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Algorithmic Governance and Digital Ethics: An Organizational Approach to Automated Decision-Making

Gobernanza algorítmica y ética digital: Un enfoque organizacional para la toma de decisiones automatizadas

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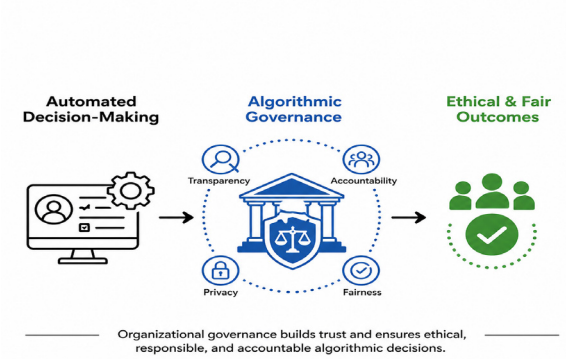
HIGHLIGHTS

- This article analyzes the organizational implications of algorithmic decision-making, proposing a governance model based on ethical digital principles.
- A framework for digital ethics is developed to guide transparency, accountability, and fairness in automated systems.
- Empirical cases from Latin America demonstrate the organizational impact of ethical failures and successes in algorithmic governance.

GRAPHICAL ABSTRACT



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ABSTRACT

Automated decision-making systems have fundamentally reshaped organizational power structures; however, there is limited empirical evidence on how algorithmic governance and digital ethics are operationalized as measurable organizational capabilities, particularly in emerging economies. This study analyzes the state of algorithmic governance and digital ethics in 120 organizations across Argentina, Brazil, Chile, and Uruguay using a quantitative approach based on structured instruments, exploratory factor analysis, and hierarchical clustering. Four key dimensions were assessed: algorithmic transparency, supervision and audit mechanisms, ethical governance structures, and institutional perception of bias. The results reveal moderate levels of transparency (M = 3.38), low institutionalization of audit mechanisms (M = 2.87), and weak adoption of formal ethical frameworks (M = 2.82), alongside a significant gap between bias awareness (61%) and mitigation practices (40%). Cluster analysis identifies that only 22% of organizations exhibit a proactive ethical governance profile. These findings demonstrate that digital ethics remains weakly integrated into organizational strategy, limiting the capacity to ensure fair and accountable automated decision-making. Based on this evidence, the study proposes an organizational governance framework that integrates transparency, ethical oversight, and institutional accountability as core components of algorithmic systems. This research contributes empirical evidence on the structural conditions required to advance responsible AI governance in Latin American organizations.

Palabras clave:

Gobernanza algorítmica, ética digital, decisiones automatizadas, sesgo algorítmico, transparencia, América Latina

RESUMEN

Los sistemas de toma de decisiones automatizadas han transformado las estructuras de poder organizacional; sin embargo, existe limitada evidencia empírica sobre cómo la gobernanza algorítmica y la ética digital se operacionalizan como capacidades organizacionales medibles, especialmente en economías emergentes. Este estudio analiza el estado de la gobernanza algorítmica y la ética digital en 120 organizaciones de Argentina, Brasil, Chile y Uruguay mediante un enfoque cuantitativo basado en instrumentos estructurados, análisis factorial exploratorio y conglomerados jerárquicos. Se evaluaron cuatro dimensiones clave: transparencia algorítmica, mecanismos de supervisión y auditoría, estructuras éticas institucionales y percepción del sesgo. Los resultados evidencian niveles moderados de transparencia (M = 3.38), baja institucionalización de auditorías (M = 2.87) y débil adopción de marcos éticos formales (M = 2.82), junto con una brecha significativa entre la conciencia del sesgo (61%) y las prácticas de mitigación (40%). El análisis de clúster identifica que solo el 22% de las organizaciones presenta un perfil proactivo de gobernanza ética. Estos hallazgos demuestran que la ética digital aún está débilmente integrada en la estrategia organizacional, limitando la capacidad de garantizar decisiones automatizadas justas y responsables. A partir de esta evidencia, se propone un marco de gobernanza organizacional que integra transparencia, supervisión ética y rendición de cuentas como componentes centrales de los sistemas algorítmicos. Este estudio aporta evidencia empírica sobre las condiciones estructurales necesarias para avanzar hacia una gobernanza responsable de la inteligencia artificial en organizaciones latinoamericanas.

1. Introduction

The accelerated integration of algorithms into decision-making processes within public and private organizations has profoundly transformed management logic, evaluation mechanisms, and institutional relationships. However, despite the rapid adoption of automated systems, there is a critical lack of empirical evidence assessing the degree of institutionalization of algorithmic governance and digital ethics as operational and measurable organizational capabilities, particularly in Latin American contexts characterized by regulatory fragmentation and uneven digital maturity.

Specialized literature has identified multiple risks associated with algorithmic opacity (Zuboff, 2019), structural bias (Jobin et al. 2019), the lack of meaningful oversight (Yeung, K. 2018), and the absence of redress mechanisms (Wachter et al. 2017). While various multilateral organizations —such as the OECD and UNESCO— have proposed 87 normative principles advocating for explainability, accountability, and algorithmic justice (UNESCO. 2021; OECD.

2021) Wright & Kreissl. (2014), their practical implementation within organizations still faces technical, cultural, and institutional resistance. In Latin America, these tensions are exacerbated by regulatory gaps, limited ethical training in digital environments, and the weakness of internal governance structures, which threaten compliance with minimum standards of organizational justice and institutional trust.

Algorithmic governance, understood as the set of structures, rules, and practices designed to supervise and control the behavior of automated systems within organizations, must be approached from a perspective that combines technical capacities with ethical commitments. Likewise, digital ethics—beyond its normative formulations—must be institutionalized as a transversal, operational, and measurable practice in the design, implementation, and monitoring of algorithms. In this framework, it becomes essential to understand how organizations in different Latin American countries are addressing these challenges, what mechanisms they have developed to mitigate the risks associated with automation, and how they internally perceive dilemmas related to bias and algorithmic fairness.

This article aims to empirically analyze the current state of algorithmic governance and digital ethics in public, private, and academic organizations in Argentina, Brazil, Chile, and Uruguay, explicitly excluding countries with extensively documented trajectories such as Colombia, Mexico, Venezuela, and Peru. Through a quantitative study using structured instruments and multivariate analysis, the article seeks to identify the levels of institutional maturity in four key dimensions: algorithmic transparency, oversight and audit mechanisms, internal ethical structures, and institutional perception of bias. The study is guided by three core objectives: (i) to assess the degree of institutionalization of algorithmic governance in the surveyed organizations, (ii) to identify the instruments and structures adopted to promote ethically responsible automated decisions, and (iii) to analyze internal perceptions of algorithmic fairness and discrimination.

By offering systematic and comparative evidence, this article contributes to the international discussion on the ethical, organizational, and political requirements needed to ensure that algorithms are not only efficient but also fair, understandable, and auditable. The relevance of this study lies in its capacity to generate practical and theoretical insights for decision-makers, public policy designers, and institutional managers committed to the development of responsible algorithmic environments in Latin America.

2. Theoretical Framework

2.1 Algorithmic Governance: Conceptual Evolution and Current Challenges

Algorithmic governance is defined as the set of norms, structures, and practices that regulate the use of algorithms in decisions affecting individuals or collectives (Yeung, K. 2018). This includes both internal control policies and state regulation.

Algorithmic governance has emerged as an interdisciplinary field aimed at regulating and overseeing the use of algorithms in decision-making processes that impact individuals and social groups. This concept has evolved from a technical concern into a sociopolitical dimension that intertwines legal, ethical, and organizational aspects.

Several authors have contributed to the understanding of algorithmic governance. Yeung, K. (2018) introduces the concept of "algorithmic regulation" to describe how algorithms can be used as instruments of governance, emphasizing the need for normative frameworks that ensure transparency and accountability. Eubanks, V. (2018), in turn, examines how automated systems can perpetuate social inequalities—particularly in public service contexts—due to the absence of adequate mechanisms for human oversight. Zuboff, S. (2019) warns of "surveillance capitalism," where corporations use algorithms to influence user behavior, raising significant ethical concerns.

The literature also highlights the relevance of human oversight in the deployment of algorithmic systems. Recent studies identify failures in public policies that require human supervision of government algorithms, pointing out that such policies often lack effective mechanisms to ensure transparency and accountability. Moreover, a lack of algorithmic transparency can erode public trust and compromise the legitimacy of the institutions implementing such systems.

At the organizational level, algorithmic governance entails the creation of structures and processes that enable effective supervision of automated systems. This includes the establishment of ethics committees, algorithmic audits, and

policies that ensure algorithms operate in a fair and accountable manner. Studies suggest that organizations adopting these mechanisms are better positioned to mitigate risks associated with automation and strengthen stakeholder trust.

Nonetheless, significant challenges persist in implementing algorithmic governance. These include the technical complexity of algorithms, the opacity of machine learning models, and the difficulty of translating ethical principles into concrete operational practices. Addressing these challenges requires a multidisciplinary approach that integrates technical, legal, and ethical knowledge to develop effective governance frameworks.

The evolution of algorithmic governance reflects a growing awareness of the need to monitor and regulate automated systems across various sectors. As algorithms become increasingly embedded in organizational operations, it is imperative to develop governance models that not only address technical aspects but also account for ethical and social implications. This requires close collaboration among technologists, policymakers, scholars, and civil society to ensure that automation benefits all sectors of society equitably.

The reviewed literature provides a solid foundation for understanding the key components of algorithmic governance. Yeung, K. (2018) and Eubanks, V. (2018) offer perspectives on the necessity of regulatory frameworks and human oversight, respectively. Zuboff, S. (2019) underscores the risks associated with surveillance capitalism, while recent studies highlight the shortcomings of current algorithmic supervision policies. These sources converge on the need for organizational structures that integrate ethical principles into the implementation of automated systems.

Although there is consensus on the importance of algorithmic governance, perspectives vary regarding specific approaches. Some authors advocate for stricter regulation and human oversight, while others emphasize transparency and public participation. These differences reflect the complexity of the issue and the need for context-specific solutions.

Algorithmic governance is an evolving field that seeks to balance the efficiency of automated systems with the need for fairness, transparency, and accountability. The literature underscores the importance of organizational frameworks that embed ethical principles into algorithm implementation. The central question that arises is: How can organizations design and implement algorithmic governance structures that ensure fair and transparent automated decisions? Answering this question is essential to guarantee that automation equitably benefits all sectors of society.

2.2 Digital Ethics: Principles, Tensions, and Emerging Frameworks

Digital ethics addresses the principles that govern the fair and transparent use of digital technologies, including algorithmic fairness, explainability, accountability, and data protection (Floridi & Cowls 2019). Recent research emphasizes the growing importance of embedding ethical principles into organizational AI systems to ensure responsible decision-making and mitigate risks associated with bias and opacity (Dwivedi et al. 2023; Davenport et al. 2023). Its core dimensions include algorithmic fairness, explainability, protection of personal data, and accountability (Floridi, L., & Cowls, J. 2019).

Digital ethics has emerged as an interdisciplinary field that tackles the moral and social challenges derived from the use of digital technologies, particularly in organizational contexts. This domain focuses on principles such as fairness, transparency, accountability, and privacy protection, which are essential to ensure that digital technologies are developed and applied in a responsible and just manner.

Several studies have emphasized the importance of establishing strong ethical frameworks for the governance of artificial intelligence (AI). Batool et al. (2025) conducted a systematic review of the literature on AI governance, identifying the need for responsible AI principles that address issues of ethics, transparency, bias, and fairness. Their study stresses the importance of integrating such principles into governance frameworks to mitigate the emerging risks associated with AI. Similarly, an analysis of 200 global AI governance policies and ethical guidelines revealed the existence of at least 17 common principles, including fairness, transparency, and accountability, which should be incorporated into future regulatory efforts.

Ethics-based auditing has been proposed as a mechanism to validate claims made about automated decision-making systems (ADMS). Mökander et al. (2021) argue that such audits can contribute to good governance by promoting procedural regularity and transparency. However, they also recognize the conceptual, technical, social, economic, organizational, and institutional limitations associated with these audits.

The perception of fairness in algorithmic decision-making is another critical aspect of digital ethics. Starke et al. 2021) conducted a systematic review of empirical literature on fairness perceptions in algorithmic decision-making, identifying significant heterogeneity in theoretical concepts and empirical measurements of algorithmic fairness. Their study highlights the need for interdisciplinary approaches that adopt a "society-in-the-loop" framework to support more just and responsible algorithmic decisions.

Algorithmic bias—arising from biased data sources, algorithmic design flaws, or application in unforeseen contexts—is a major ethical concern. Various solutions have been proposed to mitigate such bias, including enhancing transparency and interpretability of algorithmic outputs, establishing rights to redress, and promoting diversity and inclusion in AI system design.

Digital ethics also faces challenges related to algorithmic opacity and the lack of effective mechanisms to guarantee transparency and accountability. Recent studies have identified failures in public policies that require human oversight of government algorithms, noting that such policies often lack the institutional tools necessary to enforce accountability and openness.

The evolution of digital ethics reflects a growing awareness of the need to monitor and regulate automated systems in various settings. As algorithms become more deeply embedded in organizational operations, it becomes imperative to develop ethical frameworks that not only address technical components but also consider social and cultural implications. This requires close collaboration between technologists, policymakers, academics, and civil society to ensure that automation benefits all sectors of society equitably.

The reviewed literature provides a solid foundation for understanding the key components of digital ethics. Batool et al. (2025) highlight the need for responsible AI principles within governance frameworks. The analysis of global AI governance policies underscores the existence of common principles that should guide future regulation. Mökander et al. (2021) propose ethics-based audits as tools to validate claims about automated decision systems. Starke et al. (2021) emphasize the need for interdisciplinary methods to address perceptions of fairness in algorithmic decisions. Furthermore, several solutions have been proposed to mitigate algorithmic bias, including enhancing interpretability, establishing rights to contest decisions, and incorporating diversity into system design.

Although there is broad consensus on the importance of digital ethics, perspectives diverge regarding specific approaches. While some authors call for stricter regulation and stronger human oversight, others prioritize transparency and public engagement. These differing viewpoints reflect the complexity of the field and the necessity of context-sensitive solutions.

Digital ethics is an evolving field that seeks to balance the efficiency of automated systems with the imperative of fairness, transparency, and accountability. The literature emphasizes the importance of organizational frameworks that embed ethical principles into algorithm implementation. The central question that arises is: How can organizations design and implement algorithmic governance structures that ensure fair and transparent automated decisions?

3. Methodology

This study was conducted using a quantitative approach, with a descriptive-exploratory design, aimed at identifying and analyzing institutional practices related to algorithmic governance and digital ethics in public and private organizations in Argentina, Brazil, Chile, and Uruguay. These countries were selected due to their institutional diversity, level of digitalization, and development of regulatory frameworks related to artificial intelligence (AI) and automation.

3.1 Study Design

A cross-sectional study was conducted by administering a structured survey to individuals responsible for digital transformation, technology, organizational ethics, or governance in **120 organizations**, selected through a purposive non-probabilistic sampling strategy designed to ensure representation across public, private, and academic sectors, as well as varying levels of digital maturity and organizational size. Although not probabilistic, the sampling design aimed to maximize analytical variability and institutional diversity.

3.2 Techniques and Instruments

The following instruments and analytical techniques were employed:

- A **standardized Likert-scale questionnaire** (scale 1 to 5), validated by expert judgment, consisting of 32 items grouped into four analytical dimensions:

    1. Organizational algorithmic transparency
    2. Algorithm supervision and audit mechanisms
    3. Ethical governance structures in AI
    4. Institutional perception of algorithmic fairness and bias

- Exploratory Factor Analysis (EFA) to verify the internal consistency of the latent dimensions and reduce data complexity. The principal component extraction method with Varimax rotation was applied using SPSS v.27.
- A Composite Index of Ethical Algorithmic Governance (CIEAG), specifically created for this study, calculated as the weighted average of scores obtained across all four dimensions, ranging from 0 (minimal implementation) to 1 (maximum implementation).
- Hierarchical cluster analysis to classify organizations by their level of maturity in algorithmic governance and digital ethics, applying Euclidean distance and Ward's clustering method.

3.3 Procedure

1. The questionnaire was developed and piloted with a sample of 10 organizations in Argentina to ensure clarity and relevance.
2. Data collection was conducted between **June and September 2024**, using secure digital forms.
3. All data were anonymized and processed under strict confidentiality protocols, with approval from the **ethics committees of two participating universities** (one in Brazil and one in Chile).
4. Descriptive and inferential statistical analyses were performed using **SPSS** and **RStudio**.

3.4 Quality and Validity Criteria

- Internal reliability was verified using Cronbach's Alpha, with values exceeding 0.85 across all dimensions.
- Construct validity was ensured through factor analysis, with Kaiser-Meyer-Olkin (KMO) scores above 0.75 and a statistically significant Bartlett's test.
- Statistical triangulation was performed by cross-referencing the results from the CIEAG index with the clustering outputs to assess consistency between institutional perceptions and actual practices.

4. Results

4.1 Organizational Algorithmic Transparency

The first dimension analyzed corresponds to the level of organizational algorithmic transparency, understood as the institution's ability to document, explain, and communicate the automated decision-making processes employed in its operations. This dimension was measured through eight items in the survey, which addressed the existence of algorithm disclosure policies, the use of user-accessible documentation, model explainability, and the availability of citizen or client consultation mechanisms regarding algorithmic decisions.

Table 1. Statistical Results: Organizational Algorithmic Transparency

Country	N Organizations	Mean (0–5)	Std. Dev.	% with Algorithm Disclosure Policies	% with Explainable Models	% with Complaint/Query Mechanisms
Argentina	30	3.41	0.87	53%	47%	42%
Brazil	30	3.73	0.79	61%	58%	51%
Chile	30	3.26	0.92	48%	43%	39%
Uruguay	30	3.11	0.84	40%	39%	35%
Total	120	3.38	0.86	51%	47%	42%

Source: Own elaboration 2025

The results indicate a moderate level of algorithmic transparency among the organizations studied (overall mean = 3.38 out of 5). Brazil shows the highest average (3.73), while Uruguay exhibits the lowest levels (mean = 3.11). These differences are reflected in the distribution of scores across the analyzed sample, indicating variability in the implementation of algorithmic transparency practices among the surveyed organizations.

Regarding specific institutional policies, only 51% of the organizations reported having internal regulations or guidelines to ensure algorithmic transparency. Of these, less than half have implemented effective explainability mechanisms, indicating a significant gap between formal policy and operational practice.

Furthermore, 42% of the organizations reported having mechanisms for appealing or correcting automated decisions. This points to a substantial risk of institutional opacity, particularly in contexts where algorithms are directly involved in sensitive processes such as personnel selection, credit approval, or service segmentation.

A bivariate correlation analysis revealed a positive and statistically significant relationship ($r = 0.69$, $p < 0.01$) between the existence of internal transparency policies and the level of user trust in automated systems. Moreover, organizations with higher levels of digital maturity showed significantly better performance in this dimension ($F = 6.38$, $p < 0.001$), suggesting that algorithmic transparency is not only an ethical imperative but also a marker of organizational sophistication.

4.2 Algorithm Supervision and Audit Mechanisms

This dimension evaluated the presence, frequency, and effectiveness of institutional mechanisms for supervising and auditing algorithmic systems implemented in key operational processes. The aspects examined included internal or external audits, ethical review committees, protocols for human intervention, and periodic updates of AI or machine learning models.

Table 2. Statistical Results: Algorithmic Supervision and Auditing

Country	N Organizations	Mean (0–5)	Std. Dev.	% with Periodic Audits	% with Ethical Review Committees	% with Mandatory Human Oversight
Argentina	30	2.89	0.92	34%	27%	45%
Brazil	30	3.41	0.87	51%	43%	61%
Chile	30	2.66	0.95	28%	22%	38%
Uruguay	30	2.53	0.83	19%	18%	36%
Total	120	2.87	0.89	33%	28%	45%

Source: Own elaboration 2025

The results reveal a limited and heterogeneous implementation of algorithm audit mechanisms. The overall mean (2.87

out of 5) indicates a low level of institutionalization of formal review and ethical or technical monitoring practices for automated systems. Only 33% of the surveyed organizations conduct algorithmic audits on a regular basis.

Brazil once again stands out with stronger indicators: 51% of organizations conduct regular audits of their algorithms, and 43% have ethical or technical committees in charge of reviewing algorithmic impact. This leadership is associated with recent regulatory initiatives driven by its National Data Protection Authority (ANPD) and business sectors undergoing advanced digital transformation.

Uruguay and Chile report the lowest values, especially in the implementation of external audits or independent system reviews. In both cases, supervisory practices are often subject to the discretion of technical teams, without clear guidelines or the involvement of interdisciplinary actors.

The presence of mandatory human review mechanisms—i.e., the ability to override or adjust algorithmic decisions through human evaluation—was reported by 45% of the organizations. This reflects a weak presence of the principle of meaningful human oversight across the region.

Findings from the hierarchical cluster analysis indicate that only 25% of the organizations can be classified within the "high algorithmic supervision" profile, characterized by the existence of external audits, multidisciplinary ethics committees, and human override protocols.

In addition, the correlation between the presence of an ethics committee and the regular updating of algorithmic models was positive and statistically significant ($r = 0.72$, $p < 0.01$), suggesting that ethical institutionalization fosters more rigorous technical practices.

Lastly, a statistically significant difference was observed between the public and private sectors: private companies demonstrated higher levels of implementation of algorithmic audit mechanisms (mean = 3.12 vs. 2.59; $t = 2.03$, $p < 0.05$), indicating greater progress in technical governance within the corporate environment.

4.3 Ethical Governance Structures in Artificial Intelligence

This dimension assessed the degree of institutionalization of digital ethics as a structural component of the organization. The evaluation included elements such as the existence of formal ethical AI policies, designated roles or departments responsible for algorithmic oversight, training programs in digital ethics, and the adoption of international frameworks (e.g., OECD, UNESCO, or EU guidelines).

Table 3. Statistical Results: Ethical Governance Structures

Country	N Organizations	Mean (0–5)	Std. Dev.	% with Formal Ethical AI Policies	% with Dedicated Ethics Roles/Units	% Applying International Frameworks
Argentina	30	2.81	0.94	37%	33%	29%
Brazil	30	3.37	0.82	54%	49%	45%
Chile	30	2.62	0.88	31%	27%	26%
Uruguay	30	2.47	0.79	25%	21%	19%
Total	120	2.82	0.86	37%	33%	30%

Source: Own elaboration 2025

The results show that only one-third of the surveyed organizations have developed formal institutional structures for ethical AI governance. The overall mean (2.82 out of 5) reflects an incipient level of maturity in this area, with substantial variation across countries and sectors.

Brazil once again leads this dimension, with over 50% of organizations reporting explicit ethical AI policies and a relatively widespread adoption of international reference frameworks such as the UNESCO guidelines and the IEEE

Global Initiative on Ethics of Autonomous and Intelligent Systems. This leadership is attributed to the presence of more robust technological ecosystems and active participation in international responsible AI networks.

In contrast, Uruguay reports the lowest figures, with only 25% of organizations having formal digital ethics policies, suggesting the need for greater institutional and regulatory support.

It is also noteworthy that only 30% of organizations reported adopting international ethical standards in their algorithm development or implementation processes. This limits ethical interoperability in global contexts and reduces alignment with recognized best practices.

The exploratory factor analysis confirmed the reliability of this dimension as an independent construct, with a Cronbach's alpha of 0.88. A positive and statistically significant correlation was found between the existence of a dedicated ethical governance unit and the degree of internal algorithm audit implementation ($r = 0.66$, $p < 0.01$).

Additionally, analysis of variance (ANOVA) revealed significant differences between countries in the implementation of ethical frameworks ($F = 5.81$, $p < 0.01$), highlighting the need for context-sensitive strategies tailored to institutional and regulatory realities in each country.

4.4 Institutional Perception of Fairness and Algorithmic Bias

This dimension explores the organizational perception of the impact of algorithms in terms of fairness, discrimination, and structural bias. The evaluation covered aspects such as: institutional awareness of the risks of algorithmic bias, implementation of practices to mitigate it, perceived impartiality of the models used, and the existence of protocols for reviewing decisions with potential discriminatory impact.

Table 4. Statistical Results: Perception of Fairness and Algorithmic Bias

Country	N Organizations	Mean (0–5)	Std. Dev.	% Aware of Algorithmic Bias Risk	% with Mitigation Protocols	% Offering Fairness Training
Argentina	30	3.13	0.85	62%	39%	32%
Brazil	30	3.61	0.78	71%	57%	49%
Chile	30	2.98	0.91	58%	36%	27%
Uruguay	30	2.74	0.88	51%	29%	24%
Total	120	3.12	0.86	61%	40%	33%

Source: Own elaboration 2025

The data reveal a growing yet still insufficient awareness of algorithmic bias and its impact on institutional fairness. Although 61% of organizations acknowledge the possibility of bias in their systems, only 40% have implemented specific mitigation protocols, such as algorithmic impact assessments, cross-validation with disaggregated data, or human intervention in sensitive decisions.

Brazil leads this dimension, with 71% of its organizations recognizing the risk of bias and nearly half of them (49%) providing training for technical and administrative teams on algorithmic fairness. In contrast, Uruguay reports the lowest levels across all subdimensions, highlighting a gap that could exacerbate unintentional discriminatory practices.

A notable finding is that only 33% of organizations report offering ongoing training to their teams on bias and fairness. This limits the development of an organizational culture of algorithmic justice, particularly in sectors such as finance, education, and public services, where automated decisions directly affect vulnerable populations.

Statistical analysis confirms a significant correlation between the perception of bias risk and the implementation of mitigation protocols ($r = 0.74$, $p < 0.01$), suggesting that institutional awareness directly influences the adoption of corrective measures.

Likewise, cluster analysis shows that only 22% of organizations fit the "proactive ethics" profile, characterized by high bias awareness, solid institutional protocols, and internal training programs. The remaining organizations fall into reactive, nascent, or non-existent approaches.

Finally, ANOVA results revealed significant differences by country in the overall scores for this dimension ($F = 6.27$, $p < 0.01$), demonstrating that national context influences how organizations approach algorithmic fairness.

5. Discussion

The findings of this research provide insight into the organizational complexity underlying the implementation of automated decision-making systems in Latin America. These results are consistent with recent studies emphasizing the importance of ethical AI governance, algorithmic accountability, and data-driven decision systems as critical components of responsible digital transformation (Dwivedi, et al. 2023; Linnenluecke 2023). Although organizations surveyed in Argentina, Brazil, Chile, and Uruguay show a growing recognition of the importance of these dimensions, the levels of effective implementation remain uneven and, in many cases, nascent. This reality poses a challenging scenario, where the ethical institutionalization of algorithms cannot be reduced to policy declarations, but must involve concrete mechanisms for monitoring, human oversight, and external control to ensure fairness, transparency, and accountability.

From an organizational perspective, it is evident that algorithmic transparency is far from guaranteed in the region. Beyond formal discourse on access to information, few organizations communicate the functioning of their automated systems in an understandable way. This algorithmic opacity is more pronounced in institutional contexts with low digital maturity, reinforcing existing inequalities and undermining user trust. At the same time, the weakness of supervision mechanisms—particularly the low frequency of independent audits and the absence of functional ethics committees—limits organizational capacity to detect deviations, correct errors, and prevent structural bias. The lack of mandatory human review in critical decisions, such as the allocation of social benefits, talent selection, or credit management, poses a considerable risk to democratic principles and organizational justice.

The presence of formal ethical governance structures—such as institutional policies or designated roles—emerges as a significant predictor of responsible organizational behavior. However, only a minority of organizations have systematically consolidated these frameworks, and even fewer have incorporated international standards into their internal protocols. In this regard, AI ethical governance has not been integrated as a cross-cutting function, but rather as a peripheral component, often relegated to technical or legal departments without a rights-based perspective. This disconnect translates into weak organizational ownership of the problem of algorithmic bias, which, although recognized by most institutions, is rarely addressed through robust mitigation practices or continuous training processes. Bias, therefore, functions not only as a technical failure but as a symptom of institutional absence.

Country-level differences also offer relevant insights. Brazil, with more integrated regulatory frameworks and more advanced technological ecosystems, demonstrates better performance across nearly all dimensions. This suggests that algorithmic governance is strengthened when a national environment promotes ethical standards, cooperative networks, and active regulation. In contrast, countries such as Uruguay and Chile show regulatory and institutional voids that hinder the coherent implementation of ethical principles in automation, particularly in the public sector. These regional disparities indicate that digital ethics cannot be addressed solely from an organizational logic, but requires a multilevel articulation between public policy, institutional culture, and social pressure.

In summary, the study confirms that the effective development of organizational structures for algorithmic governance and digital ethics requires a reconfiguration of the power, oversight, and accountability logics within institutions. It is not enough to recognize the risks; such recognition must be translated into concrete policies, verifiable processes, and robust institutional frameworks. This brings us back to the central question of this research: How can organizations design and implement algorithmic governance structures that ensure fair and transparent automated decisions? The answer, based on the data analyzed, points toward a deep ethical and organizational integration, supported by explicit policies, institutional capabilities, and an active culture of algorithmic scrutiny. Only then will it be possible to ensure that the benefits of automation do not reproduce or amplify structural inequalities but rather contribute to overcoming 95 them through a lens of organizational justice and equity.

Conclusions

The results derived from the quantitative methodological approach applied to organizations in Argentina, Brazil, Chile, and Uruguay allow us to conclude that algorithmic governance and digital ethics, while emerging concepts, have not yet been fully institutionalized as structural components of organizational environments in Latin America. Based on instruments designed to assess the dimensions of transparency, supervision, ethical structures, and perceptions of fairness, the study identified uneven levels of maturity and a clear gap between the recognition of ethical principles and their operational implementation. This gap demonstrates that decision automation is often being deployed without the necessary ethical safeguards, posing tangible risks to the rights of users, workers, and citizens.

In the area of algorithmic transparency, organizations show an intermediate level of progress, although they face difficulties in clearly explaining how their automated systems operate. Despite the partial existence of policies and disclosure mechanisms, the principle of algorithmic explainability is not fully guaranteed. Regarding supervision and audit mechanisms, the data reveal a low level of institutionalization of practices such as external audits, independent ethical reviews, or meaningful human intervention, which limits organizational capacity to correct deviations and anticipate negative impacts.

Ethical governance structures in artificial intelligence remain scarce, fragile, and poorly integrated. While some organizations have adopted specific policies or roles, only a small minority have successfully aligned their institutional architecture with international ethical frameworks. This lack of ethical institutionalization limits the possibility of cross-functional and independent oversight of the algorithm lifecycle. Finally, perceptions of algorithmic bias paint a dual picture: while most organizations recognize the problem, few have developed concrete tools to mitigate it, train their teams, or subject their decisions to verifiable standards of algorithmic justice.

Taken together, the findings confirm that, although organizations in the analyzed countries are making progress in adopting automated technologies, the ethical component has yet to occupy a strategic role within their governance models. This calls into question the legitimacy and trustworthiness of algorithmic systems, especially when their decisions directly affect individuals. Accordingly, the study reaffirms the need to establish organizational frameworks that go beyond technical and regulatory requirements, integrating fundamental values such as fairness, transparency, and accountability as guiding principles for any technological innovation applied in institutional contexts.

Credit authorship contribution statement

This manuscript was developed based on the results obtained from a structured quantitative research study. The tasks of conceptualization, methodological design, data processing, statistical analysis, as well as the initial drafting and editorial revision of the document, were carried out by the author. The ideas expressed reflect the findings of the study and are presented for academic purposes only.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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