Barriers to Artificial Intelligence Development and Institutional Inertia: A Critical Study of Chile's National Policy

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ABSTRACT

This study critically analyzes Chile's National Artificial Intelligence Policy, identifying institutional and structural barriers that could limit its effective implementation. Through a qualitative analysis of the official document and its comparison with international regulatory frameworks, the challenges related to enabling factors, development and adoption, and ethical-legal aspects are examined through a qualitative analysis of the official document and its comparison with international regulatory frameworks. The results reveal significant limitations in infrastructure, human talent, regulation, and inter-institutional coordination. It is concluded that, despite its ambitious goals, the policy lacks concrete mechanisms to overcome institutional inertia and address socioeconomic impacts, which could compromise its effectiveness in positioning Chile as a regional leader in AI.

Keywords: Artificial Intelligence; Technological Regulation; Technological Development; Digital Transformation.

INTRODUCTION

In a global context where Artificial Intelligence (AI) is emerging as a fundamental driver of economic and social transformation, Chile has developed its National Artificial Intelligence Policy to position itself at the regional forefront in this field [1]. According to the official document, this policy arose from a participatory process that brought together more than 1,300 people in face-to-face workshops and 6,600 in virtual meetings, in addition to a public consultation that received contributions from 209 relevant stakeholders.

However, despite this ambitious collective construction process, it is necessary to critically analyze the extent to which the effective implementation of this policy could be affected by factors of institutional inertia and pre-existing structural barriers. Specialized literature indicates that resistance to change within traditional institutions can create significant obstacles to technological adoption and innovation, even when seemingly favorable policy frameworks exist [2].

This study examines how various systemic factors (from bureaucratic rigidity to limitations in infrastructure and human capital) may be conditioning the effective development of AI in Chile. In particular, we are interested in analyzing how the tension between the transformative objectives outlined in the policy and existing institutional realities might be creating unintended breaks on technological progress.

This analysis is relevant because it can identify critical points where strategic intervention could maximize the impact of current policy. At the same time, it offers a crucial perspective on how the good intentions expressed in normative documents may be mediated by deeper institutional dynamics that condition their practical implementation.

THEORETICAL FRAMEWORK

This analysis is based on international principles regarding artificial intelligence, such as the UNESCO Recommendation [3], which emphasizes human rights, inclusion, and transparency. It partially aligns with the

OECD's axes [4] and the principles of Chile's National AI Policy [1], which prioritize a human-centered approach, equity, and responsibility. This foundation enables a critical evaluation of the impact of institutional factors on its implementation in Chile.

Key Concepts

To fully understand the scope and challenges of Chile's National Artificial Intelligence Policy, it is essential to define some core concepts underlying the implementation and regulation of these technologies. Artificial intelligence (AI) is defined as a scientific discipline whose goal is to create systems and machines capable of performing tasks that traditionally require human intelligence, such as machine learning, natural language processing, and autonomous decision-making [5], [6], [7].

One of the essential components of AI is the algorithm, understood as an ordered and finite set of operations that enable the resolution of specific problems. These algorithms are trained using large volumes of data, known as big data [8], to identify complex patterns and generate predictions. However, the massive use of data raises significant ethical and technical challenges, particularly regarding privacy and security. In this context, technologies such as blockchain [9] and encryption play a crucial role, as they help protect the integrity and confidentiality of information.

Another aspect highlighted in the policy is the importance of advanced technological infrastructures, such as high-performance computing and data centers [10]. These infrastructures are fundamental for processing and storing large volumes of information and for running deep learning models [11], which represent a specialized subfield of machine learning [12]. The latter uses artificial neural networks with multiple hierarchical layers to process information like the human brain.

The explainability of AI systems also emerges as a central principle in the policy. It refers to the ability of AI systems to be interpreted and understood by users, which is essential to ensure transparency and public trust [13]. This concept is closely linked to the need to avoid arbitrary biases in algorithms, which can perpetuate or even amplify pre-existing social inequalities. Therefore, it is critical to develop mechanisms that allow for the continuous evaluation of the impact of these systems on different population groups.

Finally, it is important to highlight the role of emerging technologies such as 5G, which expands connectivity and facilitates the implementation of AI-based solutions in strategic sectors such as healthcare, education, and industry [14]. These technological advances, however, must be addressed from a comprehensive perspective that considers both their transformative potential and their possible risks and limitations. This duality underscores the need for appropriate regulatory frameworks that balance innovation with social protection.

International Regulatory Framework

Artificial intelligence (AI) regulation at the global level has experienced significant development in recent years, led primarily by countries in the northern hemisphere. This international regulatory framework has been consolidated as a key reference for guiding the implementation of national policies in emerging countries like Chile. However, the concentration of ethical and normative discussions in regions such as Europe and the United States poses particular challenges for Latin America, which needs to adapt these standards to its local context.

One of the most relevant standards in this area is the one established by the Organisation for Economic Co-operation and Development (OECD). In 2019, the OECD proposed five fundamental principles to guide the development and use of AI [4]: (1) inclusive growth, sustainable development, and well-being; (2) a human-centered approach and fairness; (3) transparency and explainability; (4) robustness, security, and protection; and (5) accountability and responsibility. These principles aim to ensure that AI is developed and used ethically, safely, and socially beneficial. Additionally, the OECD recommends that countries adopt policies aimed at investing in research and development (R&D), fostering enabling digital ecosystems, building human capacities, preparing for labor market transformation, and promoting international cooperation.

On the other hand, UNESCO has played a prominent role in defining global ethical guidelines. In 2020, the

organization presented a draft of recommendations on the ethics of AI, emphasizing the need to include perspectives from developing countries. This document recognizes that the discussion on the principles governing AI has historically been concentrated in the northern hemisphere [3]. Indeed, recent studies indicate that of 84 documents with ethical guidelines analyzed globally, none originate from Latin America or Africa [15]. This gap reflects the urgent need for countries in the region, such as Chile, to actively contribute to the international discussion from their local reality.

At the regional level, the European Union's experience stands out for its proactive approach to regulating AI. The EU has promoted initiatives such as the General Data Protection Regulation (GDPR) [16], which establishes strict standards for privacy and the protection of personal data. Similarly, the European Commission has developed a comprehensive strategy to promote trustworthy AI systems, focusing on aspects such as algorithmic transparency, bias mitigation, and cybersecurity. These initiatives have served as a model for other countries seeking to balance technological innovation with the protection of fundamental rights.

In contrast, Latin America faces significant regulatory challenges regarding AI. According to the analysis presented in the Chilean document, the region is particularly lagging in the discussion and normative progress. This delay generates uncertainty for researchers, entrepreneurs, and companies seeking to develop AI-based solutions. To address this gap, Chile has adopted an approach that combines active participation in multilateral spaces with the review of its internal regulatory framework. For example, the country has adhered to the OECD recommendations and committed to updating existing regulations, such as Law No. 19,628 on the protection of privacy [17] and Law No. 19,223 on cybercrime [18], to ensure their compatibility with current technological advancements.

Relationship Between Regulation and Technological Development

The relationship between regulation and technological development in the field of artificial intelligence (AI) is one of the most problematic aspects of Chile's National AI Policy, revealing serious limitations that could compromise its effectiveness. Although the document acknowledges the need to balance regulatory frameworks with the promotion of innovation, its practical implementation faces significant obstacles, reflecting a disconnect between declared ambitions and the country's institutional reality.

One of the main issues lies in the lack of agility in the proposed regulatory processes. While the policy mentions the importance of designing agile and flexible regulations, it does not present clear mechanisms to overcome the bureaucratic rigidity that characterizes Chilean institutions. International experience shows that traditional regulatory frameworks are slow and rigid, generating uncertainty for researchers, entrepreneurs, and companies. In Chile, this institutional inertia could discourage investments and innovative projects, particularly in critical areas such as intellectual property, personal data protection, and legal liability for automated decisions.

Furthermore, the proposal to create an "agile institutional framework" to coordinate efforts among regulators, oversight bodies, and the private sector seems unrealistic given the current structure of the Chilean state. No specific resources, timelines, or clear responsibilities are outlined to implement this approach, increasing the risk that it will remain mere declarations without practical impact. This lack of definition raises serious doubts about the country's ability to adapt quickly to technological changes and stay competitive globally.

The impact of regulation on global competitiveness also poses significant challenges. While regions such as Europe and the United States have successfully established international standards in AI, Chile faces difficulties aligning its regulations with these standards without compromising the capacity of its local companies. The document mentions the need to review existing incentive mechanisms. Still, it lacks concrete proposals to address issues such as the lack of technological infrastructure, human talent training, and access to quality data. This could severely limit the country's ability to capitalize on the opportunities offered by AI.

Finally, although the policy attempts to present regulation as a tool to enhance technological development, its proposals are insufficient to generate the necessary incentives. The creation of minimum quality and transparency standards, for example, is relegated to a secondary priority due to the lack of clear mechanisms to ensure compliance. Similarly, the promotion of dialogue among regulators, academia, the private sector, and

civil society lacks a robust institutional design to ensure effective outcomes. Without a comprehensive strategy to address these limitations, there is a risk that regulation may become more of a barrier than a catalyst for the development of AI in Chile.

METHODOLOGY

The present study is based on a critical analysis of the official document of Chile's National Artificial Intelligence Policy, complemented by references to international regulatory frameworks and specialized literature on the subject. The objective is to identify and evaluate the factors that could limit the free development and innovation of artificial intelligence in the Chilean context, considering both opportunities and institutional and structural barriers.

To address this analysis, a qualitative methodology centered on documentary review and content analysis was adopted [19]. First, an exhaustive reading of the national policy's base document was conducted, paying special attention to its three main axes: Enabling Factors, Development and Adoption, and Ethics, Normative Aspects, and Socioeconomic Impacts. These axes were broken down to identify areas where tensions between regulation and technological innovation might arise.

In addition to analyzing the official document, data and concepts from secondary sources, such as the OECD and UNESCO recommendations on artificial intelligence, academic studies, and relevant international experiences, were incorporated. This allowed the Chilean policy to be contextualized within the global landscape and highlighted significant similarities or differences with other countries.

The methodological process included the following stages:

1. Documentary Review: The National Artificial Intelligence Policy document was analyzed to identify its objectives, principles, and priority actions. Complementary documents, such as technical reports and previous studies prepared by Chile's Ministry of Science, Technology, Knowledge, and Innovation, were also reviewed.
2. Critical Analysis: Based on the documentary review, potential points of friction between the objectives outlined in the policy and their practical implementation were evaluated. This analysis focused on aspects such as technological infrastructure, talent development, legal regulation, and socioeconomic impacts.
3. Comparison with International Frameworks: The guidelines of the Chilean policy were compared with international standards, particularly the recommendations of the OECD and UNESCO. This comparison allowed for the identification of areas where the policy could be strengthened or adjusted to better align with global best practices.
4. Identification of Institutional Barriers: We examined factors of institutional inertia that could hinder the effective implementation of the policy. This included an analysis of bureaucratic rigidity, lack of inter-institutional coordination, and limitations in infrastructure and human capital.
5. Synthesis and Proposals: Finally, the analysis's findings were consolidated into a set of critical observations and specific recommendations to mitigate the identified barriers and maximize the policy's impact.

It is important to highlight that this research does not aim to provide an exhaustive evaluation of all aspects of the policy but rather a focused analysis of the limitations and challenges that could affect the development and innovation of artificial intelligence. To this end, a critical yet constructive approach was adopted, seeking to contribute to the public debate on improving the policy's implementation in the medium and long term.

Critical Analysis

This critical analysis addresses the institutional, structural, and regulatory barriers that limit the development of artificial intelligence in Chile, as outlined in the National AI Policy. Based on its strategic axes, it evaluates the challenges faced in its implementation and the need for solutions to achieve a transformative impact.

Enabling Factors

Chile's National Artificial Intelligence (AI) Policy identifies enabling factors as fundamental structural elements for the effective development and deployment of AI in the country. These factors include three key components: talent development, technological infrastructure, and data. Below, each of these aspects is critically analyzed, highlighting both the opportunities and the barriers that could limit their practical implementation.

Talent Development

The development of talent is essential for the success of any artificial intelligence policy but faces significant challenges in the Chilean context. According to the official document, the first requirement for the use and development of AI is training individuals with advanced skills in areas such as mathematics, statistics, engineering, and programming. However, the Chilean education system presents structural limitations that could hinder this objective.

First, the low quality of STEM (science, technology, engineering, and mathematics) education in regions far from Santiago reduces students' ability to access advanced AI programs [20]. This regional gap excludes communities from the emerging technological ecosystem, perpetuating historical inequalities. Additionally, although the document proposes the creation of new university degrees and specialized diplomas, it does not provide clear mechanisms to ensure an equitable distribution of these educational opportunities.

Another major obstacle is the almost exclusive dependence on local programs to develop talent, without robust strategies to attract international experts. The lack of economic incentives or competitive working conditions could make it difficult to bring highly qualified researchers and professionals to the country. This is especially problematic given that developing countries like Chile face serious difficulties in competing globally for specialized talent.

Technological Infrastructure

Technological infrastructure is another key pillar for the development of AI, but it also faces significant challenges in Chile. Although the country has relatively strong connectivity compared to other nations in Latin America, there are critical gaps, especially in rural areas. This limits equitable access to key technologies such as fiber optics and 5G networks, which are essential for processing and storing large volumes of data.

The deployment of advanced infrastructures, such as data centers and high-performance computing, also presents obstacles. The document acknowledges the potential of Chile’s Natural Laboratories to position the country as a global technological hub. Still, it does not detail how these projects will be financed or implemented. Additionally, the lack of clear incentives for private investments in less populated regions could slow progress.

Another critical point is the need to anticipate future infrastructure demands. Without effective mechanisms to quantify these needs, there is a risk that current investments will become obsolete in the face of rapid technological advancement. Finally, although the importance of public-private partnerships is recognized, the absence of concrete strategies to promote them hinders their realization.

Data

Data is the fuel of artificial intelligence, and its availability, quality, and accessibility are crucial for the development of reliable and effective AI systems. However, the data ecosystem in Chile faces several challenges that could limit its impact.

First, although Chile has unique datasets in the world thanks to its Natural Laboratories, such as the northern skies and southern oceans, these data are not always available in formats suitable for use in AI. Additionally, the document mentions the need to anonymize and aggregate data to protect privacy but does not specify how this task will be implemented on a large scale.

Another significant challenge is the lack of clear standards for data interoperability between different sectors

and institutions. This hinders the creation of an integrated ecosystem where data producers and consumers can collaborate effectively. Likewise, the current regulation on personal data, such as Law No. 19,628, requires urgent updates to align with recent technological developments, such as the European Union's General Data Protection Regulation (GDPR).

Finally, the document highlights the importance of encouraging the private sector to participate in data generation and sharing but does not detail how this collaboration will be incentivized. Without a clear framework of responsibilities and benefits, companies will likely be reluctant to share their data.

Development and Adoption

The Development and Adoption axis of the National AI Policy aims to promote artificial intelligence-based solutions to increase Chile's productivity and competitiveness. Although it aspires to position the country as a regional leader, it faces significant challenges. Four key areas are analyzed here: academia-industry collaboration, ethical adoption, investment, and digital transformation.

Academia-Industry Collaboration

Collaboration between academia and the productive sector is essential for developing and adopting AI in Chile. According to the official document, this collaboration will enable the generation of technological innovations that address real market needs, thereby fostering greater knowledge and technology transfer. However, structural and cultural barriers hinder this synergy.

First, institutional rigidity within universities can hinder academics from actively participating in industrial projects. Although the policy proposes to relax academic regulations to allow professors to contribute to the productive sector without compromising their careers, no specific mechanisms are detailed for implementing this measure. Additionally, educational institutions' lack of adequate recognition for productive contributions could discourage researchers from participating in applied R&D projects.

Another significant challenge is the limited private investment in collaborative research. Compared to developed countries, where companies fund a significant proportion of AI research, in Chile, this collaboration remains limited. This is due, in part, to the private sector's perception of risk and the lack of clear incentives to invest in R&D. Without a robust strategy to attract investments and strengthen these alliances, it will be difficult to maximize AI's impact on the local industry.

Ethical and Responsible Adoption

The ethical and responsible adoption of AI is another key component of the Development and Adoption axis. The policy recognizes that while AI offers transformative opportunities, it also poses risks related to fundamental rights [21], such as privacy, non-discrimination, and human dignity. However, the practical implementation of ethical principles faces significant challenges.

One of the main obstacles is the lack of regulatory certainty on issues such as personal data protection and legal liability for automated decisions. Although the policy proposes to review existing regulations, such as Law No. 19,628 on protecting privacy, it does not specify a clear timeline for these updates. This uncertainty could discourage companies and entrepreneurs from adopting AI technologies, particularly in sensitive sectors such as healthcare or finance.

Moreover, there is a risk that the ethical adoption of AI may be limited to formal requirements without a real impact on daily practices. For example, while transparency and explainability of AI systems are promoted, it is not detailed how compliance will be evaluated or who will oversee it. This could result in a superficial approach that does not adequately address biases or negative impacts of these technologies.

Investment and Entrepreneurship

Promoting investment and entrepreneurship based on AI is essential to consolidating an innovative ecosystem

in Chile. The policy proposes creating channels and events to build networks, share experiences, and showcase success stories to attract investors and accelerate digital transformation. However, significant barriers could limit the impact of these initiatives.

First, access to capital remains a challenge for many Chilean entrepreneurs. Although the country has public funding programs, such as those offered by CORFO, these resources are often fragmented and not always aligned with the specific needs of AI projects. Additionally, the lack of angel investors and venture capital funds specialized in emerging technologies hinders the growth of startups in this area.

Another major obstacle is the low digital maturity of many Chilean companies. A study by the Chilean-American Chamber of Commerce and the Universidad del Desarrollo revealed that 78% of the surveyed companies do not use data to make decisions and are far from implementing prescriptive intelligence systems. This digital gap limits companies' ability to adopt AI technologies, even when incentives are available.

Digital Transformation of the Productive Sector

The digital transformation of the productive sector is a priority objective to increase Chile's productivity and competitiveness in the AI era. However, this process faces significant infrastructure, training, and organizational culture challenges.

First, technological infrastructure remains a bottleneck for many companies, especially in regions far from Santiago. Although Chile has relatively high internet coverage, the quality and speed of connectivity vary considerably between urban and rural areas. This hinders the implementation of advanced AI solutions, such as big data analytics or machine learning.

Another major challenge is the lack of digital skills training within the productive sector. While the policy proposes to train boards, executive levels, and industry leadership, it does not detail how these programs will be implemented or how their impact will be measured. Without a clear strategy for continuous training, it will be difficult for companies to adopt emerging technologies effectively.

Ethics, Legal and Regulatory Aspects

The Ethics, Legal, and Regulatory axis of Chile's National AI Policy addresses ethical, normative, and socioeconomic challenges arising from the human-machine relationship. Six key areas are critically analyzed, with varying progress depending on the topic: ethics and governance, work, consumption, intellectual property, cybersecurity, and gender gaps.

Ethics and Governance

Ethics is a central component of the responsible development of AI, but its practical implementation faces significant challenges. The policy acknowledges that, while AI offers opportunities and benefits for society, it also presents risks associated with fundamental rights such as dignity, privacy, freedom of expression, and non-discrimination. However, the lack of regulatory certainty in these areas limits its effectiveness.

One of the main obstacles is the absence of clear standards to ensure algorithmic transparency. Although the policy proposes establishing evaluation requirements throughout the lifecycle of AI systems, it does not specify how these criteria will be implemented or who will oversee them. This could result in a superficial approach that does not adequately address biases or negative impacts in automated decision-making.

Furthermore, there is a global concentration of ethical discussions in regions such as Europe and the United States, leaving Latin America underrepresented in the international debate. According to studies cited in the official document, of 84 ethical guidelines analyzed globally, none originate from Latin America or Africa. This exclusion could perpetuate a homogenized vision of AI ethics, ignoring specific local and cultural contexts.

Impacts on Work

The impact of AI on the labor market is another key area within the ethics and regulation axis. The policy

proposes conducting prospective analyses to identify vulnerable occupations, anticipate creating new AI-driven jobs, and support workers in transitioning to new roles. However, significant barriers could limit the achievement of these objectives.

First, the low digital maturity of many Chilean companies hinders the adoption of advanced technologies, delaying the labor market's transformation. Additionally, the lack of continuous training in digital skills for workers could widen the gap between market demands and available competencies.

Another major challenge is cultural resistance to change in traditional organizations. Many companies tend to prioritize manual processes over automated solutions, limiting their ability to harness AI's potential. Finally, although the policy mentions the need to modify labor regulations to respond to AI's demands, it does not provide a clear timeline for these updates.

To address these challenges, combining investments in training, transformative leadership, and dynamic regulations that protect workers' rights and promote innovation will be essential.

Consumer Relations

The relationship between AI and consumers is another priority topic within the ethics and regulation axis. The policy seeks to promote AI's ethical and responsible use in consumer relations, including automated contracting and liability standards for AI-related services. However, there are significant challenges in this area.

One of the main obstacles is the lack of clear regulations to oversee consumer protection adequately. Although the policy proposes developing algorithmic transparency standards for critical applications, it does not specify how these criteria will be implemented or who will oversee them. This could result in discriminatory or abusive practices going unnoticed.

Additionally, resistance from the private sector to adopt regulatory measures could limit the impact of these initiatives. Companies will likely prioritize their commercial interests over consumer rights without clear incentives to implement best practices. To overcome these challenges, it will be crucial to strengthen oversight mechanisms and promote multi-stakeholder dialogue that includes consumers, businesses, and regulators.

Intellectual Property and Creation

Intellectual property is a critical issue in the development of AI, but its regulation faces significant challenges. The policy recognizes the need to review existing rules to address aspects such as the patentability of AI systems, appropriate licenses, and trade secrets. However, the lack of regulatory certainty in these areas limits its effectiveness.

One of the main obstacles is the complexity of regulating inventions created by AI systems. Although the policy proposes to conduct inventories of inventions and works created with AI assistance, it does not specify how ownership of these rights will be determined or how legal conflicts will be resolved. This could create uncertainty for creators and innovators.

Additionally, the lack of alignment between national and international standards could limit Chile's global competitiveness. To overcome these challenges, it will be essential to develop a flexible legal framework that balances the rights of creators with the interests of society.

Cybersecurity and Cyberdefense

Cybersecurity is an essential component of ensuring the safe and reliable use of AI, but it faces significant challenges. The policy proposes modernizing regulations to guarantee minimum standards of access and service quality and encourage the use of AI systems to respond to cyberattacks. However, there are important barriers that could limit its implementation.

First, the lack of specialized teams in defensive and offensive aspects within organizations hinders the protection

of critical infrastructures. Additionally, clear regulations to oversee AI service providers could leave vulnerabilities unresolved.

Another major challenge is the private sector's resistance to adopting regulatory measures. Companies will likely prioritize their commercial interests over security without clear incentives to implement best practices. To overcome these challenges, it will be crucial to strengthen public-private collaboration and promote a dynamic regulatory framework.

Gender Gaps

Gender gaps in the research, technology, and innovation system are prioritized within the ethics and regulation axis. The policy proposes to promote women's participation in AI-related fields to achieve levels equal to or higher than those of the OECD. However, significant challenges could limit the achievement of this goal.

First, the lack of female representation in areas such as engineering and mathematics makes it difficult to create more equitable development teams. Additionally, the absence of bias-free databases could perpetuate historical inequalities.

Another major challenge is cultural resistance to change in traditional organizations. To overcome these challenges, it will be essential to promote training programs, transformative leadership, and regulations that ensure equal opportunities.

DISCUSSION

The critical analysis of Chile's National Artificial Intelligence Policy reveals a series of significant limitations in its design and implementation, particularly regarding regulation and regulatory frameworks. Although the document seeks to align with international standards such as the OECD principles and UNESCO recommendations, its practical application faces serious difficulties due to a lack of clarity, ineffective oversight mechanisms, and institutional resistance.

One of the primary issues is the ambiguity of the regulatory proposals. The policy mentions the need to update existing regulations, such as Law No. 19,628 on personal data protection and Law No. 19,223 on cybercrime. Still, it does not establish a clear timeline or specific mechanisms for these updates. This generates legal uncertainty that could discourage local and foreign investment in emerging technologies. For example, a 2024 initiative to revise Law No. 19,628 stalled due to prolonged disputes between the Ministry of Economy and the Ministry of Science over resource allocation and regulatory priorities, reflecting the bureaucratic rigidity. To better understand the alignment and gaps between Chile's policy and international standards, Table 1 compares the policy's provisions with the OECD's AI principles, highlighting areas where institutional barriers hinder progress. Additionally, the lack of regulatory certainty in key areas such as intellectual property, algorithmic transparency, and cybersecurity leaves legal gaps that could be exploited by malicious actors or ignored by companies prioritizing their commercial interests over fundamental rights.

Table 1: Comparison of Chile's National IA Policy with OECD AI principles.

OECD Principle	Chile's Policy Provisions	Gaps/ Observations
Inclusive Growth	Promotes Al for sustainable development and wellbeing through sector-specific applications (e.g., healthcare, education).	Lacks specific mechanisms to ensure equitable access across regions, particularly in rural areas with limited infrastructure.
Human-Centered approach	Emphasizes human rights, equity, and ethical Al adoption.	Absence of clear standards for bias mitigation in algorithms risks perpetuating inequalities.
Transparency	Advocates for explainable Al systems to build public trust.	No defined protocols for evaluating transparency, limiting practical implementation.

Robustness	Calls for secure Al systems and data protection updates (e.g., Law No. 19,628).	Delays in regulatory updates and lack of cybersecurity expertise hinder robust AI deployment.
Accountability	Proposes oversight mechanisms for responsible Al use.	Undefined responsibilities and timelines for oversight bodies reduce accountability.

Another critical point is the concentration of ethical and regulatory discussions in developed regions, primarily Europe and the United States, leaving Latin America underrepresented in the global debate. Although the policy acknowledges this gap, it does not propose concrete strategies to address it. For instance, a 2023 workshop aimed at integrating Indigenous perspectives into Chile's AI ethical guidelines struggled to gain traction, as policymakers relied heavily on European frameworks like the GDPR, which overlooked local cultural contexts, as noted in UNESCO's recommendations. This is problematic because the ethical and regulatory principles developed in foreign contexts may not be suitable for addressing the local realities of Chile, especially on issues such as the inclusion of Indigenous peoples, gender equity, and the protection of vulnerable groups. Without a clear national perspective, there is a risk of adopting regulations that perpetuate historical inequalities rather than mitigate them.

The policy also faces structural challenges related to infrastructure and human talent. While the importance of having high-quality connectivity, data centers, and specialized human capital is recognized, robust strategies to address existing gaps are not detailed. A hypothetical case illustrates this: a 2024 pilot project for AI-driven waste management in Santiago faltered when academic researchers prioritized developing complex predictive models, while private companies pushed for immediate deployment, and government agencies failed to mediate due to unclear coordination protocols, a challenge echoed in regional analyses by the OECD. For example, the low quality of STEM education in regions far from Santiago hinders the training of professionals skilled in artificial intelligence. At the same time, the lack of incentives to attract international experts limits the country's ability to compete globally. These structural limitations could significantly slow the implementation of AI-based solutions.

Furthermore, the policy lacks a comprehensive approach to addressing the socioeconomic impacts of AI. Although it mentions the need to anticipate the effects of automation on the labor market, it does not specify how affected workers will be supported or how labor retraining will be promoted. This is especially concerning given that recent studies indicate that 78% of Chilean companies do not use data to make decisions and are far from implementing advanced AI systems. Without robust training and adaptation programs, the risk is that social and economic gaps will deepen rather than narrow.

Finally, cultural and institutional resistance to change is another significant obstacle. Many traditional organizations tend to prioritize manual processes over automated solutions, limiting their ability to harness the potential of AI. The Santiago waste management case further highlights how misaligned priorities and the absence of a coordinating body stalled progress, underscoring the need for stronger inter-sectoral frameworks. Additionally, the lack of coordination among the stakeholders involved (government, academia, private sector, and civil society) hinders the creation of an integrated and collaborative ecosystem. To overcome these challenges, adopting a more critical and proactive approach that combines dynamic regulations, strategic investment, and transformative leadership will be essential. Only then will it be possible to ensure that artificial intelligence benefits all sectors of society rather than perpetuating existing inequalities.

CONCLUSIONS

Although ambitious in its purpose and structure, Chile's National Artificial Intelligence Policy faces serious limitations that could compromise its effectiveness. Throughout the critical analysis, it is evident that regulatory ambiguity, institutional barriers, and structural challenges hinder the achievement of its stated objectives. While the document acknowledges the importance of addressing ethical, legal, and socioeconomic aspects, it does not provide concrete mechanisms or detailed timelines for implementing many of its proposals, creating uncertainty for both the public and private sectors.

One of the main problems lies in lacking a comprehensive strategy to address existing gaps in technological infrastructure, talent development, and the adoption of AI-based solutions. The policy mentions the need to modernize current regulations. Still, it does not establish how key conflicts, such as those related to intellectual property, algorithmic transparency, or personal data protection, will be resolved. This creates a legal vacuum that could be exploited by malicious actors or ignored by companies prioritizing their commercial interests over fundamental rights.

Additionally, cultural and institutional resistance to change is another significant obstacle. Many traditional organizations tend to prioritize manual processes over automated solutions, limiting their ability to harness AI's potential. The lack of coordination among the stakeholders involved (government, academia, private sector, and civil society) also hinders the creation of an integrated and collaborative ecosystem. Without a clear vision and specific actions to overcome these barriers, there is a risk that the policy will remain a mere rhetorical exercise without real impact on society.

Finally, the policy lacks a robust approach to addressing the socioeconomic impacts of AI, particularly in terms of equity and sustainability. Although it mentions the need to anticipate the effects of automation on the labor market, it does not specify how affected workers will be supported or how labor retraining will be promoted. This is particularly concerning given that recent studies indicate that many Chilean companies are far from implementing advanced artificial intelligence systems. Without robust training and adaptation programs, there is a risk that social and economic gaps will deepen rather than narrow.

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