The Role of Artificial Intelligence in Enhancing Agency Theory: A Theoretical Study in Light of Post-Pandemic Literature

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Abstract:

The Covid-19 pandemic has been a major accelerator of digital transformation, forcing companies to rethink their governance practices and business models. Through a post-pandemic literature review, this study highlights that Artificial Intelligence (AI) helps reduce information asymmetry, strengthen transparency, and limit opportunistic behaviors by managers. However, while AI appears to be a strategic lever for governance, it also raises new challenges related to algorithmic bias, data dependency, and ethical requirements. The analysis concludes that AI can only be effective if it is integrated into a digital, responsible, and ethical governance approach, capable of sustainably supporting organizational transformation.

Keywords: *AI, Governance, Digital Transformation, Agency Theory*

Jel codes classification: *M5, M150, O31, O32, D85*

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دور الذكاء الاصطناعي في تعزيز نظرية الوكالة: دراسة نظرية في ضوء الأدبيات ما بعد جائحة كورونا.

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ملخص :

شكلت جائحة كوفيد-19 محفزًا رئيسيًا للتحول الرقمي، مما أجبر الشركات على إعادة النظر في ممارسات الحوكمة ونماذج أعمالها. ومن خلال استعراض الأدبيات التي صدرت بعد الجائحة، تسلط هذه الدراسة الضوء على أن الذكاء الاصطناعي يساهم في الحد من عدم التكافؤ في المعلومات، وتعزيز الشفافية، والحد من السلوكيات الانتهازية لدى المديرين التنفيذيين. ومع ذلك، ففي حين يبدو الذكاء الاصطناعي (AI)كأداة استراتيجية للحوكمة، فإنها تثير أيضًا تحديات جديدة تتعلق بالتحيز الخوارزمي، والاعتماد على البيانات، والمتطلبات الأخلاقية. ويخلص التحليل إلى أن الذكاء الاصطناعي (AI) لا يمكن أن يكون فعالاً إلا إذا تم دمجه في نهج مسؤولاً وأخلاقياً لحوكمة رقمية، وقادراً على دعم التحول التنظيمي على المدى الطويل.

الكلمات المفتاحية: الذكاء الاصطناعي، الحوكمة، التحول الرقمي، نظرية الوكالة.

التصنيف: M5, M150, O31, O32, D85

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Introduction:

Recent digital transformations have profoundly changed the way businesses are organized and governed. Traditional mechanisms, such as boards of directors, external audits, and internal control systems, are sometimes proving insufficient to address the new challenges posed by the sheer volume of data, the speed of transactions, and the growing sophistication of fraudulent practices.

In this context, artificial intelligence (AI) has emerged as a key technology capable of providing innovative solutions for corporate governance. Thanks to its capabilities in massive data processing, predictive analytics, and automated anomaly detection, AI helps enhance transparency, reduce information asymmetry, and limit opportunistic behavior by executives.

Agency theory, which highlights conflicts of interest between shareholders (principals) and executives (agents), offers a relevant framework for analyzing these developments. The integration of AI into governance mechanisms can indeed be interpreted as a new tool for reducing agency costs by improving oversight and rebalancing the principal-agent relationship.

Thus, the experience of certain large international firms, such as KPMG, already illustrates how AI is transforming control practices and contributing to more effective governance.

It is in this context that the main research question of this study arises:

How does artificial intelligence contribute to transforming corporate governance mechanisms by reducing agency costs and limiting opportunistic behavior by executives, in light of agency theory?

To address this issue, three sub-questions will guide the analysis:

- How does agency theory help us understand the contribution of artificial intelligence to reducing agency costs and strengthening governance?
- What tools and conceptual approaches can be used to analyze the integration of artificial intelligence into control and audit mechanisms?
- How does KPMG's experience illustrate the role of artificial intelligence in transforming governance mechanisms?

These questions will enable the development of an analysis that is both theoretical and applied, integrating the contributions of the conceptual framework, relevant methodological approaches, and the example of a multinational pioneer in the digital transformation of audit and governance.

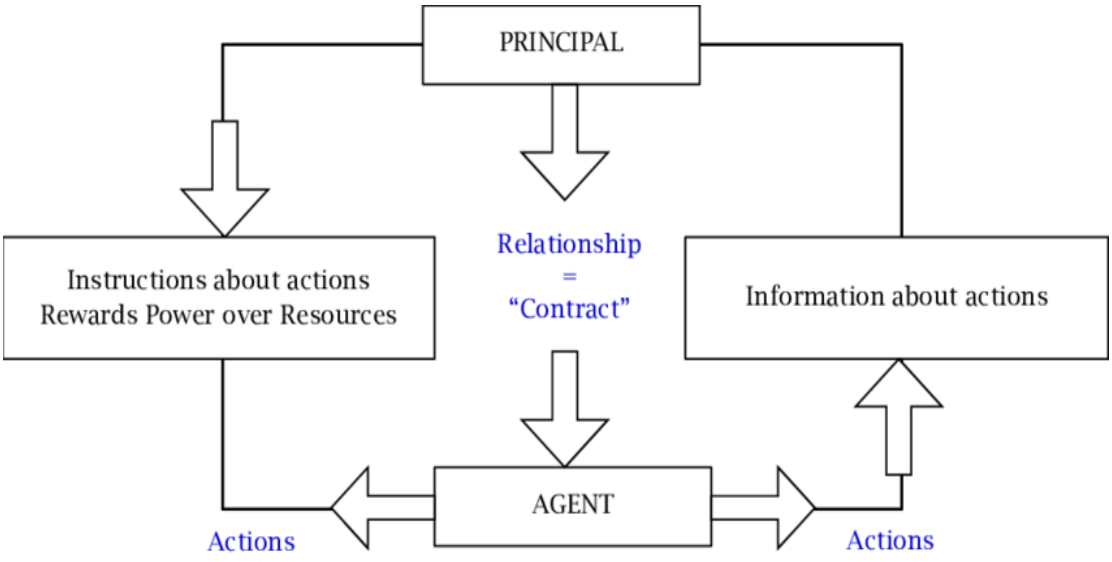
1. Theoretical framework:

1.1. Agency theory and its implications in governance:

Agency theory, introduced by Jensen and Meckling (1976), is based on the separation between owners (principals) and managers (agents). This separation gives rise to a classic governance problem: managers have access to inside information and may pursue their own interests at the expense of those of shareholders. This phenomenon generates agency costs, linked in particular to information asymmetry, monitoring, and opportunistic behavior (Fama & Jensen, 1983).

In modern companies, the growing complexity of operations, the proliferation of transactions, and the globalization of markets exacerbate these risks. Traditional governance mechanisms (board of directors, external audit, internal control) sometimes prove insufficient to effectively prevent fraud or reduce opportunistic behavior (Shleifer & Vishny, 1997).

Figure 1. Agency Relationship Mode



Source : (Gwala & Mashau, 2022)

1.2. Governance and digital transformation of business models:

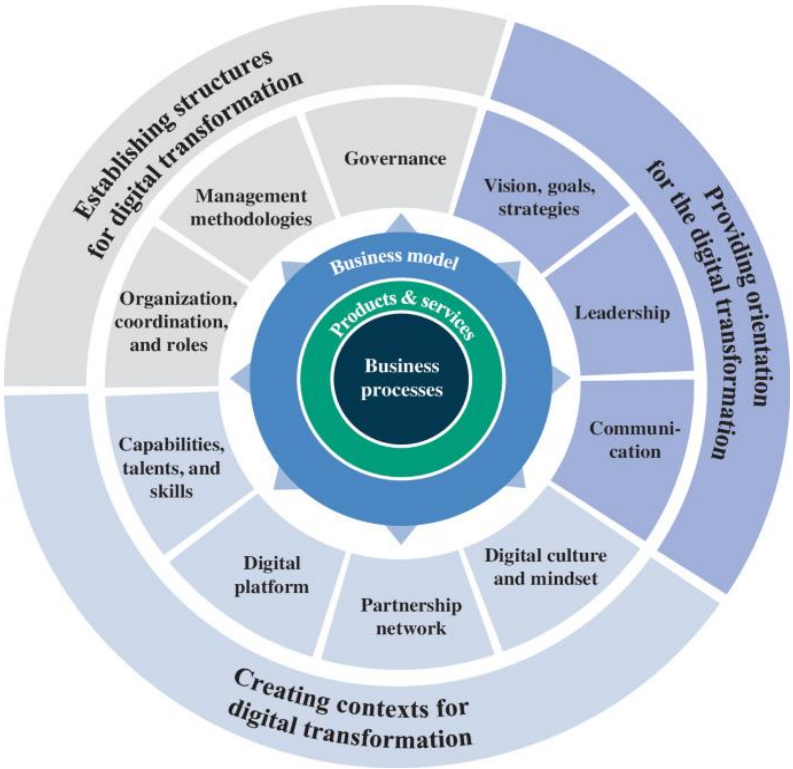
Digital transformation is not limited to the adoption of new technologies; it profoundly redefines companies' business models. Value chains are being reimagined, new digital services are emerging, and relationships with customers and partners are being reorganized (Bharadwaj et al., 2013).

In the face of this dynamic, governance must evolve in order to:

- Ensure strategic alignment between digital investments and corporate objectives;
- Oversee digital risk management (cybersecurity, data protection, regulatory compliance);
- Promote responsible innovation while protecting stakeholder interests.

Thus, governance is no longer limited to a financial oversight role but becomes a strategic lever to support digital transformation and ensure the sustainability of new business models (Verhoef et al., 2021).

Figure 2. Framework for a Digital Transformation Management Model



Source : (Wenzel, 2022)

1.3. Toward Technology-Enhanced Governance:

The advent of digital transformation has profoundly changed governance practices. Companies now rely on innovative technologies such as Big Data, Blockchain, the Internet of Things (IoT), and especially Artificial Intelligence (AI) to strengthen their monitoring mechanisms (Yoo, Henfridsson, & Lyytinen, 2010). These tools enable continuous monitoring of activities, thereby reducing the time between the occurrence of a risk and its detection (Guragai, Hunt, Neri, & Taylor, 2017).

1.4. Artificial Intelligence as a Mechanism for Reducing Agency Costs:

Artificial intelligence, in particular, is transforming governance and internal control in several ways:

- Reducing information asymmetry: AI analyzes vast volumes of financial and operational data in real time, making information more accessible and transparent (Baldwin, 2020).

Proactive anomaly detection: Machine learning algorithms identify unusual patterns in transactions, enabling faster detection of fraud or manipulation attempts (Kokina & Davenport, 2017).

- Continuous monitoring: Unlike periodic audits, AI enables continuous auditing, which acts as a deterrent for executives (Alles, Brennan, Kogan, & Vasarhelyi, 2006).
- Predictive analysis of risky behavior: AI tools are not limited to analyzing the past but anticipate future risks, helping to reduce the scope for opportunistic behavior (Issa, Sun, & Vasarhelyi, 2016).

Thus, in line with agency theory, AI serves as an advanced governance mechanism that strengthens trust between shareholders and executives by limiting the scope for opportunistic behavior.

2. Methodological framework:

This paper adopts a qualitative approach in the form of a systematic literature review, aiming to explore how artificial intelligence (AI) has contributed, in the post-pandemic context, to the transformation of governance mechanisms in light of agency theory. The chosen approach is based on an in-depth literature review of relevant academic works published between 2020 and 2025, drawn from scientific databases such as Scopus, SpringerLink, ScienceDirect, and Wiley Online Library. This method allows us to identify the main conceptual frameworks linking digitalization, governance, and the reduction of information asymmetries.

2.1. Research Objective:

The objective of this paper is to analyze how artificial intelligence can help strengthen corporate governance and control mechanisms, in light of agency theory. In particular, it seeks to understand whether and how AI can reduce information asymmetry and opportunistic behavior among executives, while improving the transparency and effectiveness of control processes.

2.2. Research approach:

The study adopts a qualitative and exploratory approach. This orientation is justified by the still-emerging nature of AI applications in corporate governance and by the need to understand the mechanisms in depth (Creswell & Poth, 2018). The approach is structured around two main stages:

Literature review: consultation of academic articles, specialized books, and institutional reports on agency theory, corporate governance, and the use of AI in auditing and internal control.

Case study: analysis of the experience of KPMG, one of the world's largest audit firms, which has integrated AI solutions into its control and audit practices.

2.3. Data sources:

Academic sources: scientific journals specializing in governance, auditing, and emerging technologies (e.g., Journal of Emerging Technologies in Accounting, Journal of Management and Governance, Sustainability).

Professional sources: reports published by KPMG, PwC, Deloitte, and EY, as well as international organizations such as IFAC and the IAASB.

Secondary data: industry documents, white papers, and studies by digital audit consulting firms.

2.4. Analysis method:

The analysis is based on a comparative documentary methodology: on one hand, theoretical concepts drawn from the academic literature (agency issues, digital technologies in governance); on the other, concrete practices reported in the KPMG case study.

This cross-referencing enables the development of an interpretive framework linking AI to governance and control, and identifies the benefits as well as the limitations of its application.

3. Literature Review Analysis:

In order to rigorously analyze recent scientific contributions, it is necessary to adopt a systematic literature review approach. This method involves identifying, comparing, and synthesizing key academic works to identify commonalities, specific contributions, and limitations noted by researchers. Unlike a simple description, the objective here is to highlight common trends and theoretical and practical lessons regarding the integration of artificial intelligence into governance mechanisms.

In this context, we selected a number of articles published after the COVID-19 pandemic, a period that marked a significant acceleration in digital transformation and the use of innovative technologies. To ensure the clarity and readability of the results, these studies are presented in the form of a summary table listing: the authors, their main contributions, and the insights relevant to our research question.

Table 1: Post-pandemic research contributions on AI and corporate governance.

N°	Author(s) / Year	Titre de l'article	Analyse (apports pour l'étude)
01	Verhoef et al. (2021)	Digital transformation: A multidisciplinary reflection and research agenda	The pandemic has accelerated digital transformation and necessitated a rethinking of business models. Governance must evolve to incorporate digital technologies and support these new models.
02	Issa, Sun & Vasarhelyi (2021)	Post-pandemic perspectives on AI in auditing and assurance	AI enabled the implementation of continuous audits and remote monitoring during the pandemic. This underscores its role in reducing information asymmetry and enabling real-time monitoring.
03	Appelbaum, Kogan & Vasarhelyi (2022)	Audit in the age of COVID-19: Artificial intelligence and continuous auditing	AI and continuous auditing have become essential in light of the limitations of on-site work during the COVID-19 pandemic. AI's ability to quickly detect financial anomalies thus reduces agency costs.
04	Al-Htaybat & von Alberti-Alhtaybat (2022)	Governance in the digital era: The role of AI in reshaping post-COVID corporate practices	AI strengthens post-COVID governance by building stakeholder trust. It acts as a third-party guarantor of transparency in the principal-agent relationship.
05	Gupta & Sharma (2022)	Artificial intelligence in corporate governance: Opportunities and challenges	Examines the opportunities and limitations of AI (algorithmic biases, reliance on data, lack of expertise). Highlights the need for ethical and regulatory oversight through governance.

Source: Adapted by the researcher from the work of Verhoef et al. (2021), Issa et al. (2021), Appelbaum et al. (2022), Al-Htaybat & von Alberti-Alhtaybat (2022), and Gupta & Sharma (2022).

3.1. Analysis and results of the study:

3.1.1 Convergence points:

Most of the studies reviewed agree on the central role of artificial intelligence (AI) in transforming post-pandemic governance.

Issa et al. (2021) and Appelbaum et al. (2022) highlight the added value of AI in continuous auditing and remote monitoring, which helps reduce information asymmetry and agency costs.

Al-Htaybat & von Alberti-Alhtaybat (2022) emphasize AI as a factor in increased trust in the principal-agent relationship.

These results confirm that AI can be considered a new governance mechanism, aligned with agency theory.

3.1.2 Specific Contribution of each study:

Verhoef et al. (2021) broaden the framework by showing that digital transformation is not limited to control tools but profoundly impacts business models. Their analysis therefore invites us to consider governance from a strategic perspective, not merely an operational one.

Issa et al. (2021) and Appelbaum et al. (2022) provide concrete evidence of AI's value during times of crisis, particularly in compensating for the limitations of traditional audit practices.

Al-Htaybat & von Alberti-Alhtaybat (2022) introduce a relational and ethical dimension: AI is not merely a technical tool, but also a vehicle for transparency and legitimacy.

Gupta & Sharma (2022) point out that despite its advantages, AI poses major challenges: algorithmic biases, data dependency, and a lack of specialized skills. These limitations require strengthened digital governance.

3.1.3 Limitations and disagreements:

While most authors highlight the benefits of AI, Gupta & Sharma (2022) take a more critical perspective by emphasizing the risks. This creates an interesting balance:

Some see AI as an essential solution for strengthening post-pandemic governance.

3.2. Contextualizing the Case of the KPMG Clara Platform and the Reconfiguration of the Principal-Agent Relationship in the Age of AI:

The KPMG Clara platform (Klynveld Peat Marwick Goerdeler) is an intelligent digital ecosystem developed by the audit and consulting firm KPMG as part of its global strategy for the digital transformation of audit services. It is a cloud-based platform integrating artificial

intelligence (AI), advanced data analytics, interactive visualization, and online collaboration tools for audit teams and clients.

3.2.1 Objective:

The objective of KPMG Clara is to modernize the audit process by automating the collection, analysis, and verification of financial data, while ensuring full traceability of operations and real-time oversight. By leveraging machine learning algorithms, the platform enables faster detection of anomalies, identification of potential risks, and improvement in the quality of auditors' professional judgments.

Furthermore, KPMG Clara is built on a "Trusted AI Framework," ensuring that AI-assisted decisions adhere to principles of ethics, transparency, and human oversight ("human-in-the-loop"). Thus, the platform is not merely a technological tool, but a digital governance mechanism that strengthens trust, accountability, and transparency among the various stakeholders—clients, auditors, and regulators.

3.2.2 Integrating AI to promote agency theory:

KPMG's experience with the KPMG Clara platform exemplifies how artificial intelligence reconfigures governance mechanisms in light of agency theory. In the traditional model, the principal-agent relationship—between shareholders (principals) and executives or auditors (agents)—is characterized by information asymmetry and a risk of opportunism. The agent holds privileged information and may act in their own interests, hence the need for costly control mechanisms.

The implementation of AI in audit processes via KPMG Clara disrupts this balance. By automating the collection, processing, and analysis of financial data in real time, this platform significantly reduces information asymmetry among stakeholders. Thanks to machine learning and anomaly detection algorithms, discrepancies, fraud, or errors become instantly detectable, thereby enhancing the transparency and traceability of decisions (KPMG, 2023). Furthermore, the integration of the "Trusted AI Framework" ensures human oversight ("human-in-the-loop") and constant supervision of the models, thereby addressing concerns regarding bias, accountability, and regulatory compliance.

Thus, the KPMG Clara platform exemplifies how AI can reduce agency costs (monitoring, verification, communication), increase trust among economic actors, and strengthen the legitimacy of governance decisions. In this sense, AI is not limited to a technological tool: it becomes an intelligent governance instrument, capable of transforming the very structure of

principal-agent relationships by promoting informational symmetry, continuous oversight, and organizational accountability.

Others point out that it can generate new agency costs if not properly regulated (e.g., poor data quality or lack of control over algorithms).

3.3. Summary:

Analysis of the table shows that:

AI is a strategic lever for post-COVID governance, capable of reducing information asymmetry and limiting opportunistic behavior.

Governance must evolve to incorporate these tools, not only as control mechanisms but also as means for the strategic management of digital business models.

AI is not a silver bullet: its effectiveness will depend on a regulatory and ethical framework, as well as on companies' ability to develop new skills.

4. Conclusion and Recommendations:

This paper has shown that the digital transformation, accelerated by the COVID-19 pandemic, has profoundly reshaped corporate governance mechanisms. In light of agency theory, artificial intelligence (AI) emerges as a strategic tool for reducing information asymmetry, enhancing transparency, and curbing opportunistic behavior by executives. The analyzed studies highlight its central role in the emergence of new practices such as continuous auditing, real-time monitoring, and proactive digital risk management.

However, an analysis of recent literature also highlights persistent challenges: risks of algorithmic bias, dependence on data quality, a lack of specialized skills, and the need for ethical and regulatory frameworks. These factors demonstrate that AI, far from being a silver bullet, must be integrated into a broader governance approach that combines technological innovation with managerial accountability.

- At the managerial level:

Integrate AI as a complementary tool to traditional governance mechanisms rather than as a substitute.

Develop continuing education programs to strengthen the digital skills of executives, auditors, and board members.

Implement hybrid systems combining automation and human judgment to minimize risks related to algorithmic bias.

- Strategically:

Rethink governance as a lever to support the digital transformation of business models.

Use AI to enhance long-term value creation, not merely for operational control.

- Institutionally and Regulatory:

Develop regulatory and ethical frameworks to guide the use of AI in governance.

Promote algorithm transparency to ensure fairness and accountability in decision-making processes.

Encourage international cooperation to harmonize digital governance standards in a globalized context.

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