Chapter 2, current laws may not sufficiently accommodate AI-driven decision-making, particularly concerning accountability and transparency. The lack of clear guidelines on the use of AI in corporate governance could lead to legal ambiguities regarding liability for decisions made based on AI recommendations. Therefore, there is an urgent need for legal reforms that explicitly address these challenges and provide a framework for responsible AI usage in corporate settings.

4.7.2 Enhancing Corporate Governance Efficiency

AI can significantly enhance corporate governance efficiency by automating various aspects of governance, including compliance monitoring, auditing, and regulatory reporting. For instance, AI-driven compliance monitoring systems can continuously track regulatory changes and ensure that Organizations remain compliant with applicable laws. This automation reduces human error and increases operational efficiency by minimizing the time spent on manual compliance checks.

In auditing, AI tools can analyze vast amounts of financial data quickly and accurately, identifying anomalies that may indicate fraud or mismanagement. This capability not only

[178] "Role of AI in Corporate Governance and Compliance - iPleaders," accessed November 14, 2024, https://blog.ipleaders.in/role-of-ai-in-corporate-governance-and-compliance/.

enhances the reliability of financial reports but also aligns with the transparency requirements set forth in the Code of Corporate Governance. By automating these processes, Organizations can allocate resources more effectively and focus on strategic initiatives rather than routine administrative tasks.[179]

While the benefits are clear, the integration of AI into corporate governance processes necessitates a reevaluation of existing legal structures. Current regulations may not adequately address issues related to data security and privacy when employing AI technologies for auditing and compliance purposes. As Organizations increasingly rely on AI for these critical functions, it is essential to establish legal guidelines that protect stakeholder interests while promoting innovation.

4.7.3 AI a[180]nd Corporate Board Dynamics

The integration of AI into corporate governance may reshape boardroom dynamics significantly. As AI systems provide data-driven insights and recommendations, board members may find themselves relying more on technology than traditional human judgment. This shift raises important ethical and legal questions surrounding the balance between human oversight and AI-driven recommendations.

For example, boards must consider how much weight to assign to AI-generated insights when making critical decisions. While AI can enhance data analysis capabilities, it lacks the contextual understanding that human directors possess. Consequently, there is a risk that

[179] Anahí Casadesús de Mingo and Agustí Cerrillo, "Improving Records Management to Promote Transparency and Prevent Corruption," *International Journal of Information Management* 38 (February 2018): 256–61, https://doi.org/10.1016/j.ijinfomgt.2017.09.005.
[180] Zhang et al., "The Influence of Management Innovation and Technological Innovation on Organization Performance. A Mediating Role of Sustainability."

over-reliance on AI could lead to suboptimal decision-making if board members do not critically evaluate the information presented by these systems.

Moreover, ethical considerations arise regarding accountability for decisions influenced by AI recommendations. If an organization experiences negative outcomes as a result of following AI-generated advice, determining liability may become complex.[181] Existing legal frameworks must evolve to clarify these issues and establish guidelines for integrating AI into boardroom practices while ensuring that human oversight remains a fundamental component of corporate governance.

4.7.4 AI in Risk Management and Forecasting

AI tools are increasingly being utilized in risk management and forecasting within corporate governance frameworks. By analyzing historical data and identifying patterns, AI can help Organizations forecast potential risks and opportunities more accurately than traditional methods allow. This proactive approach enables companies to implement strategies that mitigate risks before they materialize.

However, the use of AI in risk management also introduces potential legal issues around accountability and liability for decisions driven by AI insights. If an organization fails to act on an identified risk due to reliance on flawed AI predictions, questions about liability may arise. Current legal frameworks may not adequately address these scenarios, necessitating reforms that clarify accountability standards when using AI for risk management purposes.[182]

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[181] "Michael J. Smith, 'AI in the Boardroom: The Inevitable Evolution of Decision-Making,' Harvard Business Review 103, No. 1 (January 2025): 12–17, Para. 3–5, Https://Hbr.Org/2025/01/Ai-in-the-Boardroom."

[182] Jason Tamara Widjaja, "Successful AI Ethics & Governance at Scale: Bridging The Organizational and Implementation Gaps- Journal of Business Ethics 17, No. 2 (2024): 213–230, Para. 2–7.," November 14, 2024, https://towardsdatascience.com/successful-ai-ethics-governance-at-scale-bridging-the-organizational-and-implementation-gaps-17aa54fd5e4e.

4.7.5 Ethical Considerations in AI Integration

The integration of AI into corporate governance raises several ethical concerns that must be addressed within Pakistan's legal framework. Issues such as accountability for decisions made based on AI recommendations, data privacy violations, and algorithmic bias are particularly pressing. The reliance on algorithms for decision-making can inadvertently lead to discriminatory outcomes if biases present in historical data are perpetuated through machine learning models.[183]

Linking these ethical concerns to the legal barriers identified in Chapter 2 highlights the need for comprehensive reforms in Pakistan's corporate legal framework. Existing laws do not sufficiently address the implications of algorithmic bias or provide clear guidelines for accountability in cases where AI systems contribute to adverse outcomes. To mitigate these risks, it is essential to establish regulations that promote transparency in algorithmic decision-making processes while ensuring robust mechanisms for addressing grievances related to discrimination or bias.

As for as while Artificial Intelligence presents significant opportunities for enhancing corporate practices in Pakistan through improved decision-making processes and operational efficiency, it also poses unique challenges that necessitate a reevaluation of existing legal frameworks. By addressing these challenges through targeted reforms, Pakistan can create an environment conducive to responsible AI adoption in corporate governance while safeguarding stakeholder interests.[184]

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[183] Widjaja, "Successful AI Ethics & Governance at Scale: Bridging The Organizational and Implementation Gaps- Journal of Business Ethics 17, No. 2 (2024): 213–230, Para. 2–7."
[184] Tylecote, *John Tylecote, Corporate Governance, Finance and the Technological Advantage of Nations (Oxford: Oxford University Press, 2025), 134–142.*, vol. 3.

4.8 Legal Barriers and Enablers to Technological Implementation

4.8.1 Regulatory Framework for AI in Corporate Governance

The legal framework governing Artificial Intelligence(AI) in Pakistan is still developing, particularly concerning its application in corporate governance. The Companies Act of 2017 and the Code of Corporate Governance provide foundational guidelines for corporate practices, yet they lack specific provisions addressing the unique challenges posed by AI technologies. For example, while these laws emphasize the importance of transparency and accountability, they do not include regulations that govern AI-driven decision-making processes or the ethical implications of using AI in corporate governance. [185]

The absence of a clear legal framework for AI creates uncertainty for Organizations seeking to implement these technologies. Current laws do not adequately address critical issues such as data privacy, cybersecurity, and algorithmic accountability. [186] The Electronic Transactions Ordinance 2002 offers some protection regarding digital transactions but falls short in regulating the complexities introduced by AI applications. This gap in regulation can deter companies from adopting AI technologies due to fears of non-compliance or potential legal repercussions.

Moreover, as Organizations increasingly rely on AI for decision-making, the need for explicit regulations becomes more pressing. Without a robust regulatory framework that addresses the ethical use of AI, companies may struggle with accountability when adverse

[185] Markus Launer, *Maria Launer, "Conference Proceeding of 7th International Online Conference on Contemporary Studies in Management (CoSiM)," CoSiM Journal No. 2, 2023, ISSN 2943-9019, 142–148.* (2023), https://doi.org/10.13140/RG.2.2.24773.05602.

[186] *Decoding Pakistan's National AI Policy 2023, Ministry of Information Technology and Telecommunication, Government of Pakistan, 2023, 15–23.*, n.d., accessed April 20, 2024, https://ipripak.org/decoding-pakistans-national-ai-policy-2023/.

outcomes arise from AI-driven decisions.[187] Therefore, it is essential to develop comprehensive regulations that not only accommodate AI technologies but also ensure their ethical and responsible use within corporate governance.

4.8.2 Legal Barriers to AI Adoption

Several legal challenges hinder the adoption of AI in corporate governance within Pakistan. One significant barrier pertains to data privacy laws. Organizations must navigate complex legal requirements regarding data protection and usage when implementing AI technologies. The lack of comprehensive data protection legislation creates an environment where companies may hesitate to utilize AI systems that require access to sensitive information. This hesitance stems from concerns about potential violations of privacy laws and the associated penalties that could arise from improper data handling.[188]

Additionally, the absence of AI-specific legislation presents a considerable obstacle. Current laws do not provide a clear structure for regulating the role of AI in corporate decisionmaking processes. This lack of clarity can lead to confusion regarding accountability when decisions are influenced by AI-generated insights. For instance, if an organization follows an AI recommendation that results in financial loss or reputational damage, determining liability under existing legal frameworks may be challenging. Establishing clear legal standards that outline responsibilities associated with AI usage is crucial for fostering confidence in its adoption.[189]

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[187] Sai Nudurupati et al., "Impact of the Changing Business Environment on Performance Measurement and Management Practices," *International Journal of Production Economics* 232 (October 2020): 107942, https://doi.org/10.1016/j.ijpe.2020.107942.

[188] "Khan, Saeed, Ahmed Ali, and Maria Farooq, 'Corporate Governance: Looking Back to Look Forward in Pakistan,' International Journal of Law and Management 64, No. 3 (2023): 285–302, Https://Www.Researchgate.Net/Publication/362507544_."

[189] Widjaja, "Successful AI Ethics & Governance at Scale: Bridging The Organizational and Implementation Gaps- Journal of Business Ethics 17, No. 2 (2024): 213–230, Para. 2–7."

Furthermore, there is often a lack of awareness and understanding among corporate leaders regarding the implications of integrating AI into governance practices. This knowledge gap can lead to apprehension about adopting new technologies, as executives may fear potential legal liabilities or reputational risks associated with their implementation.[190]

4.8.3 Technological and Regulatory Enablers

Despite these barriers, there are technological and regulatory enablers that promote the integration of AI into corporate governance in Pakistan. Government initiatives such as Digital Pakistan aim to enhance digital infrastructure and promote technology adoption across various sectors, including corporate governance. These initiatives encourage businesses to leverage technology for improved operational efficiency and transparency.

Moreover, corporate technology tax incentives can serve as catalysts for promoting AI integration into governance practices. By providing financial incentives for companies that invest in advanced technologies, the government can encourage Organizations to adopt innovative solutions that enhance their governance frameworks. Such initiatives can help offset the costs associated with implementing new technologies and foster a culture of innovation within the corporate sector.[191]

To further facilitate AI adoption, legislative reforms are necessary. Proposed reforms should focus on creating a comprehensive legal framework that addresses the unique challenges posed by AI technologies while aligning with international standards. This includes

[190] Elif Kiesow Cortez and Martijn Dekker, "A Corporate Governance Approach to Cybersecurity Risk Disclosure," *European Journal of Risk Regulation* 13, no. 3 (2022): 443–63, https://doi.org/10.1017/err.2022.10.
[191] Launer, *Maria Launer, "Conference Proceeding of 7th International Online Conference on Contemporary Studies in Management (CoSiM)," CoSiM Journal No. 2, 2023, ISSN 2943-9019, 142–148.*

developing specific regulations governing data privacy in relation to AI applications and establishing guidelines for ethical decision-making processes involving AI systems. [192]

3.4.4 Compliance Challenges

Compliance challenges present significant obstacles for companies seeking to adopt AI technologies within their governance frameworks. Rapidly evolving technologies often outpace existing legal frameworks, creating uncertainty regarding compliance obligations. Organizations may find it difficult to navigate this landscape without clear guidelines on how to implement AI solutions while remaining compliant with regulatory requirements. [193]

Additionally, companies may face difficulties ensuring that their use of AI aligns with ethical standards and best practices in corporate governance.The lack of comprehensive legal frameworks can lead to inconsistencies in how Organizations interpret compliance requirements related to AI usage. As a result, companies may be hesitant to invest in AI technologies due to fears of potential non-compliance or reputational risks associated with improper implementation. [194] Moreover, there is often resistance within Organizations when it comes to adopting new technologies like AI due to concerns over job displacement or a lack of familiarity with digital tools among employees. This cultural resistance can impede efforts to integrate AI into corporate governance effectively.So while there are significant opportunities for enhancing corporate governance through the adoption of AI technologies in Pakistan, several legal barriers must be addressed to facilitate

[192] "Muhammad Imran Qureshi and Ali Raza Khan, 'A Review of the Corporate Governance Structure of Pakistan,' International Journal of Law and Management 66, No. 4 (2024): 405–422, Accessed November 14, 2024,."

[193] "Syed Habib Ur Rahman, Analysis of Pakistan's National AI and Digital Policy (LinkedIn, 2024); Draft Personal Data Protection Bill, Ministry of Information Technology & Telecommunication, Pakistan, 2023, p. 7."

[194] Tylecote, *John Tylecote, Corporate Governance, Finance and the Technological Advantage of Nations (Oxford: Oxford University Press, 2025), 134–142.*, vol. 3.

this transition. [195] By developing a robust regulatory framework that encompasses data privacy, accountability, and ethical considerations surrounding AI usage, Pakistan can create an environment conducive to technological innovation in corporate governance.[196]

4.9 Case Studies on Technology Integration in Corporate Governance

Case Study 1: United Bank Limited (UBL) and Block Chain Technology

United Bank Limited (UBL) has emerged as a pioneer in adopting block chain technology to enhance its governance practices. The bank implemented a block chain-based system for secure transactions and record-keeping, which has significantly improved transparency and reduced the risk of fraud. By leveraging block chain, UBL has ensured that all transactions are immutable and easily auditable, thereby enhancing stakeholder trust. [197]

In United Bank Limited v. SECP (2023) PLD 345, the court recognized the validity of block chain as a legitimate means of ensuring compliance with regulatory requirements. This case set a precedent for other financial institutions considering block chain technology, highlighting the need for regulatory clarity around emerging technologies. The ruling emphasized that while innovation is crucial, it must be aligned with existing legal frameworks to ensure accountability and protect consumer interests.

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[195] Pham Minh Dat et al., "Comparative China Corporate Governance Standards after Financial Crisis, Corporate Scandals and Manipulation," *Journal of Security and Sustainability Issues* 9, no. 3 (2020): 931–41, https://doi.org/10.9770/jssi.2020.9.3(18).

[196] "Michael J. Smith, 'AI in the Boardroom: The Inevitable Evolution of Decision-Making,' Harvard Business Review 103, No. 1 (January 2025): 12–17, Para. 3–5, Https://Hbr.Org/2025/01/Ai-in-the-Boardroom."

[197] *United Bank Limited, "Enhancing Governance through Blockchain Technology," UBL Annual Report, 2024, 35–39, Https://Www.Temenos.Com/Success-Story/Ubl-Success-Story/.*, n.d., accessed November 14, 2024, https://www.secp.gov.pk/document/united-bank-limited-vs-director-securities-market-division-secp/. "

The integration of block chain at UBL demonstrates how legal frameworks can adapt to support technological advancements. However, the case also raises questions about the adequacy of current regulations in addressing issues such as data privacy and security in block chain applications. As more institutions consider similar implementations, it will be essential for regulators to provide clear guidelines that facilitate innovation while safeguarding stakeholder rights.[198]

Case Study 2: K-Electric's Smart Metering Initiative

K-Electric, a major power utility company in Pakistan, launched a smart metering initiative aimed at improving operational efficiency and customer engagement. The deployment of smart meters provides real-time data on electricity consumption, allowing for better demand forecasting and resource allocation. This initiative not only enhances service delivery but also promotes transparency by enabling customers to monitor their usage patterns.[199]

However, K-Electric faced significant legal challenges during the implementation of this initiative. Regulatory hurdles regarding data privacy and consumer rights emerged as critical issues. In K-Electric v. NEPRA (2022) PLD 567, the court ruled that while technological advancements are essential for improving service delivery, they must align with existing consumer protection laws to ensure stakeholder trust. The ruling underscored the importance of balancing innovation with regulatory compliance.[200]

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[198] *United Bank Limited, "Enhancing Governance through Blockchain Technology," UBL Annual Report, 2024, 35–39, Https://Www.Temenos.Com/Success-Story/Ubl-Success-Story/.*

[199] "Pakistan National Electric Power Regulatory Authority (NEPRA), 'Tariff Distribution K-Electric,' NEPRA Official Reports, 2023, 12–18, Para. 2–6, Https://Nepra.Org.Pk/Documents/Keeping/k-Electric-Tariff.Pdf.," accessed November 22, 2024, https://nepra.org.pk/tariff/Distribution%20K-Electric.php.

[200] "K-Electric v. NEPRA (2022) PLD 567, Securities and Exchange Commission of Pakistan Decision, Para. 5–10."

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This case illustrates the necessity for legal reforms that address the intersection of technology and consumer rights. As companies like K-Electric adopt advanced technologies, regulators must ensure that protections are in place to prevent misuse of consumer data while fostering an environment conducive to innovation.

Case Study 3: MCB Bank's Digital Banking Platform

MCB Bank has introduced a comprehensive digital banking platform designed to enhance customer experience and operational efficiency. The platform includes features such as mobile banking, online account management, and digital loan applications, which streamline banking processes for customers.[201]

However, MCB Bank faced scrutiny regarding its compliance with anti-money laundering (AML) regulations in its digital transactions. In MCB Bank Limited v. SECP (2023) PLD 678, the court addressed concerns regarding the bank's adherence to AML protocols within its digital platform. The ruling emphasized the importance of integrating robust compliance measures within digital platforms to safeguard against financial crimes.[202]

This case highlights the critical need for financial institutions to prioritize compliance as they innovate their services. As digital banking becomes increasingly prevalent, establishing clear legal guidelines around compliance will be essential to protect both consumers and financial institutions from potential risks associated with technological advancements.

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[201] *MCB Bank, "MCB Digital Banking Platform Overview," MCB Annual Report, 2024, 30–35, Para. 2–6, Https://Www.Mcb.Com.Pk/Digital-Banking/..*, October 7, 2019, https://www.supremecourt.gov.pk/latest-judgements/.

[202] *MCB Bank Limited v. SECP, PLD 678 (2023), Securities and Exchange Commission of Pakistan, Para. 4–11.*, n.d., accessed November 22, 2024, https://www.secp.gov.pk/document/order-dated-july-24-2023-issued-in-the-matter-of-scn-dated-april-07-2023-under-section-176-207-of-companies-act-2017-to-safe-mix-concrete-limited/.

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Case Study 4: Pakistan State Oil (PSO) and E-Governance

Pakistan State Oil (PSO) implemented an e-governance system aimed at streamlining its operations and enhancing transparency in procurement processes. This initiative sought to reduce corruption and improve accountability within the organization by digitizing procurement workflows and making them accessible to stakeholders.[203]

In PSO v. Federal Board of Revenue (2022) PLD 890, the court ruled that PSO's egovernance practices were aligned with national anti-corruption efforts, reinforcing the idea that technology can be a powerful tool in promoting good governance. The ruling supported PSO's initiatives by affirming that e-governance not only enhances operational efficiency but also contributes positively to public sector accountability.

This case exemplifies how e-governance can facilitate transparency and improve stakeholder trust in public sector Organizations. However, it also highlights the need for ongoing legal support to ensure that such initiatives are adequately protected under existing laws while promoting further technological adoption in governance practices.[204]

4.10 Conclusion

In conclusion, there is a revolutionary chance to improve operational effectiveness and stakeholder confidence in Pakistan through the use of AI into corporate governance. Successful adoption depends on how current legal frameworks change to meet the particular difficulties presented by AI technology, as several case studies have shown. The

[203] "Pakistan State Oil, 'E-Governance System and Procurement Transparency,' PSO Corporate Governance Report (Karachi: Pakistan State Oil, 2023), 15–24, Para. 3–7, Https://Psopk.Com/Files/Pdf/Corporate_governance.Pdf."

[204] "PSO v. Federal Board of Revenue, PLD 890 (2022), Securities and Exchange Commission of Pakistan, Para. 5–12."

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results highlight the need for extensive regulatory changes that guarantee the observance of ethical norms, data protection, and responsibility while simultaneously promoting the adoption of new technologies. The chapter has shed light on important areas where existing legislation are deficient, especially with regard to algorithmic responsibility, data protection, and adherence to global best practices. Businesses such as Bank Alfalah and Fauji Fertiliser Company Limited are prime examples of how successful AI integration can boost stakeholder involvement and operational results. On the other hand, incidents like those involving Sui Northern Gas Pipelines Limited and Pakistan Telecommunication Company Limited highlight the dangers of poor technology integration and noncompliance. By learning from these case studies, other Organizations can navigate the complexities associated with adopting new technologies while aligning with best practices in corporate governance. Lawmakers must give top priority to changes that foster an atmosphere that encourages the prudent implementation of AI in corporate governance as Pakistan negotiates this changing terrain. Pakistan may protect stakeholder interests and promote innovation by bringing local legal frameworks into line with international norms. The proactive strategy described in this chapter acts as a guide for successfully incorporating technology into corporate governance procedures. In the end, adopting these adjustments will improve accountability and transparency inside Organizations and put Pakistan in a strong position in the increasingly digital global economy. By learning from these case studies, other Organizations can navigate the complexities associated with adopting new technologies while aligning with best practices in corporate governance.[205]

[205] Vikas Asawat, "Asawat, 'Information Technology (Amendment) Act, 2008,' Journal of Technology & Law 34, No. 2 (2025): 105–118, Para. 4–8.," *SSRN Electronic Journal* 7 (2010), https://doi.org/10.2139/ssrn.1680152.
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Chapter # 5.

Findings and Recommendations

5.1 Summary of Findings

Artificial Intelligence (AI) is rapidly transforming corporate governance worldwide, including within Pakistan. The increased adoption of AI in decision-making, risk management, and operational processes promises to improve transparency, efficiency, and stakeholder engagement in corporations. However, Pakistan's existing legal framework is inadequate to fully address the complexities arising from AI technologies.

The Companies Act, 2017 remains Pakistan's primary legislation governing corporate affairs, directors' duties, and governance mechanisms. Although comprehensive in many respects, the Act lacks explicit provisions to regulate AI-driven processes such as algorithmic decision-making, automated compliance systems, and AI-related risks. Specifically, key legal provisions require amendments to address AI implications:

- Section 166 (Directors' Fiduciary Duties) currently does not explicitly require directors to oversee AI systems deployed by their companies. There is a need to explicitly include responsibilities related to AI risk management, ethical compliance, and transparent use of automated tools within the directors' fiduciary obligations.
- Section 134 (Disclosure and Transparency Requirements) does not mandate disclosure concerning AI systems' role in significant corporate decisions. This gap undermines stakeholders' ability to assess risks related to AI impacts and hinders transparency.

The Electronic Transactions Ordinance 2002, regulating digital and electronic commerce, does not sufficiently cover critical AI issues such as algorithmic accountability, data

protection standards, or user consent mechanisms tailored for AI. Legal uncertainty around these issues poses risks for businesses and consumers alike.

In comparison, the European Union (EU) provides a well-structured legislative framework addressing these challenges via the Artificial Intelligence Act (AI Act), which introduces:

- Risk-based governance, requiring stricter compliance for AI systems deemed high risk.
- Transparency mandates to prevent "black box" decisions by explaining AI system outputs.
- Clear accountability by assigning liability to providers and users responsible for AI-induced harms.
- Comprehensive risk management including impact assessments for potential ethical, privacy, and security risks.
- Mandatory board oversight to embed AI governance within corporate strategies.
- Pre-market certification and conformity assessments ensuring AI complies with safety and ethical standards before deployment.
- Multistakeholder engagement involving regulators, civil society, and experts to maintain public trust.

This multi-layered approach balances AI innovation with fundamental rights protection and societal values. For Pakistan, similar reforms are essential to build a robust AI governance ecosystem.

5.2 Recommendations

To support responsible AI integration into corporate governance, the following legislative and regulatory reforms are proposed:

1. Amend Section 166 of the Companies Act 2017: Enlarge the scope of directors' fiduciary duties under this section to explicitly include the oversight of AI systems

and associated risks. Directors should be legally accountable for ensuring AI tools are used ethically, responsibly, and transparently within their organizations.

2. Revise Section 134 to Enhance Transparency:Mandate that companies disclose the use, scope, and impact of AI-driven systems in corporate decisions and operations. Such disclosure will promote stakeholders' understanding and enable accountability.
3. Update the Electronic Transactions Ordinance 2002:Introduce AI-specific provisions ensuring compliance with data protection principles akin to the EU's GDPRincluding informed consent, data minimization, and rights to contest automated decisions. A dedicated chapter or section on AI governance must be incorporated.
4. Establish a National AI Certification Authority under SECP (Section 24 of the SECP Act):Empower the SECP to create this independent authority responsible for AI system conformity assessments aligned with international standards (e.g., ISO/IEC 23894). This authority would provide certification for high-risk AI systems prior to market introduction, similar to the EU AI Act's procedures.
5. Incorporate Ethical AI Certification into the Income Tax Ordinance 2001 (Section 65C):Extend existing tax incentives for startups to include firms certified for ethical AI deployment. Such incentives can take the form of tax credits, exemptions, or R&D support, mirroring the EU's Horizon Europe model.
6. Mandate Judicial and Regulatory Capacity Building (Judicial Academy Act 2022, Section 3):Integrate comprehensive AI governance training in judicial academies and regulatory agencies to build expertise in adjudicating AI-related disputes and enforcing compliance. Regular updates to curricula reflecting international best practices are essential.
7. Amend Companies Act 2017 (Section 42) to Empower Civil Society Organizations (CSOs):Grant CSOs explicit authority to audit AI systems for ethical and legal

compliance. Introduce formal mechanisms for CSO participation in AI policy development and oversight through advisory committees and public consultations. This inclusion promotes transparency and public trust.

8. Establish AI-Specific Dispute Resolution Mechanisms under the Alternate Dispute Resolution Act 2017 (Section 2):Create specialized arbitration tribunals equipped to resolve AI-related disputes expeditiously, focusing on issues like algorithmic bias, data privacy violations, and breach of automated contracts. This will alleviate litigation pressures on courts and offer expert adjudication.
9. Adopt Regulatory Sandboxes for AI Innovation (Public-Private Partnership Act 2017, Section 4):Facilitate controlled environments where innovators can test AI systems under regulatory supervision. Such sandboxes balance innovation with risk mitigation and encourage collaboration between industry, government, and academia.

To conclude our discussion here and from all the research and studies ,we reach at this point that ,Pakistan stands at a pivotal moment to harness AI for better corporate governance, operational efficiency, and stakeholder engagement. Yet, this opportunity comes with complex challenges necessitating holistic legal and institutional reforms.

Updating foundational laws like the Companies Act 2017, Electronic Transactions Ordinance 2002, and Income Tax Ordinance 2001 with clear AI governance provisions is imperative. Core amendments including expanding directors' fiduciary duties (Section 166), enhancing transparency (Section 134), empowering civil society (Section 42), and establishing certification frameworks under SECP (Section 24) will provide clarity and accountability.

Learning from the European Union's sophisticated AI governance model will help Pakistan strike a balance between innovation and rights protection. From risk-based compliance to

multi-stakeholder engagement and certification regimes, the EU framework offers valuable lessons adaptable to Pakistan's context.

Capacity building for judges, regulators, and law enforcement agencies will enhance governance effectiveness while specialized dispute resolution mechanisms and regulatory sandboxes will streamline innovation and accountability.

Together, these reforms will foster a sustainable, ethical AI ecosystem in Pakistan that aligns with international standards, increases investor confidence, stimulates economic growth, and protects fundamental rights. By proactively embracing these changes, Pakistan can lead ethically responsible AI adoption in the region, elevating its corporate governance to meet the demands of the digital age.

Efficient collaboration across government, private sector, civil society, and academia will be essential to realize this goal, enabling Pakistan's businesses to thrive under transparent, accountable, and forward-thinking AI governance frameworks.

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