Brazil's First AI Regulatory Sandbox: Towards Responsible Innovation

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ABSTRACT

As artificial intelligence technologies rapidly evolve, regulatory sandbox initiatives have emerged as crucial tools for promoting responsible AI development, enabling innovation while safeguarding fundamental rights and public interests. This paper analyzes the development and implications of Brazil's first AI regulatory sandbox, with a particular focus on the model established by SUSEP (Superintendence of Private Insurance). Designed as a controlled environment for testing innovative products and services in the insurance sector, the SUSEP sandbox illustrates how regulatory flexibility can foster technological advancement, financial inclusion, and market efficiency while maintaining consumer protection and risk oversight. Being developed under Brazil's Economic Freedom Law, the sandbox has evolved through three editions (2020, 2021, and 2024), prioritizing both sustainable and technological projects. This study explores the sandbox's structure, eligibility criteria, business plan requirements, operational limitations, and transition mechanisms for companies seeking permanent licensure. It also identifies actionable insights for future regulatory frameworks, particularly for the National Data Protection Authority (ANPD) as Brazil advances toward AI-specific governance. By comparing the sandbox's legal foundations, selection processes, and risk mitigation protocols with international best practices, this paper underscores the sandbox's role as a blueprint for responsible AI regulation in emerging markets.

CCS CONCEPTS

• Computing methodologies • Applied computing • Information systems • Social and professional topics

KEYWORDS

Regulatory Sandboxes, Artificial Intelligence Governance, Data Protection, Innovation Policy, Brazilian AI Regulation.

1 Introduction

The rapid evolution of artificial intelligence (AI) has prompted urgent global discussions about governance frameworks that can both stimulate innovation and mitigate potential risks. Around the world, regulators are grappling with how to manage AI systems that are increasingly impacting critical sectors, such as finance, healthcare, education, and public administration. While countries in Europe have taken the lead in formalizing AI-specific legislation—most notably through the European Union's AI Act—many nations in the Global South, including those in South America, are only beginning to articulate coherent regulatory approaches. In Europe, the EU AI Act represents the first comprehensive legal framework for AI, categorizing applications by risk level and imposing strict requirements for high-risk systems. It introduces transparency, accountability, and human oversight obligations, while also fostering innovation through mechanisms such as regulatory sandboxes. This structured and anticipatory approach reflects Europe's long-standing tradition of precautionary regulation and data protection, rooted in the General Data Protection Regulation (GDPR), and with succeeding regulations and standards such as the upcoming European AI Sandbox Act that will further extend Article 57 of the European AI Act, focusing on AI Sandboxes in Europe.

By contrast, AI regulation in Brazil and South America remains fragmented, preliminary, and largely reactive. In Brazil, multiple legislative proposals have been introduced in Congress, but no comprehensive AI law has yet been enacted. The country's current approach relies on a patchwork of sectoral regulations, soft law instruments, and the foundational framework provided by the General Data Protection Law (Lei Geral de Proteção de Dados - LGPD). While the LGPD is a significant step forward in regulating personal data and algorithmic decision-making, it does not address the broader ethical, operational, and societal challenges posed by AI systems. Regionally, South American countries exhibit a similar

lack of uniformity. Argentina, Chile, and Colombia have published national AI strategies or draft policy guidelines, yet most remain in early implementation phases. Regulatory oversight is often spread across multiple agencies, and few jurisdictions have adopted binding legal norms for AI beyond data protection. In this landscape, Brazil stands out as a potential regional leader, particularly through initiatives such as the National Artificial Intelligence Strategy (Estratégia Brasileira de Inteligência Artificial – EBIA) [1], National Artificial Intelligence Plan (Plano Nacional de Inteligência Artificial – PBIA) [2], and the growing role of ANPD.

This paper argues that regulatory sandboxes — flexible, supervised environments for testing innovative solutions — offer a pragmatic and context-sensitive tool for advancing AI governance in Brazil and Latin America. In particular, the experience of the SUSEP Regulatory Sandbox, an experimental regulatory environment created by the Superintendence of Private Insurance (SUSEP) [3] designed for the insurance market, provides a valuable model for structuring oversight of emerging technologies. Through an in-depth analysis of the SUSEP sandbox, this research explores how key regulatory principles—such as proportionality, transparency, risk management, and sustainability—can inform the development of Brazil's first AI sandbox. In doing so, this study contributes to ongoing policy debates about how developing economies can chart their own paths in AI governance, drawing lessons from both global benchmarks and local regulatory experiments. Moreover, it fosters the ongoing collaboration with various stakeholders in the development of the Slovenian AI Sandbox initiative, aiming for a constructive exchange based on best practices and perspectives on AI regulation.

2. **Methodology**

The SUSEP Regulatory Sandbox is an experimental regulatory environment established to enable the implementation of innovative projects that offer products and/or services in the insurance market. These innovations are developed or offered using new methodologies, processes, procedures, or by applying existing technologies in a novel way. Companies participating in the sandbox can test − under supervision − new products, services, or new ways of providing traditional services. SUSEP assesses the benefits and risks associated with each innovation and determines whether adjustments are needed, either to the business model or to existing regulations.

When the SUSEP Sandbox was launched, it was part of a joint initiative involving the financial, insurance, and capital markets, led by the Central Bank of Brazil (BCB), the Securities and Exchange Commission (CVM), and SUSEP. The SUSEP Sandbox was established during the Bolsonaro administration, in alignment with the Economic Freedom Law (Law No. 13,874/2019) and broader deregulation efforts. There have been three editions so far: in 2020, 2021, and 2024 [4] − with the 2024 edition currently open for an indefinite period. The SUSEP Sandbox is governed by CNSP Resolution No. 381/2020, as amended, along with SUSEP Circular No. 598/2020, and by specific public notices for each edition. The National Private Insurance Council (CNSP) sets the rules for the insurance market, and SUSEP ensures compliance.

ANPD's Regulatory Sandbox, on the other hand, is structured to comprehensively evaluate the technical, legal, ethical, and social dimensions of AI-based projects involving personal data. It adopts a multidisciplinary approach encompassing organizational, technological, and regulatory aspects. Participants are required to present a detailed description of the problem or opportunity addressed by their project, highlighting the current context, challenges, and expected benefits, such as innovation and efficiency. The methodology emphasizes the innovative aspects of the solution, the processing of personal data in AI systems, the social impact, and the intended outcomes.

A core component of the methodology is the implementation of algorithmic transparency measures. Applicants must describe how their systems will make algorithmic logic, decisions, and criteria understandable to end users. This includes the use of explainable AI (XAI) tools, audit reports, documentation, and dashboards, as well as practices for data traceability and decision accountability. The methodology also requires information on compliance with the LGPD or GDPR, such as data minimization, risk management, mitigation of algorithmic bias, governance mechanisms, and respect for data subject rights. Projects must show alignment with ethical and legal standards to ensure responsible AI development.

In terms of data methodology, applicants must describe the lifecycle of the personal data used, including its origin, collection, processing, storage, and disposal. In addition, the quality of data is crucial, and applicants must describe it to demonstrate that they are in a good phase to participate in the regulatory sandbox. A preliminary impact assessment on data protection must be included, along with a risk matrix that identifies potential harms to data subjects and proposes mitigation strategies. The form also assesses the technical feasibility of the project by requiring information on the IT infrastructure (cloud, hybrid, on-premises), API data flows, outsourcing arrangements, LLM usage, and cybersecurity controls. Financial planning (FINOPS), scalability, social impact assessment, and performance metrics are also critical elements of the methodology.

Finally, organizations must consolidate their identified risks and mitigation measures into a summary framework, ensuring transparency and accountability throughout the project lifecycle.

3. **Legislation, Regulation, and Ethical Use: Objectives and Priorities**

In the 2024 edition of the SUSEP Regulatory Sandbox, participating companies were required to submit detailed information and upload relevant documents through Brazil's

Electronic Information System (SEI). The sandbox was designed to: (i) stimulate competition to improve efficiency; (ii) promote financial inclusion; (iii) encourage capital formation and efficient resource allocation; and (iv) develop and deepen the Brazilian insurance market.

SUSEP prioritized proposals classified by the applicants themselves as either Sustainable or Technological projects:

- **Sustainable Projects**: Aligned with SUSEP and CNSP rules, as well as the Federal Government's Ecological Transformation Plan. These initiatives must deliver climate, environmental, or social benefits to policyholders, beneficiaries, or society as a whole.
- **Technological Projects**: Promote the development of innovative technology by introducing technological novelties or enhancements to products, services, business models, or processes, thereby adding functionality or quality improvements.

Regarding the eligibility criteria for startups (insurtechs), applicants were required to offer an innovative product or service and operate via remote/digital platforms. They should demonstrate the novelty of their technology or its creative application and present the solution in a development stage suitable for temporary authorization. Moreover, they had to submit a business plan, which included a risk assessment specifically addressing cybersecurity, as well as a damage mitigation plan. Besides the typical proposed and current legal/trade names, or organizational structure and director profiles, the business plan had to include strategic objectives, and company history, mission, and vision, along with a problem statement and market/consumer benefits, proof of concept of product or service and demonstration of potential cost reduction for consumers, if any. It also described a comparative analysis with existing offerings, target market, and geographic scope, along with risk factors and mitigation strategies, the technical architecture and operational model, the justification for the Priority Project classification, and the sustainability policy. The selection process involved two stages: (i) a Selection Phase with a video interview with SUSEP; and a (ii) Temporary Authorization Phase, with a follow-up interview and submission of evidence proving compliance with normative requirements and completion of corporate formalities, as well as appointment of a director responsible for sandbox participation and documentary evidence attesting to the lawful origin of funds contributed by investors.

4 Discussion of initial results

The 2024 edition of this initiative included four companies that were granted permanent licenses (by September), while **32 projects** were selected, amongst which **21** received temporary authorization (by April). Authorized companies were required to transmit operational data to SUSEP via API. While in the sandbox, companies:

- can only sell approved types of insurance,
- operate under capped risk exposure, and
- face limits on claims payouts.

Given the similarities between insurance regulation and data protection governance, several SUSEP sandbox practices could inform the design of an AI sandbox under Brazil's **National Data Protection Authority (ANPD)**, such as:

1. **Innovation focus** – Projects must demonstrate clear novelty or novel applications of technologies, methods and procedures.
2. **Sustainability integration** – For AI, this could include energy, water and natural resources efficiency, environmental impact, and ethical safeguards.
3. **Defined operational boundaries** – Limitations on AI use cases, affected populations, and permitted risk categories.
4. **Mandatory submissions** – Risk analysis and mitigation plan, business plan, and funding source verification.
5. **AI registry** – All AI systems must be formally registered with the ANPD. This registration grants temporary authorization, which can be revoked at any time if the project fails to meet regulatory, ethical, or safety requirements.
6. **Virtual interviews** – Ensuring nationwide accessibility.
7. **Exit Strategy** – A clear post-sandbox transition plan for continued compliance.

In Phase 1 of the ANPD's regulatory sandbox selection process, whose application period closed on August 25, 2025, additional points will be awarded to startups, public sector organizations, and companies developing generative AI solutions. These categories were identified as strategic priorities for Brazil: startups are legally recognized in the Brazilian Innovation Framework [5] as key beneficiaries of sandbox initiatives; public sector organizations often develop socially impactful solutions and are expected to sustain participation without financial or technical aid from ANPD; and Brazil has an explicit national interest in fostering large language models (LLMs) in Portuguese as part of its broader AI sovereignty strategy.

As part of the application process, the ANPD's form required that any confidential or sensitive business information be clearly marked as such by the applicants. This provision is necessary due to Brazil's Freedom of Information Law (Lei de

Acesso à Informação - LAI), which mandates public disclosure unless a legal exception is claimed. Without this explicit classification, all submitted materials may be treated as public, potentially exposing strategic or proprietary information from participating firms.

To enhance visibility and inclusiveness, the ANPD also adopted a multi-channel outreach strategy, disseminating the call for applications through official platforms and with the support of civil society organizations. To maximize participation, the deadline for applications was extended by an additional 15 days, although the overall schedule for evaluation and publication of results remained unchanged. The final list of selected participants is scheduled to be released on October 2, 2025, as originally planned.

Finally, there is also another point of flexibility, not expressly codified, which is the absence of a fixed taxonomy of sandboxes. For example, the SUSEP sandbox has an innovative character, seeking to make regulations more flexible. At the same time, the service is being used in the market. In contrast, the ANPD sandbox aims to provide the regulator with knowledge that enables the preventive updating of market rules, rather than a reactive one. Oversight may be distributed among agencies like SUSEP, yet the regulatory status of AI companies post-sandbox remains unclear. For this reason, ANPD must establish both sandbox-specific rules and post-sandbox AI regulations, ensuring long-term supervision and market stability.

The importance of embedding responsible and ethical principles in AI governance is particularly acute in Brazil and across South America, where technological innovation intersects with social inequality, fragile institutional structures, and diverse regulatory frameworks. By prioritizing transparency, accountability, and fairness in AI systems, these countries can foster public trust while mitigating risks of discrimination, exclusion, or misuse of personal data. Brazil's initiatives—such as its National AI Strategy (EBIA), the forthcoming AI legal framework, and the regulatory sandbox programs led by SUSEP and the ANPD—illustrate how developing nations can create adaptive governance models that balance innovation with fundamental rights. Moreover, as the largest economy in Latin America, Brazil is well-positioned to serve as a regional benchmark, demonstrating how ethical AI practices can foster financial inclusion, reinforce democratic values, and promote sustainable development. In this sense, South America's experience underscores that responsible AI is not a luxury for advanced economies but a prerequisite for equitable technological progress in the Global South.

5 Conclusions and further work

The ANPD's regulatory sandbox demonstrates Brazil's commitment to experimental and responsible governance of AI. By ensuring transparency through a public information portal, addressing confidentiality in accordance with the Access to Information Law, and promoting inclusive engagement, the initiative aligns with international standards. Drawing on frameworks such as the OECD's recommendations and the EU's AI Act, which formally includes regulatory sandboxes, the Brazilian approach reinforces the importance of embedding such mechanisms into national legislation. In the context of Bill 2338/2023 (under debate in the Deputy Chamber to regulate AI in Brazil) [6], regulatory sandboxes emerge as strategic tools to enable adaptive, participatory, and context-aware AI regulation.

The Brazilian AI sandbox experience also holds significant relevance beyond Brazil and South America, offering valuable insights for other developing countries and even jurisdictions with more advanced regulatory frameworks, such as those in Europe. While the European Union has already institutionalized AI sandboxes within the AI Act, the Brazilian model demonstrates how experimental, flexible, and context-sensitive approaches can be adapted to environments where regulatory structures are less consolidated. Its emphasis on transparency, proportionality, and multi-stakeholder participation shows that effective governance does not require fully mature institutions but rather innovative mechanisms that align local priorities with global best practices. By demonstrating that responsible innovation can be pursued within resource-constrained and diverse legal frameworks, the Brazilian sandbox contributes to a global dialogue on AI governance, enabling countries at various stages of regulatory development to tailor their sandbox initiatives to their specific socio-economic and institutional realities.

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