Universidad de los Andes Colombia | Escuela de Gobierno Alberto Lleras Camargo

SISTEMAS DE ALGORITMOS PÚBLICOS

# Report of AI Repositories v. 2.0

## Main findings from three AI repositories:

- Repository of Artificial Intelligence Systems in Latin America and the Caribbean.
- Repository on Artificial Intelligence Regulation in Latin America and the Caribbean.
- Repository of Automated Decision-Making Systems in Colombia.

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# Executive Summary

The Systems of Public Algorithms project was launched on March 18, 2025, by the School of Government of the Universidad de los Andes (Colombia). The project aims to contribute to the understanding of algorithmic systems employed in the public sector of Latin America and the Caribbean, as well as to the governance of these technologies in the region.

**The Report of AI Repositories v. 2.0**[1] updates and expands on the main findings of the three repositories developed by the project: (1) Artificial Intelligence Systems in the Public Sector in Latin America and the Caribbean, (2) Artificial Intelligence Regulation in the Public Sector in Latin America and the Caribbean and (3) Automated Decision-Making Systems in Colombia.

**First, the Repository of Artificial Intelligence Systems in Latin America and the Caribbean** records 772 artificial intelligence systems in 25 countries and territories in the region, with Colombia (259), Brazil (122) and Mexico (109) accounting for 63% of the total. The repository shows a growing but uneven adoption of AI tools in the region. The main novelty of the new version (V. 2.4) of the database is the addition of 36 AI tools.
We highlight the following findings:

- **Status of AI systems and institutional distribution:** 730 of the 772 systems are active: 70% of the systems are operational, and 13% are in the pilot phase (the remaining 42 systems are suspended or discontinued).
- **Types of public bodies with active AI systems:** Regarding the active systems, 68% are piloted or implemented by executive branch entities, followed by autonomous bodies (13%), educational institutions/state enterprises (10%), judicial branch entities (7%) and the remaining corresponds to legislative bodies (2%). Public bodies dedicated to general public services pilot or implement 32% of the systems, followed by economic affairs (25%) and public order and safety (17%).
- **Functions of AI systems:** Recognition is the most prevalent technical function (537 systems), followed by prediction (327 systems) and event detection (310 systems).
- **Contributions of AI systems to governmental affairs:** 41% of the systems contribute to law enforcement, 25% to public services and participation and 19% to public policy analysis. In terms of Sustainable Development Goals (SDGs), potential contributions are concentrated in industry and innovation (SDG 9), health and well-being (SDG 3) and partnerships for goals (SDG 17).

[1] The Spanish version of the report was published on May 30, 2025, this translation was prepared with *DeepL* and edited by Juan David Gutiérrez.

- **Interaction with AI systems and personal data:** Government-Government interactions predominate (540 systems), followed by Government-Citizen (256 systems). Of the systems, 54% handle personal data, raising important privacy and data protection considerations in the public sector.

In addition, in this report, we include the **case of the Peruvian public sector,** where we mapped 39 AI systems, of which 34 are in the piloting or implementation stage.

We highlight the following findings in the case of Peru:

- **Institutional distribution of the AI systems:** 79.4% of the AI systems are implemented by the executive branch, concentrated in entities dedicated to economic affairs (28.2%), general public services (25.6%), and health (20.5%).
- **Functional characteristics of AI systems:** The recognition function predominates, followed by event detection and prediction. 62% operate with personal data, and Government-Government interactions prevail.
- **Contributions of AI systems to government sectors and functions:** Health, government management, and public safety account for 55% of the government sectors to which AI systems contribute, with a primary focus on law enforcement and public policy analysis.

**Secondly, the Repository on Artificial Intelligence Regulation in Latin America and the Caribbean** registers 572 regulatory instruments in 20 countries and territories in the region, both at the national and subnational levels. The database includes different types of binding regulations: laws, constitutional reform bills, draft laws, decrees, resolutions, and other administrative acts.

The four main changes in version 1.1 of the database concerning the previous version are: 1) the inclusion of 232 new regulatory instruments; 2) the update of the processing status of more than 50 instruments; 3) the introduction of two new variables that inform on the beginning and end of validity of rules that were approved; and 4) the characterization of the regulatory instruments based on a new variable called “AI Regulatory Centrality” that indicates the degree to which artificial intelligence constitutes the main object of regulation in the articles of each instrument and that establishes three levels: Central, Complementary and Incidental.

We highlight the following findings:

- **Regulatory processes are incipient:** Most of the documented instruments are national-level bills that are still in the pipeline.

- **Regulation by the three branches of government:** Most of the regulatory instruments have been adopted or processed by legislative bodies, but we identified regulators from the executive and judicial branches.
- **Countries with the highest number of regulatory instruments:** In terms of number of regulatory instruments per jurisdiction, Brazil (203) continues to top the list, followed by Mexico (103), Argentina (74), Colombia (63) and Peru (38). These five countries account for more than 84% of the instruments identified in the region.
- **Recent regulatory boom:** As of 2023, the region has experienced a notable increase in new regulatory projects, a phenomenon that coincides with the rise of generative AI tools.
- **Centrality of AI in the articles of the instruments:** The instruments were classified into three categories: central (353 cases, 61.71%), complementary (125 cases, 21.85%), incidental (94 cases, 16.43%).

**Finally, the Repository of Automated Decision-Making Systems in Colombia** registers **400 automated decision-making systems (ADM)** in the Colombian public sector, of which 355 are active (76% in execution, 12% in piloting). The main novelty of the new version (V. 2.2) of the database is the addition of 17 AI tools.

We highlight the following findings:

- **Temporal evolution in ADM deployment:** ADM deployment between 2000 and 2025 in Colombia shows five distinctive stages: minimal activity before 2016, moderate growth (2017-2019), accelerated expansion (2020-2022) with 55 new ADMs per year on average, slowdown (2023-2024) and projected recovery by 2025.
- **Institutional distribution of the ADMs:** The executive branch concentrates 59% of the ADMs, followed by educational institutions and state-owned companies (29%). Sixty-five percent operate at the national level, while 35% correspond to the subnational level, with Bogota leading (11%).
- **ADS technologies and functions:** AI represents 63% of the systems and robotic process automation (RPA) 37%. The main functions of ADS in Colombia are recognition, human-machine interaction support and event detection.
- **Governmental contributions of SDGs:** The majority of public entities piloting or deploying SDGs perform functions associated with economic affairs (30% of SDGs), followed by general public services (16% of SDGs) and education (12% of SDGs). In terms of SDGs, SDGs can mainly contribute to industry and innovation (SDG 9) and peace, justice and strong institutions (SDG 16).

- **Interaction, personal data and algorithmic transparency:** User interactions with GDSs of the Government-Government type predominate (66%), followed by Government-Citizen (40%). Sixty-nine percent of ADSs deal with personal data. The availability of public information on key issues is limited: documentation on funding sources was found in only 13% of cases, on investment amounts in 28% and on results obtained with the BDS in 23%, which shows critical limitations in transparency and accountability.

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# 1. The Systems of Public Algorithms Project

## 1.1 The project

The Systems of Public Algorithms project is an interdisciplinary academic initiative developed and funded by the School of Government of the Universidad de los Andes (Bogotá, Colombia). The project aims to contribute to the understanding of algorithmic systems employed in the public sector of Latin America and the Caribbean, as well as to the governance of these technological tools in the region.

On March 18, 2025, we officially launched the project at the Universidad de los Andes. The launch event was a hybrid event, with more than 70 people attending in person. The video of the event has garnered more than 1,400 views since the project's launch.

We are actively working to ensure that this project makes a significant contribution to knowledge about the implementation of algorithms in the Latin American public sector, providing valuable data to inform public policy and technological governance strategies in the region. In addition, we hope to enrich the public debate on how we want these technological tools to be deployed and used in our societies, as well as the implications they have for citizens.

## 1.2 Activities carried out between March and May 2025

In addition to continuously updating and expanding our databases, we have carried out two noteworthy activities in the period from March to May 2025 as part of the project.

**First,** we launched a **registration list for people interested in receiving the *Newsletter* and information about the project**. We currently have more than 400 people registered from 22 countries in the Americas, Europe and Asia (registration available here). The *Newsletter* is sent once a month and informs about the main updates introduced to the repositories.
**Secondly**, on May 6, we held an **Open Class on "Human-robot interactions: possibilities for organizing public space"**, which was led by Dr. Samanta Varela (U. of Texas at Austin). The video of the Open Class is available here.

In the Open Class, Dr. Varela contextualized the robotics boom, especially in Austin, Texas, where numerous companies are developing robots for various purposes: from exoskeletons that assist people with reduced mobility, telepresence robots that interact with passengers at airports, autonomous robots that make food deliveries, and robots that support emergency and rescue situations.

In addition, Dr. Varela shared preliminary results of her study at the University of Texas campus, where they analyzed students' perceptions of robots in public spaces. Among the most relevant findings, she highlighted that people are willing to interact with robots, accept them and even feel empathy towards them, which raises interesting anthropological questions about the boundaries between human and technology-mediated socialization. The session addressed implications for public policy, such as the need for: a) Transparency on data collection and use, b) Citizen participation in the design and deployment of these technologies, c) Regulation as a confidence builder, d) Ethical and privacy considerations, and e) Assessment of the environmental impact of these technologies.

In the second half of the year, we plan to organize two Open Class sessions, the details of which we will inform you through our *Newsletter*. We invite you to register.

## 1.3 Contents of the report

This Repository Report presents the main findings of the three repositories developed by the project:

Table 1. Repositories of the Public Algorithm Systems project.

| Repository name | Database version | Location in the report |
|---|---|---|
| 1. Artificial Intelligence Systems in the Public Sector in Latin America and the Caribbean | v. 2.4 | Section 2 |
| 2. Regulation of Artificial Intelligence in the Public Sector in Latin America and the Caribbean | v. 1.1 | Section 3 |
| 3. Automated Decision-Making Systems in Colombia | v. 2.2 | Section 4 |

This report includes two case studies in which we present in greater depth findings from our databases. Regarding the database of Artificial Intelligence Systems in the Public Sector in Latin America and the Caribbean we present the **case of Peru** and regarding the database of Artificial Intelligence Regulation in the Public Sector in Latin America and the Caribbean we explain the **case of Colombia**.

We are convinced that there is much more to discover in the data we have published and hope that many people will use it to find more clues about the implications of the use of emerging

technological tools in the public sector in our region, as well as their governance through regulation.

Finally, we consider it pertinent to report that, as part of the editing process of this report, we used *Claude Sonnet 4* to improve the clarity of the text.

# 2. Repository of AI systems in the public sector in Latin America and the Caribbean.

*Section prepared by Sarah Muñoz-Cadena, Michelle Castellanos-Sánchez and Juan David Gutiérrez*

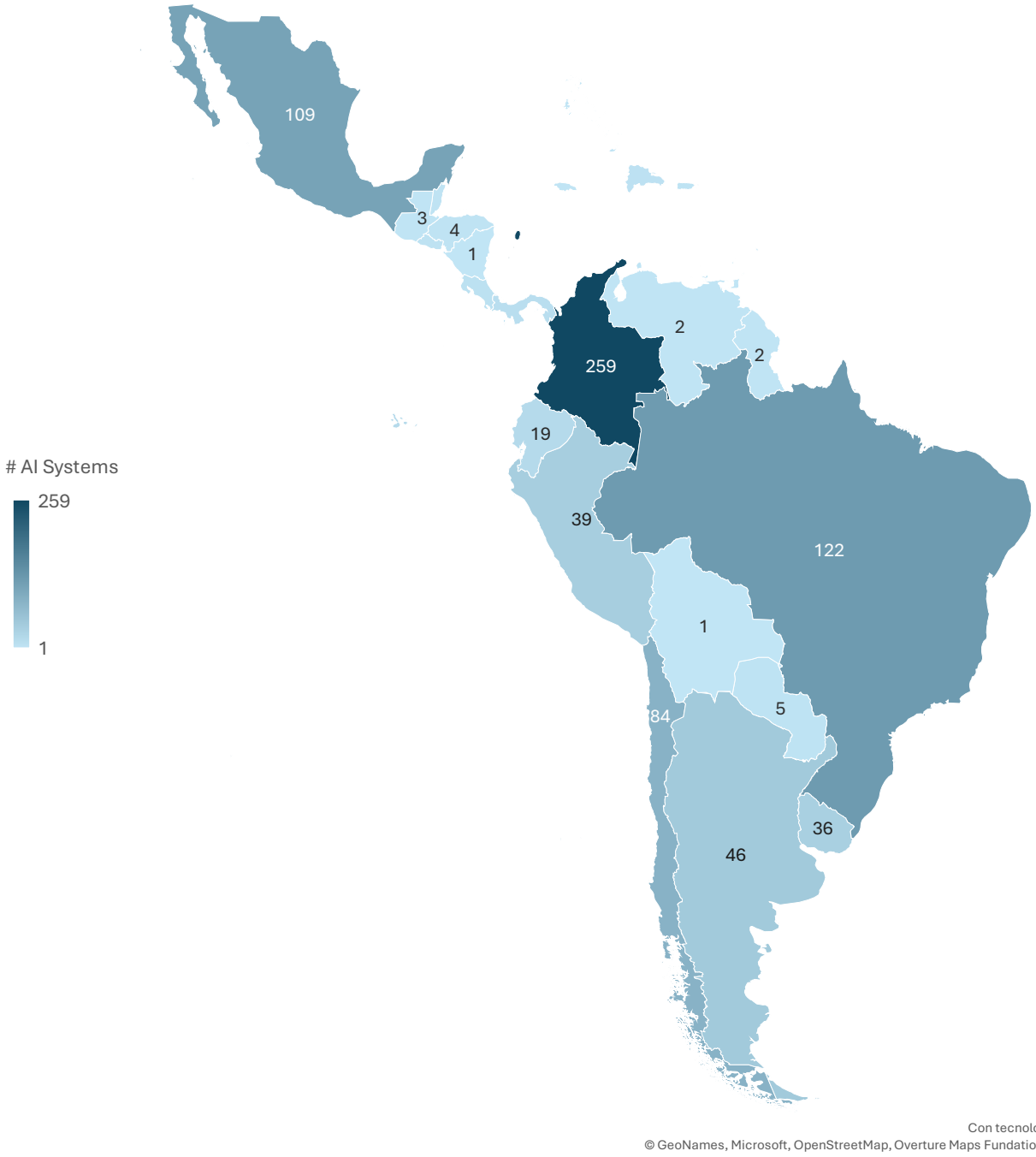
## 2.1 Repository basic data

- **Summary**: It allows exploring 772 artificial intelligence (AI) systems in the public sector in 25 countries of Latin America and the Caribbean (LAC), Puerto Rico and the Inter-American Court of Human Rights (IACHR). The repository includes AI systems piloted, implemented, suspended or discontinued in all branches of government, autonomous agencies, and public enterprises, at the national and subnational levels.
- **Repository location:** https://sistemaspublicos.tech/sistemas-de-ia-en-america-latina/
- **Sources**: The database was built with information publicly available on the websites of the entities, in repositories of algorithms developed in Argentina, Brazil, Chile, Colombia, Mexico, and Uruguay, in global algorithm repositories including tools from the judicial (CEPEJ) and legislative (IPU) branches, in reports from technology companies, reports from multilateral organizations, press reports, academic articles, and reports from civil society organizations. Thirty-eight percent of the 772 AI systems mapped have not been previously reported in other repositories, demonstrating the added value of the Public Algorithm Systems project.
- **Database (flat file)**: To access more detailed information, in which each AI system is characterized on the basis of 25 variables, you can download the flat file of the database from which the repository was built.
- **Main new features of the new version (V. 2.4) of the database**: Addition of 36 AI tools.
- **Suggested Citation:** Muñoz-Cadena, S., Gutiérrez, J. D., Castellanos-Sánchez, M. and Peralta, D. S. (2025). "AI systems in the public sector in Latin America and the Caribbean (Version V. 2.4)" [Data set]. May 2025, Universidad de los Andes.

## 2.2 Mapping of AI systems in LAC

This repository maps **772 AI systems in the public sector** in 25 LAC countries, Puerto Rico and the Inter-American Court (Figure 1).

Figure 1 . Map by country of the number of AI systems in the public sector in LAC.



**Colombia (259), Brazil (122) and Mexico (109) make up the podium of countries with the largest number of AI systems registered in our database, accounting for 63% of the total number of mapped tools**. For countries such as Barbados, Trinidad and Tobago, Nicaragua, Grenada and Bolivia, only one system per country has been registered.

The low number of systems documented in our database for some countries does not imply that there are no more systems currently piloted or deployed by the respective States. It also reflects the limited information publicly available on the systems deployed and/or the difficulty in accessing such information.

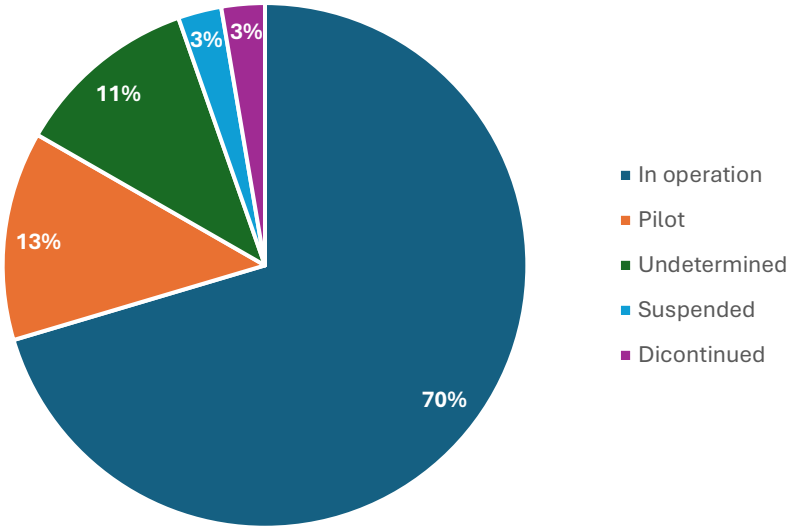
In that sense, we recognize that the number of AI systems we document in each country is related to the level of algorithmic transparency of its public sector. It is no coincidence that the countries for which we identified the most AI systems also have repositories of public algorithms created by universities, civil society organizations and public entities.

On the other hand, it is worth clarifying that the high number of AI systems may sometimes reflect the lack of articulation between public entities in relation to the development and adoption of these technologies. The case of *chatbots* illustrates the point: while Argentina has only one *chatbot*, Tina, which allows more than 446 procedures in 55 public agencies at the national level, in Colombia there are 24 *chatbots* from different national public entities (including national government organizations, higher education institutions, state-owned companies and autonomous agencies).

## 2.3 Status of AI systems and type of entity that pilots or executes them

Figure 2 shows that **70% of the AI systems we identified (544) are in operation**, 13% (97) are in the pilot phase, in 11% (89) of the cases it was not possible to determine their current status, 3% (21) were suspended and the remaining 3% (21) were discontinued.

Figure 2 . Status of AI systems in the public sector in LAC.



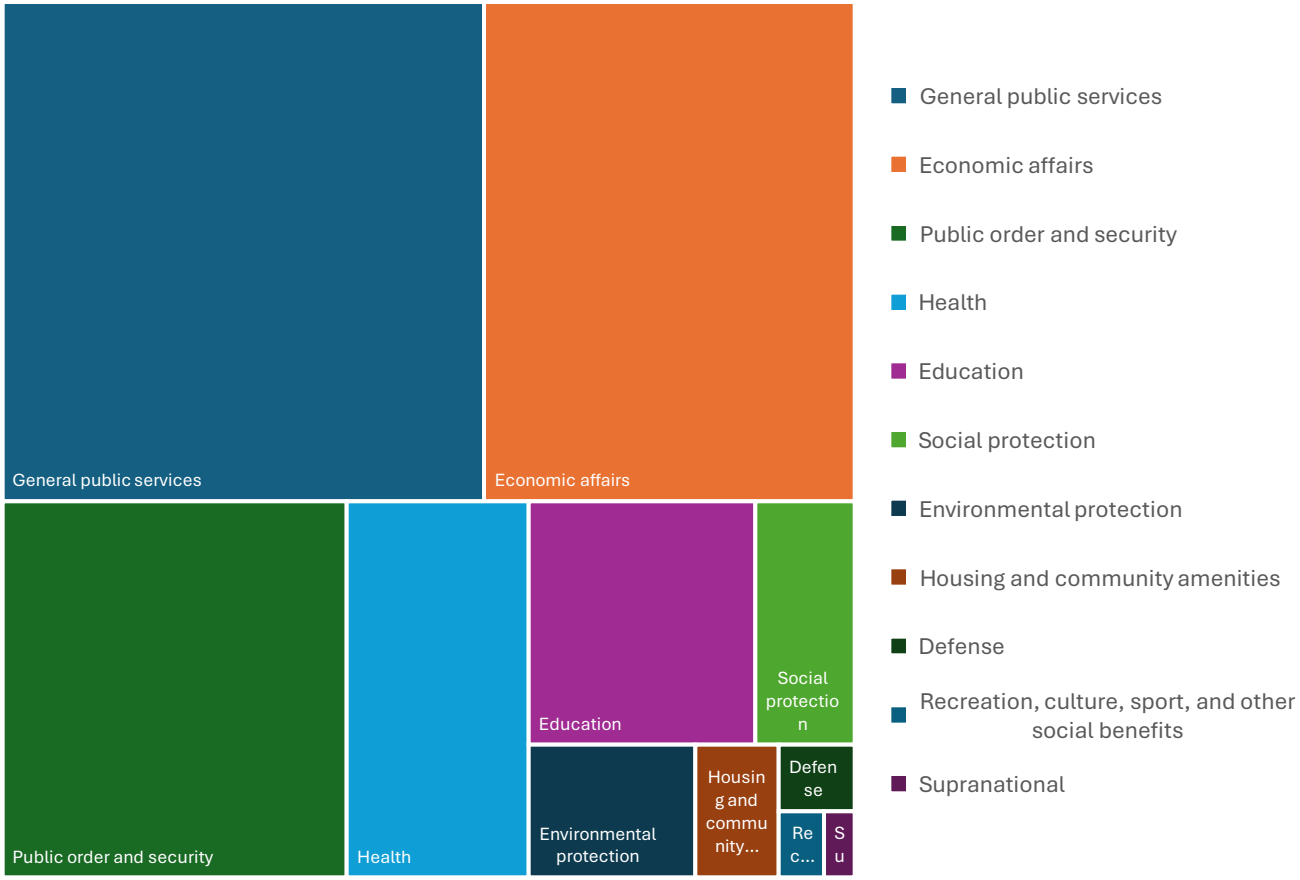

When considering only those AI systems that have not been suspended or discontinued (730 systems, 94% of the total database), the following **distribution by systems** is observed in terms **of the type of public entity: 68% of the AI systems are piloted or deployed in executive entities**, 13% by autonomous bodies, 10% by higher education institutions and/or state companies, 7% by entities of the judicial branch and the remaining 2% (corresponding to 14 systems) by legislative bodies.

Of these 730 systems, **59.6% are piloted or used by national entities, 40.1% by subnational entities**, and the remaining 0.3% corresponds to the two systems of the Inter-American Court of Human Rights.

The Classification of the Functions of Government (COFOG) developed in 1999 by the Organisation for Economic Co-operation and Development (OECD) and published by the United

Nations (UN) Statistical Unit was used to complement the characterization of the public entities piloting or deploying the 730 AI systems.[2] Figure 3 presents the breakdown of level I of this classification, illustrating the number of AI tools that are piloted or deployed by public entities performing different government functions.

Figure 3. Number of AI tools classified according to the governance functions performed by public entities (COFOG - Level I).




The data show that **public entities dedicated to general public services pilot or implement 32% of the AI systems (234), followed by those focused on economic affairs with 25% (183) and public order and security with 17% (128).** Together, these three categories account for approximately 75% of the AI systems piloted or implemented by public entities in LAC.

In contrast, other government functions show considerably lower adoption of AI systems. Social protection accounts for only 3% (23 systems), while environmental protection reaches 2.9% (21

[2] The classification of governance functions -COFOG- is available at this link.

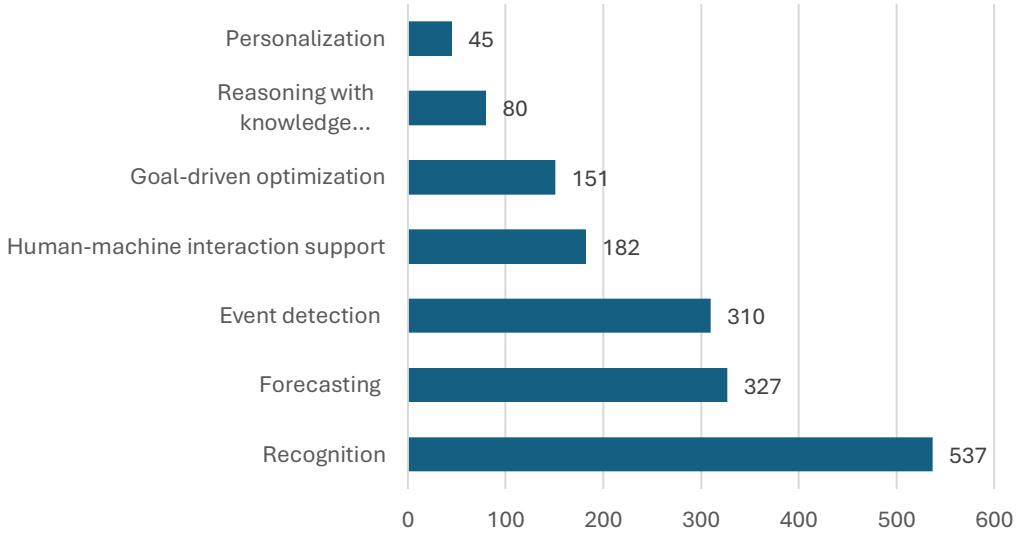
systems). The functions with the lowest implementation are defense, housing and related services, and recreation, culture and sport, all below 2%.

The comment we made in section 2.2 on the difficulty of accessing information on certain types of tools also applies here. The fact that our database contains a low percentage of AI systems in the defense sector most likely reflects the fact that States omit to publish information on them. It is worth remembering that most legislation on transparency and access to public information includes exceptions to the State's duty to inform when legal confidentiality prevails on issues such as defense and security.

## 2.4 Types of functions performed by AI systems

For the classification of the 730 AI systems according to their function, we adopted the typology developed by the OECD, which distinguishes seven categories based on the type of *output* generated by the system.[3] It is important to note that, in most cases, the systems analyzed are capable of fulfilling multiple functions (Figure 4).

Figure 4 . Main functions of AI systems (OECD classification).




**Recognition is the most common function among AI systems, with 537 systems identified. It is followed by the forecasting function with 327 systems and event detection, with 310 systems.**

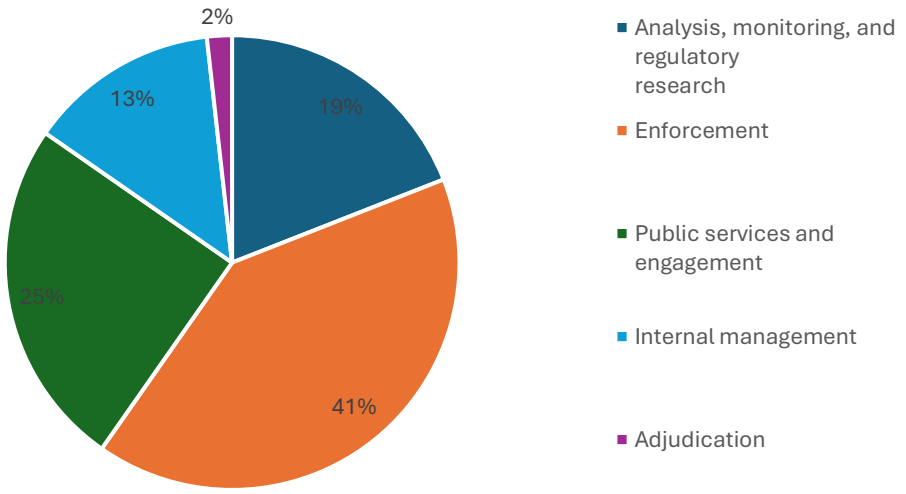
[3] OECD (2022). *OECD Framework for the Classification of AI systems* (No. 323). OECD Publishing. https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/02/oecd-framework-for-the-classification-of-ai-systems_336a8b57/cb6d9eca-en.pdf

Other relevant tasks include human-machine interaction support, performed by 182 systems,[4] and goal-driven optimization, present in 151 cases. A smaller proportion are the functions of reasoning with knowledge structures, with 80 systems, and personalization, with 45 systems.

## 2.5 Potential Contributions of AI Systems to Government Processes

Using the taxonomy of the contribution of AI systems to government processes proposed by the *Joint Research Centre* (JRS) of the European Union,[5] Figure 5 shows that 41% of these AI systems in LAC's public sector contribute to the performance of tasks related to law enforcement; 25% to the category of public services and engagement; 19% contribute to the analysis, monitoring and regulatory research; 13% to internal management; and only 2% to adjudication of benefits or rights.

Figure 5 . Contribution of AI systems to governance processes (EU - JRC classification).




On the other hand, to identify the potential contributions of AI systems in different areas of government, the classification of the Sustainable Development Goals (SDGs) established by the UN was used. Based on the functions of each AI tool, we identified which SDGs its deployment

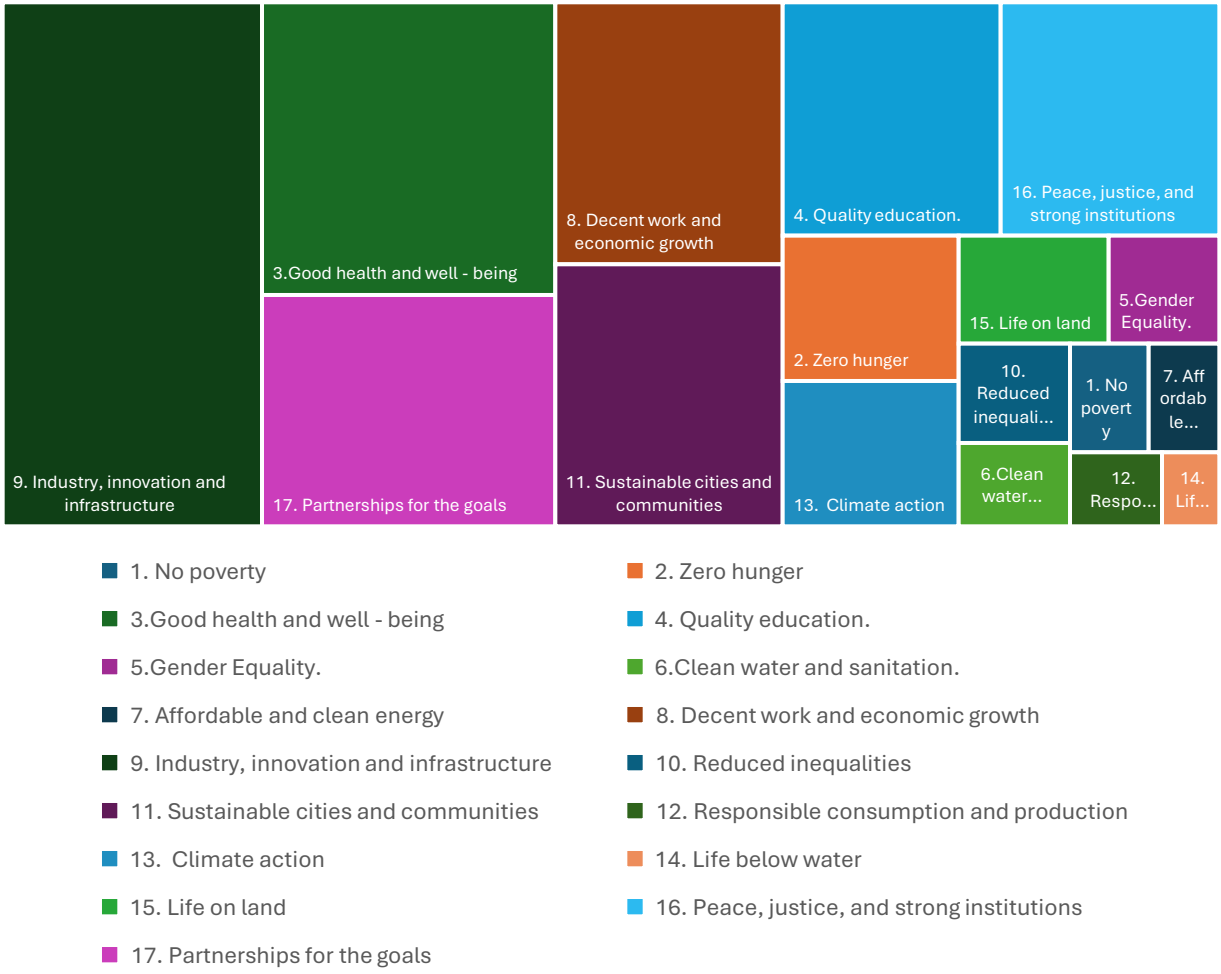
[4] Of the 182 systems classified in the human-machine interaction support category, 148 are *chatbots* and 5 are *voicebots*.

[5] For an explanation of the JRC-EU taxonomy, see Tangi, L., Van Noordt, C., Combetto, M., Gattwinkel, D. and Pignatelli, F. (2022), AI Watch. European landscape on the use of Artificial Intelligence by the Public Sector, Publications Office of the European Union, Luxembourg, doi:10.2760/39336, JRC129301.

could support. It should be noted that, in most cases, these AI systems have the potential to contribute to multiple SDGs.

Figure 6 shows that **the main contributions of the 730 AI systems to the SDGs are concentrated in three key areas: industry, innovation, and infrastructure (SDG 9); good health and well-being (SDG 3); and partnerships for the goals (SDG 17).** To a lesser extent, these systems also contribute to decent work and economic growth (SDG 8); sustainable cities and communities (SDG 11); and quality education (SDG 4). In contrast, a lower incidence is observed in goals related to life below water (SDG 14); responsible consumption and production (SDG 12); gender equality (SDG 5); and ending poverty (SDG 1). This suggests a more limited scope of AI systems in these specific areas.

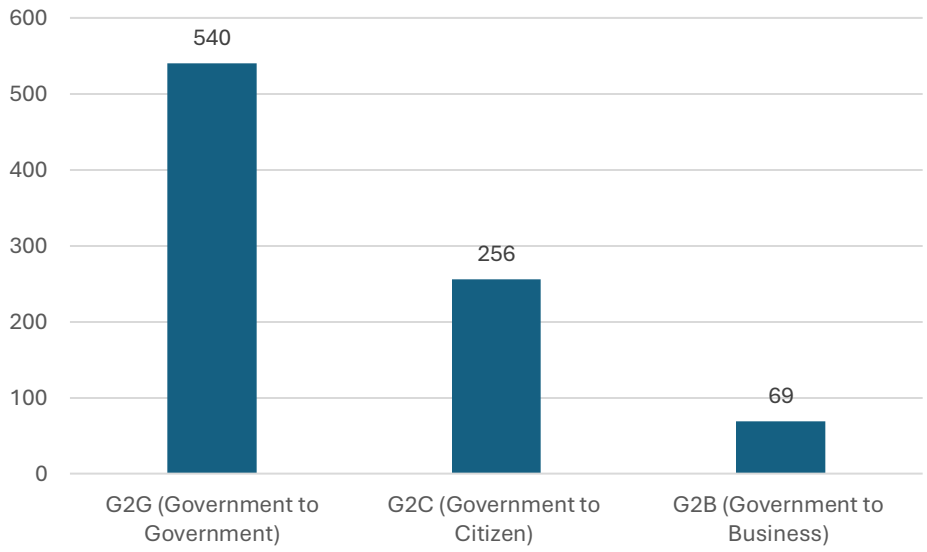
Figure 6 . Potential contribution of AI systems to the SDGs.



## 2.6 Type of interaction and processing of personal data

**Most AI systems enable G2G (Government to Government) interactions, with 540 cases,** indicating a predominant use of AI in internal processes or among public bodies. This is followed by systems with G2C (Government to Citizen) interaction, with 256 cases, aimed at improving services and communication with citizens, and systems with G2B (Government to Business) interaction, with 69 cases, designed to facilitate or directly provide services to companies.

Figure 7 . Type of interaction between AI systems and the user.




Finally, 54% of the systems process personal data, 29% do not treat personal data, and in 17% of cases, based on available information, it is unclear whether personal data is used or not. This point is very important because the State has a strong duty to protect the privacy and personal data of individuals.

## 2.7 Case study: AI systems in the Peruvian public sector

The first version of the LAC AI systems repository, published in March 2025, documented 26 AI systems in the Peruvian public sector. The May 2025 update expanded the registry to 39 systems, incorporating new cases thanks to leads provided by our colleagues in Peru, Verónica Rojas Montes and Gianfranco Mejía Trujillo.

This increase places Peru as the sixth country in the region with the highest number of mapped AI systems. Of the 39 registered AI systems, 67% (26) are in operation, 20% (8) are in the pilot phase, and 13% (5) were not able to determine their status (Figure 8).

Figure 8 . Status of Peru's public sector AI systems.

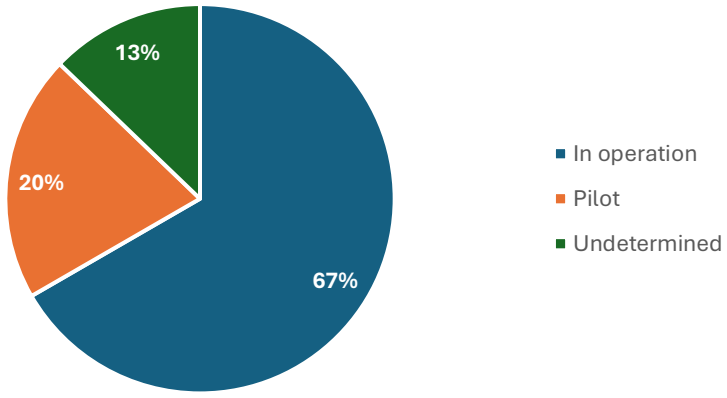
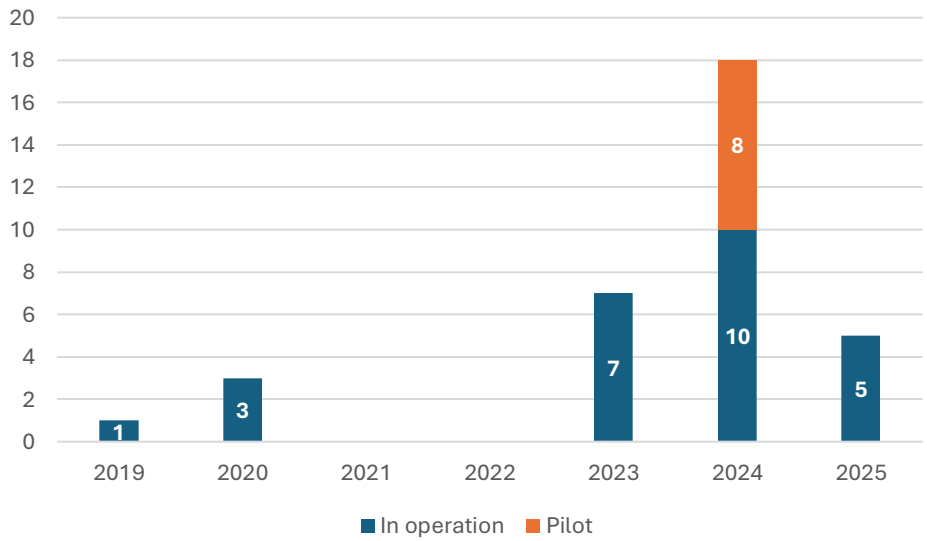


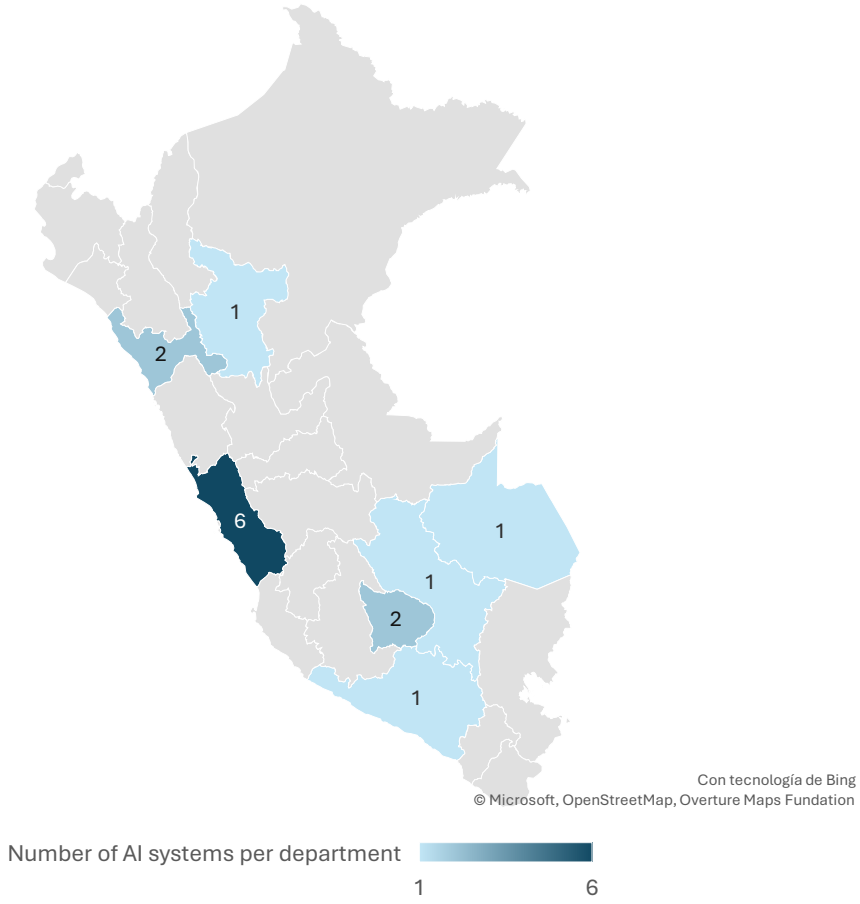

Figure 9 illustrates the temporal evolution, between 2019 and 2025, of the AI systems in the Peruvian State that are under implementation and piloting (34 systems). The last three years have been the period of greatest activity in this area.

Figure 9 . Year of Start of Implementation or Piloting of AI systems in Peru (2019-2025).



The 34 AI systems were identified in 32 public entities. Of these systems, 68% (23) are implemented by entities at the national level, while the remaining 32% (11) correspond to the subnational level. Within the latter group, the majority is concentrated in public entities in Lima. The map in Figure 10 shows the geographic distribution of tools piloted or implemented at the subnational level.

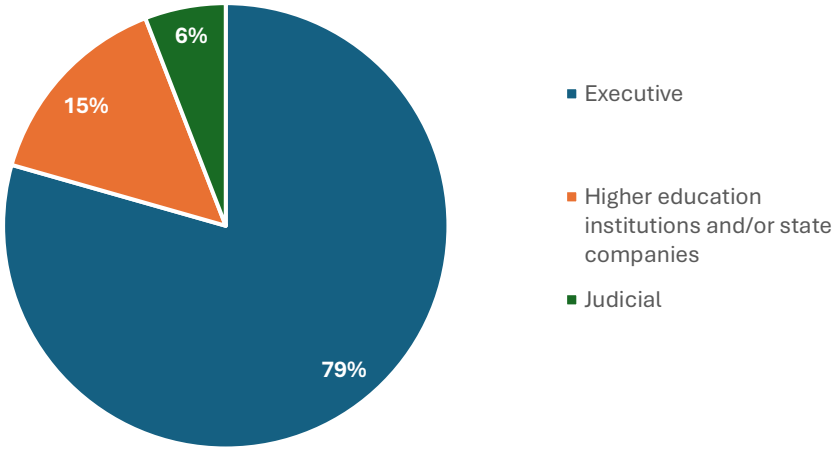
Figure 10 . Distribution map of AI systems implemented or piloted by subnational public entities in Peru.




Regarding the distribution of the 34 AI systems in the state's structure (Figure 11), most are piloted or implemented by entities of the executive branch: 79.4% (27 systems). In a smaller proportion, higher education institutions and state enterprises participate with 14.7% (5

systems) and judicial branch entities with 5.9% (2 systems). There are no systems implemented by the legislative branch, independent autonomous bodies, or electoral organizations.[6]

Figure 11 . Location in the structure of the Peruvian State.

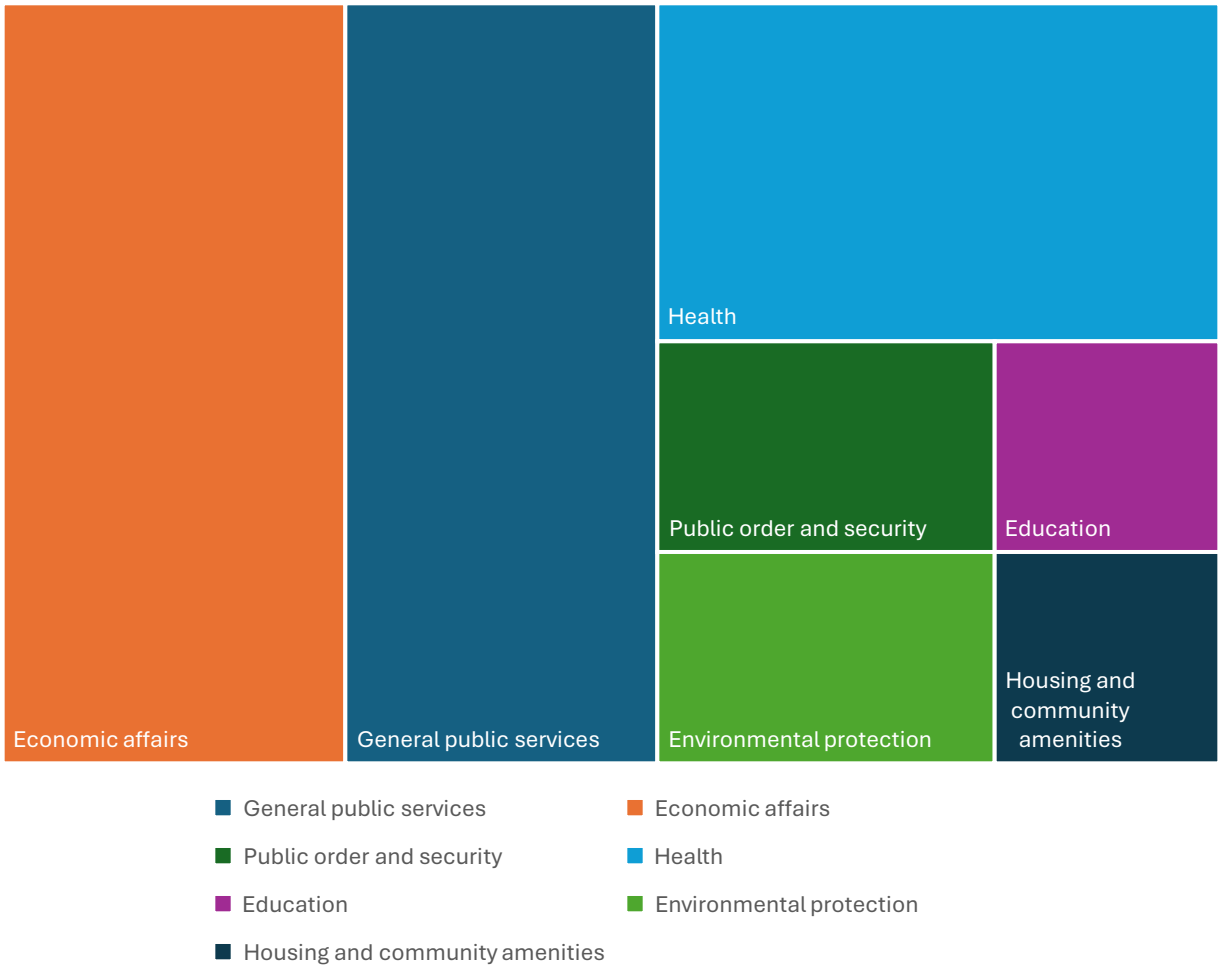



To complement the characterization of the public entities that implement the 34 AI systems, the COFOG classification was used again. According to Figure 12, public entities dedicated to economic affairs pilot or implement 28.2% of the systems (11), followed by general public services with 25.6% (10) and health with 20.5% (8). These three categories account for 74.3% of the piloted or implemented AI systems.

The areas of public order and safety, and environmental protection registered 3 systems each (7.7%), while education, housing, and related services presented 2 systems each (5.1%). No AI systems were identified in the functions of social protection, defense, or recreation, culture and sports.

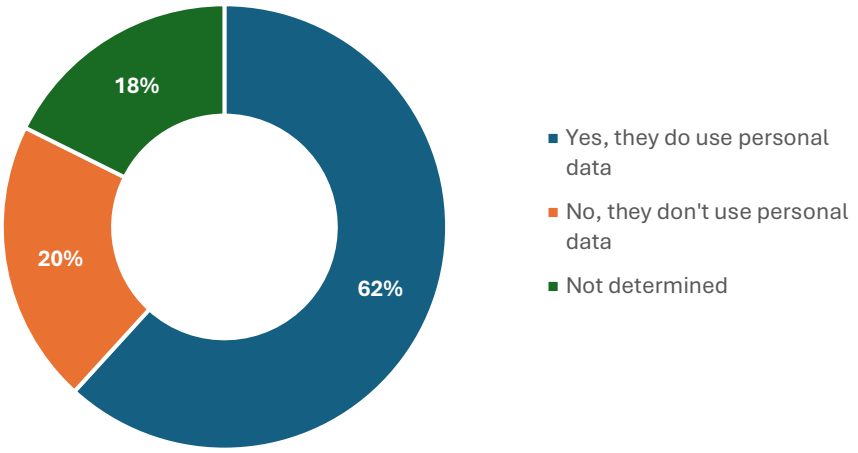
[6] However, we have received information from the National Jury of Elections to the effect that it is working on a tool called "Intelligent Assistant called 'ELECCIA-JNE' that 'will elaborate resolution projects for the Special Electoral Juries installed at the national level of Peru, such projects will be of admissibility or not for the registration of lists of political parties or movements for the regional and municipal elections 2026'."

Figure 12 . Number of AI tools classified according to governance functions performed by public entities in Peru (COFOG - Level I).



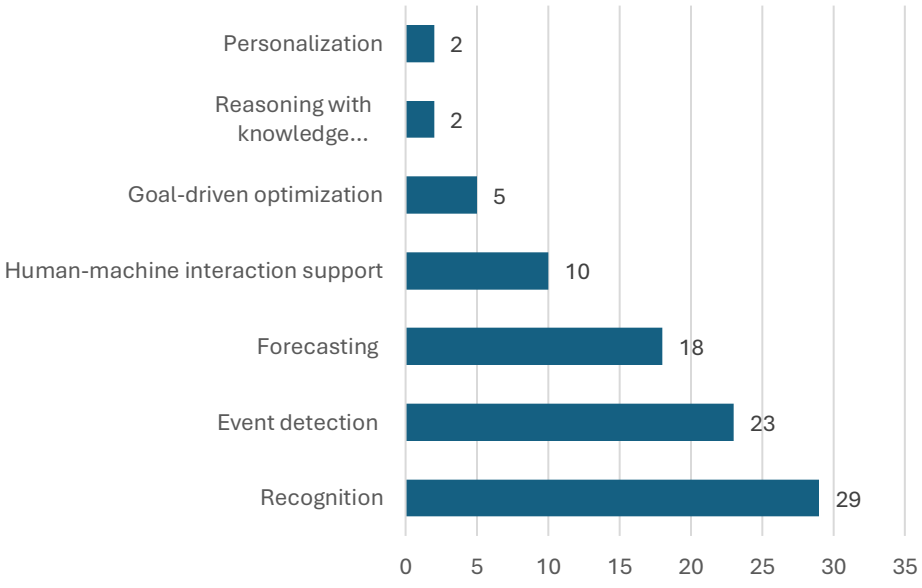

Likewise, Figure 13 shows that 62% (21) of these AI systems operate with personal data, while 20% (7) do not treat personal data in their processes. In the remaining 18% (6) it was not possible to determine the type of data used.

Figure 13 . Processing of personal data associated with the operation of the AI system in Peru.




To classify the 34 AI systems under implementation and piloting according to their main function, the typology proposed by the OECD was used. Figure 14 shows that most of the systems analyzed fall into the recognition category (29 systems), followed by event detection (23 systems) and forecasting (18 systems). The other categories show a lower participation: support for human-machine interaction (10 systems), goal-driven optimization (5 systems), personalization (2 systems), and reasoning with knowledge structures (2 systems).

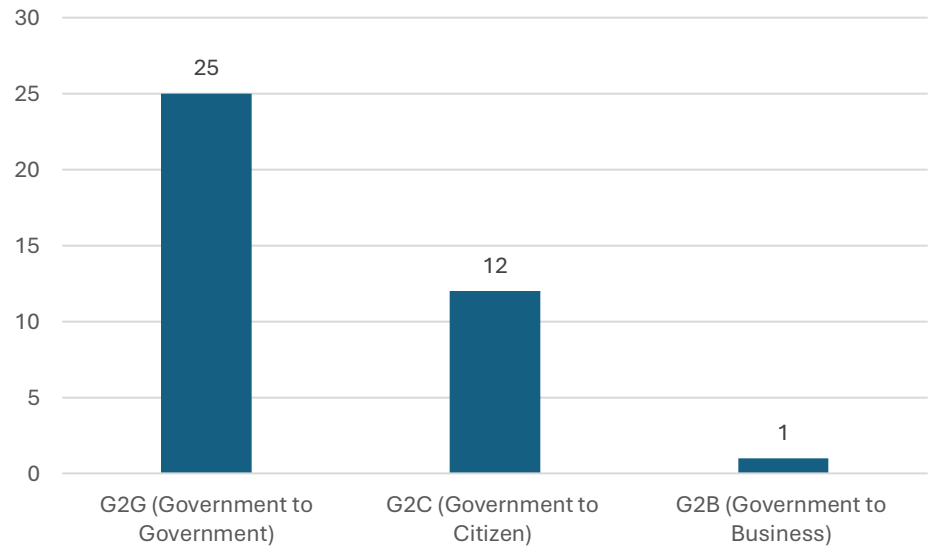
Figure 14 . Main functions of AI systems in Peru (ODCE classification).



To complement the characterization of the 34 AI systems in execution and piloting, they were classified by type of interaction between the system and the user (G2C, G2B, and G2G). An AI system can allow more than one type of interaction.

As shown in Figure 15, most of the systems analyzed focus on G2G interactions, with 25 cases, indicating a predominant use of AI in internal processes or between state institutions. This is followed by systems with G2C type of interaction, with 12 cases, aimed at improving services and communication with citizens. Finally, only one system with G2B interaction was identified, which shows a low presence of AI solutions aimed at the business sector.

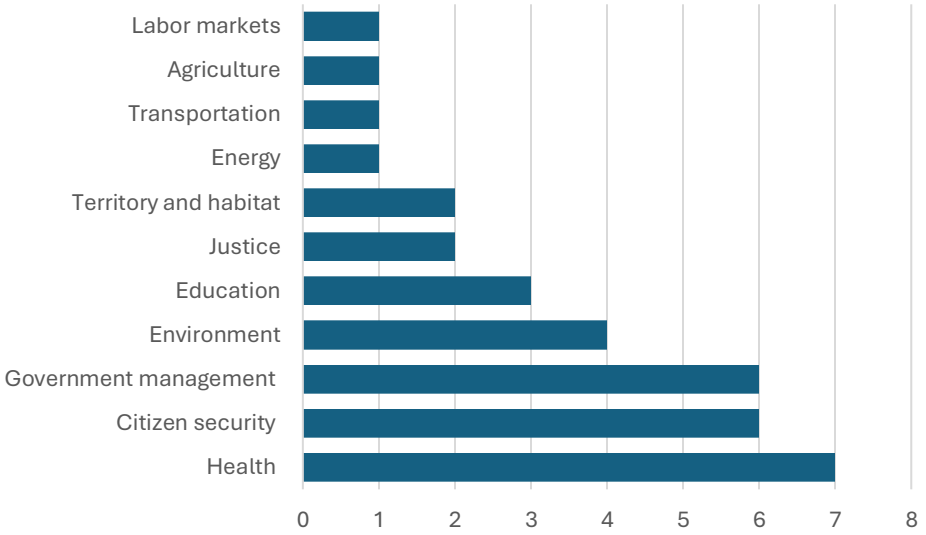
Figure 15 . Type of interaction between AI systems and the user in Peru.




To identify the potential contributions of the 34 AI systems in the government sectors, the 'fAIrLAC' classification of the Inter-American Development Bank (IDB) was adapted. The results show that three sectors concentrate 55% of the contributions within the Peruvian State: health with 20.6% (7 systems), government management with 17.6% (6 systems), and citizen security also with 17.6% (6 systems).

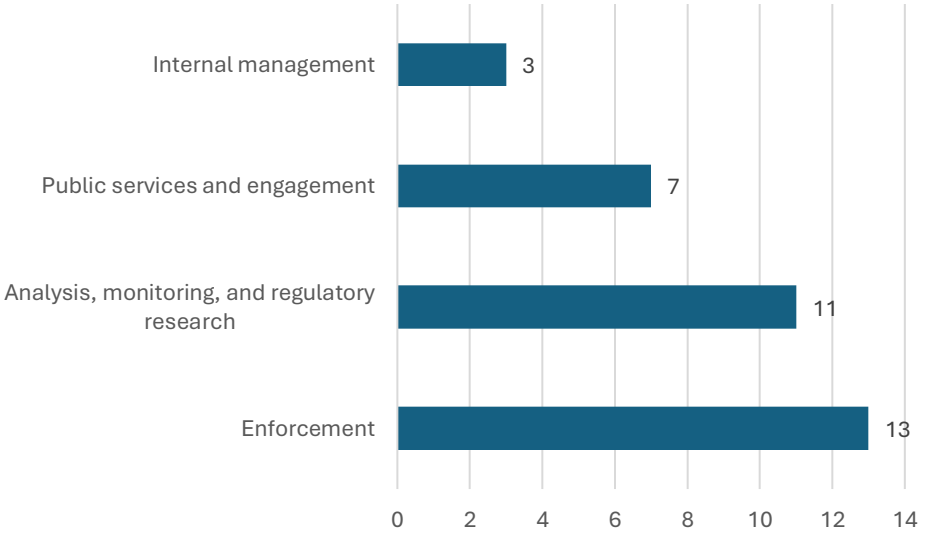
Other sectors also make significant contributions: environment with 11% (4 systems) and education with 9% (3 systems). In contrast, energy, transportation, and agriculture have a minimal participation with only 3% of the total contributions each.

Figure 16. Government sector to which AI systems contribute in Peru (adapted from IDB classification).




However, with respect to the type of contribution of the 34 AI systems under implementation and piloting to government processes, the taxonomy proposed by the JRC of the EU was again used. Mainly, there is a concentration of contributions associated with law enforcement processes (13 systems) and in the analysis, monitoring and regulatory research (11 systems). On the other hand, contributions to public services and participation (7 systems) is moderate, while internal process management (3 systems) is significantly lower.

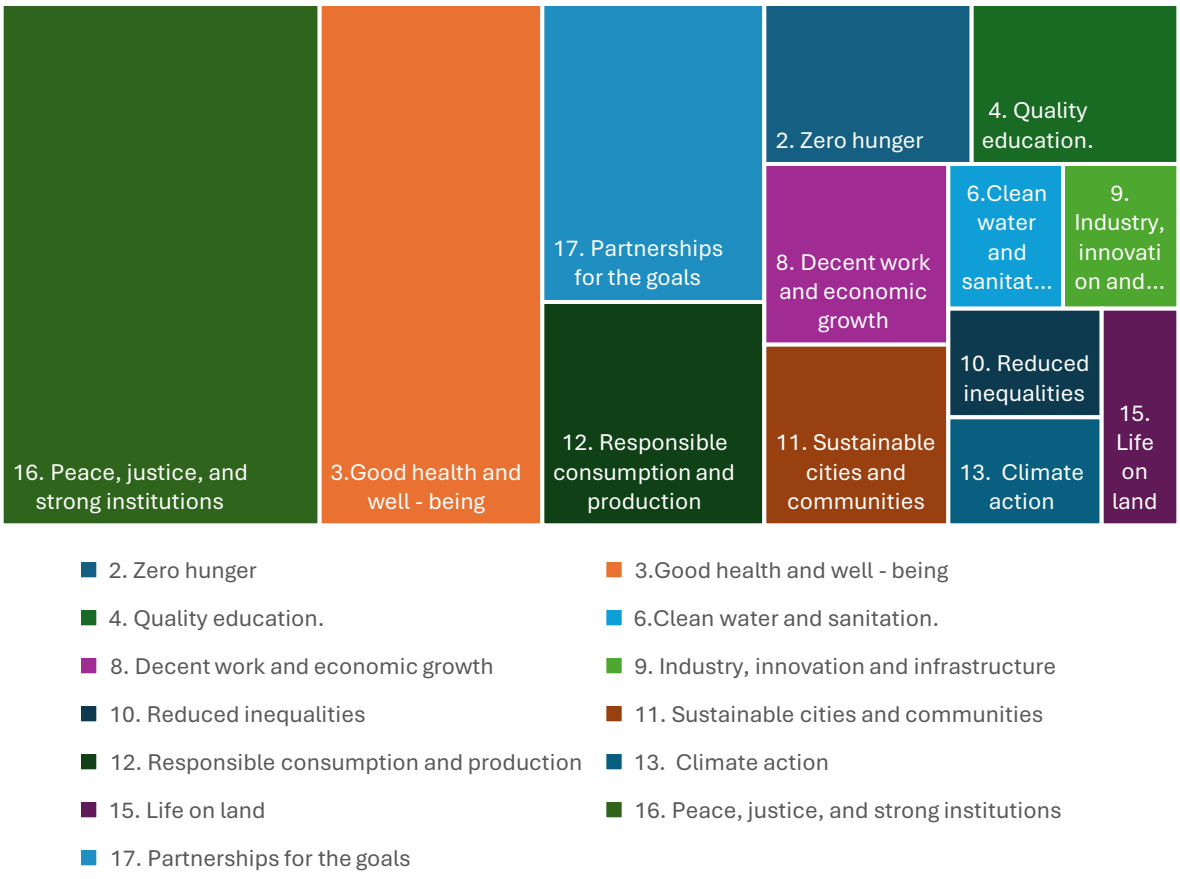
Figure 17. Type of contribution of the AI system to governance processes Peru (EU-JRC classification).



Finally, to identify the potential contributions of AI systems in various thematic areas, the classification of SDGs proposed by the UN was used. It is important to note that, in most cases, systems have the potential to contribute to more than one SDG.

Figure 18 shows that the main contributions of the 34 Peruvian public sector AI systems are concentrated in peace, justice and strong institutions (SDG 16), followed by good health and well-being (SDG 3) and partnerships for the goals (SDG 17). To a lesser extent, they contribute to sustainable cities and communities (SDG 11), decent work and economic growth (SDG 8), zero hunger (SDG 2), quality education (SDG 4), and clean water and sanitation (SDG 6). In contrast, it has a minimal impact on climate action (SDG 13), reducing inequalities (SDG 10), and life of land (SDG 15), which shows a limited scope in these areas.

Figure 18 . Potential contributions of AI tools to the SDGs in Peru.



# 3. Repository on AI Regulation in Latin America and the Caribbean

*Section prepared by Sebastián Hurtado and Juan David Gutiérrez*

## 3.1 Basic data about the repository

- **Summary**: It allows exploring 572 regulations and regulatory projects on artificial intelligence (AI) in 20 countries and territories in Latin America and the Caribbean (LAC). The repository includes different types of regulatory instruments (binding norms and draft norms) from the national and subnational levels such as laws, decrees, resolutions and other administrative acts.
- **Repository location:** https://sistemaspublicos.tech/regulacion-sobre-ia-en-america-latina/
- **Sources**: The database was constructed with information publicly available on the websites of legislative bodies and other public entities, legislative repositories, press reports, academic articles, and reports from civil society organizations.
- **Database (flat file)**: If you wish to access more detailed information on the 572 instruments identified, you can download the flat file of the database from which the repository was built. Each regulation or regulatory project was characterized based on 26 variables.
- **Main novelties of the new version (V 1.1) of the database**: In this version we excluded court rulings because we are building a new database that compiles case law from High Courts where AI issues are addressed. In addition, we added the variables of beginning and end of validity, as well as a variable on "regulatory centrality of AI" in the articles of each instrument.
- **Suggested citation:** Gutiérrez, J. D. & Hurtado, S. (2025). "Regulation on AI in Latin America and the Caribbean (Version V 1.1)" [Dataset]. May 2025, Universidad de los Andes.

## 3.2 What do we mean by regulation?

An important point to address, before presenting the main findings of this repository, is to clarify what we mean by "regulation" and "regulatory instruments". By regulation, we mean mandatory rules that have been issued by state bodies, at both the national and subnational levels, and that may be part of any branch of the state.

Given this definition of regulation, we have identified different types of binding rules adopted by legislative bodies, by entities of the executive branch and even by organizations of the judicial branch. Regulation takes the form of different types of "regulatory instruments", such as laws, decrees, resolutions or other necessarily binding administrative acts.

This repository has identified 572 regulatory instruments on AI in 20 LAC countries and territories (as of 29-05-2025). These instruments include approved norms, repealed norms, regulatory projects that are currently in the approval process and also those projects that were archived or withdrawn.

## 3.3 Distribution by country

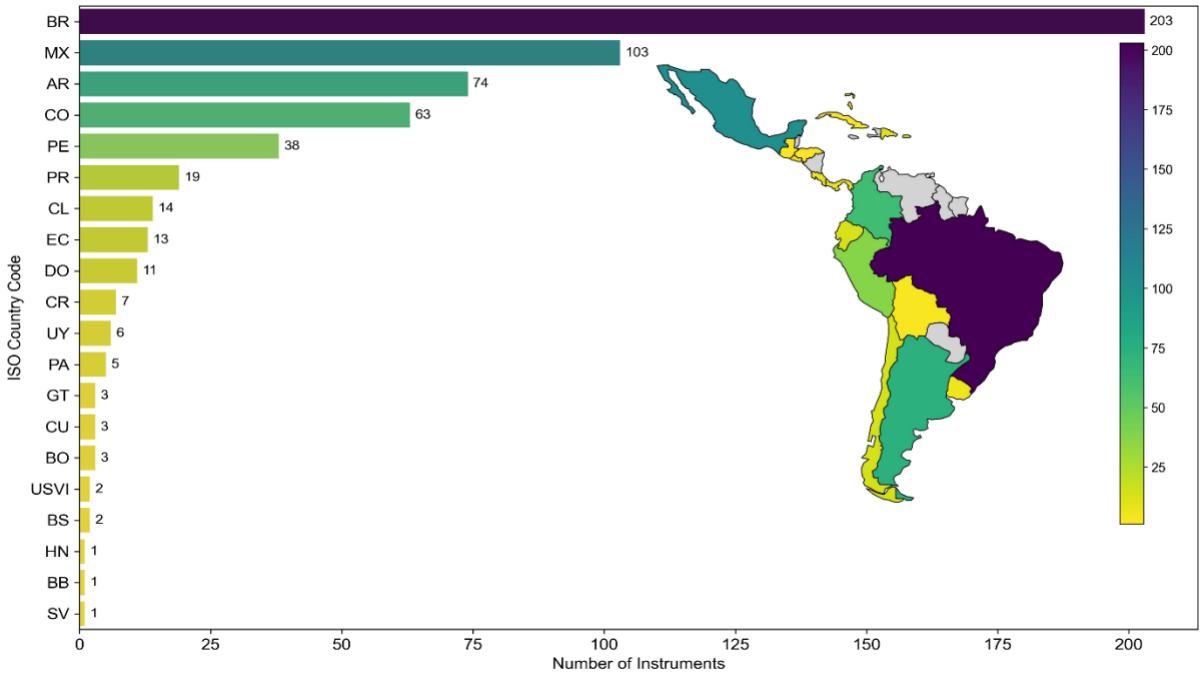
**We identified and documented 572 binding instruments in 20 LAC countries and territories**[7]. This list includes two unincorporated territories of the United States, the Commonwealth of Puerto Rico and the U.S. Virgin Islands.

Figure 19 shows that Brazil remains the jurisdiction with the highest number of regulatory instruments (203), followed by Mexico (103), Argentina (74), Colombia (63) and Peru (38). Together, **these five countries account for 84.06% of the regulatory instruments identified.**

AI regulation is still in its infancy in many countries and regulatory intensity varies significantly. However, since the last report we published on this repository, we have identified countries that have entered for the first time "into the ring" of AI regulatory processes.

[7] These are the countries with identified instruments followed by their ISO identification code: Argentina [AR], Bahamas [BS], Barbados [BZ], Bolivia [BO], Brazil [BR], Chile [CL], Colombia [CO], Costa Rica [CR], Cuba [CU], Ecuador [EC], El Salvador [SV], Guatemala [GT], Honduras [HN], United States Virgin Islands [USVI], Mexico [MX], Panama [PA], Peru [PE], Puerto Rico [PR], Dominican Republic [DO], and Uruguay [UY].

Figure 19. Number of regulatory instruments by country in LAC (cut-off date: 05-29-2025).




## 3.4 Temporal evolution of regulatory instruments

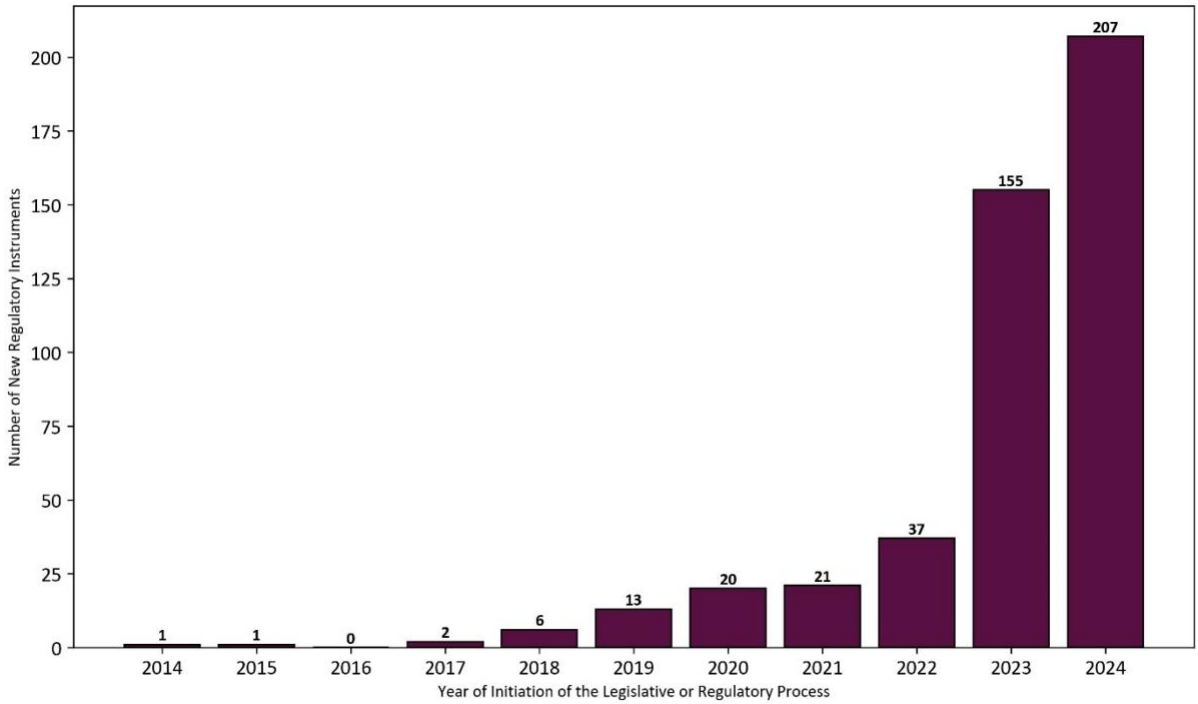
Figure 20 shows the evolution in the pace of creation of new AI regulatory instruments in LAC for the years 2014 to 2024. During the period prior to 2018, a relatively moderate and stable record of new instruments per year is observed. Between 2019 and 2022, the record shows a significant increase in the number of new instruments filed annually. The average number of new instruments per year between 2014-2018 was 2.5, increased significantly to 22.8 between 2019-2022.

**In 2023 and 2024, there was an explosion of new regulatory projects in the region. The annual average of new regulatory instruments between 2023-2024 was 181.** So, the average of the most recent period (2023-2024) is approximately 72 times higher than the average of the initial period (2014-2018) and 8 times higher than the intermediate period (2019-2022).

The marked acceleration in regulatory output coincides with the launch of ChatGPT (GPT-3.0 model) in November 2022 and the subsequent popularization of generative AI. In other words, the increased visibility of generative AI during the first half of 2023 appears to have coincided with increased interest from policymakers and regulators across the region to prioritize these

initiatives and act swiftly. It appears that this technological tipping point propelled AI from a niche topic into mainstream public and political discourse. However, there is no confirmed causality.

Figure 20. Number of new AI regulatory instruments in LAC by year (2014-2024).

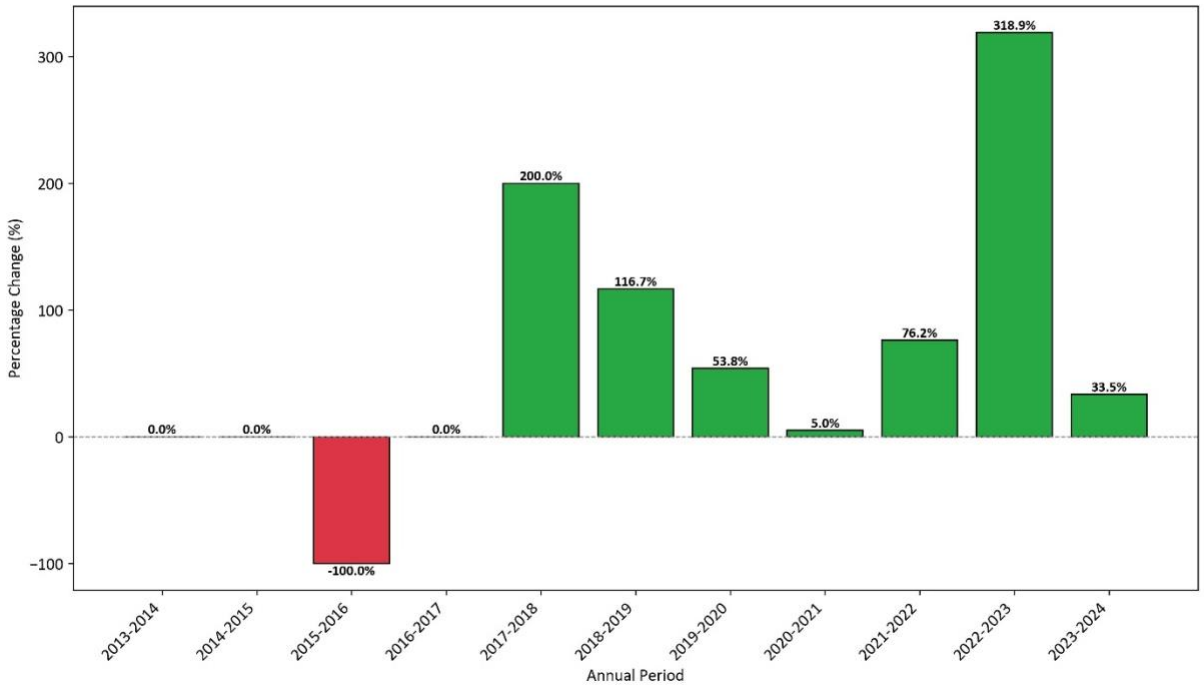



Note: Each bar represents new regulatory instruments issued during that specific year, not the cumulative total.

In sum, the gradual regulatory progression of the 2014-2022 period was transformed from 2023 into an accelerated response in LAC by various public entities with regulatory competence.

The information on the percentage change in the number of new regulatory projects confirms these trends. Figure 21 shows a **steady growth in new instruments filed starting in 2017, with notable increases of 200% in 2017-2018 and 116.7% in 2018-2019, culminating in the extraordinary 318.9% growth in the 2022-2023 period.**

Figure 21 . Annual percentage change in the number of new regulatory instruments (2014-2024).

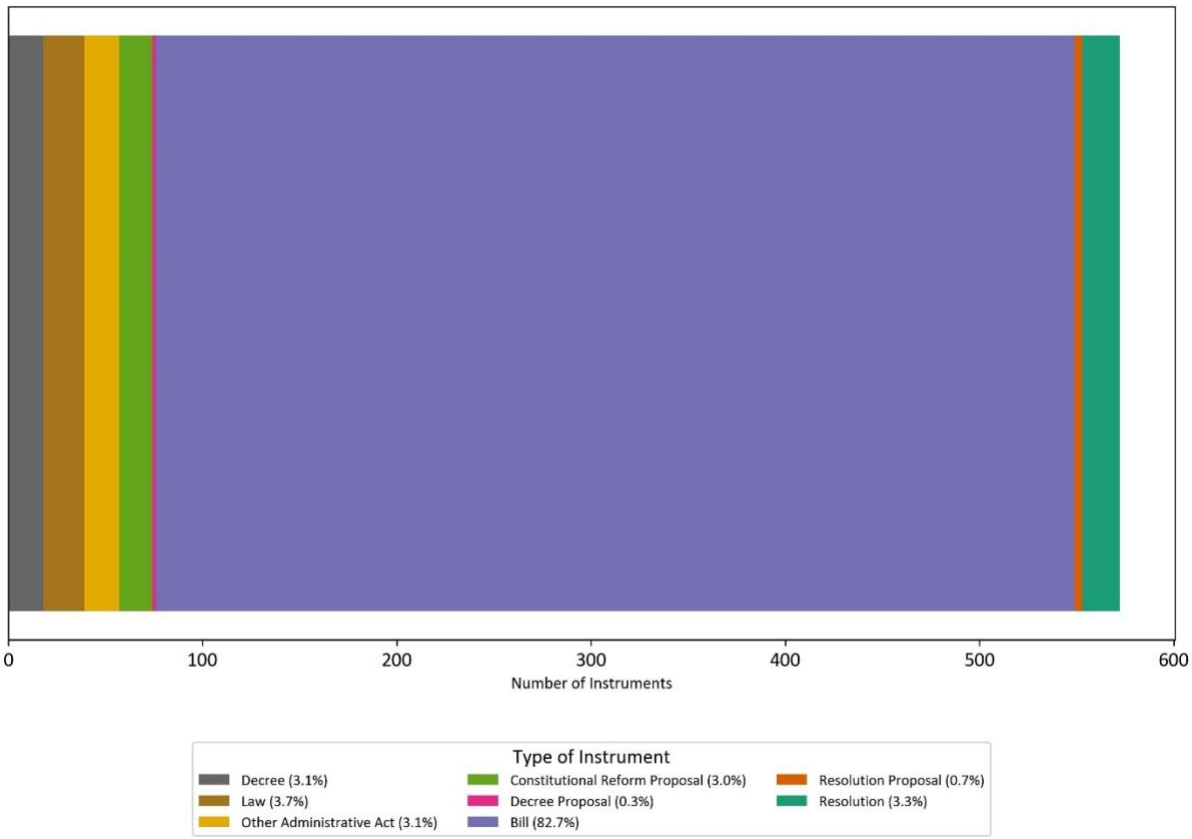



The trajectory of this trend appears to be maintained in the most recent data. So far in 2025 (through May), 109 new instruments have already been registered, representing more than half of the 207 new instruments identified during 2024.

## 3.5 Types of regulatory instruments

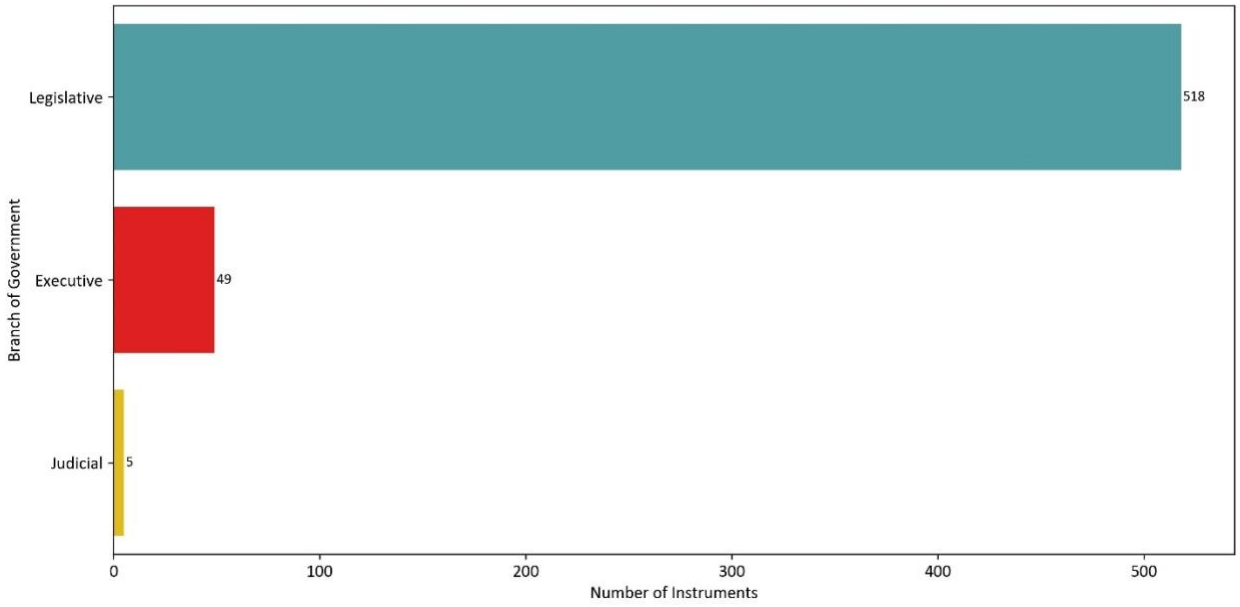
The recent update of the repository, with a total of 572 regulatory instruments, made it possible to specify the composition of the type of AI regulatory instruments in LAC. **The 473 bills constitute the majority of documented instruments with 82.7%, followed by 21 approved laws (3.7%)**, 18 approved resolutions (3.3%), 18 approved decrees (3.1%), 18 other approved administrative acts (3.1%), and 17 constitutional reform proposals (3%). Resolution proposals (0.7%) and decree proposals (0.3%) are in lower proportion.

Figure 22. Proportion of the type of instruments identified in LAC.




As can be seen in Figure 22, a vast majority of the instruments are bills (472 out of 572 instruments). This connects with the fact that most of the instruments in LAC come from the legislative branch (Figure 23).

Figure 23. Number of regulatory instruments by branch of government.

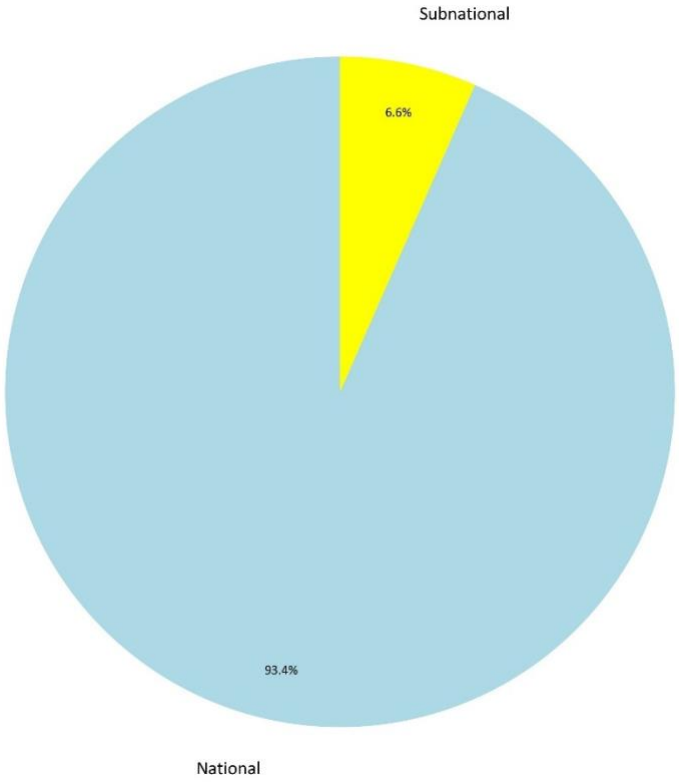



It should be clarified that, in this new version of the repository, we have completely excluded court rulings. This is because we are building a new database dedicated exclusively to the compilation of High Court jurisprudence dealing with AI issues. We hope that its construction will allow for a deeper and more specialized analysis of this type of instruments in the future.

## 3.6 Geographic scope of application of regulatory instruments

Figure 24 details the geographic scope of the AI regulatory instruments identified in LAC. There is a clear **preponderance of legislation with national application, which constitutes 93.36% of the total identified**. In contrast, instruments with subnational scope represent 6.64%.

Figure 24. Scope of application of the instruments identified in LAC.




It is important to note that most of the instruments classified as subnational come from Puerto Rico and the U.S. Virgin Islands[8] (21 of 38). These are followed by subnational instruments from Argentina (10) and Colombia (7). It is also worth clarifying that there may be more national-level regulatory instruments that we have not included in the database because they are more difficult to access. Finally, as of the date of this analysis, no regulatory instruments of supranational application specific to LAC have been identified within the repository.

[8] Puerto Rico is a "Commonwealth" under its Constitution, which does not grant it full sovereignty or modify its status as a territory under the authority of the U.S. Congress. The U.S. Virgin Islands are governed by the Revised Organic Act of 1954, which does not define a political status different from that of an unincorporated territory. Thus, as both are unincorporated territories under U.S. sovereignty, the scope of their regulatory instruments is limited to a subnational level.

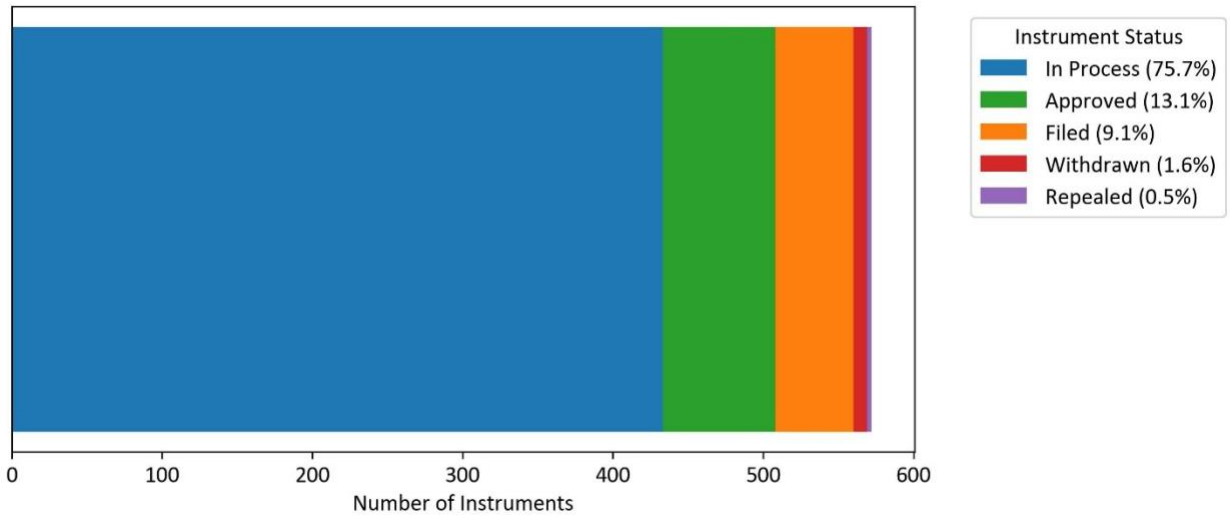
## 3.7 Status of the processing of regulatory instruments

**With respect to the status of the regulatory process of the instruments identified, Figure 25 shows the following distribution: 75.52% are in process, 13.29% have been approved,** 9.09% have been filed, 1.57% have been withdrawn, and 0.52% have been repealed.

The high proportion of instruments pending or in the approval process (75.52%) underscores the evolving nature of this regulation. This segment is subject to modification, filing, or withdrawal, which highlights the need for constant monitoring to capture changes in its articles and final status.

It is important to clarify that, in this update of the repository, the category "repealed" has been incorporated to identify those instruments that, having been in force, have ceased to be in force because subsequent regulations repealed them.

Figure 25. Status of the regulatory instruments identified in LAC.




## 3.8 Level of regulatory centrality of AI in the articles of regulatory instruments

In this section, we introduce the new variable we have developed to assess the regulatory centrality of AI within the instruments identified in LAC. This variable reflects the degree to which AI is the main object of regulation in each of the documents analyzed.
The classification is divided into three categories:

1. **Central:** In this category, AI is the main subject or explicit object of regulation. Here, the fundamental purpose of the instrument is to establish a specific regulatory framework for AI systems, applications or technologies. In most of these cases, both the title and the summary of the articles of the instrument mention AI verbatim.
2. **Complementary:** This category includes instruments that contain specific sections or articles dedicated to AI but operate within a broader regulatory framework. In these cases, AI is neither the only nor the main object of regulation, although it is given significant attention.
3. **Incidental:** In this category, AI is mentioned briefly or incidentally in one or a few articles of the instrument. The regulation of AI in these cases is minimal and does not constitute a central or significant focus of the document.

After these clarifications, as shown in Figure 26, **of the total of 572 regulatory instruments identified in LAC related to AI, 61.71% (353) are classified as having central regulatory centrality**, 21.85% (125) of the instruments were classified as having complementary centrality and, finally, 16.43% (94) correspond to instruments with incidental centrality, in which the mention of AI is tangential, occasional or of low regulatory relevance.

In addition to the above, when analyzing the distribution of the processing status according to the level of regulatory centrality, it is observed that **84.7% of the central instruments are being processed (299 of 353), followed by 30 filed and 22 approved.** Similarly, 69.6% of the complementary instruments are also pending (87 out of 125), followed by 15 filed and 19 approved.

**The proportion of approvals is different among the levels of centrality; 6.23% of the central instruments have been approved, 15.2% of the complementary ones and 37.23% of the incidental ones have been approved.** Although incidental instruments have a lower presence in the absolute total number (94 out of 572 instruments), they have a higher proportional approval rate compared to central or complementary instruments, as shown in Figure 27. Even so, a majority of 52.27% of the total number of instruments identified are in the processing phase and have been classified as central.

Figure 26. Type of regulatory centrality of AI initiatives.

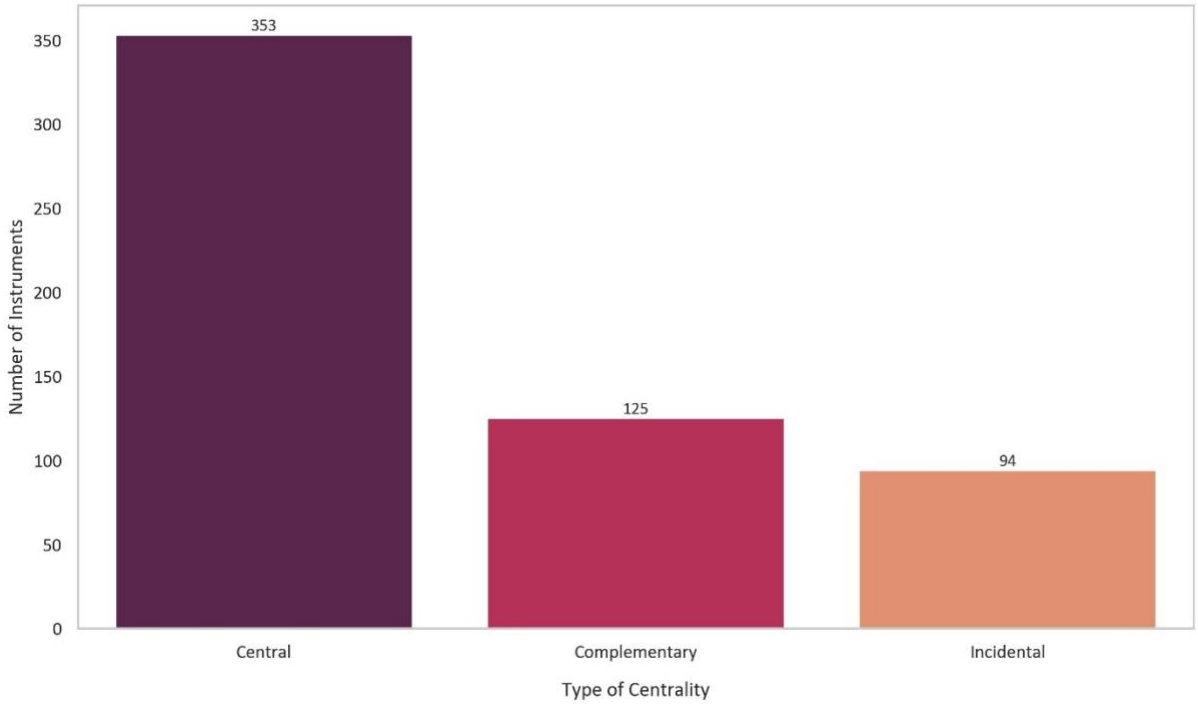
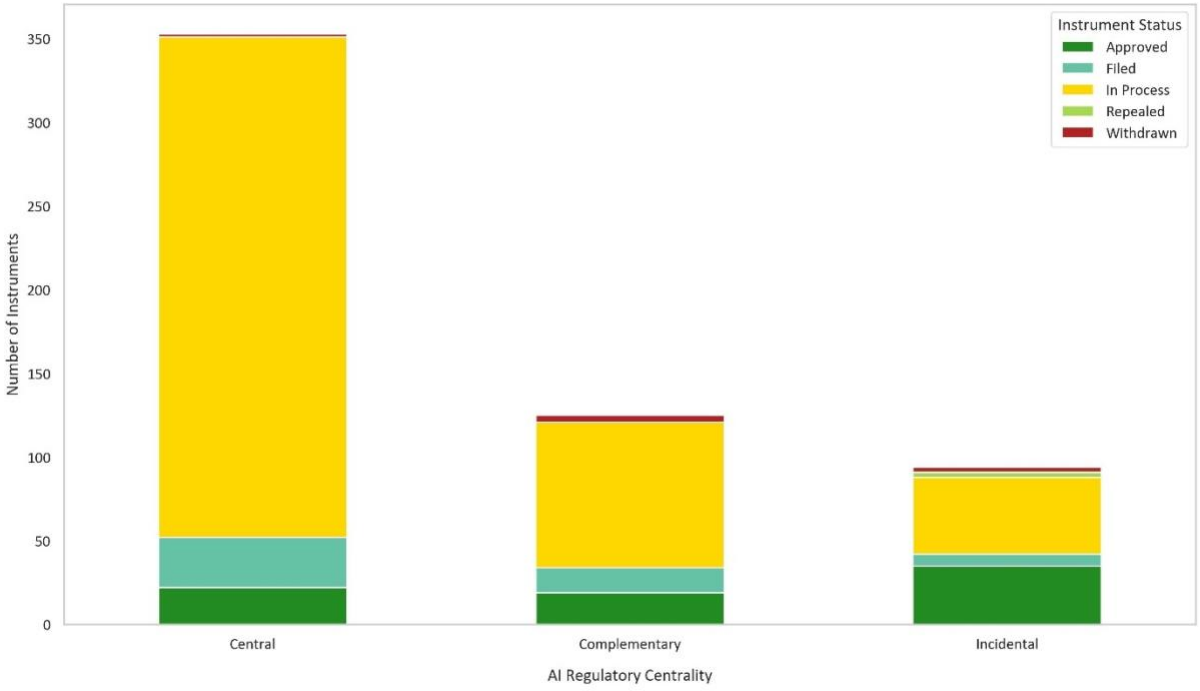


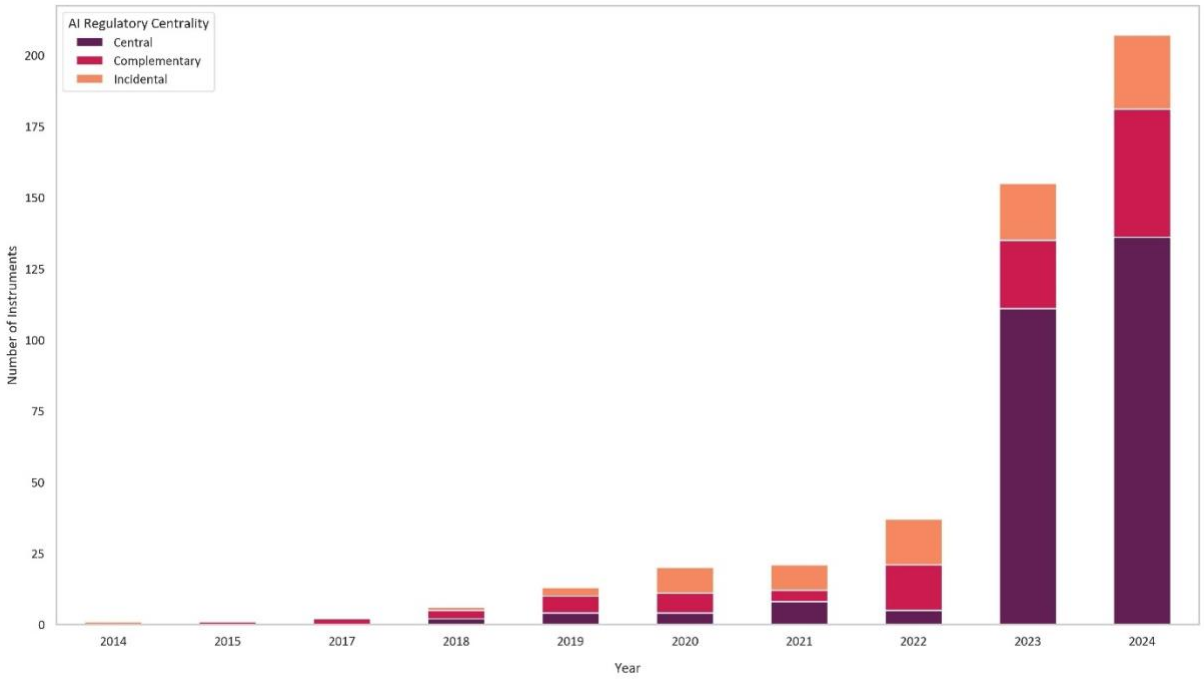

Figure 27. Instruments by regulatory centrality and status.



Based on Figure 28, and as already shown in a previous section, **the temporal evolution of the creation of new regulatory instruments (at the three levels of centrality) reveals an enormous increase as of 2023. In this year, 155 regulatory initiatives were registered, of which 71.61% were classified as central. In 2024, this trend continued with a total of 207 instruments, of these 65.70% were also central.**

In contrast, during the previous years, especially between 2014 and 2020, the volumes of new instruments were low, and the incidental and complementary centrality categories accounted for a higher relative share. So far in 2025, although the data is partial, a slight increase in the proportion of central instruments is observed; 83 instruments representing 76.15% of the running year total.

Figure 28. Time evolution of regulatory centrality on AI by year (2014-2024).

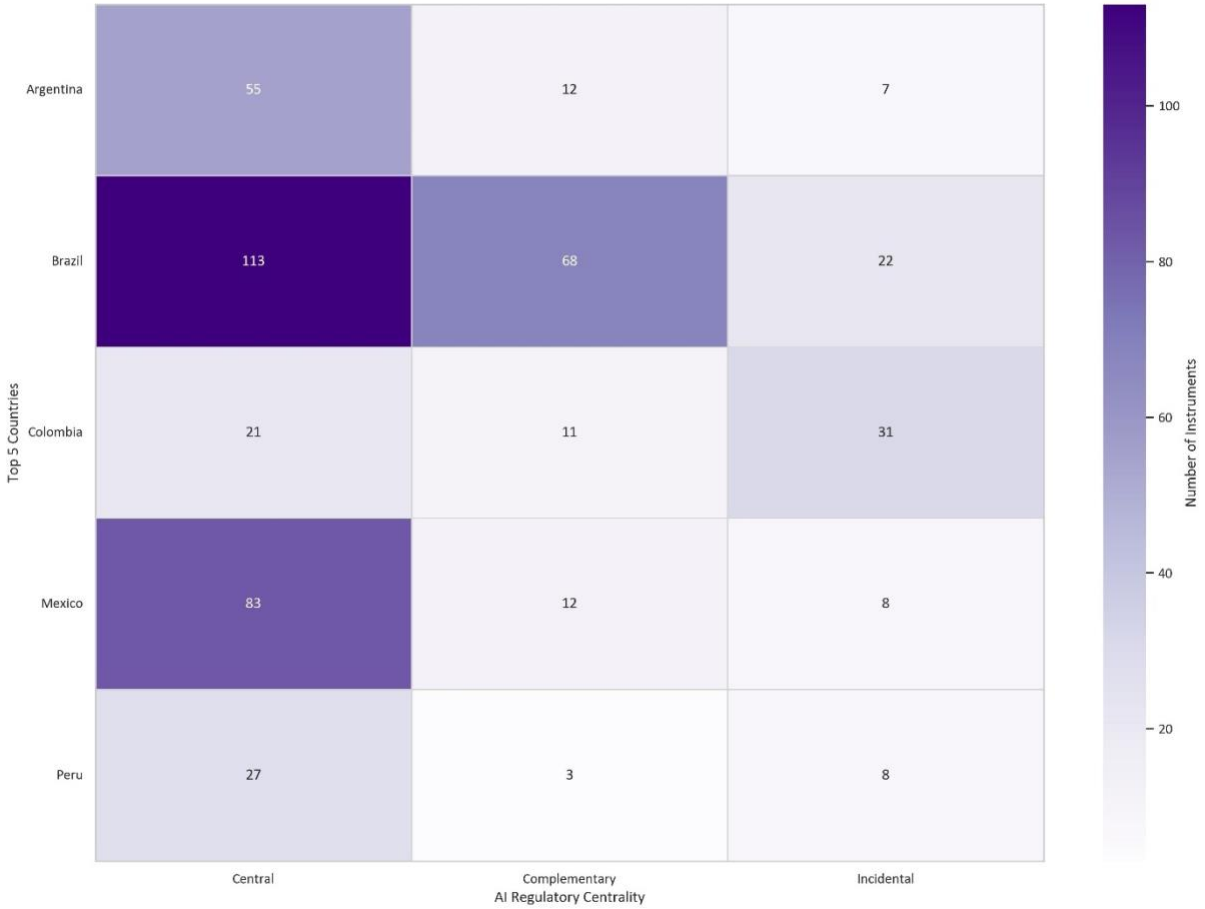



To conclude this section, an analysis focused on the five countries with the highest volume of initiatives shows that Brazil leads with 203 instruments, of which more than half (55.67%) are central. Mexico follows with 103 instruments and a high proportion of central instruments (80.58%). Argentina has 74 instruments, with a similar composition (74.32% central).

In fourth place, Colombia stands out for its relatively high proportion of incidental instruments, with 31 out of 63 (49.21% of the Colombian total). Finally, Peru, with 38 instruments, shows a higher relative presence of central instruments (71.05%).

This distribution is shown in Figure 29, which presents a heatmap between country and level of centrality. The intensity of the color reflects the concentration of each type of centrality among the five countries with the highest density of regulatory instruments. The map shows that, despite the differences in total volume, **there is a shared trend towards the formulation of regulatory instruments with a strong AI centrality, especially in Brazil and Mexico. Of the total number of instruments in these five countries (481 instruments), 62.16% are central, 22.04% are complementary, and only 15.8% are incidental to AI.**

Figure 29. Distribution of AI regulatory centrality among the top five countries with the largest number of instruments.



## 3.9 Content analysis of regulatory instruments

The analysis of keywords in the regulatory instruments[9] reveals a marked orientation towards fundamental principles such as transparency, protection of rights, privacy and responsibility. Among the most frequent terms are artificial intelligence, technology, optimization, deepfake, criminal code, electoral code, security, manipulation, ethics, digital rights, digital violence and regulation (Illustration 1).

Illustration1 . Most frequent words in the summaries of LAC AI instruments.


Note: The words are in Spanish because all instrument summaries were translated into Spanish, including those in English or Portuguese.

These terms reflect two main trends in regulation. On the one hand, existing regulatory frameworks are being adapted to the challenges of AI. This includes proposed reforms to criminal, labor, tax, electoral and intellectual property regulations, among others. On the other hand, the creation of new specific regulations to address emerging risks, such as the manipulation of information through deepfakes or the impact of algorithms on privacy and other fundamental rights, stands out.

Additionally, the predominance of concepts such as transparency and accountability suggests that legislators are prioritizing the development of basic principles for AI governance.

[9] The analysis was not based on the complete articles of the regulatory instruments, but rather on the summaries prepared for the database, which often reflect the article that establishes the purpose or objectives of the regulatory instrument.

Furthermore, the presence of terms associated with criminal and electoral codes indicates concerns about the misuse of these technologies in critical areas such as security and democratic processes. In this sense, LAC seems to be following a normative approach that combines preventive regulation with oversight and control mechanisms.

## 3.10 Case Study: Regulation of AI in Colombia

In Colombia, 63 regulatory instruments have been identified that mention AI in their contents. This set of regulations reflects a regulatory framework under construction, with a predominance of initiatives in the formulation and legislative discussion stage.

Figure 30 illustrates the distribution of these instruments according to their type. The 42 bills represent more than two-thirds (66.67%) of the total, and the 3 laws approved account for 4.76% for the moment, suggesting that the discussion on AI is centered in the legislative branch, at an early stage of regulatory consolidation. There is a high level of political-institutional interest in delimiting the legal frameworks on AI, although still with low levels of effective implementation. This is followed in frequency by other administrative acts with 15.87%, decrees (9.52%) and resolutions (3.17%), which reflect regulatory efforts from the executive branch.

Figure 30. Colombia: Type of regulatory instruments on AI.

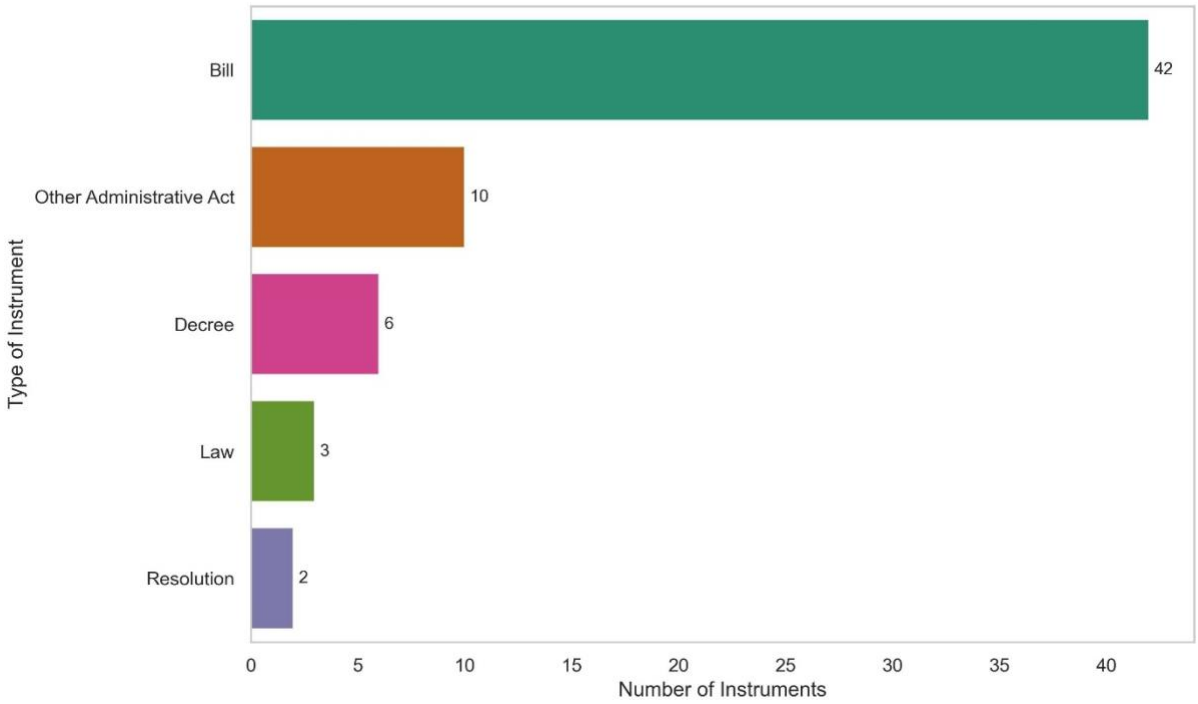


Figure 31 shows the degree of progress and maturity of regulatory initiatives. Of the total identified for Colombia, 23 instruments are currently in the legislative process, representing 36.51% of the total. Similar to other territories, it is notable that most of the AI initiatives have not yet concluded their regulatory process. This is followed by approved instruments, with 20 cases (31.75%). A significant part of the initiatives has reached legal force, either through laws, decrees, or other administrative acts (mostly the latter).

The 14 bills that were filed (22.22%) and the five withdrawn (7.94%) reflect the instability or low political viability of proposals, which failed to advance within the deadlines and processes established in the legislative process. Finally, only one law has been repealed (1.59%).

Overall, more than 67% of the regulatory instruments have not reached legal force. This reinforces the reading of a process under construction, with important challenges in terms of regulatory consolidation and institutional coordination in Colombia.

Figure 31. Colombia: Status of processing of AI regulatory instruments.

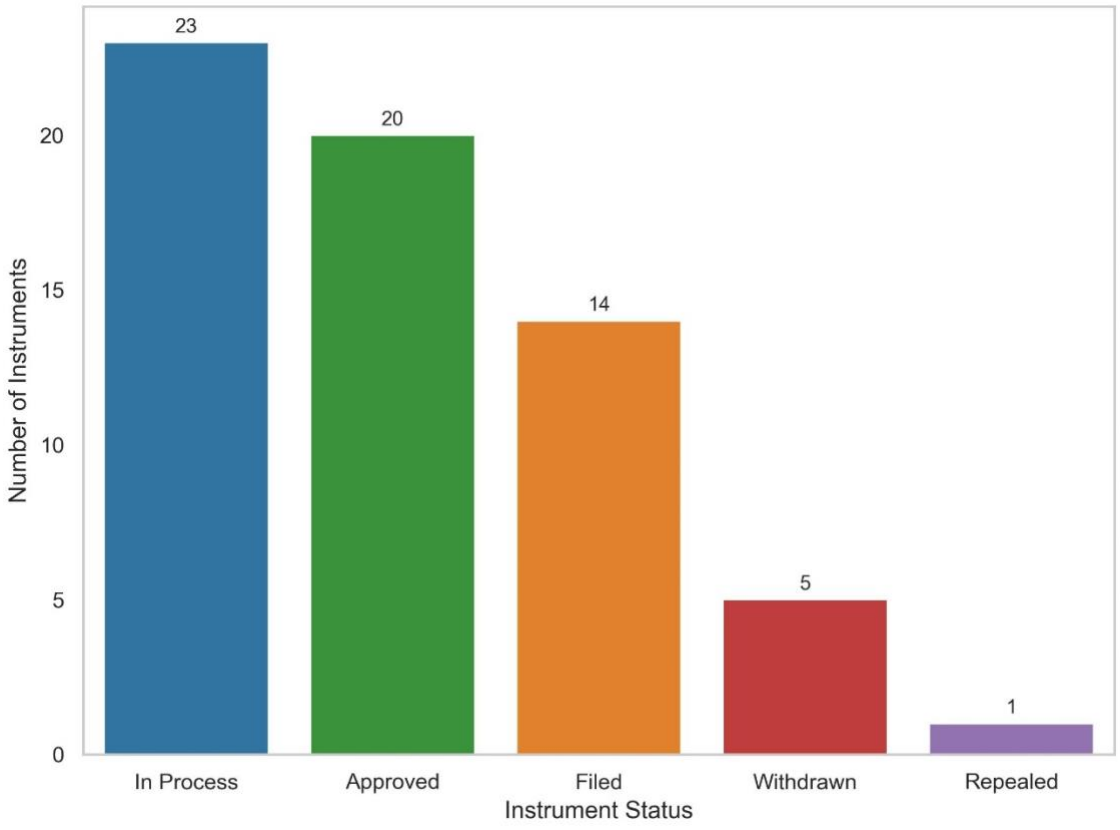


Figure 32 shows the interaction between the status of the instruments identified in Colombia and their classification of regulatory centrality. Thus, of the total of instruments, 21 (33.33%) consider AI to be central to the articles, 11 (17.46%) and 31 (49.21%) are considered to have complementary centrality, and 31 (49.21%) are incidental.

Within each classification, the following trends stand out:

- The instruments approved so far are mostly incidental (14 out of 20, or 70%). While there are regulations already in place that address AI, they predominantly do so in an indirect or partial manner.
- The bills in the legislative process show a higher proportion of central instruments (11 out of 23, or 47.83%).
- With respect to the bills filed, their distribution is rather balanced. With five central, three complementary, and six incidental, this reflects the unlikely association between the focus of the initiatives and their success in the legislative process.
- Among the remainder, the only repealed law was of an incidental category, and among the withdrawn bills, the central and complementary approaches predominate (1 and 2 out of 5, which together account for 60%).

Figure 32. Colombia: Status of the process by level of regulatory centrality.

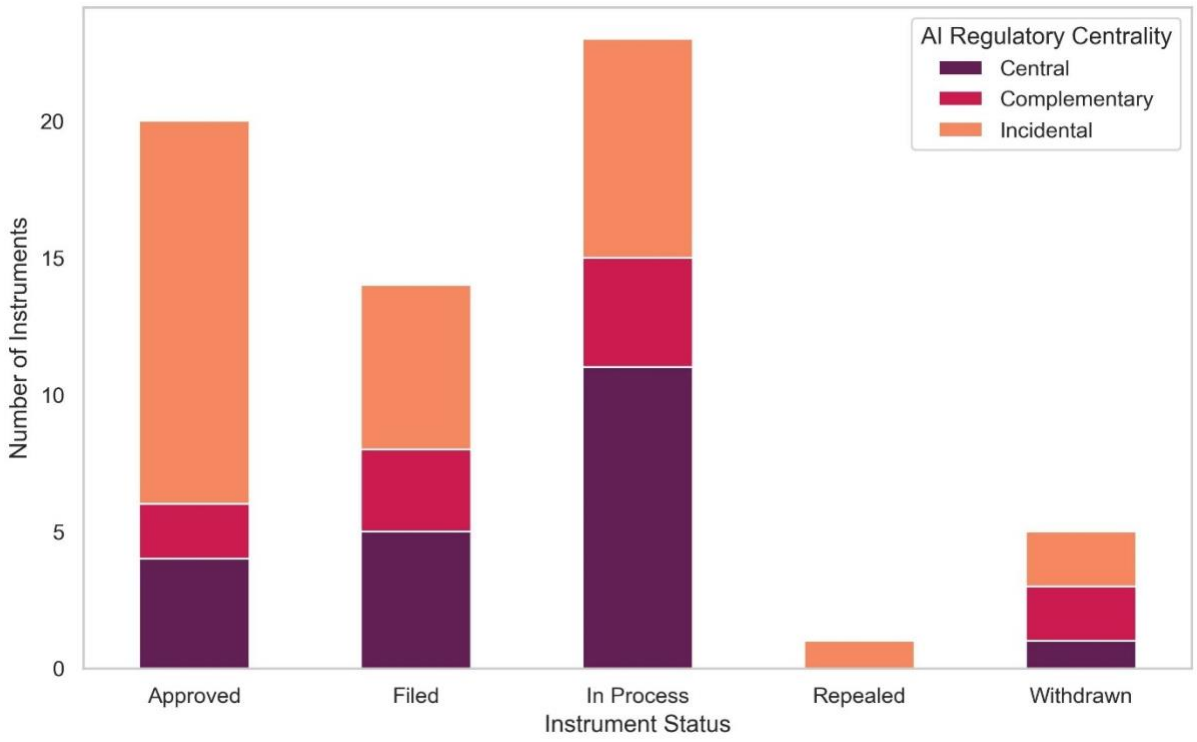



Figure 33 considers both the number of new instruments grouped by regulatory centrality and their evolution over the years in Colombia. Like other countries and territories, there is evidence of sustained growth in regulatory production on AI. Likewise, the transformation in the type of regulatory centrality over time is clear.

Between 2014 and 2019, the presence of AI in policy instruments was sporadic and mainly incidental or complementary. In those years, AI was marginally mentioned within broader agendas such as science, innovation, technology or digital transformation.

As of 2020, there was a significant change in the regulatory dynamics. That same year, 7 new instruments with 14.29% central and a majority of 57.14% incidental were accounted for. It is likely that this year marked a turning point in the institutional attention given to AI.

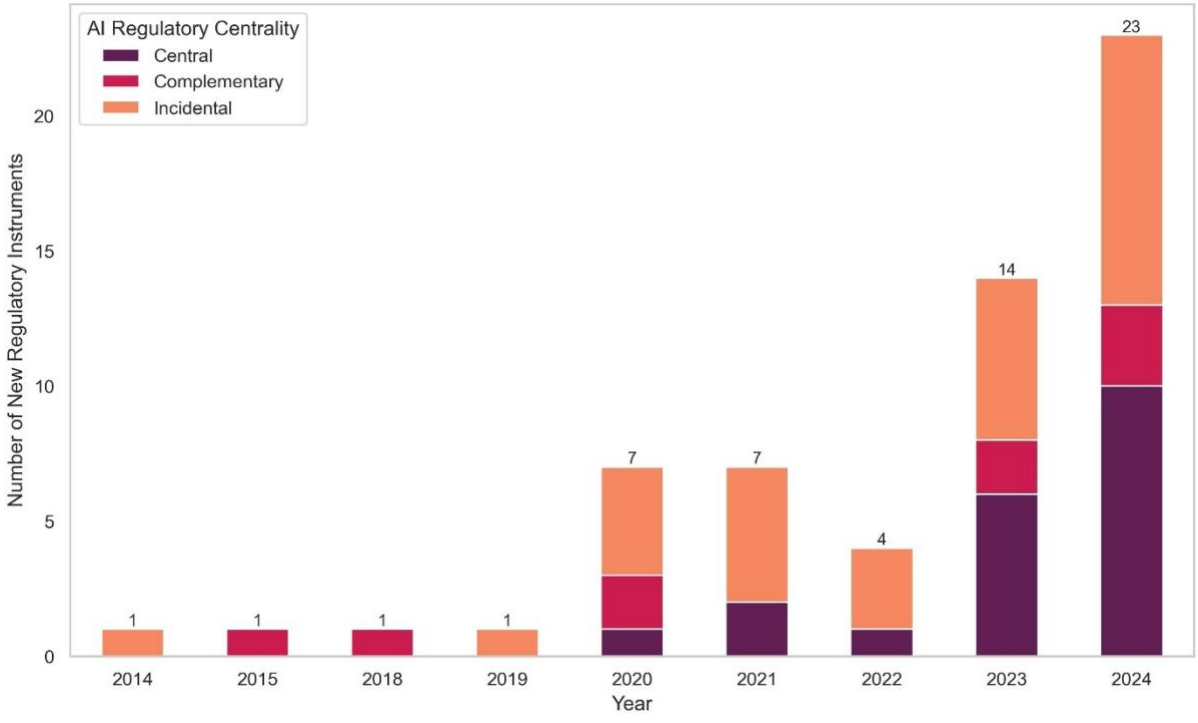
In 2021 and 2022, although the number did not increase sharply (7 and 4 respectively per year), the trend towards greater incorporation of AI into policy initiatives continued. Even so, during this period, instruments of incidental centrality predominated (more than 70% in both years).

Given the context, there may have been a persistent difficulty in developing more comprehensive regulation.

The clearest take-off in the last decade took place between 2023 and 2024, as in the rest of the region. In 2023, with 14 new instruments registered, the distribution is divided between central and incidental categories (both with 42.86%). In 2024, with 23 instruments identified, it is the year with the highest regulatory activity in the AI. That year the central instruments reached 43.48%, which added to the complementary ones (13.04%) give a total of 56.52%, more than half of the regulations had a significant focus on AI.

The latest figures point to an increase in regulatory interest and perhaps a window of opportunity to mature the public debate on why and how to regulate AI and how the instruments that are approved could be implemented. This is shown so far in 2025 which, with 4 new instruments at the time of the cut-off, shows a preponderant presence of central and complementary initiatives (75% of the total year-to-date).

Figure 33. Colombia: Evolution of the level of regulatory centrality on AI (2014-2024).




Note: The total number of new instruments initiated per year is shown above their respective bars.

Finally, this case study includes two additional resources that are useful to broaden the understanding of the regulatory ecosystem in Colombia. Table 2 presents the list of the 11 bills currently underway that are of core category, along with information on their latest status in the legislative process. Table 3 compiles 10 public hearings that have addressed the regulation of artificial intelligence, many of them directly linked to the bills as mentioned earlier, as well as forums with experts in the field. Readers are invited to consult these tables to deepen the analysis of the legislative and deliberative context surrounding AI in Colombia.

Table 2 . Colombia: Bills pending that centrally regulate AI (Updated 27-05-2025).

| Instrument Id. | Name of Regulatory Instrument | Procedure Details | Name Authors or Relevant Speakers |
|---|---|---|---|
| PL 442/2025S | Bill, By Means Of Which Artificial Intelligence In Colombia Is Regulated To Guarantee Its Ethical And Responsible Development And Other Provisions Are Issued. | Presented | Angela Olaya & Julian Molina |
| Bill 436/2024C | Bill, Whereby the use of autonomous lethal weapons in the defense and national security sector is regulated, and other provisions are enacted. | Pending Appointment of Speakers in the House | David Toro Ramírez et al. |
| Bill 293/2024S | Bill, Whereby guidelines are established for the training of artificial intelligence (AI) models or systems and the mandatory collective management of some forms of use of works protected by copyright is defined, and other provisions are enacted. | Pending Discussion of the First Debate | Julio Elías & Pedro Flórez |
| Bill 199/2024C | Bill, Whereby Law 115 of 1994 is amended, robotics is established as a mandatory teaching area and other provisions are enacted. | Pending Discussion of the Second Debate | Jorge Quevedo et al. |
| Bill 154/2024C | Draft Statutory Bill, Whereby artificial intelligence is defined and regulated, adjusted to human rights standards, limits are established regarding its development, use and implementation, Law 1581 of 2012 is partially amended and other provisions are enacted. | Pending Discussion of the First Debate | Alirio Uribe Muñoz et al. |
| Bill 005/2024C | Draft Bill, Law on ethical and sustainable artificial intelligence for social welfare. | Pending Discussion of the First Debate | Olga Lucia Velásquez et al. |

| | | | |
|---|---|---|---|
| Bill 255/2024S, Senate | Bill, Which establishes guidelines for the use of artificial intelligence to improve efficiency in reducing road accidents and their costs, automating the processes of analysis and control of road accident risks in real time with AI. | Pending Discussion of the Second Debate | Guido Echeverri & Hernando Gonzalez |
| Bill 360/2024C | Bill, Whereby Article 296 of Law 599 of 2000, Colombian Penal Code, is amended and an aggravating circumstance is established. | Approved in Fourth Debate | Jonathan Pulido Hernández et al. |
| Bill 130/2023S | Bill, Whereby the harmonization of artificial intelligence with people's right to work is created. | Pending Discussion of the Second Debate | Andrés Felipe Guerra et al. |
| Bill 091/2023S | Bill, By which the duty of information for the responsible use of Artificial Intelligence in Colombia is established and other provisions are enacted. | Pending Presentation for Second Debate | Julio Elías et al. |
| Bill 059/2023S | Bill, Whereby public policy guidelines are established for the development, use and implementation of artificial intelligence and other provisions are enacted. | Pending Discussion of the Second Debate | Juan Diego Echavarría & Juan Carlos Garcés |

Table 3 . Colombia: Public hearings on AI (Updated 27-05-2025).

| Date of hearing | Audience name | Commission or Plenary | Transmission link |
|---|---|---|---|
| 02/04/2025 | Working Table: Artificial Intelligence. Analysis of the Bill "Whereby Artificial Intelligence is Regulated in Colombia to Guarantee its Ethical and Sustainable Development". | Commission | Link |
| 28/11/2024 | International Legislative Forum. Peace And Security In The Age Of Artificial Intelligence. | Plenary | Link |
| 06/11/2024 | FORUM. Artificial Intelligence in Colombia: Transformation in the Digital Era. Accidental Commissions of Artificial Intelligence of the Senate and House of Representatives. | Commission | Link |
| 16/10/2024 | Installation of the Accidental Bicameral Commission on Artificial Intelligence. | Commission | Link |
| 07/10/2024 | Installation of the Accidental Commission on Artificial Intelligence. Sixth Committee of the House of Representatives. | Commission | Link |
| 30/09/2024 | First Permanent Constitutional Committee Public Hearing - PLE 154/24 House. | Commission | Link |
| 27/08/2024 | Installation of the Artificial Intelligence Accidental Commission. Sixth Senate Committee. | Commission | Link |

| | | | |
|---|---|---|---|
| 05/04/2024 | Technical Round Table Implications of Artificial Intelligence. First Commission of the Senate of the Republic of Colombia. | Commission | Link |
| 01/12/2023 | Public Hearing Artificial Intelligence, First Constitutional Committee of the House of Representatives on Bill No. 200 of 2023 C. | Commission | Link |
| 01/12/2022 | Artificial Intelligence in Colombia: Initiatives for a regulation with a human rights approach. | Commission | Link |

# 4. Repository of Automated Decision-Making Systems in Colombia

*Section prepared by Juan David Gutiérrez and Michelle Castellanos-Sánchez*

## 4.1 Basic data about the repository

- **Abstract**: This repository allows exploring 400 automated decision making systems in the Colombian public sector, including AI and robotic process automation (RPA) systems. This repository includes piloted, implemented, suspended or discontinued systems from the executive branch, the judicial branch, autonomous agencies, electoral organizations, higher education institutions and public companies, at the national and territorial level.
- **Repository location:** https://sistemaspublicos.tech/sistemas-automatizados-de-toma-de-decisiones-en-el-sector-publico-de-colombia/
- **Sources**: The database was built with information publicly available on the websites of the entities, repositories of government algorithms, with the answers obtained from the National Planning Department through officious sent to public entities, petition rights sent to public entities, direct observation, in reports from technology companies, reports from multilateral organizations, press reports, academic articles, and reports from civil society organizations.
- **Database (flat file)**: If you wish to access more detailed information, in which each system is characterized on the basis of 59 variables, you can download the flat file of the database from which the repository was built.
- **Main new features of the new version (V. 2.2) of the database**: Inclusion of 17 new systems and addition of a new variable, the name of the territorial entity.
- **Suggested citation:** Gutiérrez, J. D., Castellanos-Sánchez, M. & Muñoz-Cadena, S. (2025). "Automated decision making systems in the Colombian public sector (Version V. 2.2)" [Data set]. May 2025, Universidad de los Andes.

## 4.2 Status of ADSs and evolution over time

This repository characterizes **400 automated decision making systems (ADS) in the Colombian public sector**. Currently, 76% (306) of the mapped systems are under implementation, 12% (49) are in the pilot phase and 12% (45) have been suspended or discontinued.

Figure 34 . Known status of the ADM in Colombia.

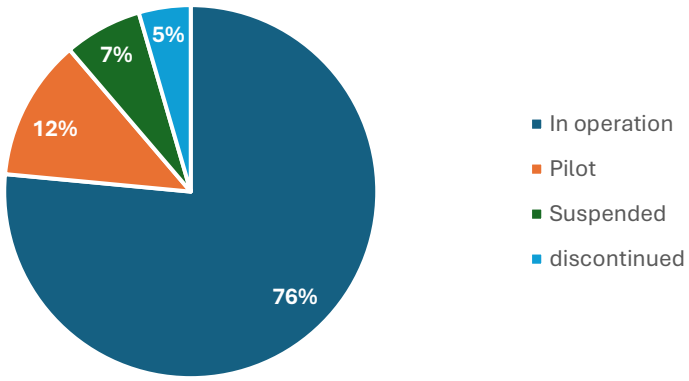
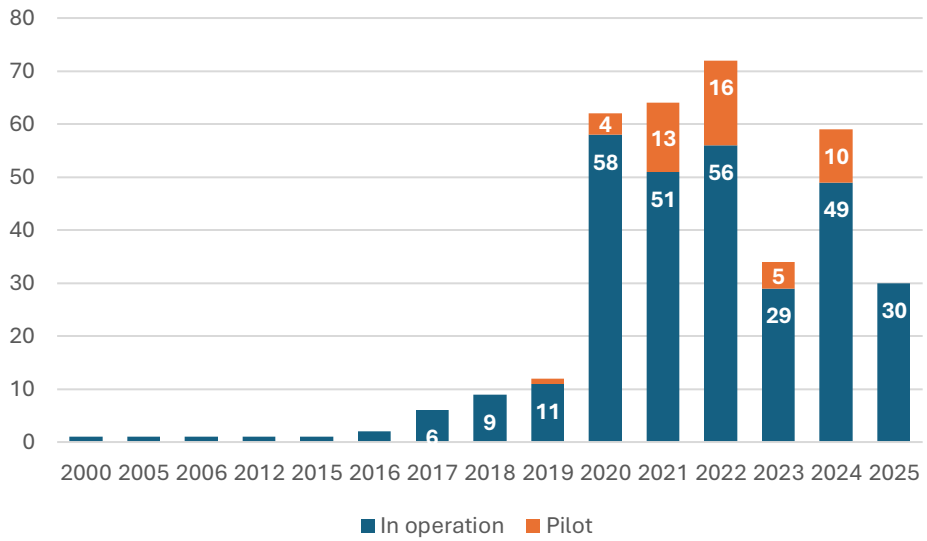



Figure 35 illustrates, for the period 2000-2025, the starting year for the implementation of new ADSs and the piloting of those that have not yet entered into production.

Figure 35 . Year of beginning of implementation or piloting of BDS (2000 - 2025) in Colombia.




With respect to the **temporal evolution in the implementation of the ADMs** in the Colombian State, **five stages have been identified:**

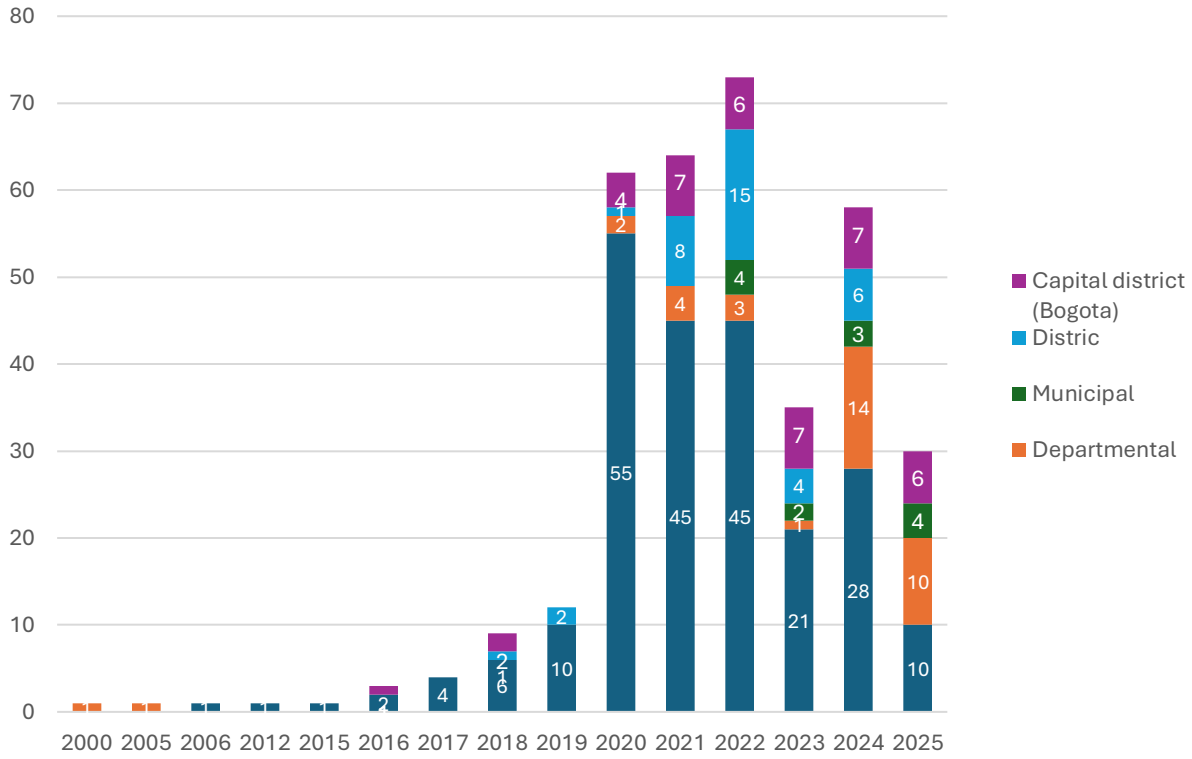
- **Initial period (between 2000 and 2016):** Minimum activity with an average of one new ADM implemented per year.

- **Moderate growth (2017-2019):** Gradual increase in implementation, reaching an average of 8.6 new ADMs per year.
- **Accelerated expansion (2020-2022):** Period of increased activity with an average of 55 new ADMs implemented annually.
- **Deceleration (2023-2024):** Decrease in the registration of new ADMs under implementation, with an average of 39 per year.
- **Projection (2025):** If the current trajectory is maintained, the number of new ADMs could approach 2020-2022 levels.

On the other hand, Figure 35 also suggests a decline in the number of projects in the piloting phase when comparing the 2020-2022 and 2023-2025 periods.

Figure 36 shows the temporal evolution of the 355 ADMs under implementation and piloting according to the level of government of the public entity in charge. Six levels are included: national, departmental, municipal, district and the capital district (Bogota).

Figure 36 . Year of start of the pilot or entry into implementation of the BDS according to their location within the level of government in Colombia.



During most of the period analyzed, the national level has concentrated the largest number of initiatives, consolidating itself as the main actor in the adoption of BDS in Colombia. Its leadership is particularly visible between 2020 and 2022, a period in which 4.83 BDS were piloted and implemented on average per year. Then, in the period 2023 - 2024 a progressive drop in the number of new systems piloted and implemented by this level is observed.

On the other hand, from 2020 onwards, there is evidence of a progressive increase in the participation of the subnational level, which suggests the beginning of the process of territorialization of these tools. In this scenario, the capital district emerges as the most active subnational actor, with a constant implementation that reaches its highest point in 2023 and 2024, with 7 new ADMs in each of those years.

The district level, which includes other cities with special regimes, shows a significant participation, especially in 2022, when 15 ADMs were registered. For its part, the departmental level shows a gradual evolution, with a notable upturn in 2024, when it led the piloting and implementation of 14 new systems. In relation to the municipal level, although it maintains a more limited participation, it shows an upward trajectory especially between 2024 and 2025.

Overall, the data suggest that, although the national government continues to lead the implementation of the EDS, the territorial entities -particularly the capital district, as well as the departmental and district levels- are assuming a progressively more relevant role. However, in recent years there has been a slowdown in the adoption of these systems at both the national and subnational levels.

Finally, Figure 37 shows the temporal evolution of the 355 ADMs under implementation and piloting according to the location within the state structure of the public entity. Seven categories are distinguished: executive branch, legislative branch, judicial branch, higher education institutions and/or state-owned companies, autonomous and independent bodies, control bodies and electoral organizations.

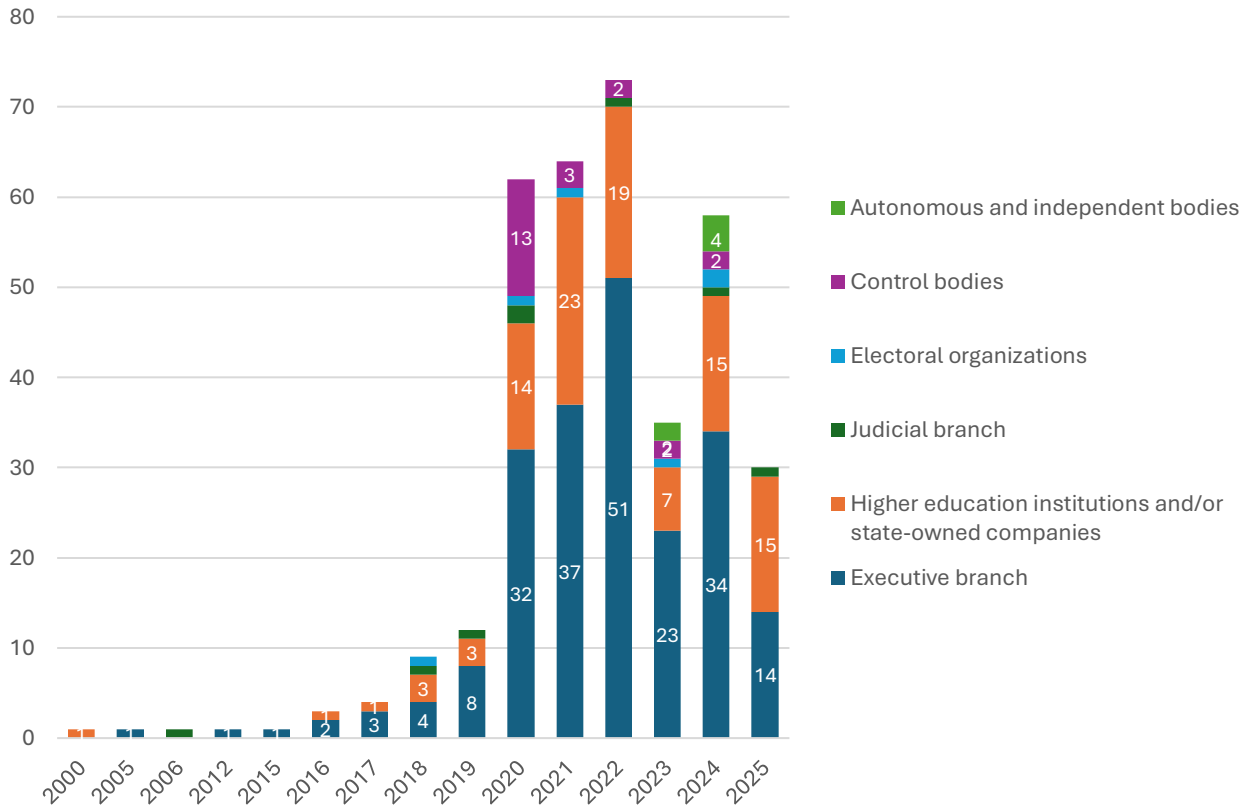
In the first place, the preponderant role of the executive branch in the piloting and implementation of the SDGs stands out in all the periods analyzed. This leadership intensifies especially from 2020 onwards, with a remarkable growth that reaches its peak in 2022, when 51 new ADMs were registered in this branch. However, a decreasing trend is evident in 2024: 34 new ADMs were registered in 2024.

In second place are higher education institutions and/or state-owned enterprises, which also show an increasing piloting and adoption of ADM, particularly between 2020 and 2022, with a

maximum of 23 systems registered in 2021. After a moderate reduction in 2022 (19 systems) and a more pronounced decrease in 2023 (7 systems), the sector experienced a remarkable revival in the last two years (2024-2025), maintaining the implementation of 15 ADMs per year.

In the case of control bodies, an irregular trajectory is evident, with long intervals without activity between 2000 and 2019. However, in 2020 there is a significant and atypical upturn, with the registration of 13 new ADMs, which represents the largest number in a single year for this sector. It should be noted that, of this total, 12 ADMs were piloted and implemented by the Office of the Comptroller General of the Nation (CGN), through the Directorate of Information, Analysis and Immediate Reaction (DIARI), a unit created in 2019.[10]

Figure 37 . Year of start of the pilot or entry into implementation of the ADMs according to their location within the state structure in Colombia.




[10] The Directorate of Information, Analysis and Immediate Reaction (DIARI) of the Office of the Comptroller General of the Republic was created in 2019 by Decree Law 2037 of 2019 "Whereby the structure of the Office of the Comptroller General of the Republic is developed, the Directorate of Information, Analysis and Immediate Reaction is created, and other dependencies required for the operation of the Entity."

From 2021 onwards, the number of ADMs piloted and implemented by control bodies decreased considerably, with 3 systems in 2021. This trend remained the same in the following years, with 2 ADMs per year in 2022, 2023 and 2024.

The other sectors show a smaller participation. The judiciary has a total of 8 ADMs piloted and implemented and electoral organizations have 6 ADMs. Regarding autonomous and independent bodies, no ADMs were registered until 2023, when two systems were identified. In 2024 the peak was reached with four new ADMs.

It is worth noting that to date there have been no records of ADS piloted or implemented by the legislature in Colombia. In contrast with other countries in the region where AI systems have

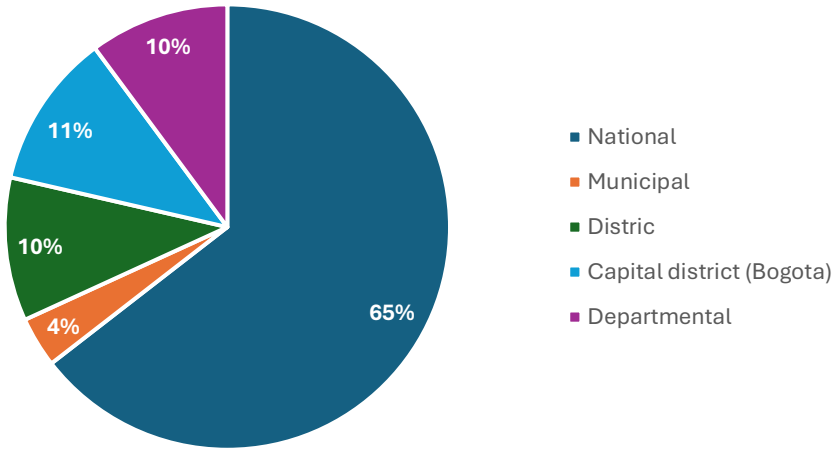
been identified in legislative bodies, such as Brazil (10 systems), Chile (3 systems) and El Salvador (1 system).

## 4.3 Type of public entities adopting or piloting BDSs

The 355 ADMs that are in the execution or piloting stage were mapped in 166 public entities, of which 65% (229 ADMs) are implemented by entities at the national level, while the remaining 35% (126 ADMs) correspond to entities at the subnational level (Figure 38).

At the subnational level, the capital district (Bogota) accounts for 11% (40 ADMs), followed by the departmental and district levels with 10% each (36 and 37 systems, respectively). In contrast, the municipal level has a significantly lower participation, with only 4% (13 ADMs).

Figure 38 . Distribution of the ADM at the territorial level in Colombia.




As shown in Figure 39, the distribution of the 126 DDS (under implementation and piloting) at the subnational level is mainly concentrated in departments of the Andean Region of the country, such as: Cundinamarca (45 systems), Antioquia (32 systems) and Valle del Cauca (11 systems).

Other departments with outstanding figures are Bolívar (7 ADMs), Risaralda (6 ADMs) and Santander (5 ADMs). To a lesser extent, departments such as Arauca, Boyacá, Córdoba, Huila, Meta, San Andrés and Providencia registered only 1 ADM. It should be noted that large areas of

the country, particularly the Amazon region and sectors of the Orinoco and Pacific regions, do not have any mapped ADMs.

Figure 40 illustrates the distribution of the 355 ADMs (under implementation and piloting) in the state structure. Most of the ADMs are in executive branch entities with 59% (211 ADMs), followed by higher education institutions and state-owned enterprises with 29% (102 ADMs). Control bodies represent 6% (22 ADMs), while the entities of the judiciary, independent autonomous bodies and electoral organizations have a minimal participation with 2% each.

Figure 39 . Distribution of the ADM by territorial entities in Colombia.

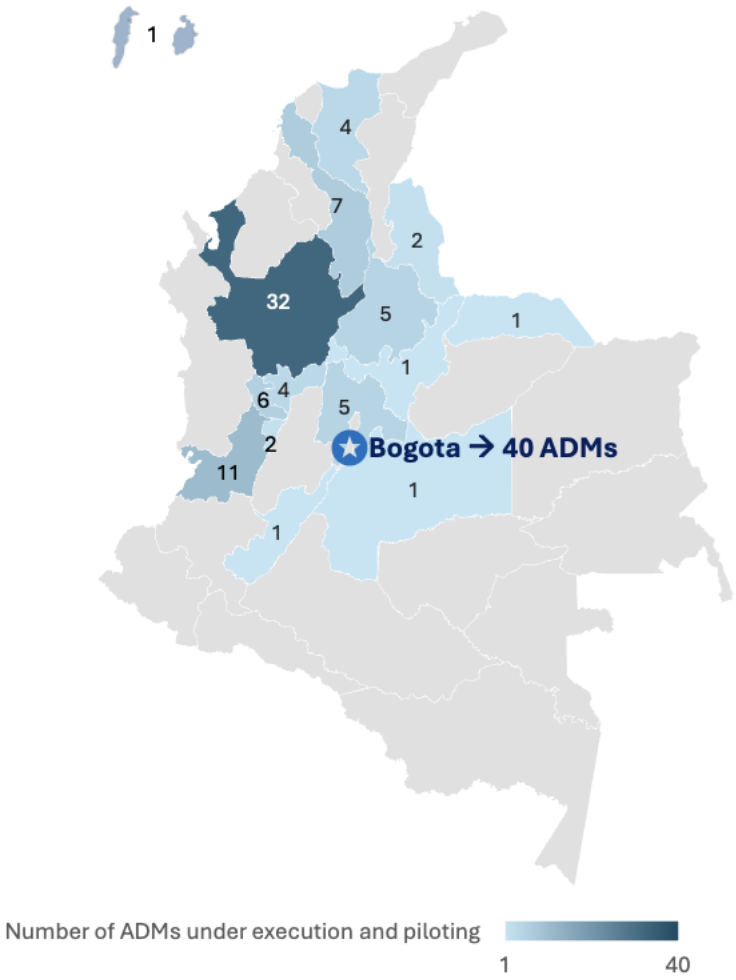
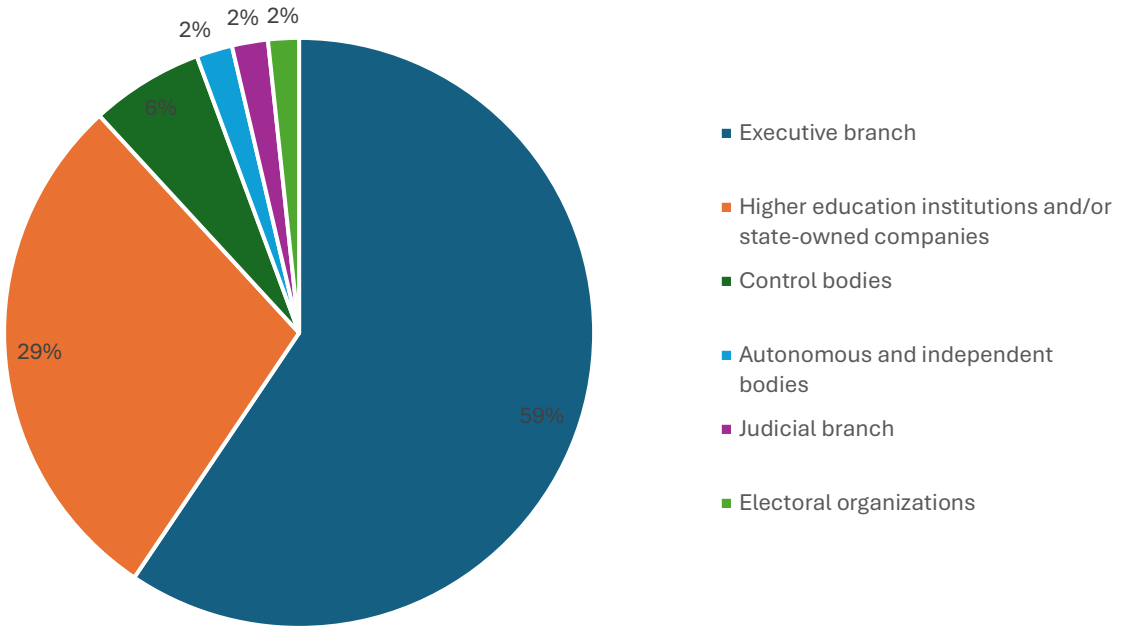


Figure 40 . Location of the ADMs in the structure of the Colombian State.




To complement the characterization of the public entities that implement the ADMs, the "Manual of Functional Classification of Public Expenditure" of the Ministry of Finance and Public Credit was used, which is based on the Classification of Government Functions (COFOG).[11] Figure 41 presents the breakdown of both level I and level II of this classification.

[11] The 2023 version of the Manual is available at the following web portal.

Figure 41 . Number of ADMs classified according to the governance functions performed by public entities in Colombia (COFOG - Levels I and II).


Of the 355 ADMs under implementation and piloting, 30% (105 ADMs) are linked to public entities whose functions are related to economic affairs. In particular, within this main category, most of the entities are concentrated in subcategories such as economic affairs n.e.p., commercial and labor economic affairs in general, agriculture, forestry and fishing, transportation and communications.

In similar proportions, 16.33% (58 ADMs) of the government institutions that pilot or adopt ADMs perform functions of executive and legislative bodies, financial and fiscal affairs, and foreign affairs. In this category, the subcategories of general services and general public services n.e.p. stand out, where most of the entities are concentrated.

Other relevant categories correspond to the education (12%), social protection (10%) and public order and security (9%) sectors, which group together a significant proportion of the public entities that deploy ODS. Within education, the subcategory of education n.e.p. stands out. In the area of public order and security, the subcategory of courts of justice and police services stands out. In social protection, the subcategories of elderly and vulnerable population predominate.

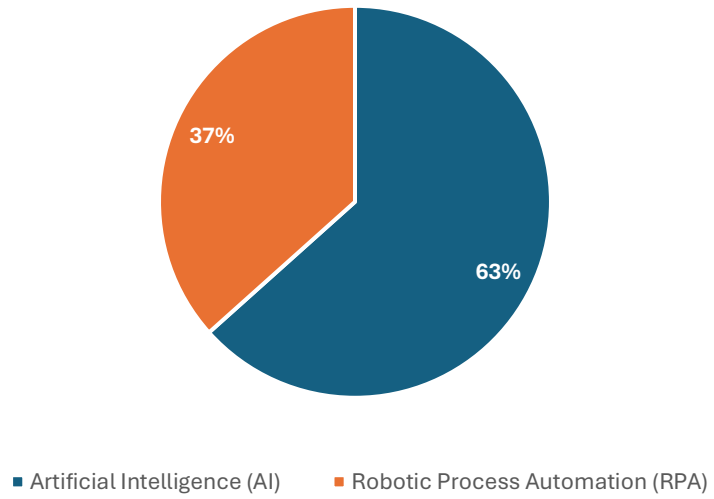
Although to a lesser extent, the ADMs are also associated with public entities whose functions correspond to health (7%) and environmental protection (4%). Within the health sector, the subcategory of hospital services stands out, while in environmental protection, entities linked to research and development related to environmental protection and those classified as environmental protection n.e.p. stand out.

There are also sectors with lower representation, such as defense (1%), recreational activities, culture, sports and other social services (1%) and housing and related services (1%). It is worth noting that the low number of systems corresponding to the defense sector are underrepresented because the information on the use of this type of tools is confidential or subject to legal confidentiality.

## 4.4 Types of technologies

In all 355 ADMs being implemented and piloted, AI stands out as the most widely used technology, comprising 63% (225) of the cases, while robotic process automation (RPA) accounts for the remaining 37% (130).

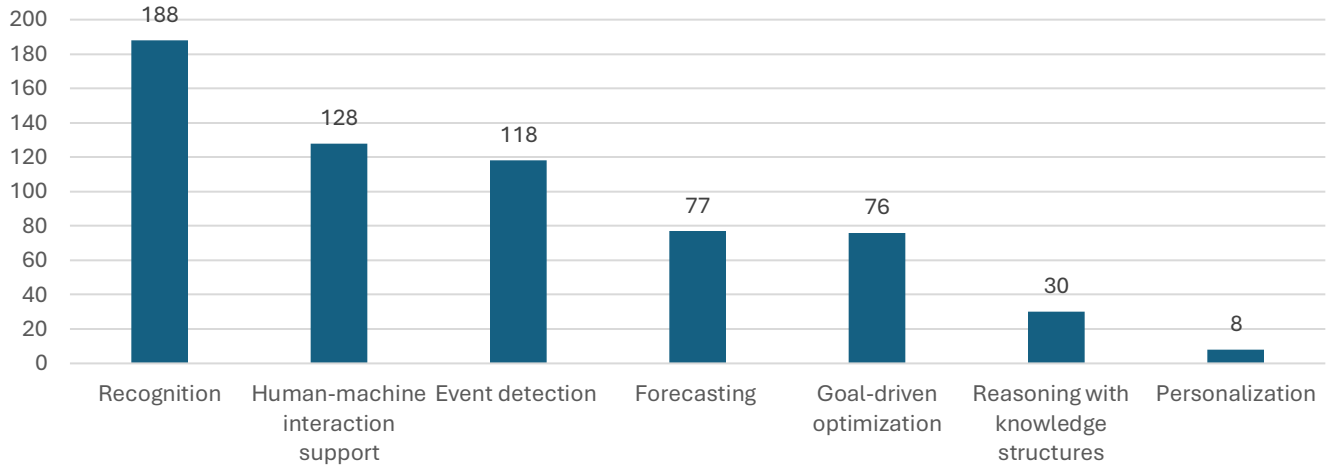
Figure 42 . Distribution of the ADM by type of technology used.




In the process of classifying ADSs by function, the typology proposed by the OECD was used, which distinguishes seven categories according to the type of *output* produced by the system. It should be noted that, in most cases, the systems were found to have the capacity to perform multiple functions simultaneously.

Figure 43 shows that, among the 355 ADMs in execution and piloting, the most common function is recognition, with 188 ADMs. It is followed by human-machine interaction support with 128 ADMs and event detection with 118 ADMs. Other relevant tasks include forecasting, performed by 77 ADMs, and goal-oriented optimization, present in 76 cases. In a smaller proportion are the functions of reasoning with established knowledge, with 30 ADMs, and personalization, with 8 ADMs.

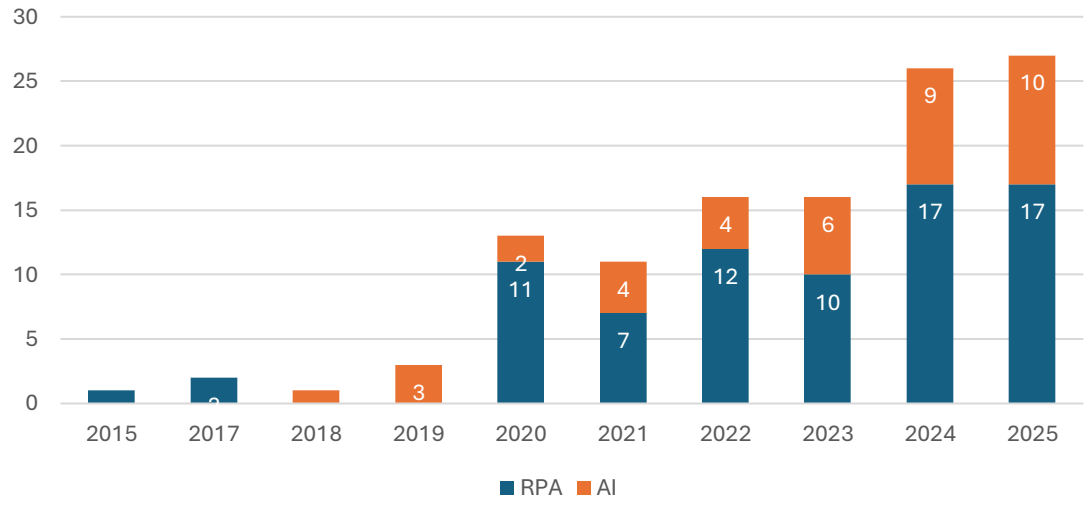
Figure 43 . Main functions of the ADMs in Colombia (classification adapted from OECD).




A relevant finding of the repository is that, of the 355 ADMs in execution and piloting, 6 correspond to chatbots that mainly perform interaction support functions. Within this group, 77.86% of the chatbots in operation are based on RPA, while 33.62% employ AI solutions.

According to the temporal distribution in Figure 44, RPA technology has predominated over AI in the implementation of chatbots. However, in the last two years (2024 and 2025), a significant growth in the use of AI-based solutions can be observed, suggesting a trend towards greater adoption of this type of technology.

Figure 44 . Temporal distribution of government chatbots by technology (RPA vs. AI) in Colombia, 2015-2025.




## 4.5 Potential contributions of the ADMs

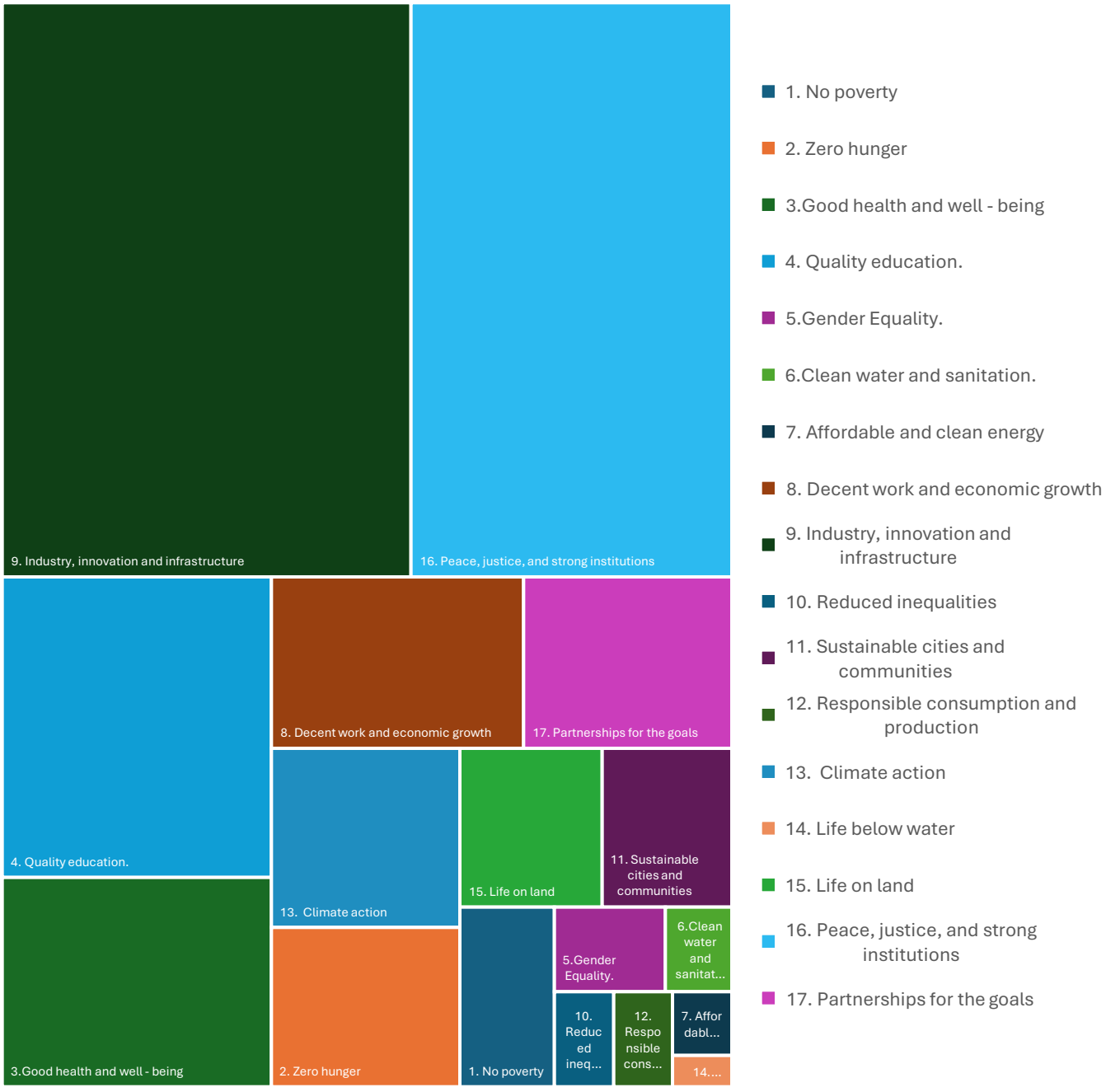
To identify the potential contributions of the SDGs in various thematic areas, the classification of the SDGs proposed by the UN was used. It is important to note that, in most cases, the systems have the potential to contribute to more than one SDG.

Figure 45 shows that the main contributions of the 338 ADMs under implementation and piloting to SDGs are concentrated in two key areas: industry, innovation and infrastructure (SDG 9) and peace, justice and strong institutions (SDG 16).

In a moderate proportion, the systems also contribute to goals such as quality education (SDG 4), health and well-being (SDG 3), decent work and economic growth (SDG 8) and partnerships to achieve goals (SDG 17).

In contrast, a lower incidence is observed in goals related to undersea life (SDG 14), responsible production and consumption (SDG 12), gender equality (SDG 5) and ending poverty (SDG 1), suggesting a more limited scope of the SDGs in these specific areas.

Figure 45 . Potential contributions of the SDGs to the SDGs in Colombia.

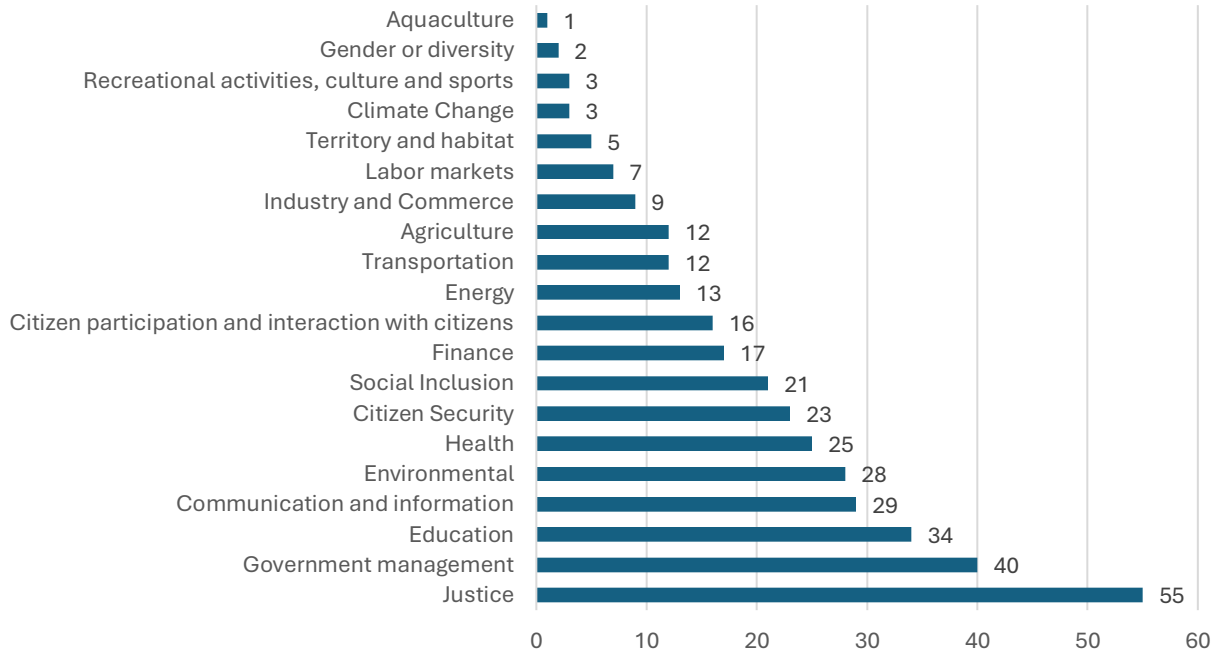



To complement the characterization of the 355 ADMs under implementation and piloting, the IDB's 'fAIrLAC' classification was adapted. The sectors with the highest concentration of ADMs

are Justice (55 ADMs, 15%), Government Management (40 ADMs, 11%) and Education (34 ADMs, 10%).

Other sectors with a significant presence are Communication and information (29 ADMs, 8%), Environment (28 ADMs, 7.8%) and Health (25 ADMs, 7%). In contrast, sectors such as Aquaculture, Gender or Diversity, Climate Change and Culture and Sport present a very low incorporation of ADMs, with less than 3 ADMs each.

Figure 46 . Government sector to which the ADM contributes in Colombia (IDB classification adaptation).

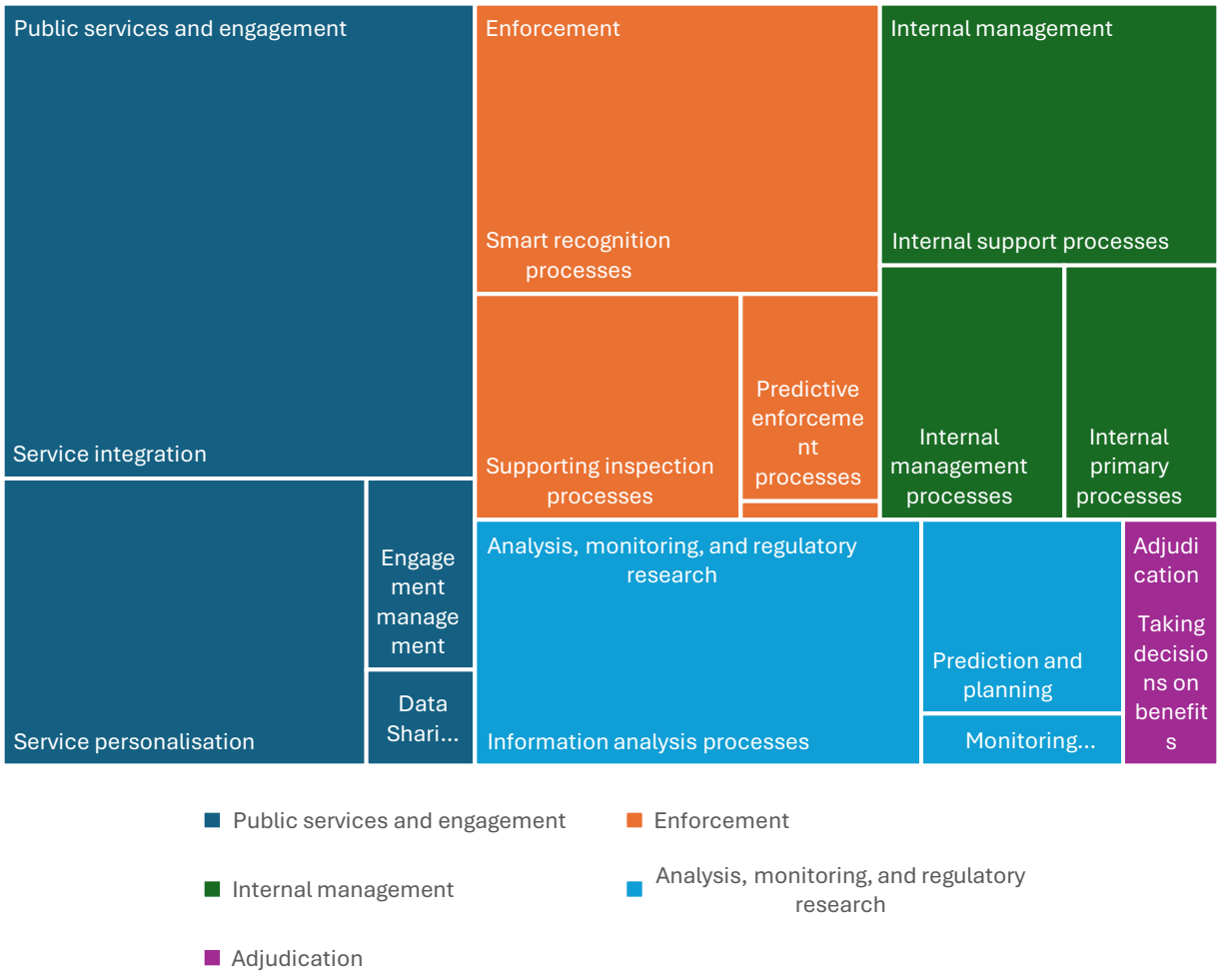



Finally, Figure 47 shows the classification of the contribution of the 355 DSSs under implementation and piloting to government processes, according to the methodology of the European Union's *JRC*. It is evident that the greatest contribution of these systems is oriented towards public service and participation processes (38.87%), with emphasis on service integration, service personalization and participation management.

In second place are the systems associated with law enforcement (23%), where their application in intelligent recognition processes, support for inspection processes and predictive processes for law enforcement stand out. Another important block corresponds to internal process management (19%), where systems oriented to internal support processes, internal management processes and internal primary processes are grouped together.

Likewise, the ADMs have a significant presence in the area of public policy analysis, monitoring and research (17%), particularly in processes of information analysis, forecasting and planning and supervision of public policy implementation. Finally, although to a lesser extent, ADMs also support the granting of benefits (2.53%), especially in benefit decision-making.

Figure 47 . Classification of the contribution of the ADMs to the governance processes in Colombia (EU - JRC classification)



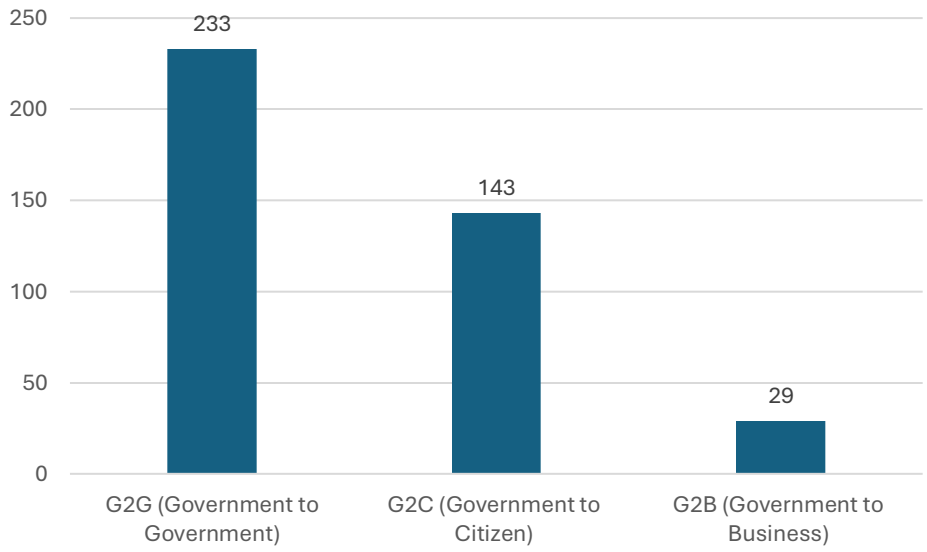

## 4.7 Type of interaction and processing of personal data

The 355 AI systems in execution and piloting were also characterized according to the type of interaction between the system and the user. This typology identifies three main modalities: G2C,

G2B and G2G. It should be noted that the same system can fulfill more than one type of interaction, so these categories are not mutually exclusive.

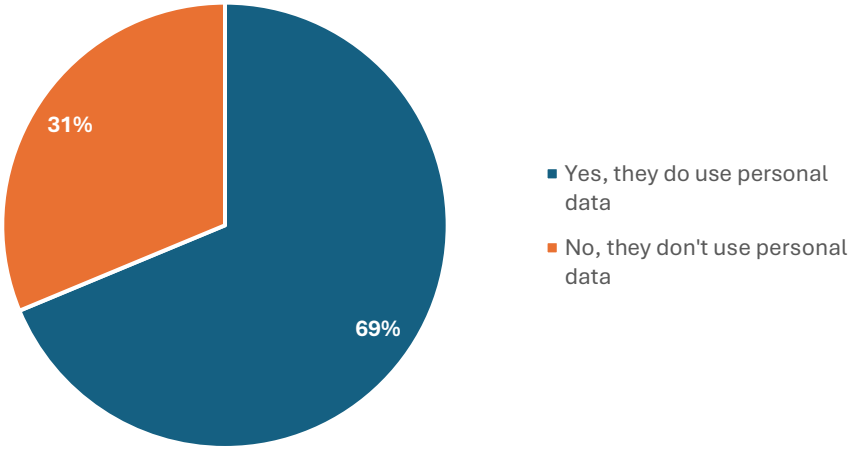
As shown in Figure 48, most of the DSSs analyzed focus on G2G interactions, with 233 cases, indicating a predominant use of AI in internal processes or between state institutions. This is followed by ADMs with G2C type of interaction, with 143 cases, aimed at improving services and communication with citizens. Finally, only 29 ADMs with G2B interaction were identified, which shows a low presence of solutions of this type aimed at the business sector.

Figure 48 . Type of interaction between AI systems and the user in Colombia.




Likewise, 69% (244) of these ADMs operate with personal data, while 31% (111) do not incorporate them in their processes. This issue is important, since the State must guarantee the protection of privacy and personal data.

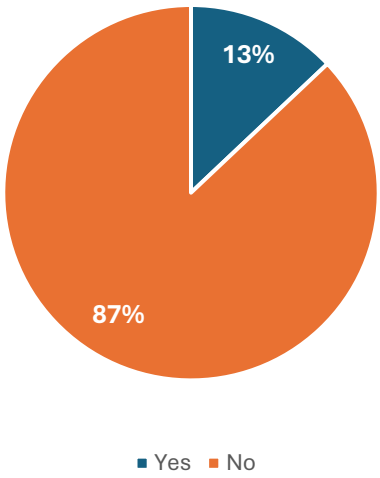
Figure 49 . Use of personal data associated with the ADM in Colombia.




## 4.8 Transparency and access to information on ADMs

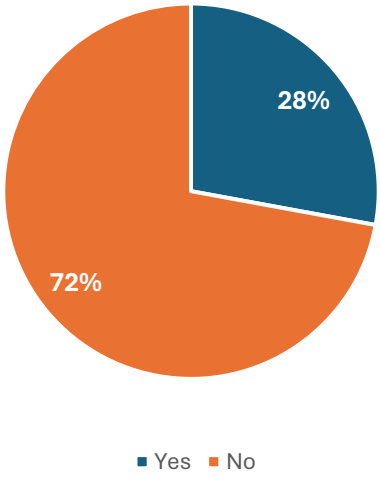
The availability of public information on the financing of the 355 ADMs under implementation and piloting is very limited. Only 13% (46) of the ADMs have accessible information on their funding sources, while the remaining 87% (309) have no information available.

Figure 50 . Is there public information available on the funder of the ADM in Colombia?



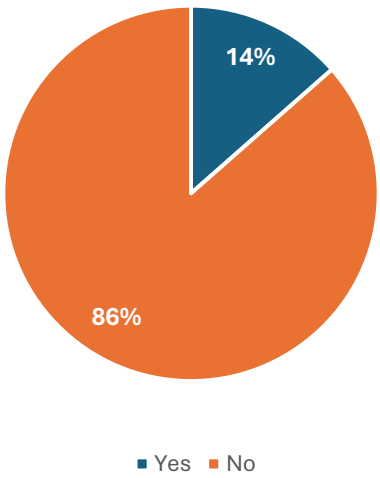
Similarly, public information on investment values was identified in only 28% (99) of the ADMs, in contrast to 72% (256) where such information is not available.

Figure 51 . Is there publicly available information on the amount invested in the ADM in Colombia?




When reviewing public procurement platforms such as the Electronic System for Public Procurement (SECOP I and II), only 14% (48) of the cases found information on procurement processes related to the implementation of the 355 ADMs (in execution and pilot). On the other hand, in the remaining 86% (307 systems) no information of any kind was recorded.

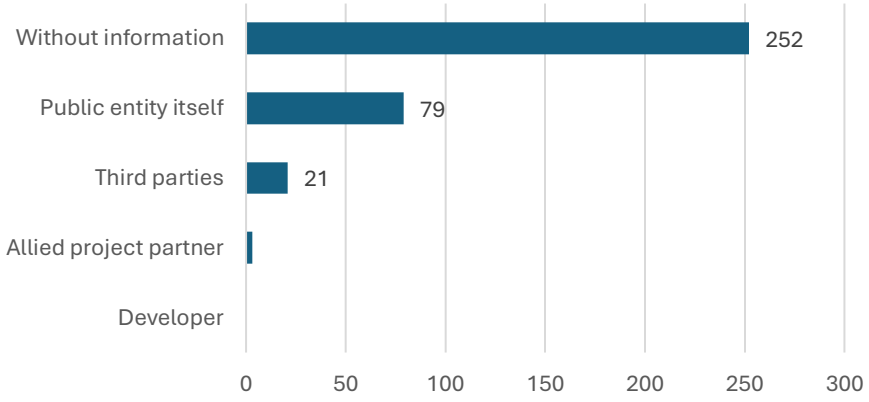
Figure 52 . Is there public information in SECOP (I and II) on ADM contracting in Colombia?



Finally, the public information available on the results obtained by the 355 ADMs in execution and piloting is usually limited and scarce. As shown in Figure 53, the category with no information concentrates 252 ADMs (73.0%), which indicates that almost three quarters of the ADMs do not provide information on their performance. On the other hand, only 79 public entities (22.9%) present information on the achievements or results obtained.

This distribution shows a significant gap in accountability and transparency, where more than 70% of the ADMs keep their results undisclosed, considerably limiting the capacity for evaluation and follow-up by stakeholders.

Figure 53 . Availability and source of information on the results of the ADMs in Colombia.

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