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The impact of AI in the Spanish public sector

Breakthroughs enhancing access across core services

May, 2025

With the collaboration of IMPLEMENT CONSULTING GROUP_

AI presents high potential to improve public services in Spain

AI offers great potential to improve the delivery of public services while addressing particularly pressing challenges in the current Spanish context, such as reducing bureaucratic burdens and improving interactions with citizens. In a context like the current one, with increasing demands and needs for the public sector, these efficiency gains can be especially valuable.

This report focuses on **administrative tasks** and **processes** where AI's strengths—rapid data processing, summarization, and context-based interactions—can provide a **strong positive impact**. Strengthening that backbone would send benefits **down every branch of the public sector**, including those delivering essential services such as care or education.

A task-based economic model applied to all 1,44M public administration workers at the local, regional, and national levels in Spain estimates this potential:

- For **67%** of public administration workers (representing more than 960k workers), between 10% and half of their tasks could be enhanced by generative AI, making it feasible **integrating** it on **daily** processes.
- For **9%** of occupations (around 130k workers), the potential is even higher: could benefit from generative AI incorporation in **over half of their tasks.**
- The remaining **24%** (about 345k workers) display low potential due to the non-replaceable nature of their tasks.

All of this is also reflected in the efforts being made to advance this implementation, such as the Artificial Intelligence Strategy 2024 (with a dedicated lever for this purpose) or Digital Spain 2026.

Reflecting this potential, ongoing use cases point to five promising fronts for AI implementation:

1. Improving **interactions** between **citizens** and the administration.
2. Reducing **bureaucratic** and **paperwork** burdens.
3. Alleviating bottlenecks in **public procurement.**
4. Supporting **one-by-one decisions** for grants, monitoring, and control.
5. Feeding **data** and **evidence** into the policymaking process.

All of this is also reflected in the efforts being made to advance this implementation, such as the Artificial Intelligence Strategy 2024 (with a dedicated lever for this purpose) or Digital Spain 2026.

An online survey conducted among a representative sample of public administration workers indicates that:

- **Two thirds** think **AI** could **change** how the **public sector** operates - it could help address current issues such as excessive bureaucracy (identified as one of the main challenges by 35%), or improve management (a significant challenge for 16%).
- **54%** already **use AI** at least occasionally. Of those, a large majority expects a positive impact of AI in their jobs.
- Analyzing data, summarizing and translating documents are the most prominently executed tasks.
- Only **6%** think **AI is already capable of doing their jobs**. Most expect reskilling (88%) or freed-up time for more high-value tasks (82%).
- **90% think the public sector should keep pace** with technological changes, but almost 60% believe their institution is not yet prepared to integrate AI.

To fully leverage the potential of these technologies across the public sector, **governance** should be **clear** and predictable, allowing for **controlled bottom-up innovation** and information exchange among workers, who know best the challenges they encounter in their day to day work. In contrast, **complex regulations might hinder innovation** and have secondary negative effects on economic growth.

Investing in up to date technological **infrastructure** with **robust** and **public cloud computing** capabilities at the forefront of this effort, and **skill development** should also constitute government priorities.



How can AI help boost opportunity in the Spanish public sector?



The impact of generative AI on public administration jobs and tasks and its derived economic benefits



How is AI already helping the public sector



How are public sector workers seeing the impact of AI?

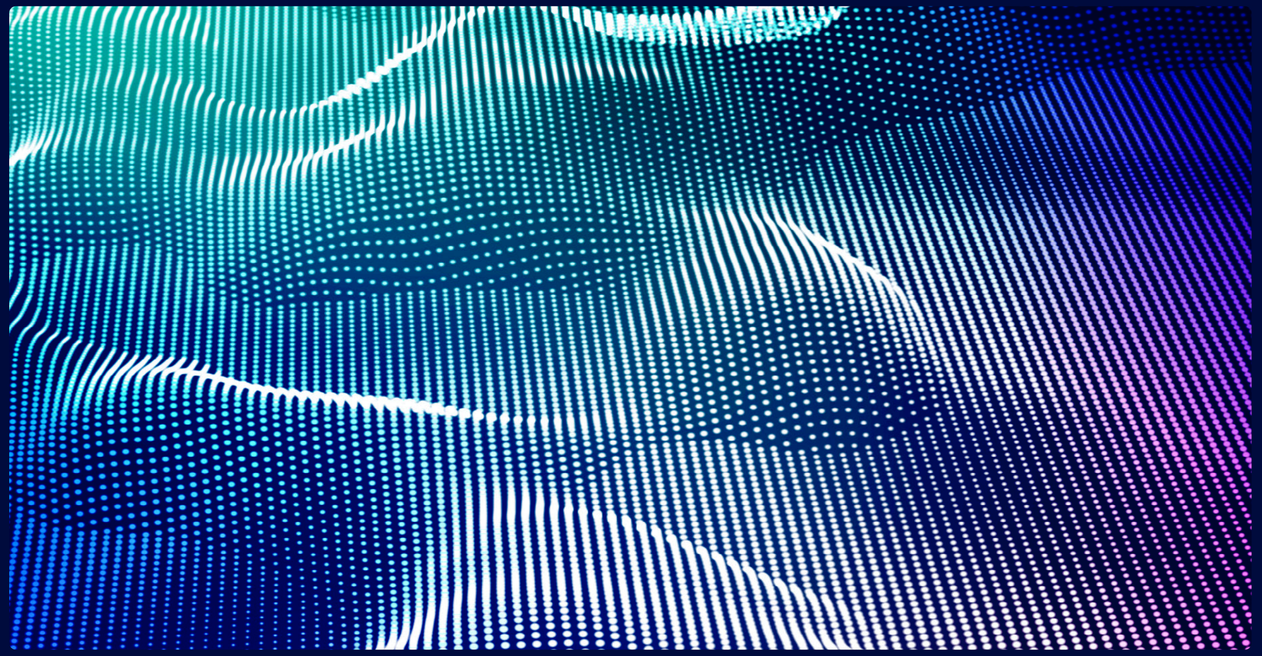


Enhancing present and future AI benefits

- Governance
- Infrastructure
- Skills

Summary

01 How can AI help boost opportunity in the Spanish public sector?



AI's capabilities have surged thanks to large-scale foundation models that can process and produce text, images, and other unstructured data. This generative AI wave drastically lowers barriers to adoption, letting non-technical users leverage powerful tools via plain-language requests (prompts).

Public administration can benefit from AI deployment to address some of its most pressing challenges, including excessive bureaucracy, complex legislation and ineffective citizen interactions.

The present report examines how AI can improve tasks and processes within the public administration by leveraging rapid data processing, summarization, and text-based interactions.

The evolution of AI's potential is exponential and has ramped up after the emergence of generative AI

2021 · 2022-23 · 2024 · 2025 ·····

2021 PRE GENERATIVE AI

Traditional algorithms or early machine-learning systems relied heavily on manual feature engineering and classical statistical models.

Models were use-specific. Each model was built around narrow tasks. And most of the time they required specific advanced skills and capabilities.

As a consequence, systems, while powerful, presented:

Limited flexibility
Poor generalization beyond the original training domain.

Difficulty to scale:
Each new application required building or retraining a model from scratch.

Rigid skill requirements:
Data scientists and ML engineers were indispensable at every step.

2022 THE ADVENT OF GENERATIVE AI

1st phase: 2022-23 · GenAI boom

Large Language Models (LLMs) and other foundational models that had been trained on large data sets were adapted to perform more specific tasks, such as interacting with chatbots, coding assistants, or generating content.

Excelling at handling large amounts of **unstructured data.**

Non-technical users can **easily learn to interact in natural language** with the AI, reducing barriers to entry to all kinds of users and allowing for rapid changes at a low cost.

2nd phase: 2024 · Reasoning

Reasoning Models: Models move beyond text-only capabilities, integrating vision, audio, and structured data. Most crucially, they can handle all this info through more complex, multi-step reasoning.

Higher accuracy and relevance:
Less prone to factual errors, better alignment with real-time or domain-specific data.

Deep and sophisticated language-based work thanks to reasoning capabilities that can help complement higher-order skills.

Broader use cases: bridging textual reasoning with numeric and visual inputs.

3rd phase: 2025 · Agentic systems

AI Agents: AI agents move beyond static responses to acting on tasks with minimal human involvement. Capable of chaining multiple tools and APIs, self-initiating new steps based on user-defined goals.

Hands-off automation:
Frees human operators from low-level decision-making, reducing human workloads while keeping humans in the loop.

Scalable decisioning:
Multiple AI-based agents capable of autonomous action can coordinate in large, complex processes.

Key public sector challenges can benefit from AI's growing powers to handle complex, data-intensive processes

Excessive bureaucratic burden

High reliance on stringent controls, paperwork-intensive processes and red tape create friction for citizens and companies.

Complex legislation

Modern multi-level states risk ending too frequently in redundancy of norms, fragmented regulations, and inconsistent processes.

Ineffective citizen interaction

Effective governance requires frequent and efficient interaction between government and citizens. However, citizen engagement with the administration often suffers from delays, opacity, and accessibility issues.

Some examples of these challenges in the Spanish public sector

License for major construction projects (such as building a house) takes approximately 12 months to be granted in Madrid, despite the law establishing a maximum period of 3 months (EY, 2020).

In 2024, the Colegio de Registradores reported that the registration of a new commercial company took an average of between 39 (online) and 55 days (in person).

Recent research estimates Spain now passes about 12,000 norms/year (figure for 2018), up from ~6,000/year in the mid-1980s (Mora-Sanguinetti and Soler, 2022). In this same research it is shown that 10% increase in new regulations is associated with a 0.5% drop in the number of employees in small firms, as complexity discourages entrepreneurship and expansion (Mora-Sanguinetti et al, 2023).

Ineffective interactions gets especially evident on data indicating low take up of supportive policies:

- Guaranteed Minimum Income reaching <40% of potential beneficiaries (AIReF, 2024)
- The Social Electric Bonus, the most relevant Spanish tool to fight against energy poverty, reaches less than 25% of potential beneficiaries (Collado and Martínez-Jorge, 2024)

The Spanish public sector
– a basic fact sheet

3,5M
workers in 2023

of its total

16,5%
labour force working for it

Germany **16%**
France **21%**

46,4%
of total GDP

EU-27 average: **49,4%**

Spain is a quasi-federal system with highly decentralized powers in three main levels of government: **national, regional and local.**



All public sector employment

59%
>2M workers

REGIONAL
Final provision of education, healthcare, social assistance, poverty and care; housing; territorial & environmental planning; regional infrastructure; region-specific economic policy.

20%
~696k workers

LOCAL
Urban planning; water management; traffic, parking and mobility; urban public transport; immediate attention to social exclusion.

16%
~563k workers

NACIONAL
General economic planning and financial affairs; social security and pensions; law enforcement, defence and justice; core guidelines and policymaking on education, healthcare, social provision, housing; nationwide infrastructure.

Note: 5% up to 100% in "other".
Sources: 2023 Labour Force Survey for employment data (on average for its four quarters, it estimates 3,522,900 public sector employees; the 2024 data are very similar: 3,560,200. This category includes all types of employment relationships, being defined by the employer: public sector entities).; Funcas and European Commission for public spending over GDP estimates. Data for France public sector employment comes from OECD's 2023 Government at a Glance; for Germany, the source is Mehde (2023) based on the Federal Statistical Office of Germany.

In Spain, public sector workers are:



4,9
years older than private sector workers.

49,4%
have 15 or more years of tenure in their role, compared to 22.8% in the private sector.

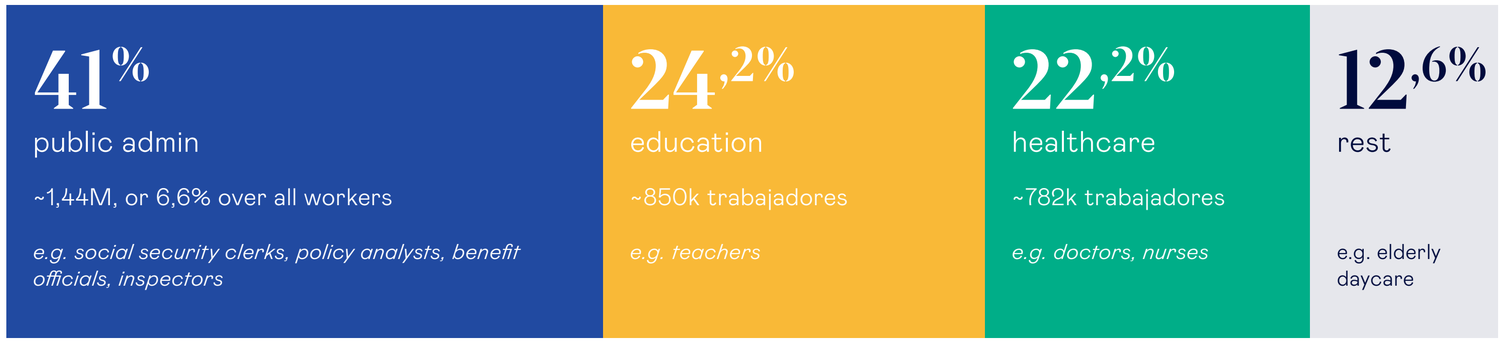
87,6%
more frequently highly educated compared to 66.6% in the private sector.

This positions them well to **enjoy the benefits of a technology with low barriers to access.**

This report focuses on public administration, but also provides data and insights on the rest of the public sector.

Public administration is an essential component of the public sector - enabling government services and managing public resources, therefore making it a critical area for exploring innovations like generative AI to improve efficiency and quality. While carrying those duties, **public administration has the right characteristics to benefit from AI.**

The ~3.5M workers in the Spanish public sector by branch in 2023



Since current AI capabilities could particularly benefit these roles, the present study focuses on AI's concrete potential to support text-heavy tasks, routine processes, and complex decision-making within the **public administration.**

**...but all branches within the public sector (including those devoted to frontline delivery in health and teaching) perform tasks that could be enhanced as well, and the report brings specific ideas for them.*

TEXT HEAVY PROCESSES

Public administration involves a significant amount of documentation, reports, and communication.

Generative AI can support this work by automating the creation of text, summarizing content, or generating templates for repetitive communications.

ROUTINE TASKS

Administrative processes are routine and involve structured tasks such as form filling, document review, and responding to common inquiries.

Generative AI can support these tasks efficiently, allowing people to focus on more complex issues.

HIGH ANALYTICAL COMPLEXITY

Public administrative work often requires deep analysis of regulations, data, and policy implications.

Generative AI can assist in synthesising vast amounts of information, providing insights, or generating reports that support informed decision-making.

Source: Estimates based on 2023 LFS microdata, using the four quarters.

AI is already driving public administration transformations across the world

– and Spain is following them, as this report will show



Risk detection & compliance in public procurement

Brazil has deployed a **nationwide AI audit** tool that combs through public contracting data to catch irregularities – notably the use of shell or "ghost" companies in government bids. Nicknamed ALICE (Analyst of Bids, Contracts, and Tenders), the system was developed by the Office of the Comptroller General (CGU) to automatically monitor over 500 procurement notices every day across federal platforms (Convergencia Digital).

It uses **machine learning and expert rules** (derived from auditors' knowledge) to scan **documents and cross-check information for red flags**; for example, abnormally high pricing, suspiciously close vendor relationships, or patterns suggesting fake companies.

According to OPSI's data, in 2023 alone, ALICE analyzed 190,000+ procurement processes and triggered alerts that led to 203 audits worth a total of R$27 billion (OPSI) One pattern it uncovered was a network of over 500 companies that were nominally independent vendors but in fact secretly owned by the very public officials overseeing those contracts (Banco Mundial).



AI Assistants for more accessible information on Public Services

Germany · The **City of Bonn multilingual AI chatbot** operates in 95 languages and uses AI-based natural language understanding to interpret free-text questions and retrieve answers from Bonn's official knowledge base on a range of information citizens daily request: origin and functioning of services, contact information for agencies and such, or calendar/event information.

Focusing on this sort of queries and info retrieval, the AI will deflect repetitive questions (e.g. "How do I register my address?") that used to consume staff time, thereby freeing human officers to focus on more complex or sensitive cases (bonn.de).



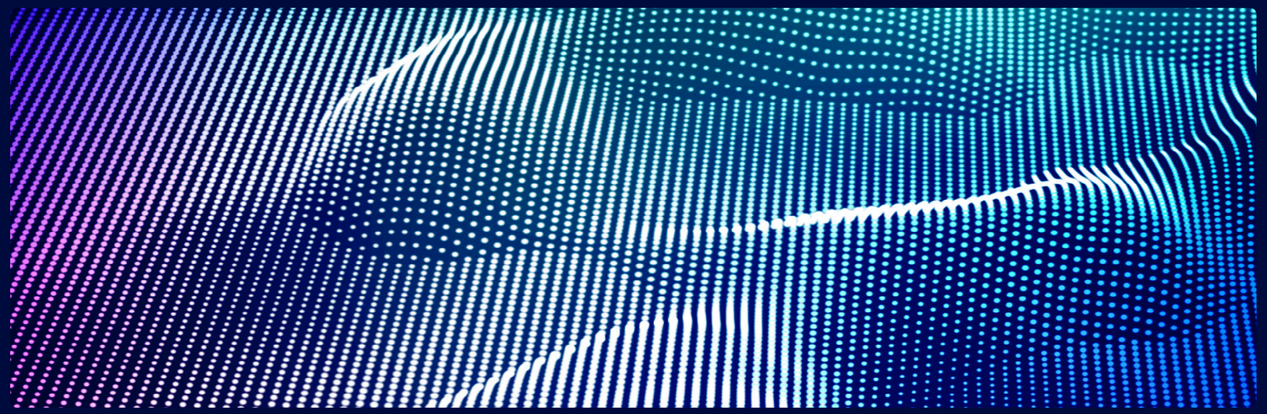
Personalized & integrated services for citizen interaction

Australia · The **tax and fines authority in New South Wales** knew that many people incur fines (for traffic, transit, etc.) that they cannot afford to pay, leading to punitive enforcement (license suspensions, debt collection) that may be ineffective and harmful. To address this, in 2018 the agency launched a predictive hardship model that **proactively identifies individuals at high risk** of defaulting due to genuine financial or social hardship.

The model crunches a range of data points: how often the person contacts the agency, their history of serious unpaid fines, outstanding balances, age, and socio-economic indicators like whether their address is public housing or their estimated income level. From over 20 such variables, the AI predicts vulnerability. **If a person is likely vulnerable the system flags their case for special handling before standard enforcement actions kick in.** The model prefers to over-identify potential hardship cases to avoid missing people in need; it's continuously monitored and tuned to ensure fairness and to prevent any unintended bias.

Each year, **roughly 15,000 people who would otherwise be pursued for unpaid fines are identified** by the AI tool and redirected to supportive arrangements rather than punitive measures (nsw.gov.au).

02 The impact of generative AI on public administration jobs and tasks and derived economic benefits



Evidence from a task-based economic model considering all 1'44M public admin workers in Spain:

Assuming widespread generative AI adoption, the model estimates that productivity per public administration worker could increase by 9% after a ten-year deployment period (close to the 10% estimated for the whole EU), adding by that point about €7 billion in annual value while using the same overall resources. This is equivalent, for example, to the annual expenditure on an annual active employment policies plan in 2024 (€6.4 billion).

For 67% of public administration workers, between 10% and half of their tasks could be enhanced by generative AI technology, making it feasible integrating it on daily processes.

For 9% of occupations, the potential is even higher: over half of their tasks could benefit from generative AI incorporation.

The remaining 24% display low potential due to the non-replaceable nature of their tasks.

How to measure AI's impact on occupations through task analysis

By examining micro-level data, the model we use identifies which concrete tasks can be enhanced by generative AI through partial or full automation. It then classifies occupations in three tiers depending on the share of their tasks that could benefit from AI adoption at its current technological level [see full methodology in the Appendix].

Low potential occupations

e.g. Gardeners

Mostly (<10%) unaffected tasks, e.g.

Take action to contain any hazardous chemicals that could catch fire, leak, or spill. Salvage property by removing broken glass, pumping out water, and ventilating buildings to remove smoke

.

Medium potential occupations

e.g. Legal or policy advisors

Several (10-49%) tasks affected, e.g.

Design, promote, or administer government plans or policies affecting land use, zoning, public utilities, community facilities, housing, or transportation.

High potential occupations

e.g. Social benefits administrators

Most (50%+) tasks affected, e.g.

Interpret and explain information such as eligibility requirements, application details, payment methods, and applicants' legal rights.

Answer applicants' questions about benefits and claim procedures.

This approach is especially relevant for the public sector since.

1. Many roles mix routine administrative duties with complex, interpersonal responsibilities. The focus on concrete tasks helps measuring the overall potential considering the variety of profiles and task combinations across occupations.
2. The model accounts for current generative AI capabilities, rather than over-speculating about future technological breakthroughs.

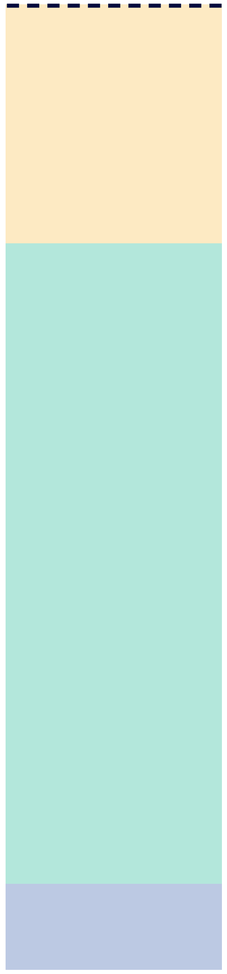
This makes this framework **especially practical for guiding decision-making.**

Source: Implement Economics based on Eurostat, O*Net, Briggs and Kodnani (2023a).

AI as a potential companion for a majority of public administration workers in their daily tasks

Potential for using generative AI across public administration in Spain
% of jobs in public administration

~1.44
million jobs in Spain's public administration



Note: The methodology is restrained to NACE O Public administration and defence; compulsory social security. It is based on a detailed dataset that includes different work activities and tasks from the occupational task database O*NET, which is then matched with Eurostat data on the actual occupations for the ~1.44 million people employed in the Spanish public administration according to 2023's Labour Force Survey.. Source: Implement Economics based on Eurostat, O*Net, Briggs and Kodnani (2023a).

Source: Implement Economics based on Eurostat, O*Net, Briggs and Kodnani (2023a).

24%

Una cuarta parte de los empleos de la Administración pública tiene un potencial bajo de uso de la IA

Ocupaciones en las que la IA puede ayudar en un máximo del 10% de la tareas actuales. Estas incluyen el trabajo manual o entre personas, en los que el potencial de la IA generativa para gestionar el contenido de la tarea es bajo.
Ejemplos: transporte, limpieza.

67%

Dos tercios de los empleos de la Administración pública tienen un potencial medio de uso de la IA

La IA generativa puede ayudar con el 10-50% de la tareas actuales. Tareas que la IA generativa puede **mejorar**, p. ej. ayudar a crear contenido (texto, código e imágenes) y colaborar con los trabajadores en problemas complejos. En estos puestos y en los procesos de los que se ocupan, la IA puede integrarse en el trabajo diario, aumentando la productividad y liberando tiempo para otras actividades que crean valor. *Ejemplos: administración de licencias, inspección.*

9%

Menos de una décima parte de los empleos de la Administración pública tienen un potencial alto de uso de la IA

Ocupaciones en las que la IA generativa puede ayudar con más del 50% de la tareas actuales. Estas incluyen procesos relacionados con la gestión de datos básicos, la generación de informes y el análisis de documentos.

Para solventar la escasez de mano de obra y otras limitaciones de la Administración pública, en las próximas décadas los responsables del sector público podrían aprovecharlos para liberar recursos y destinarlos a ámbitos en los que sean más necesarios o en tareas de mayor contenido personal.

AI can enhance productivity in Spain's public administration in the next ten years

Public administration forms the backbone of the public sector, where workers manage routine- and text-heavy complex tasks that ensure effective delivery and implementation of government policies.

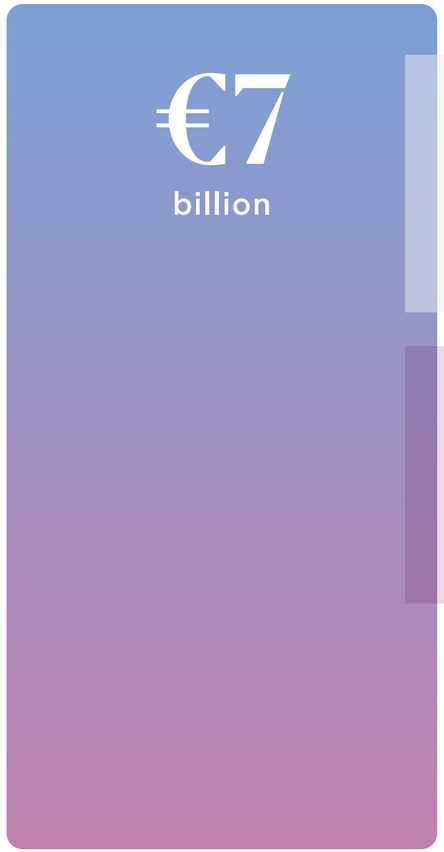
The adoption of generative AI at current technological levels could generate significant economic impact in the public sector by enhancing specific tasks, improving service quality, increasing speed, and boosting efficiency.

Assuming widespread generative AI adoption, the model estimates that average productivity per public administration worker could increase by 9% after a ten-year deployment period (in line with the 10% estimated for the whole EU), adding by that point about €7 billion in annual value while using the same overall resources.

To put this into perspective, this amount roughly equals the overall public spending on active labour market policies for a whole year (€6.4bn in 2024).

By optimizing routine processes and improving service quality and speed, AI would enable public employees to focus on solving more complex problems and enhancing citizen engagement.

Potential impact of generative AI on public administration in Spain
€ billion increase from baseline gross-value-added after a ten-year adoption period



The full potential could be realised through a combination of...

Increased quality and speed of public services, allowing for new types of services and increasing personalisation, transparency and accessibility.

Example: AI improves document search, enabling staff to provide citizens with faster and more accurate advice.

More available time and resources that can either enable public employees to focus on new, high-value tasks or be directed to reduce budget deficits.

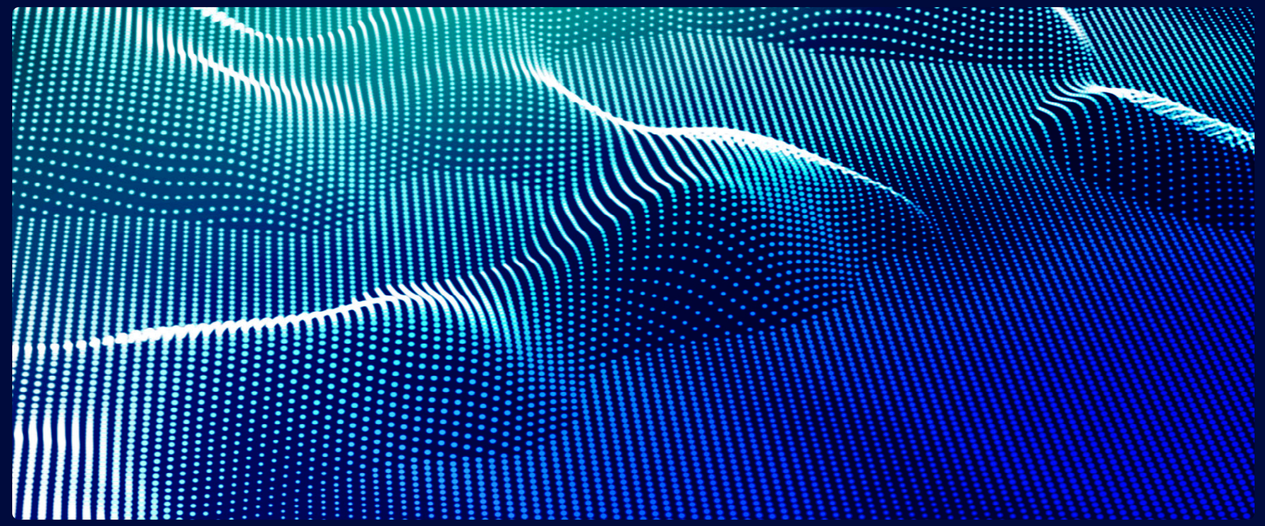
Example: AI processes routine paperwork, allowing employees to spend more time on complex cases.

Note: The estimate assumes widespread adoption of generative AI over a ten-year period. In other words, it is the result of tens years adoption of generative AI, and €7bn is the estimated annual impact reached in year ten. There is uncertainty associated with the estimated size of the economic potential. The size of the productivity boost depends on the difficulty level of tasks that generative AI will be able to complete and the number of jobs it can automate.

Source: Implement Economics based on Eurostat, O*Net, Briggs and Kodnani (2023a).

03 How is AI already helping the public sector

Spain is among European countries incorporating public sector AI use. To support realising the potential gains estimated by the model, five areas appear particularly promising with ongoing successful use cases at the national, regional, and local levels, across all public sector services.



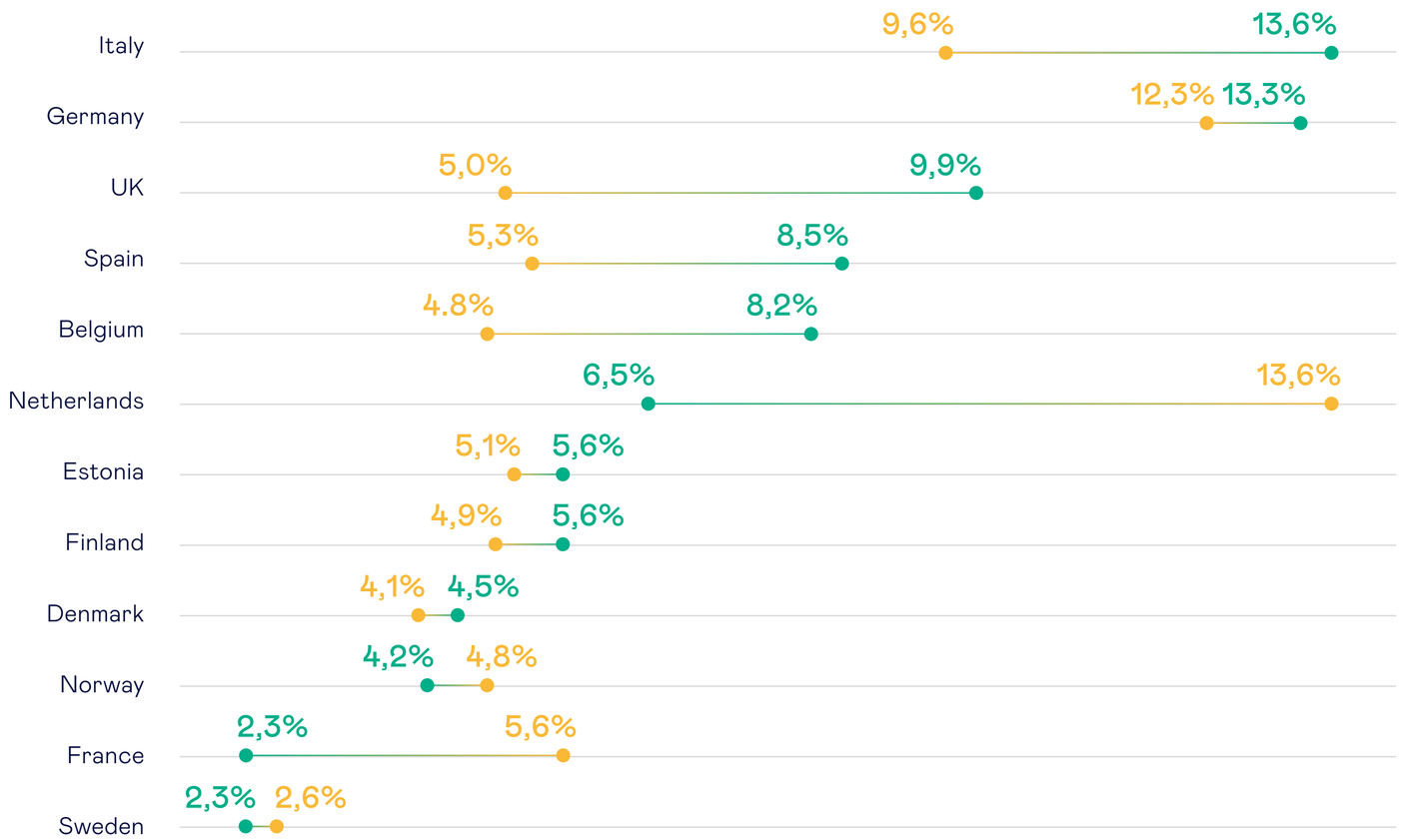
- Improving interactions between citizens and the administration.
- Reducing bureaucratic and paperwork burdens.
- Alleviating bottlenecks in public procurement.
- Supporting policy implementation and one-to-one decisions for grants, monitoring, and control.
- Feeding data and evidence into the policymaking process.

European countries, and Spain among them, are increasingly running use cases for AI

Spain displays a significant volume of **AI pilots*** - in line with its size

*According to the Public Sector Tech Watch dataset of selected cases compiled by the European Commission's Joint Research Centre.

% of AI pilots in 12 countries
2010-2021 and 2022-2024



Note: % calculated based on the total number of AI-classified pilot projects recorded for each period in the Public Sector Tech Watch dataset of selected cases compiled by the European Commission's Joint Research Centre.

AI can improve several key administrative functions along with other complementary tech

Public administrative functions		Highlighted potential use cases
Improving the citizen-admin interface	INFORMATION AND GUIDANCE	**Proactive guidance.** LLM-based chats can handle inquiries in real time, providing answers through chatbots, or directing them to the right department.
	CITIZEN ADVISORY	**AI-powered advisory services.** Public workers can use Retrieval Augmented Generation (RAG)-based tools accessible through search engines or chats to find relevant case details and regulations.
Streamlining public procurement	TENDERING PREPARATION	**Drafting tender specifications.** LLM-powered systems can provide guidance, ensure compliance with regulations, and improve accuracy and efficiency of documentation.
	GRANTS AND PAYMENTS	**Grant application processing.** LLM-based AI quickly assesses whether a project or community group qualifies for a grant and highlights any missing critical information.
Enacting policy	CASE HANDLING	**AI-assisted case management.** Agentic AI systems combining several underlying technologies can processes citizen applications, ensuring faster reviews and approvals.
	CONTROL AND COMPLIANCE	**Control and compliance.** Advanced RPA (Robotic Process Automation) along with LLM-based additional tools audit documentation and use data to detect inconsistencies, ensuring legal adherence and flagging infringements.
Supporting analysis and policy making	RESEARCH	**AI-driven analysis.** LLM-based reasoning models combine text and data analysis, evaluating evidence and regulations to inform novel policy design.
	RESOURCE MANAGEMENT	**Resource allocation.** Advanced machine learning--driven, predictive AI can optimise the distribution of staff and resources helping re-calibrate policies.
Reducing b ureaucratic burden	INFORMATION RETRIEVAL	**Knowledge retrieval.** RAG & advanced semantic search helps administrative staff quickly locate the exact documents, precedents, or guidelines they need.
	PERMITTING	**Permit generation.** AI-based document automation leveraging RPA and LLM-driven compliance checks to produce pre-populated forms and streamline approvals.

Most external

Cut across levels **(local - regional - national)** and areas:

Pensions & social welfare
Justice & public safety
Healthcare
Taxes
Education
Employment
Housing
Transport
...

Most internal

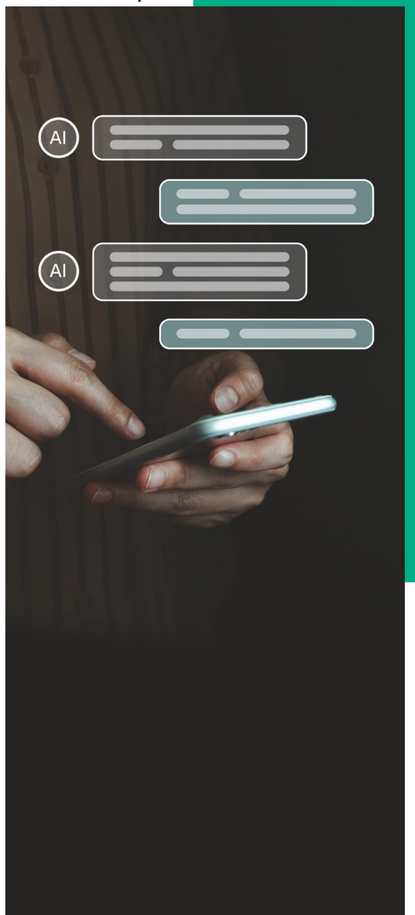
How AI may help

Improving the citizen-admin interface

These systems could take several routes.

Fully automated chatbots in low-stakes use cases or with easy-to-parametrize info. Also language translation (especially valuable in multi-language countries such as Spain); clarifying technical or legal parlance.

AI-based systems to make human interactions more efficient, allowing humans to act, as the final interface with the citizen in cases on which human interaction adds relevant value.



How AI + complementary tech is helping

N Transport

OLI CHATBOT

Aena (Aeropuertos Españoles y Navegación Aérea)

"Oli" is an AI-powered chatbot designed to **enhance passenger experience** by improving communication and accessibility in airports. It integrates advanced conversational AI.

This chatbot **understands and answers effectively to passenger inquiries** in **8 languages**, facilitating interactions even when users ask complex questions or express multiple intentions simultaneously. It provides passengers with updates on topics such as flight status, gate information, waiting times, and airport services.

N Social security

ISSA (Inteligencia Artificial + Seguridad Social)

Ministry of Inclusion

The Social Security's AI virtual assistant provides citizens with immediate, 24/7 access to official information and guidance on frequently requested procedures, thus significantly reducing administrative workloads.

The chatbot initially tackled **37 core services**, encompassing access to benefits as well as routine processes.

On its first month, **the chatbot had over 2 million interactions**.

N Nacional R Regional L Local

How AI may help

Streamlining public procurement

Public procurement accounts for more than 11% of national GDP and 21.8% of public spending.

The documentation involved is both **lengthy and highly specific**, requiring meticulous drafting to capture technical requirements and regulatory nuances.

Generative AI shows especially high potential in **shaping these tender documents.** Technical precision and real-time legal alignment speeds up the entire bidding process.

On top of that, administrators must process **large volumes of bids** maintain thorough oversight throughout the procurement cycle. Here, AI is also starting to prove valuable in **evaluating proposals**, detecting irregularities, and monitoring contract performance.

How AI + complementary tech is helping

N R L

TENDIOS

Tendios is a **Spanish startup** that leverages artificial intelligence to **streamline public procurement processes**, offering **services** such as tender search and filtering, customized alerts, market analysis, and public procurement generation for tenders featuring a vast amount of knowledge from past tender proceedings and the ability to check compliance and technical aspects.

N

KIT CONSULTING

Red.es

With the Kit Consulting program, Red.es is launching, for the first time, an artificial intelligence platform designed to support the verification process of submitted documents, detecting plagiarism, copies, and assessing document quality.

This initiative represents a unique and pioneering step within the Administration, aiming to drastically reduce review times to accelerate aid payment processes while ensuring traceability and quality throughout.

Kit Consulting expects to handle approximately 45,000 documents for review. Thanks to the employed AI model, processing time for verifying documentation can be **reduced by up to 80%**. This means review time per document will decrease from 5 hours to just 1.5 hours (90 minutes). Furthermore, the AI will enable up to 1 billion comparisons between documents to prevent plagiarism.

–80% **reduction in time processing applications**

N Nacional R Regional L Local

How AI may help

Implementing and enacting policy

AI is a relevant tool for implementing and enacting policy, since it helps to guide decisions over particular cases departing from large amounts of unstructured data, creating a sort of information funnel at the end of which may be the decision-maker, the “human in the loop”.

While fully integrating AI into actual decision-making calls for caution and continued human oversight, early pilots show promise—particularly in **supporting the verification** of eligibility and regulatory compliance.



How AI + complementary tech is helping

R

Housing

RENTAL SUBSIDIES

Valencian Regional Government

The Valencian Regional Government has developed an AI-based solution to reduce administrative processing time and burdens associated with rental subsidy programs.

This system automatically verifies rental contracts and pay slips, avoiding redundant request for documentation, streamlining the application process and significantly cutting verification time.

This allows **administrative personnel to focus solely on complex cases** that require manual review, increasing overall efficiency.

N

Education

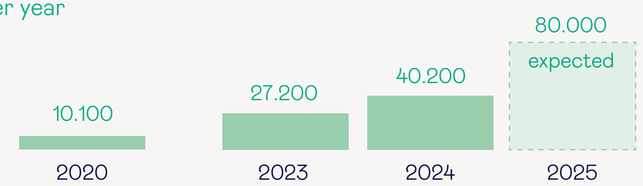
RECOGNITION OF UNIVERSITY DEGREES

Ministry of Universities

The Ministry of Science, Innovation, and Universities is starting to use AI and other automation technologies to streamline the process of recognition of foreign university degrees.

The process not only eliminates repetitive paperwork but also will **significantly shorten waiting times from years to months.** This application will also improve the implementation of public policies, facilitating the incorporation of foreign professionals into tight, high-value areas of the labor market.

Accreditation files solved per year



Source: official government’s response to the Written Congressional Question Num. 184/19582 posed on the 6th of February, 2025

N Nacional R Regional L Local

How AI may help

Implementing and enacting policy

Focus on control and fraud detection

AI is helping policy implementers enhancing control and fraud detection, whether in **tax collection,** or benefit administration.

Advanced analytics can process massive troves of all kinds of data in near real time, **detecting hidden patterns and flagging anomalies** that would likely escape traditional audits.

The potential is significant across central and regional administrations, where fraud prevention measures are both high-volume and high-stakes.

When properly implemented, AI-driven fraud detection not only accelerates investigations and cuts administrative overhead, but it also **enhances public confidence** in government fairness and equity.

How AI + complementary tech is helping

N Taxes

FISCAL EVASION

AEAT (Tax Agency)

The Spanish Tax Agency (AEAT) is applying AI tools to enhance the effectiveness and efficiency of tax and customs operations, placing, **strategic emphasis** on taxpayer support, information management, and preventive measures.

The adoption of AI technologies will **streamline tax compliance procedures**, simplifying taxpayer responsibilities and improving the accuracy of submitted data. By proactively addressing common reporting errors, AI solutions will substantially reduce the frequency of audits and subsequent tax regularizations.

The implementation follows a **"human-in-the-loop"**, approach, ensuring continuous human oversight. Tax professionals will actively review, assess, and validate AI-based tools and outcomes to guarantee reliability and accountability.

N Competition

DETECTING ANTI-COMPETITIVE PRACTICES

National Commission for Markets and Competition (CNMC)

"BRAVA" (Bid Rigging Algorithm for Vigilance in Antitrust) is an advanced AI-driven solution developed by Spain's National Commission on Markets and Competition (CNMC) designed to proactively detect anti-competitive practices in public procurement.

It uses machine learning algorithms trained on millions of public contracts, enhancing transparency and ensuring fair competition and regulatory compliance, featuring high accuracy in assesses bidding behavior & identifying **potential collusion** among suppliers.

N Nacional R Regional L Local

How AI may help

Policy analysis and policy making

Data and evidence could (and should) end up feeding the re-calibration and overall design of specific policies.

Scaling AI-driven approaches to complex policy design or predictive analyses depends on integrating data from multiple departments.

Once robust data sharing is in place, generative AI can provide deeper insights, highlight trends, and support faster, evidence-based decisions.

Adding to pre-genAI models that were already supporting (and will continue to do so) policy decisions, reasoning models not only handle large volumes of information but also **produce coherent outputs** that could help inform evidence-based policy-making.

How AI + complementary tech is helping

R

Education

HIPATIA

Andalusian Regional Government

The Andalusian Regional Government is using an AI-driven forecasting tool to improve the impact and speed of educational services.

One of the applications is "Hipatia". an AI solution that implements predictive analytics methodologies to analyze historical student data to **accurately predict key educational indicators.**

Hipatia" helps the Department of Education and Vocational Training to anticipate critical needs such as **teacher allocation, classroom requirements and vocational training.** Thus, schools can offer student personalized support (such as tutoring and guidance) and education authorities can optimize professors or classroom planning decisions in advance.

L

Transport & resources

SUSTAINABILITY MONITORING AND URBAN POLICY

Barcelona City Council

The Barcelona City Council is using advanced **AI solutions to manage sustainability-related policy areas.** For example, it is used to implement smart systems that leverage real-time sensors and machine learning. In urban mobility, AI-driven public transport optimization systems analyze traffic and passenger demand data, with a **new pilot aimed at controlling bus lanes and detecting violation.**

Simultaneously, Barcelona has implemented smart lighting systems that use AI to adjust lighting based on human presence, conserving energy.

Traffic light optimization in Spain could reduce up to...

–2,8Mtn CO2

-10% car emissions in intersections

Source: HispanIA 2040 (2025). National Office of Foresight and Strategy (Government of Spain)

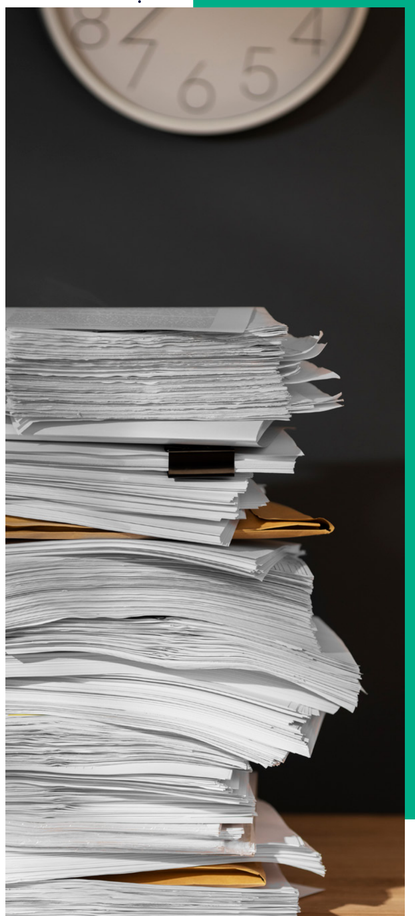
N Nacional R Regional L Local

How AI may help

Reducing the bureaucratic burden

The raw material of the bureaucratic burden are administrative documents that tend to be text-based, and therefore contain un- or semi-structured data.

AI uses here are **straightforward**, involving **minimal decision-making** and offering "quick wins" for AI adoption.



How AI + complementary tech is helping

N

Justice & public safety

DEALING WITH JUDICIAL DOCUMENTATION

Ministry of Justice

Within the "Justicia 2030" Plan, the Ministry of Justice has developed an AI strategy aimed at automating repetitive procedures, accelerating processes and reducing inefficiencies, with varying degrees of success. For instance:

400.000
criminal record files managed

1,5M
citizen files processed according to the State secretariat of Justice

The Ministry of Justice has also incorporated AI to the management of large volumes of documents. For instance, **to automate the anonymization of judicial documents,** identifying and hiding sensitive information in legal documents, thus providing better compliance with data protection regulation. AI has also been used to automate information extraction from **judicial hearings and recordings**.

The Ministry has also implemented an AI documentation assistant (ADIA - Asistente de Documentos con IA), which is publicly available but focused on justice professionals, to help with various tasks.

R

Business support

CANAL EMPRESA

Valencian Regional Government

"Canal Empresa" is a one-stop-shop for companies oriented towards reducing administrative burden and providing regulatory information for businesses.

It combines information from various portals featuring several administrative procedures relevant for firms. Companies upload their documents avoiding repetitive submissions to run applications that can be monitored within the platform.

N Nacional R Regional L Local

Beyond *admin*: Education - helping teachers spend more time with students...

In the education sector, from an administrative perspective, AI could allow teachers to devote a higher share of their time to **higher-value pedagogical tasks.**

In Spain, primary and secondary school teachers spend half of their time on non-teaching activities: preparing lessons, marking assignments or simply performing administrative tasks. The adoption of AI will support them in performing these tasks, thus saving them up to one day of work (8+ hours) per week.

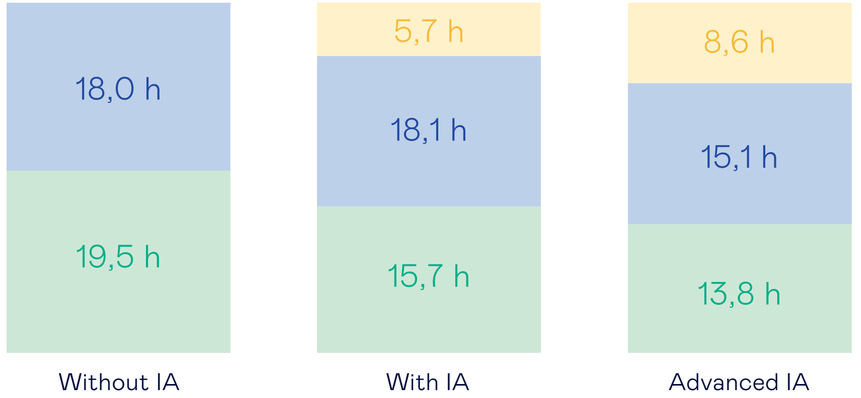
...and augmenting the time they spend with them

AI not only frees up hours for teachers, but also transforms how they use that time. With AI, educators could offer more **individualized attention**—through tutoring or small group sessions—and invest in their own training. This may prove crucial in increasingly diverse and heterogeneous contexts such as Spain's educational environment.

Already, generative AI is **proving helpful in several core teaching activities.**

Potential hours saved by secondary education teachers thanks to AI

Other tasks, teaching and free hours per week



Source: HispanIA 2040 (2025). National Office of Foresight and Strategy (Government of Spain)

Current and expected uses of AI by teachers

63%

of teachers use AI a lot or quite a bit; and the use is frequently devoted to core teaching activities:

- **53%** for course preparation
- **50%** to simulate hypothetical learning scenarios
- **49%** to prepare tests and exercises

Looking ahead,

82%

believe AI could help at least to some extent on increasing personalization in learning.

Source: representative survey by GAD3 to 208 teachers in January 2025 · Empantallados report

How AI may help

Improving education delivery through personalization

While research consistently shows individualized learning produces better outcomes, it has traditionally implied huge resource investments.

Generative AI offers a way to enable teachers and schools to create personalized learning experiences at scale.

In addition, AI- and data-driven predictive capabilities enable educators and administrators to model different possible outcomes and adapt their strategies proactively.



How AI + complementary tech is helping

R

PREDUCA

Andalusian Regional Government

Preduca is a system developed by the Andalusian Government to **personalize student learning pathways** and support data-driven planning in public education by predicting each student's educational needs.

Built on Hipatia, and integrated into the regional school management system, it uses historical academic and behavioral data to **identify behavior patterns and recommend tailored educational interventions.** This enables educators to **tailor lesson plans, materials, and classroom activities to the specific profile of each student:** for instance, early support for at-risk students or personalized challenges for high-achievers.

And also incorporating knowledge and digital tools into the classrooms

R

ESKOLA ADIMENTSUA

Basque Regional Government

This **initiative** for the 2024-25 academic year, promotes active learning and the incorporation of advanced digital technologies into the educational experience in a context in which, as the Consejería de Educación itself emphasizes, "automation, robotics, and artificial intelligence are producing profound changes in our society, redefining our ways of learning, working, and relating to one another." One component of Eskola Adimentsua is teacher training. The program offers educators mentoring and horizontal coordination mechanisms for incorporating computational thinking, programming, and the development of building blocks for building more advanced digital skills. Teachers will have this support throughout the entire process, which will help them gain the confidence and skills to incorporate this knowledge and tools into their classrooms. This investment not only improves digital skills but also makes educators drivers of innovation for the future.

N Nacional R Regional L Local

Beyond admin: **helping healthcare providers keep an enhanced focus on patients**

Demographic aging, increased demands and the lagging effects of the pandemic shock are putting significant pressure on healthcare - where the bureaucratic burden plays a major role.

→ Administrative and writing tasks account for ~25% of the time in **primary care** consultations.

→ On **specialized care,** waiting lists represent a critical challenge. 2024 data from the Ministry of Health indicates nearly 850,000 individuals currently await specialist consultations (+30,000 vs. 2023). Moreover, 38.1% of patients awaiting specialist care have experienced wait times exceeding three months.

These challenges have contributed to declining patient satisfaction, particularly on primary care, which has fallen from 7,4 to 6.3 in a decade.

By **automating documentation-related processes,** AI could free medical professionals to focus on what matters most: human-led clinical reasoning and care.

AI also gives a **pathway to further transform how care is delivered:** through support in content-heavy tasks such as analysis, research and diagnostic processes, clinicians can provide more personalized and patient-oriented attention.

At its current tech level, generative AI could help with routine text-based tasks (e.g. keeping and checking records) in primary care consultations **to save up to 1 min per consultation.**

This would mean **freeing the equivalent of 10.7M consultations** across the whole primary care system, reducing the **current burden up to 7%.**

The implementation of similar AI-supported, time-saving tactics to bureaucratic, text-heavy tasks could bring productivity gains equivalent to **7% across the specialty provision system** (feasible at current AI tech levels). This would mean, for instance:

- **Neurology** (currently the specialty with the longest average waitlists) **could reduce patient wait periods by 9 days.**
- **Ophthalmology** (which has the highest number of patients awaiting consultation) **could reduce -40,100 patients annually.**

Source: HispanIA 2040 (2025). National Office of Foresight and Strategy (Government of Spain)

21%

of Spanish doctors currently use AI for researching diseases through a variety of tools

Looking ahead,

47%

expect AI will give them more time to interact with patients

Source: Medscape online poll to 1.000+ Spanish doctors, September 2024

How AI may help

Alleviating pressured services and extending the reach of the system

Going beyond merely reducing administrative burden, healthcare professionals and institutions can better anticipate patient needs and optimize resource allocation through AI-powered tools fed by real-time data—an especially crucial benefit for overstretched healthcare services. This approach enables more proactive interventions, faster response times, and an enhanced quality of care.

Furthermore, when combined with the outreach potential offered by generative AI tools, it can significantly expand the reach and effectiveness of healthcare centers.

How AI + complementary tech is helping

R

HOSPITAL LA FE

Valencian Regional Government

La Fe Hospital has implemented a pioneering AI-driven solution designed to predict emergency room hospitalizations by combining historical and real-time data, aiming to alleviate **pressure on emergency services** and reduce wait times.

This solution, designed by the Data Science area of the Information Systems Subdirectorate, uses a two-year analysis of historical care in the Adult Emergency Department to anticipate peaks in care pressure. The system combines historical trends with real-time care data, allowing for the prediction of increases in hospitalization demand and the adoption of preventive measures to avoid service saturation.

N R L

CHATBOT LOLA

“Lola” is a virtual healthcare assistant powered by conversational AI, designed to automate medical telephone conversations to extend clinical monitoring for chronically ill and elderly patients in their homes. **Its goal is to "give professionals time back”,** according to its CEO, María González. Several autonomous communities have adopted it, in different medical specialties...

This assistant has been developed by the Spanish startup Tucuvi, in close collaboration with the health institutions and other strategic alliances. The company provides the AI engine, clinical configuration tools, and an interoperable cloud platform that integrates with existing hospital information systems.

“Lola” is built on a health cloud infrastructure, being highly scalable and flexible: it can perform tens of thousands of calls per day without requiring local installation. Therefore, hospitals can start using it directly, via Internet, with an easy configuration of protocols and patients. Besides, updates can be done in a centralised manner.

N Nacional R Regional L Local

How AI may help

Improving elderly care

Our aging demographic creates pressing economic realities: long-term care costs are projected to rise by 0.6% of GDP by 2050, according to AIReF. This demographic shift demands innovative approaches that combine personalized companionship with practical support systems.

Promising solutions offer daily well-being monitoring, emergency detection, and seamless connection to public services—all while sustaining seniors' independence.

Fighting undesired loneliness (that may peak at 17% by 2040) could be one crucial contribution, both in urban and rural areas (where efficient service delivery for isolated population could be greatly enhanced by these technologies).

How AI + complementary tech is helping

L

‘ARI” SUPPORT ROBOT FOR SERVICES

Barcelona City Council

"ARI" (Intelligent Robotic Assistant) is Barcelona’s robotic assistant, designed to **enhance the quality of life for elderly citizens living alone** and improve their interactions with municipal services.

It offers **personalized support and real-time companionship** to users at home. The solution is gradually incorporating advanced mobility features autonomous navigation, facial and voice recognition and bilingual communication (both in Catalan and Spanish).

ARI **proactively interacts with users,** offering daily well-being checks, reminders for medication and appointments, and immediate detection of emergencies. Additionally, it serves as a point of contact for queries.

Currently, the city is **expanding ARI to 600 homes and care facilities,** part of a pilot project aimed at enhancing home care and potentially integrating into municipal social assistance services.

L

“PALOMA”

Madrid City Council’s Social Services Area

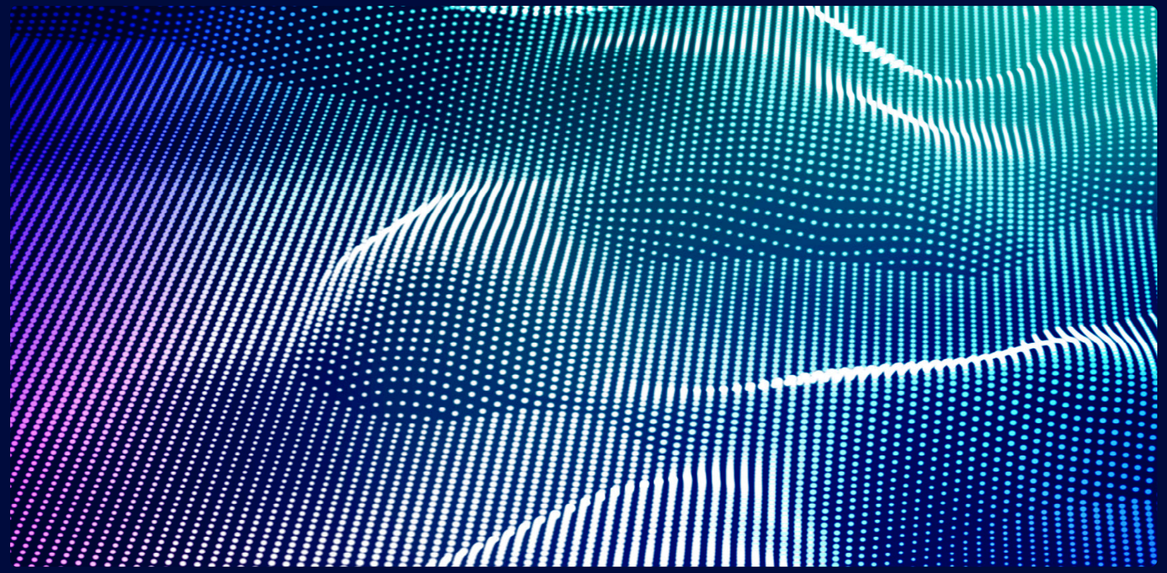
“Paloma” is Madrid’s AI-powered virtual assistant developed by the Social Serives area aimed at proactively **tackling unwanted loneliness among elderly residents.**

This assistant systematically contacts citizens aged over 75 who live alone, initiating personalized phone conversations to assess their well-being through a brief questionnaire in a procedure that fully respects privacy and protects underlying data, while firmly keeping a ‘human in the loop’ in all phases: by detecting issues early, it can **connect vulnerable residents with the appropriate municipal support services.**

Currently part of the city’s broader strategy against loneliness, it streamlines the identification of at-risk individuals, allowing social workers to focus their efforts directly on residents needing intervention, thus improving quality of life and reducing social isolation.

N Nacional R Regional L Local

04 How are public sector workers seeing the impact of AI?



Evidence from a 2025 online representative survey conducted among public administration workers

Positive perceptions. 74% think AI could have an overall positive impact in the public sector in the future, potentially helping the main challenges identified by workers themselves, such as excessive bureaucracy (35%).

Current uses. 54% already use AI at least occasionally, and 66% see its impact as positive so far. Analyzing data (62%), summarizing (55%) and translating documents (54%) are the most prominently executed tasks.

Public sector should keep pace. A broad majority (90%) believe it is important for the public sector to keep pace with technological changes to improve services, and more than half expect their organizations to invest in AI in the coming year.

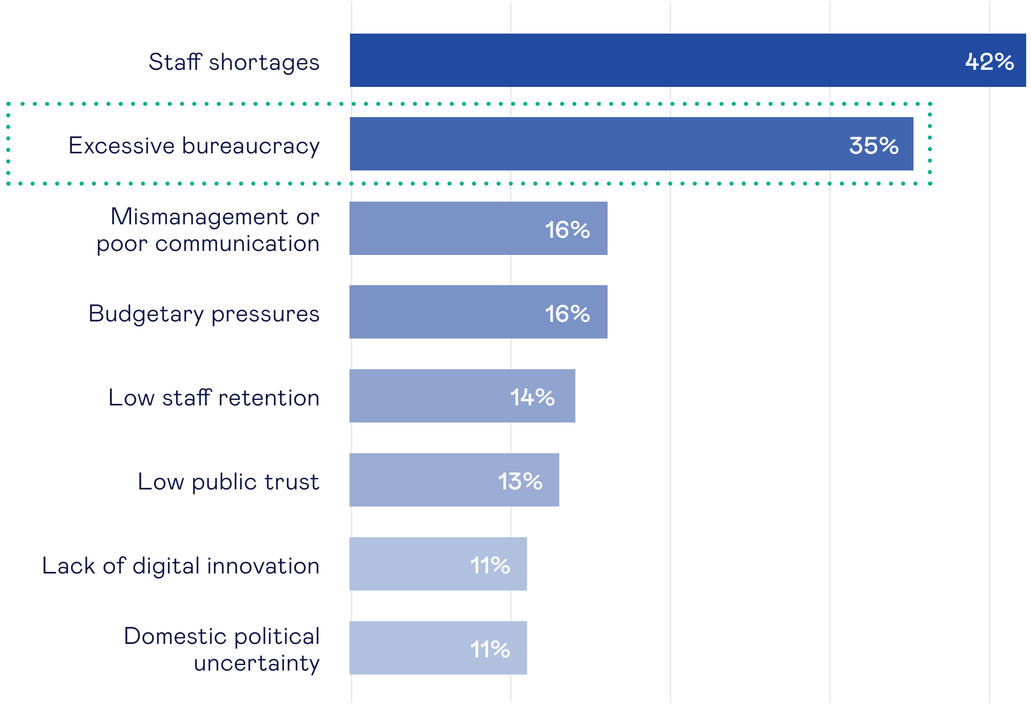
A companion, rather than a substitute. Only 6% think AI is already capable of doing their jobs, and most expect reskilling (88%) or freed-up time for more high-value tasks (82%).

Institutions aren't prepared. About 60% think their institution is currently not prepared to further integrate AI into daily operations. Security, reliability of tools and legal hurdles are seen as significant barriers, but most workers (especially those in managerial roles) tend to trust AI on privacy, citizens' rights and ethical boundaries.

* Public First online survey of 333 active Spanish public administration workers. See the appendix for methodological details.

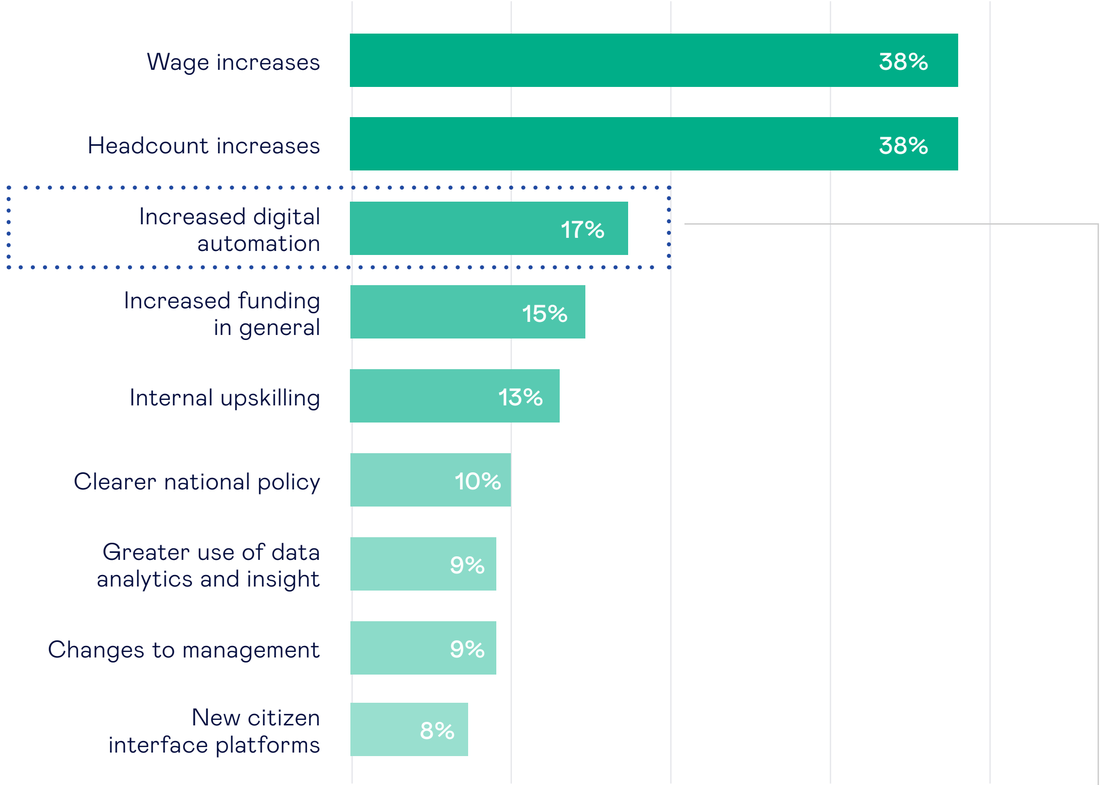
AI capabilities can help address key concerns from workers

Which of the following are the three biggest challenges facing the public sector institution that you work in?



Excessive bureaucracy is one of the top challenges indentified by workers.

Which of the following changes are most needed in the public sector institution that you work in?

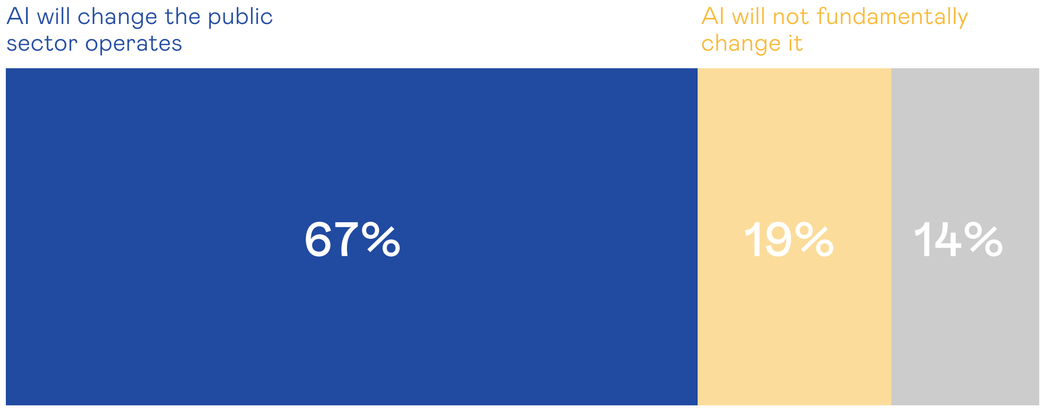


AI can be instrumental in increasing **digital automation** and supporting over-stretched workers.

Source: Public First online polling of 333 active public administration workers in Spain. See appendix for methodological details.

A large majority of workers expect AI to have a lasting, positive impact

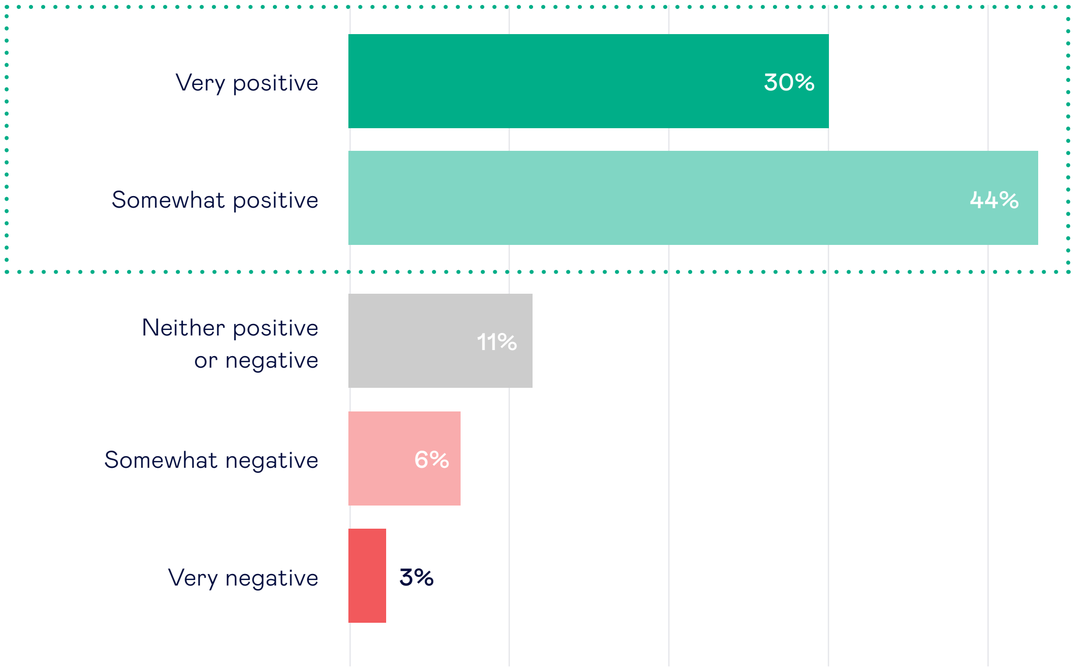
Which of the following statements comes closest to your view?



Two thirds* expect a **lasting impact** in the overall public sector...

*The figure is significantly larger than in France (47%) or Germany (45%)

Overall, do you expect AI to have a positive or negative impact on the public sector in the future?



... and **74%*** anticipate it will be positive or very positive...

*managerial roles are even slightly more optimistic (76%)

Source: Public First online polling of 333 active public administration workers in Spain. See appendix for methodological details.

Most workers are already using AI tools at their current jobs, and hold a very positive view

How often do you use AI tools at your current job, if at all?

	All workers	Leaders
Multiple times a day	5%	12%
Once a day	4%	9%
Multiple times a week	12%	22%
Once a week	3%	4%
Multiple times a month	7%	10%
Once a month	3%	1%
Less often, but still on occasion	20%	22%
Never	44%	18 %

54% use AI tools at their current job

and the figure goes up to **81%** among those in managerial roles

**Back in 2021, only ~ 14% of public sector workers (and <12% of the private sector workers) used AI - according to EU's CEDEFOP survey*

Source: Public First online polling of 333 active public administration workers in Spain. See appendix for methodological details.

% of workers that see current AI impact as...



Don't know: managerial roles 0% and rest 12%

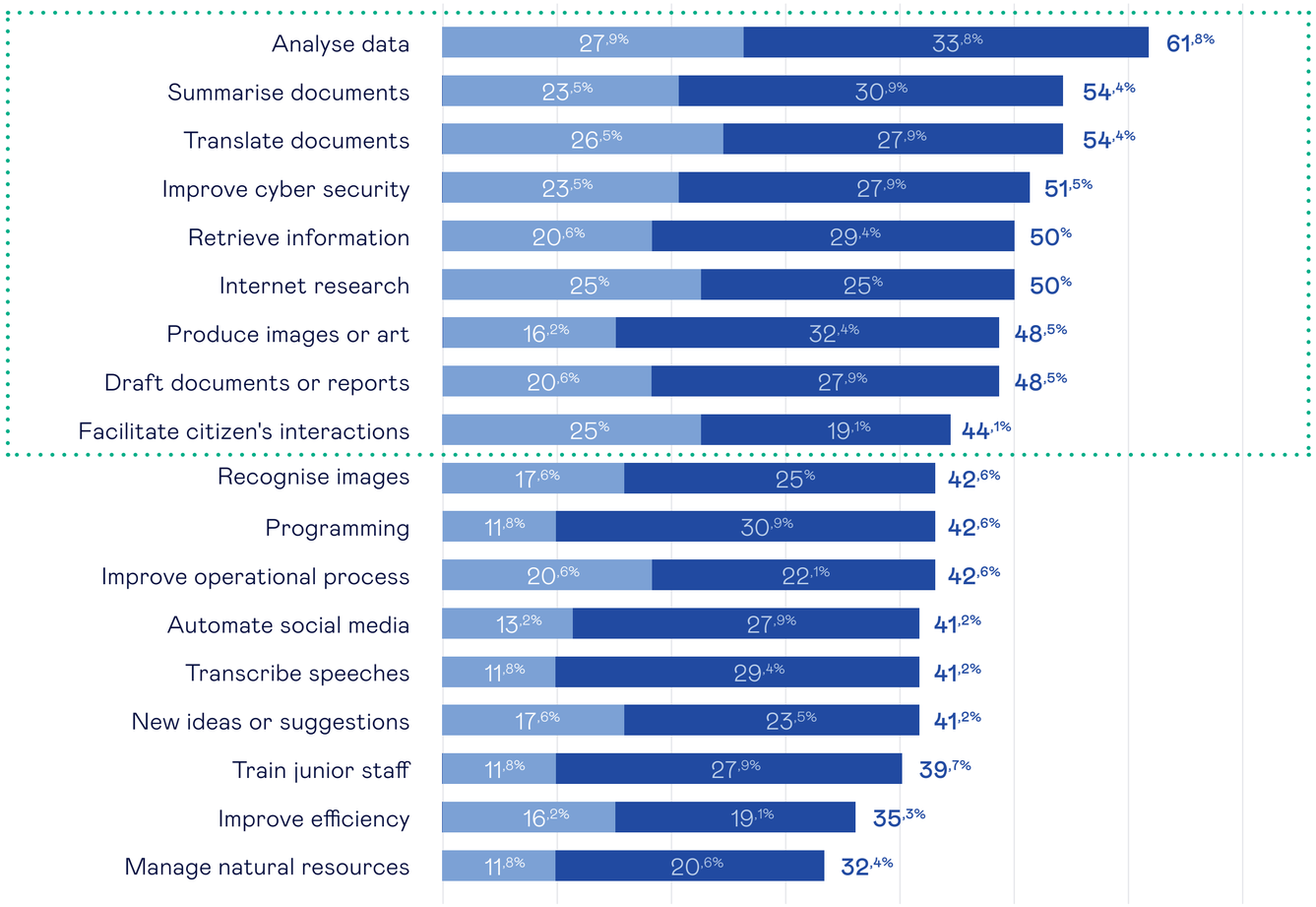
Two thirds* see it as positive so far, and only a **minimal portion** see it as negative impact

**Germany (60%) and especially France (53%) display a lower share*

Only among workers who their institution has invest in AI

Su utilización actual está relacionada sobre todo con la gestión de la información, el análisis de datos y el apoyo a la investigación

% of public workers whose institution currently uses AI for...



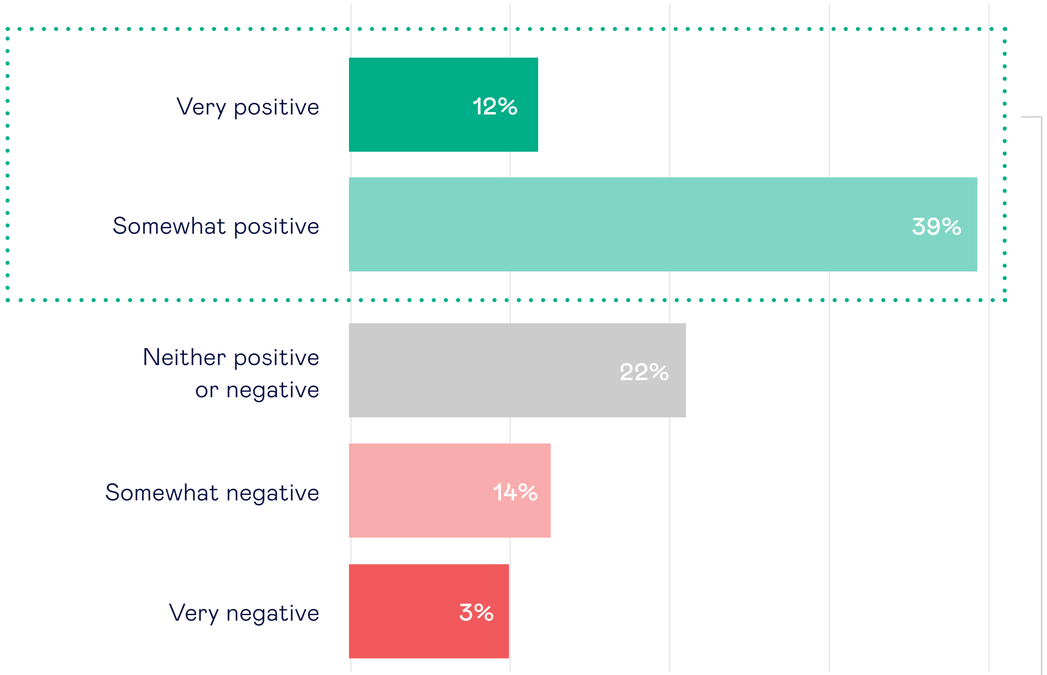
Source: Public First online polling of 333 active public administration workers in Spain. See appendix for methodological details.Only among workers who their institution has invest in AI.

Most frequent uses are related to tasks on which AI has already proven its power:

- → Dealing with large volumes of unstructured information, analyzing data and programming
- → Summarizing, translating, and drafting text
- → Conducting research
- → Generating novel content

Current uses are mostly related to information management, data analysis and research support

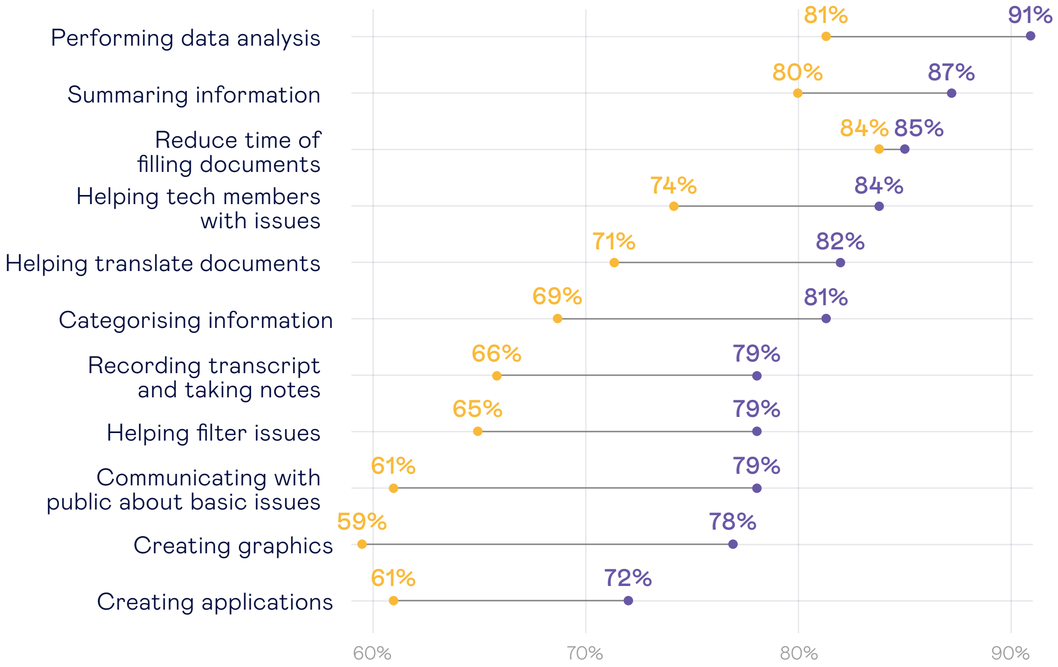
How likely do you think it is that your institution will explore AI tools more in the next year?



51% see their organizations as **likely** to invest in AI in the next year

**managerial roles are even slightly more optimistic (76%)*

% in managerial roles and rest of public admin workers that expect AI to add them value in the coming years on the following tasks;

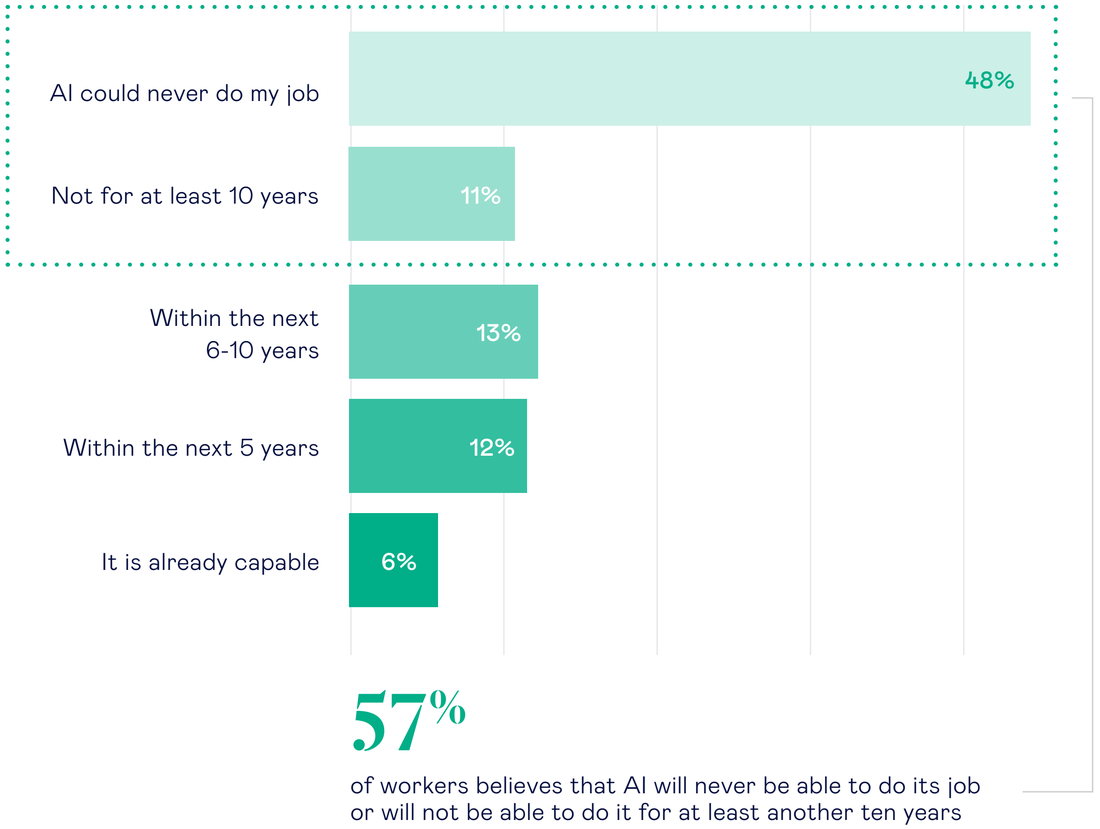


They widely (>60%) expect it to be useful across a broad range of potencial applications at which AI already excels, matching what it has been used for alreadu

Source: Public First online polling of 333 active public administration workers in Spain. See appendix for methodological details.

A majority expect their organization to invest in AI in the coming year, with high hopes of adding value

Do you think an AI would be capable of doing your job?



57%

of workers believes that AI will never be able to do its job or will not be able to do it for at least another ten years

And among those expecting their institution to invest in AI*:

88%

believe that reskilling will be a policy likely implemented

82%

think it is likely their organization will use the opportunity to reallocate freed up time of workers into more high-value tasks

67%

see hiring new employees to manage new technologies as likely

...but only

9%

consider workforce reductions as a very likely outcome

*Only among those expecting their institution to invest in AI that would perform tasks currently performed by humans.

Source: Public First online polling of 333 active public administration workers in Spain. See appendix for methodological details.

*Only among those expecting their institution to invest in AI that would perform tasks currently performed by humans.

Workers agree on the importance of keeping up with technology, but most feel their institutions aren't fully prepared

There is consensus on the need of keeping pace with technological advancements for the public administration:

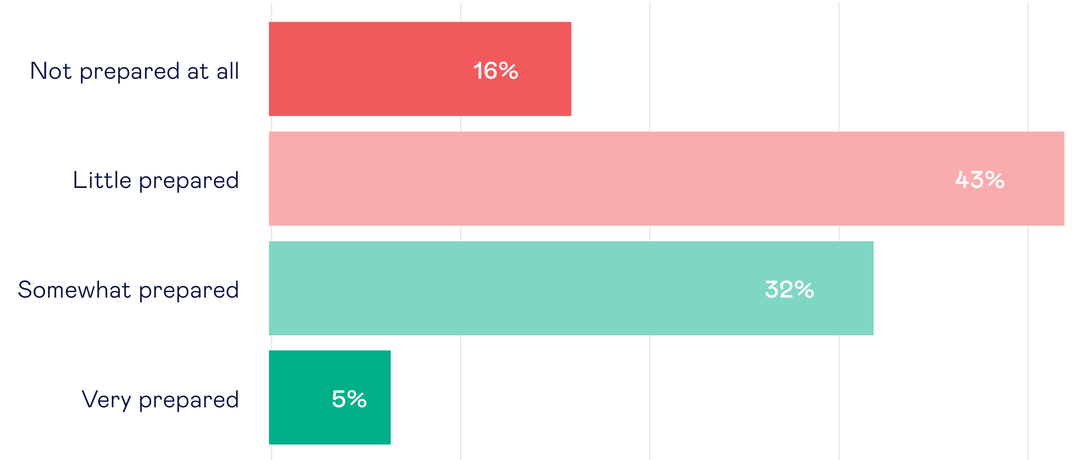
91%
agree it is important
“to provide the best service possible"

90%
"to mach developments being made
in the private sector"

91%
"to meet future demands
and challenges"

...but **77%** think that it is harder for the public sector to adopt new technologies compared to private businesses...

How prepared do you believe your institution is to further integrate AI into daily operations?

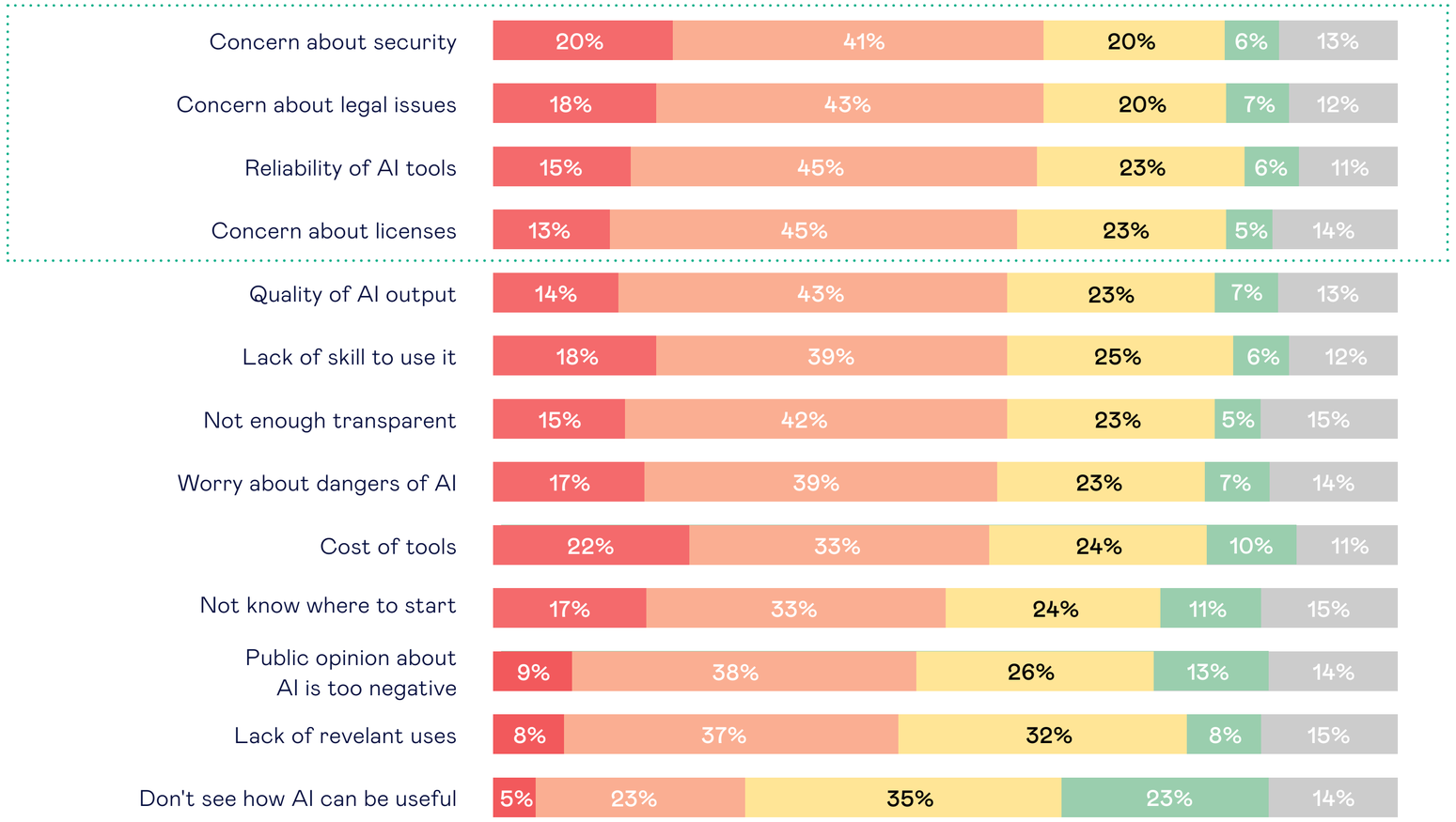


...and **59%**
believe their institution is currently not solidly prepared
to further integrate AI into daily operations

Source: Public First online polling of 333 active public administration workers in Spain. See appendix for methodological details.

Main barriers to AI effective implementation are security concerns, reliability and legal uncertainty

_____ is a significant barrier, a barrier, not much of a barrier or no barrier at all to implement AI in your institution



Source: Public First online polling of 333 active public administration workers in Spain. See appendix for methodological details.

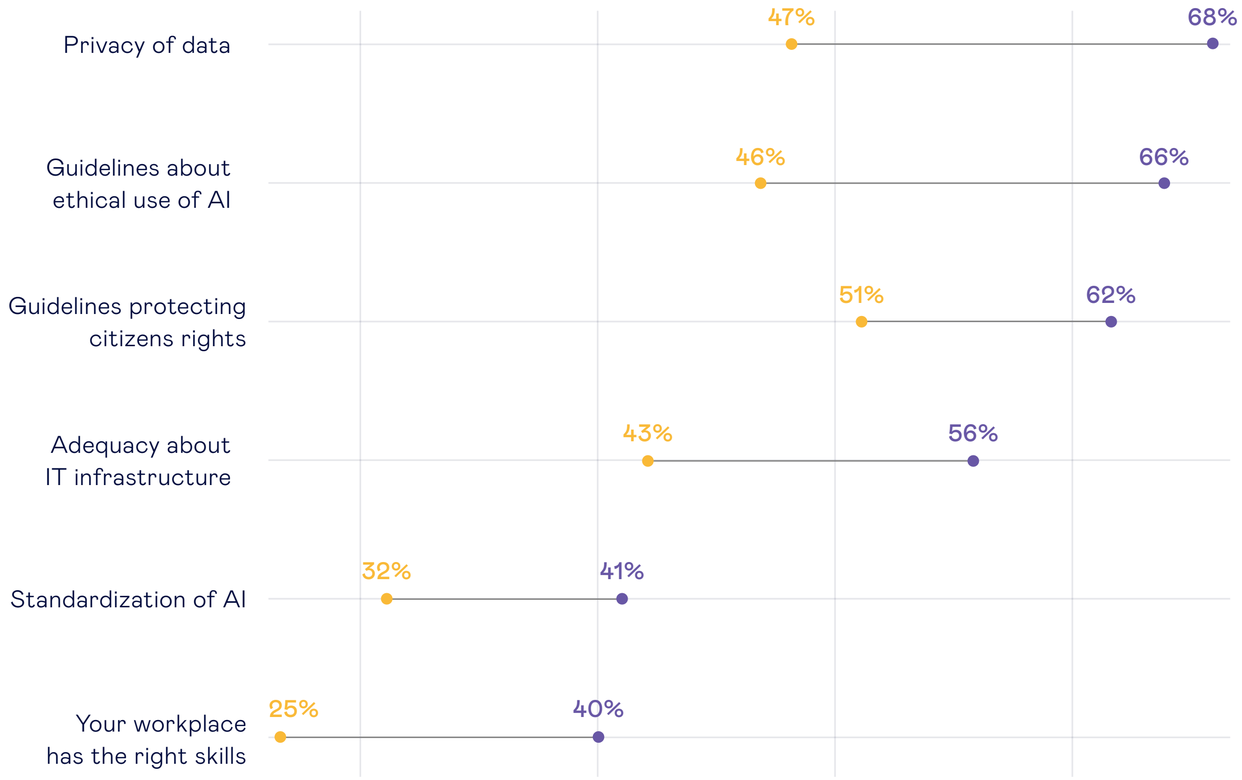
Many of these more prominent barriers can be tackled through implementing policy and governance that enables a powerful yet safe and responsible use of AI in the public administration.

**Concerns about security are commonplace in Germany and France as well.*

However, German and French public admin workers give more weight to the lack of skills from the workforce to use it. In France, lack of transparency is also more prominent.

Trust on AI ethical and privacy dimensions is rather high among public workers

% in managerial roles and rest of public administration workers that is very or somewhat confident about each aspect when it comes to AI in the public sector

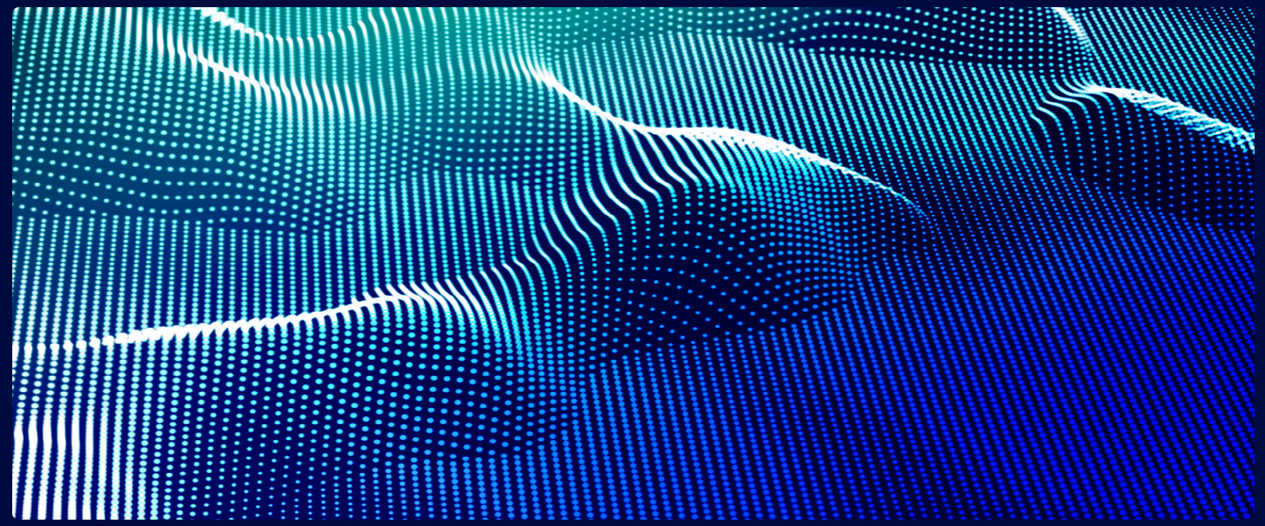


Confidence ranks high specially on **privacy and guidelines** (and lower regarding AI standardization and skills) and is somewhat more robust among managerial roles.

→ This offers a **solid base for policy and governance** to build upon.

Source: Public First online polling of 333 active public administration workers in Spain. See appendix for methodological details.

05 Enhancing present and future AI benefits



05.1. Governance
05.2. Infrastructure
05.3. Skills

05.1. Governance as an enabler



Governance should focus on addressing risks and concerns related to data privacy/security and AI reliability should be a priority.



However, to fully leverage the AI potential, the public sector should enable bottom-up innovation among public sector workers who know best the challenges they encounter in their day to day work.



Keeping clear governance frameworks will help reduce uncertainty, a special concern among public servants.



Too stringent AI regulation has also negative secondary effects such as reducing economic growth and competitiveness.

There are existing risks that governance needs to tackle

DATA PRIVACY AND SECURITY

61% cite data privacy as a significant barrier to AI adoption in our survey

High-stakes data mixed in complex hard-to-trace processes. Large volumes of sensitive information call for robust protection. When they are used in increasingly complex process along with less sensitive information, consistency in privacy protection may get tougher to implement. Furthermore, any breaches of poor safeguards may undermine public confidence in these innovative solutions.

BIAS AND TRANSPARENCY

60% cite reliability as a significant barrier to AI adoption in our survey

→ **Risk of algorithmic bias:** models trained on skewed data could inadvertently discriminate.

→ **Explainability gap:** opaque processes hamper oversight and accountability.

→ **Human-in-the-loop requirements:** the need for final human decision-making in critical tasks.



An aspect that cuts across these two (and other) risks: **uncertainty surrounding legal liability and accountability** (cited by 61% in our survey) around novel technologies embedded into complex systems operating in a **changing and hard-to-keep-pace regulatory landscape.**

But those risks should not stop innovation: a controlled bottom-up, piloting approach to maximize AI potential

Despite growing evidence regarding the uses of AI, **we are at a very early stage of deployment.**

The right approach to **maximize productivity gains and process innovation** is to allow for bottom up innovation among civil-servants.

Top-down "pre-cooked" approaches that do not allow for decentralized experimentation will miss essential specific **learnings from expert users** in hundreds of day to day small tasks.

Bottom-up approaches allowing users to share learnings from their areas of specialization will likely increase short-term engagement and long-term stickiness, while helping identify and properly dimension real-word risks to be avoided in the next iteration.

→ this means...

Select low-risk areas and use cases, and allow for the progressive and controlled introduction of AI supporting bots in different government areas.

15-20%

Low-risk use cases (mostly organizational and resource management not dealing with personal data) already account for a **significant share** of the overall potential value creation from generative AI in public administration in the EU - according to Implement's estimate.

Promote individual experimentation in a variety of day to day tasks in different departments to identify user needs.

Extract all the relevant information from those bottom up innovations.

Disseminate best practices systematically across the public sector.



Sources, among others: (McKinsey, 2024, (WB) (OECD-OPSI 2019) (Dell Acqua et al 2023)

Examples of innovative piloting approaches to AI implementation

CHALLENGES/HACKATHONS

Organize open innovation competitions inviting public officials, civil society, and independent developers to produce minimum viable pilots that can later evolve into official pilots.

Switzerland: GovTech Hackathon

In 2024, the GovTech Hackathon at the Federal Office of Information Technology, Systems and Telecommunication aimed to enhance digital networking solutions for public administration. It brought together developers and experts from various sectors to work on innovative solutions involving data interchange, digital government services, and the integration of AI.

PLATFORMS

Establish networks, communities, and shared platforms where exchange best practices, code, methodologies, and lessons learned. Knowledge sharing prevents duplication of efforts and accelerates adoption by making resources (documentation, cloud services, validated algorithms, datasets, etc.) readily available.

United Kingdom: AI community

Where key departments collaborate on strategies and share their experiences in adopting AI solutions and specific use cases.

By January 2024, a survey showed it had over 1,000 members drawn from 100+ departments, agencies, local authorities, and public institutions across the UK. These members combine technical and non-technical roles to foster collaboration.

INNOVATION LABS

Create or empower mixed internal teams dedicated to experimenting, developing, and co-creating AI solutions in partnership between the units that have the technical knowledge and those holding the greatest knowledge of operational processes and needs.

Singapore: GovTech

In Singapore, the GovTech agency includes specialized teams (e.g., Open Government Products) that collaborate directly with sector-specific agencies.

A successful result has been the “Pair” suite of generative AI tools for civil servants, developed by a small experimental team working hand-in-hand with problem owners across various government agencies. Pair has more than 50,000 registered users across 148 agencies.

There are prominent examples of these approaches in Spain, both at the national and regional/local levels

N Nacional R Regional L Local

Departments or agencies in charge of AI development and implementation are running **use case incubators** that **receive proposals based on** what users themselves identify as potential **needs** and **allocate resources to assess, implement and iterate.**

In these cases, the, **Public Administration ends up holding a balanced portfolio of pilots:** some are more focused on direct, easy to implement solutions for internal efficiency, while others correspond to experimental solutions in high-value but more technically complex domains.

This balance **allows for gaining experience and demonstrating early results, while exploring more ambitious uses of AI** as the technology matures.

N

GOBTECHLAB

Ministry for the Digital Transformation and Civil Service

The Spanish GobTechLab was born with the goal of launching a dedicated innovation lab to develop and centralize AI use cases for the Public Sector, forming a comprehensive catalogue of innovative solutions for public administration, with more than 300 applications submitted by most of the ministerial bodies, some of them will be developed in the next months.

It also seeks to create personalized and innovative public services, aligned with European projects, across all areas of government - aiming at having a balanced and service-oriented approach. It is part of the Spanish AI Strategy 2024.

R

DIGITAL AGENCY OF ANDALUCIA

Andalusian Regional Government

The Digital Agency of Andalucía is a service-oriented agency that pivots towards emerging technology based on needs. Since the advent of genAI it has recorded several use cases in a wide range of policy areas, from judicial hearings to agriculture.

It also features a strong focus on automating processes. According to the Agency, this has helped process over 2.2 million files across 11 ministries.

L

DIGITAL OFFICE

Madrid City Council

Madrid's Digital Office is the responsible for facilitating the digital transformation of the Madrid City Council and of the city. They follow an integral approach with at least two distinctive elements:

→ The Digital Office is involved in drawing up and developing the digital transformation strategy, which includes identifying digitisation needs and promoting service innovation through collaboration with technology player. This implies a proactive approach to enhancing efficiency in internal processes.

→ Keeping a **network of points-of-contact** (so-called Digital Delegates) in areas & departments that help identify needs and articulate potential solutions.

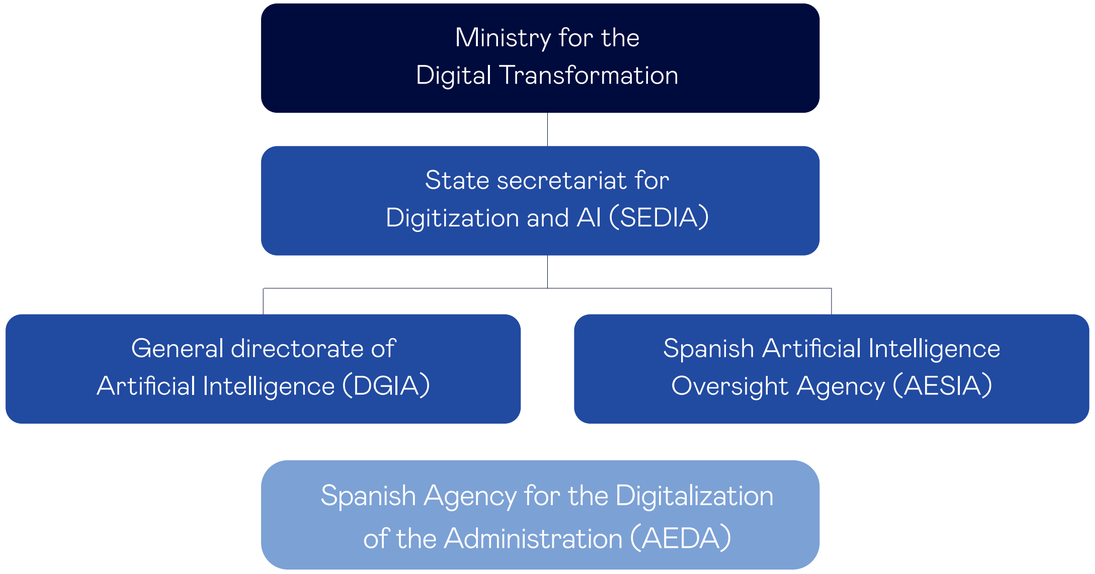
Efforts towards AI implementation in Spain take place within a growingly complex regulatory framework

At the **national level**, the Ministry for Digital Transformation and Civil Service, through its State Secretariat for Digitization and Artificial Intelligence (SEDIA), formulates **nationwide policies** on the development and promotion of AI.

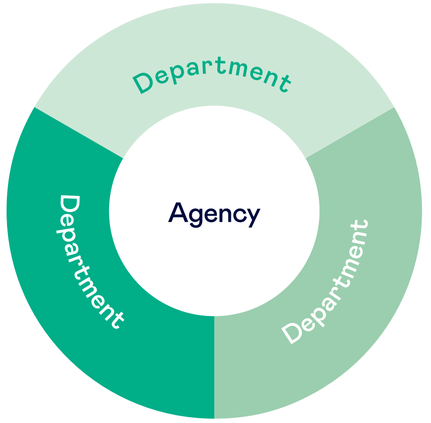
Within it, the General directorate of Artificial Intelligence (DGIA) promotes the **deployment of AI** and related enabling technologies.

Both the DGIA and the Spanish Agency for Artificial Intelligence Supervision (AESIA) exercise **oversight roles** while promoting AI-enhancement policies*.

The State Agency for Digital Administration (AEAD) **coordinates the digitization efforts** across the public administrations. It coordinates with other entities within SEDIA (especially the DGIA) to ensure cohesive governance and aligned implementation strategies.



At **regional and local levels**, governance structures vary, coexisting different models. The **most frequent setup** is one of a Digital Agency operating to support departmental AI initiatives, collaborating with the area departments to effectively implement targeted use cases.



*Other bodies may enjoy oversight responsibilities according to the current draft of the AI Law, including the Spanish Data Protection Agency (AEPD), the General Council of the Judiciary (CGPJ), the National Securities Market Commission (CNMV), and the Bank of Spain (BdE).

Several initiatives, strategies, and norms at the national level serving one purpose

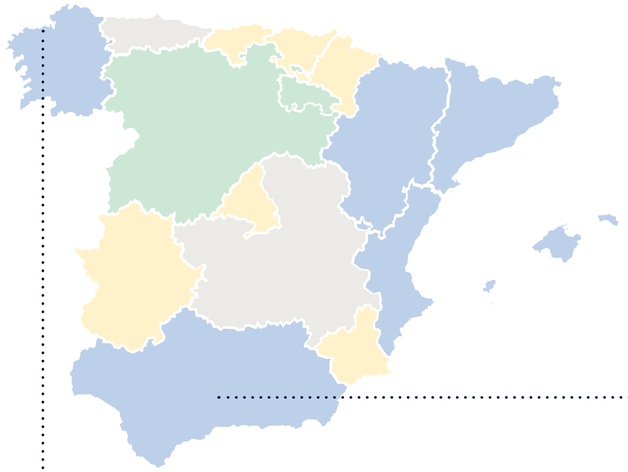
	RECOVERY, TRANSFORMATION AND RESILIENCE PLAN	ESPAÑA DIGITAL 2026 (DIGITAL SPAIN 2026)	2024 ARTIFICIAL INTELLIGENCE STRATEGY	HISPANIA 2040
	Aimed at modernizing the Public Administration and including a National AI Strategy	The Government agenda for digital transformation	Basic strategic instrument for the expansion of AI in the public and private sectors	A prospective and foresight document on the opportunities that AI brings to solve the problems that Spain faces
Areas of public sector focus	Spain's EU-funded recovery plan dedicates significant investment to digitize and modernize public administration, with over 3 billion for public admin reforms; and €540 million for the National AI Strategy. Its goals include streamlining administrative processes, improving citizen services through digital platforms, and introducing AI to boost efficiency. Expected outcomes are faster, paperless procedures and data-driven public services.	This is Spain's overarching digital agenda extending to 2026, aligning national digital transformation with EU recovery funds. For public administration, España Digital 2026 reinforces digital government as a priority, continuing the drive for online, efficient public services across ministries, regions and cities. Advancements on citizen-oriented attention and key high-impact projects can be gathered from the use case survey conducted in the present report, albeit more progress - especially on infrastructure buildup - should be expected in the coming years.	Spain's 2024 AI Strategy is a two-year national plan (2024–2025) backed by €1.5 billion in new funding (on top of money already invested). It aims to position Spain at the forefront of ethical AI use and innovation. Key goals include expanding AI deployment in public services to improve citizen care and administrative efficiency, while also catalyzing AI uptake in industry..	HispanIA 2040: "HispanIA 2040" is a strategic foresight study mapping how AI can enhance Spain's welfare and public sector by the year 2040. Led by the government's futures office, it addresses five grand challenges – modernizing the economy, strengthening the welfare state, environmental sustainability, security/defense, and reducing inequality – and charts AI's role in tackling each.

Since 2024 these initiatives and regulations are also embedded within the **EU Artificial Intelligence Act** - setting unionwide rules on AI, the Act lays down specific requirements for high-risk AI systems and obligations for operators of such systems, e.g. access to and enjoyment of public services and benefits; law enforcement; migration, asylum and border control management. In Spain, a draft law has been in place since March 2025 to develop European regulation and adapt it to national legislation.

Regional governments have enacted more regulations

At the sub-national level, **6 regions have their own AI regional strategies**, with specific measures and provisions regarding the Public Administration, governance and skills.

Other **7 have digitalization regional strategies that include AI,** while the remaining 4 have either other **types of instruments (2)** or, at the time of writing this report, **there is no conclusive information (2).**



ESTRATEGIA ANDALUZA DE INTELIGENCIA ARTIFICIAL 2030

This integral strategy features a specific axis devoted to the public administration, aiming at promoting and developing use cases that improve public services and enhance AI governance within the Public Administration. In line with the broader digital transformation—including the recently approved Estrategia Cloud de Andalucía 2030 (April 2025)—the strategy supports the integration of cloud infrastructures that enable AI use. Key initiatives include:

- → A team to promote new AI use cases in the Administration, within the Andalusian Digital Agency, including a figure responsible for identifying opportunities in the departments / and therefore Multidisciplinary teams to support the implementation of AI solutions.
- → An AI use cases repository, aiming at optimizing the replication, reuse and dissemination of best practices, as well as lessons learned

Andalusia's government is leading by example in ethical AI use: training its staff in AI skills, investing in secure data infrastructure, and insisting that algorithms augment (not replace) human judgment. This strategy combines the search for tech-driven efficiency with the goal of building public trust in AI through transparency and a focus on citizens' needs.

LEI PARA O DESENVOLVEMENTO E IMPULSO DA IA EN GALICIA

Galicia's new law features a legal framework for using AI in the regional public sector, emphasizing oversight and transparency. It requires that all AI systems in the Galician government have human supervision and be registered in a public inventory, enabling citizens to see which algorithms are deployed and why. Citizens also have the right to request explanations of AI-driven decisions or ask for human review. Touted as Europe's first regional AI-specific legislation, the law aims to encourage AI-related innovation and coincides with Galicia hosting Spain's national AI agency.

It provides a concrete example of how a subnational government can codify AI governance, funding measures, and institutional structures in one regulatory instrument.

While is essential to maintain clear rules and guidelines adhering to principles of transparency, fairness, accountability, and privacy, the introduction of a supra-national framework (i.e. the EU's AI act) that already takes them into account and focuses on minimizing risks should help **avoiding redundant, unjustified** or **overlapping norms**

Simplified rules and legal certainty are key supporters of AI adoption; in contrast excessive regulation hampers it and might have prevent economic gains from realizing.

Overall, governance should act as an enabler, **targeting effective and secure AI adoption as its intended outcome**, ensuring quality while preventing harm.

05.2. Securing access to up to date technological infrastructure



Public-sector AI requires both robust computing infrastructure and reliable foundation models - ensuring speed, scalability, and compliance.



Crucially, on infrastructure - Spain has lagged in public cloud adoption across its economy, yet cloud infrastructure is essential for public administrations to deploy AI at scale by providing necessary computing power and data platforms.



A balanced approach combining robust, secure outsourcing with targeted in-house development would allow for hybrid models allowing for optimal path forward.



Fair procurement processes that ensure organizations can pick the most suitable technology providers without artificial barriers are essential for the public sector to fully leverage AI capabilities.

Access to AI good quality infrastructure requires fair competition

AI applications

THE DECISION BETWEEN 'MAKE OR BUY' PRESENTS A SET OF DILEMMAS

- **Control vs. speed to market:** Developing AI tools internally may help with customisation and data control, but external solutions can offer faster deployment and cutting-edge technology.
- **Fit to current practice vs. adaptability:** Building AI solutions in-house allows for detailed support of current practices, while external tools offer greater adaptability to evolving technologies and changing public sector needs.
- **Data security vs. expertise access:** In-house development ensures direct control over data, but external vendors may offer higher levels of expertise and innovative solutions, while still meeting stringent requirements.

Cases in point for Spain

Initiatives like ALIA—Spain's publicly developed foundational model supporting Spanish and co-official languages - can be tailored for regional use cases and public sector needs.

Meanwhile **external providers could** (as they are doing already) **supply cutting edge innovation** and **faster deployment** addressing evolving needs without lengthy in house development cycles.

AI infrastructure

- **Data control vs. cost flexibility:** On-premise infrastructure provides direct control over sensitive data, but external services can offer flexible, scalable solutions while meeting sovereignty compliance.
- **Customisation vs. speed and scalability:** On-premise infrastructure allows for deep customisation, but external vendors can often offer tailored solutions with faster setup times and greater scalability to handle fluctuating demands.
- **Path dependency vs. future flexibility:** On-premise may decrease fixed costs on each new iteration but can lead to path dependency, as it locks the government into existing technologies and approaches, while outsourcing provides more flexibility to adopt new innovations and adjust to future technological shifts.

Cases in point for Spain

One of the challenges Spain faces in fully leveraging digital transformation across the whole economy is having **lagged behind in the adoption of public cloud solutions**. For public administration, the cloud is an enabler for deploying AI at scale, providing the scalable computing power and data platforms that modern AI applications require.

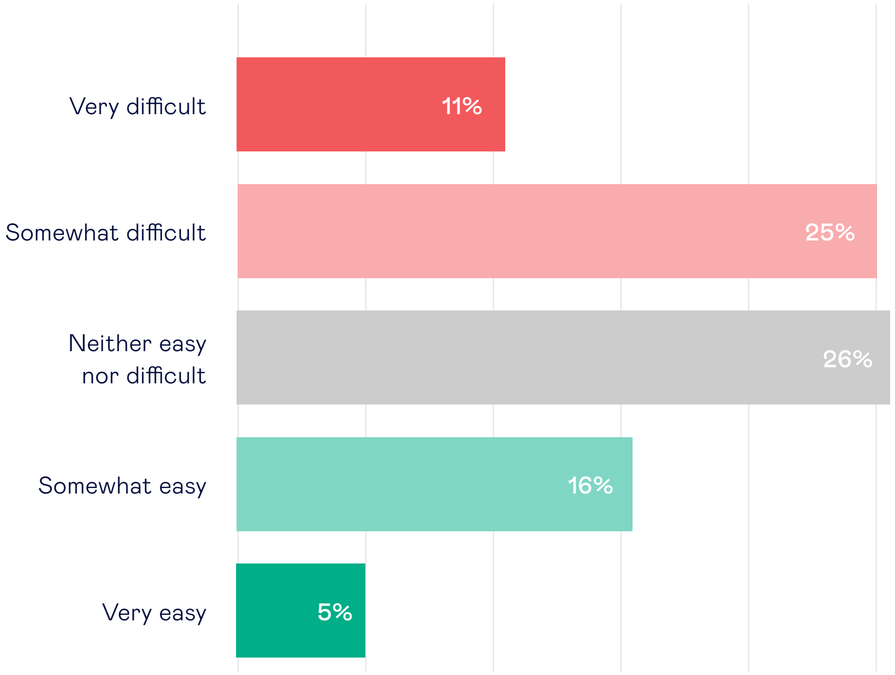
Cloud technology represented **approximately 6% of total government IT spending in 2021** (FIDE, 2023): by then public administrations continued to **rely predominantly on around 300 physical data centers**, potentially exposing them to technological obsolescence and limited scalability.

However, **recent trends indicate a potential shift**: NextGenEU funds have allocated significan resources for cloud infrastructure and services (also in the 2022 Public Admin Digitalization Plan). The National Cloud Services Strategy brings the goals of consolidating data processing centers, establishing a **hybrid model** mixing on premises cloud with public cloud service providers, expanding the service catalogue, and ensuring infrastructure advancements that adhere strictly to Europe's current regulations and requirements.

These efforts should continue to allow Spain catch up on cloud penetration, providing an **efficiently scalable, adaptable, secure** and **interoperable** infrastructure that allows widespread leverage of AI capabilities. For meeting these unique demands, **relying on specialized suppliers will be key**.

According to public sector workers its not easy to change the IT provider

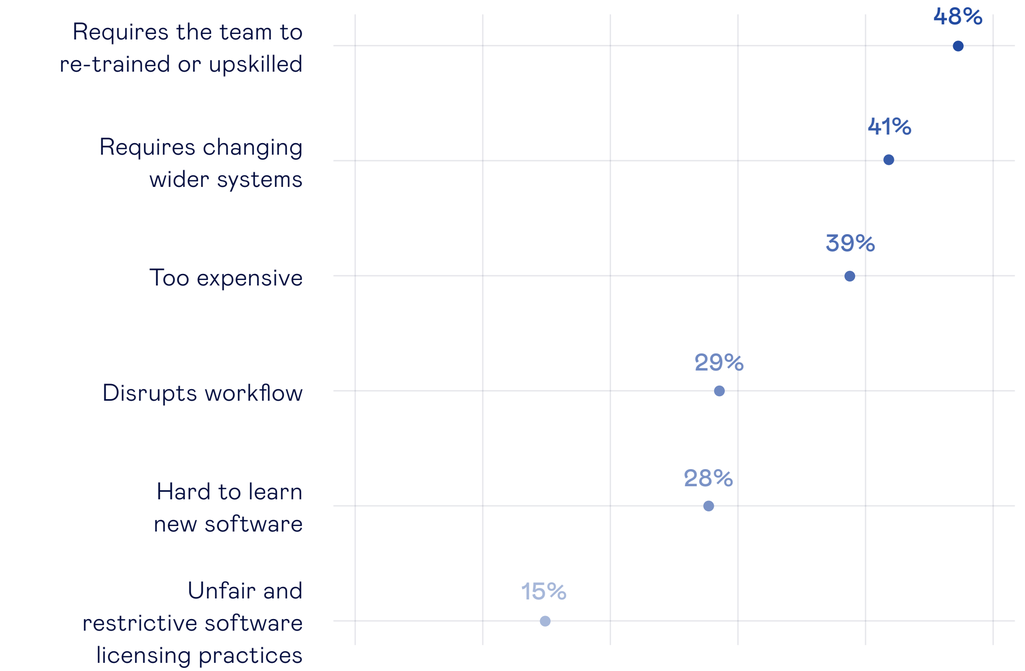
How easy or difficult is it to switch providers?



Only **21%** believe changing IT provider is somewhat or very easy

**36% see it as difficult; 31% in France*

Why is it difficult?

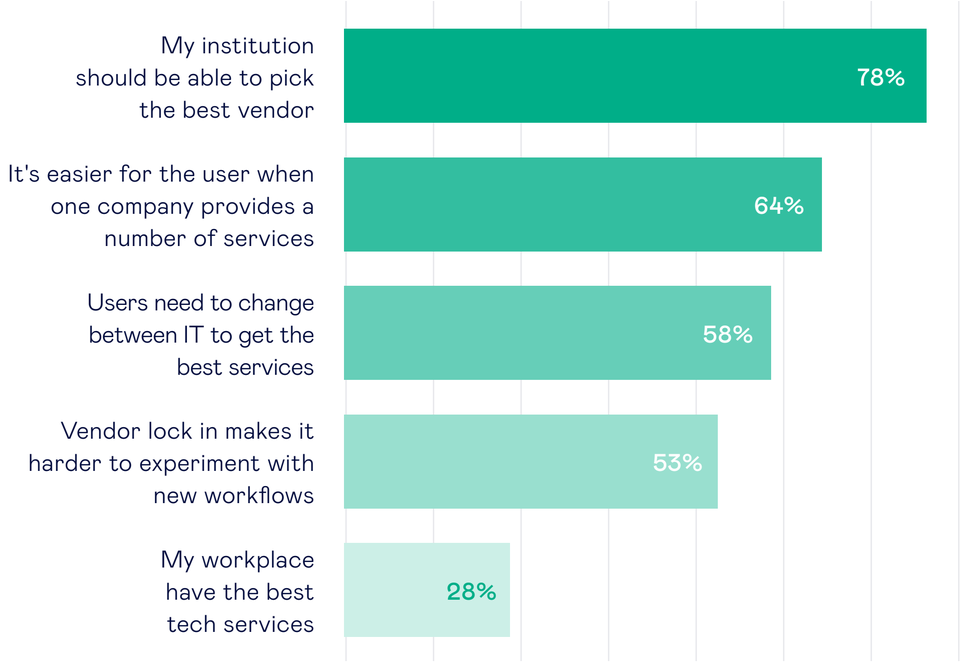


Nearly half quote the need to re-train, changing wider systems, and price of changing are quoted as reasons why it's difficult to change.

Source: Public First online polling of 333 active public administration workers in Spain. See appendix for methodological details.

*(Only respondents who said is difficult to change IT providers.)

Most believe that their institution should be able to pick the most suitable provider



In face of this, **public purchasers** should **veer towards contracts that preserve long-term flexibility**, ensuring independence from specific providers and maintaining freedom to adapt to changing technology needs, making it feasible to choose the best provider for each org, project, and adapted to different workloads.

Source: Public First online polling of 333 active public administration workers in Spain. See appendix for methodological details.

→ Vendor lock-in limits institutions' ability to adapt

Depending on overly specialized IT systems or a limited number of vendors may reduce adaptability, increase costs through technology lock-in, and restrict organizational flexibility- therefore hampering the adoption of **infrastructure needed** to incorporate emerging technologies.

Case in point: cloud computing

60%

of IT decision makers in the public sector surveyed across five European countries cited licensing restrictions as a key barrier to switching cloud provider - source: Savanta.

In the EU, the Commission is currently considering investigating restrictive software licensing.

In Spain, the National Competition Authority (CNMC) is running a cloud market analysis - looking into "elements that may influence the efficient and competitive functioning of the sector", e.g. competition dynamics or software licensing practices.

Source: Savanta survey for Implement (2025)

In turn, vendors should commit to:

→ **Guarantee security and compliance,** ensuring adherence to national and EU laws while maintaining strict protocols.

→ **Align with governance and ethical standards**, ensuring solutions promote fairness and transparency, and mitigate risks.

→ **Ensure interoperability** enabling seamless integration with current IT infrastructure to reduce disruption and implementation costs.

→ **Offer scalable and flexible setups**, capable of adjusting resources based on the changing needs of public administration while ensuring reliable performance.

→ **Provide accountability** through performance metrics, uptime guarantees, and fast response times for addressing service failures.

05.3. Focused training and generalized access



A crucial advantage generative AI enjoys against previous technologies is its very low entry barrier for all types of workers - this means many more will be able to access it and enjoy its advantages.



Nonetheless, the rise of new more developed tools based generative AI and the adoption and deployment of specialized setups will probably require training to take advantage of the full potential, and to make sure no one is left behind.



Public administration also needs to increase the share of IT workers to enable a stronger use of AI revolution beyond the most accessible tools to boost productivity and to ensure they can navigate the complexities of AI and its required infrastructure.

Public sector workers' departing skill set: highly educated, limited STEM emphasis

% of public sector workers by attained education level



87,6%public sector workers have post-obligatory education
vs 66.6% in the private sector

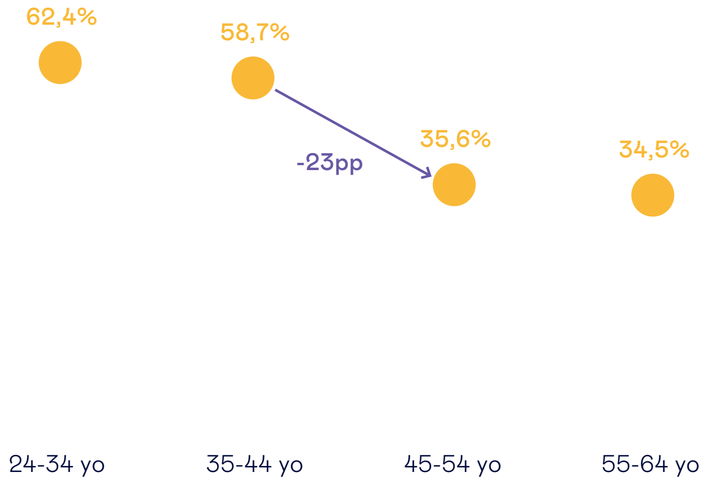
% public sector workers that hold a STEM occupation

5,6%

Around 1 in 20 public sector workers hold a STEM-heavy role in line with the overall Spanish labor market

Furthermore, **around two-thirds are 45 years old or above** - and in recent times use of advanced IT has shown a **substantial age gap,** despite overall significant IT use.

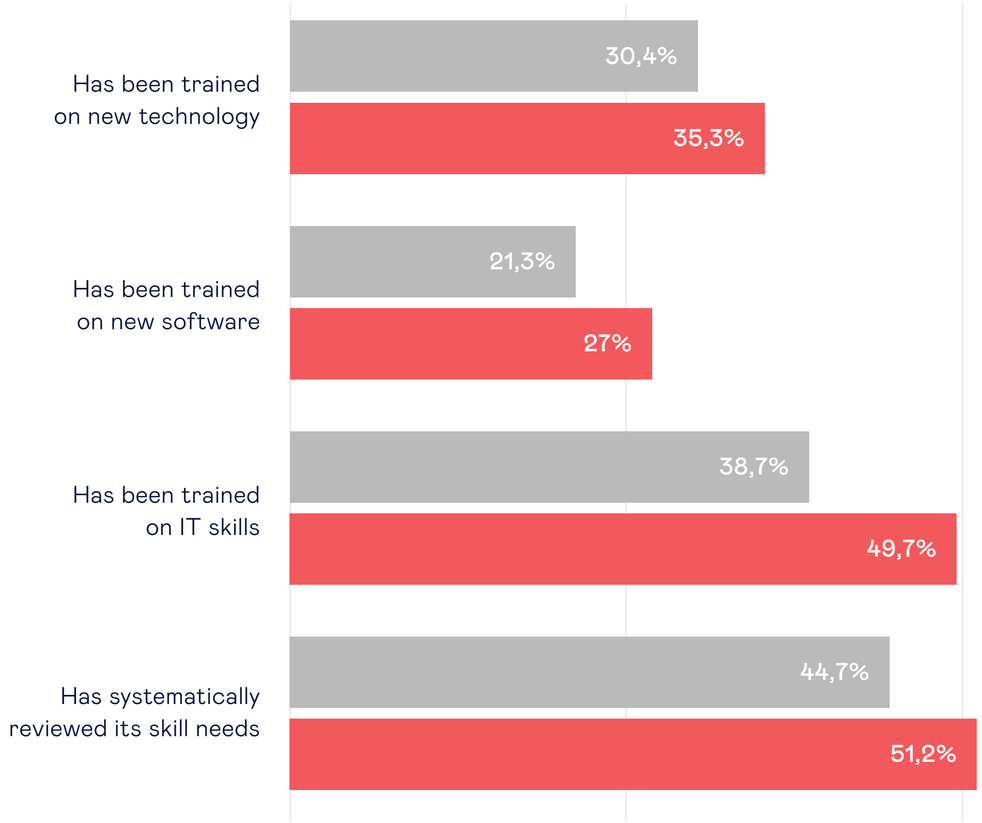
% of public sector workers that use advanced IT · 2021



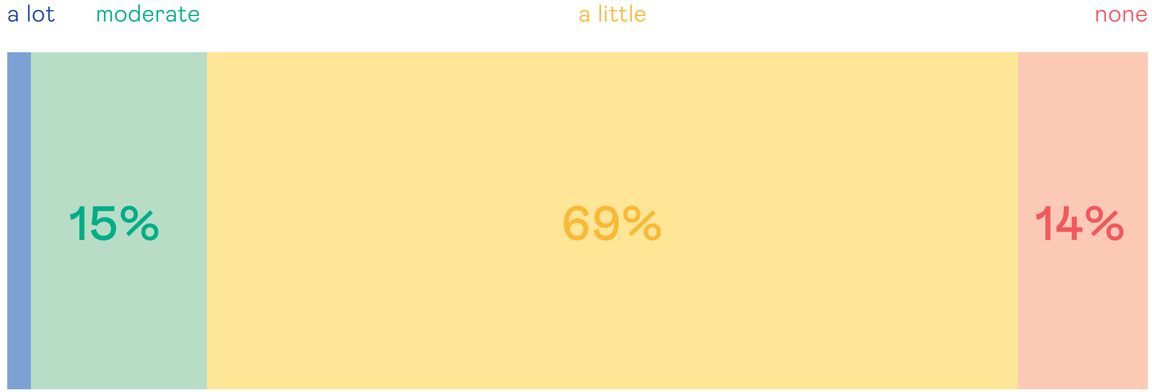
Sources: 2023 Labour Force Survey, 2021 CEDEFOP's ESJS2 Survey. "Use of advanced IT" means having used some form of complex IT systems (e.g. coding, AI, specialized hardware) in the last month.

Nevertheless, the building blocks are in place: a tradition of developing digital skills and emerging knowledge of AI

% of public or private sector workers that, in the years up to 2021…



% of public sector workers that, in early 2025, know _____ about AI



86%
declared to hold at least some of AI knowledge…

54%
are already using it

*Back in 2021, only ~14% of public sector workers declared used AI.

Sources: for 2021,CEDEFOP's ESJS2 Survey; for 2025, Public First survey among public administration workers.

And crucially generative AI has proven to boost productivity early on, and across different tasks and skills

Early evidence from field experiments shows **generative AI have out-of-the-box positive effects among many tasks and worker profiles,** although the debate is not settled on which skill profiles benefit most low or high performers.

Legal analysis · Choi, Monahan and Schwarcz (2023)
AI assistance increased speed on completing legal tasks. It also had an equalizing effect on performance, improving the quality more for the lowest-skilled participants.

Writing quality · Noy and Zhang (2023)
In a experiment with college-educated professionals, generative AI raised productivity, decreased inequality between workers and increased output quality.

Customer chat · Brynjolfsson, Li and Raymond (2023)
An AI-based conversational assistant increased the number of issues resolved per hour, with a higher improvement for novice and low-skilled workers, and improved customer sentiment.

Consulting tasks · Dell'Acqua *et al.* (2023)
Consultants using AI were significantly more productive in almost each of the 18 realistic consulting tasks they were given. Besides, the quality of results improved.

Debating points · Roldán Monés (2024)
In a debate competition, high-performing students and those with a stronger academic background benefit significantly more from GenAI than their lower-performing counterparts.

And, at the same time...



Technology is evolving rapidly, so **flexibility and a broad range of options** are better than rigid upskilling frameworks.



Emerging advanced setups - agentic capabilities, reasoning, deep research models, multimodality, and the integration of traditional machine learning (pre-genAI) with newer generative AI methods - may benefit from broader skill sets.



ICT workers with advanced technical expertise and an emphasis on AI new capabilities would be extremely **valuable across the public sector,** as it happens with other industries.

Enabling basic access to most workers should be the priority
– complemented with targeted training for specific occupational profiles

Managers and supervisors

9,6% of workers

- Deep organizational understanding of implications of AI + Build skills on digital transformation and change management

*Leveraging on the fact that 8 out of 10 public admin workers in managerial roles are using AI already

IT specialists

1,3% of workers

- deep technical understanding of AI systems
- a solid grasp of its underlying infrastructure, esp. cloud
- skills to assist on implementation & procurement

Specialized experts in analytical or technical roles

6,3% of workers

Skills in **programing · data science · machine learning**

Fostering collaboration to ensure effective AI integration

The ~82,8% public admin workers that do not hold managerial, highly specialized, or IT-related roles need, first and foremost:

Broad AI access and competencies to support and develop its own intuitive understanding of when and how to use AI.

Nonetheless, training on more advanced skills should be open to allow those workers interested on catching up with high performers to do so.

*Leveraging on generative AI systems being easy to use with everyday language, therefore having a low-barrier access

Beyond Admin - **Teachers would need skills and tools to operate in an AI-rich environment**

For teachers, generative AI is not just a tool that helps with their work—it's already being integrated into education through student use, given its low access barriers. This reinforces the bottom-up approach of supporting teachers from the beginning, as we've emphasized throughout this report. This also highlights the value of teacher training, both during initial education and throughout their professional careers (note the low training data for teachers). Key teacher-specific training aspects would include:

01.

Building trust through foundational AI literacy: Teachers can benefit from understanding how models generate content, their limitations, and basic technical concepts.

02.

Developing content curation skills: Teachers thrive when they can curate and adapt AI-generated content, applying creativity and editorial judgment—treating AI as a co-creator or assistant.

03.

Balancing technology with human skills: In an AI-enhanced educational environment, uniquely human capabilities may become more relevant. Socio-emotional pedagogy and methodologies that foster higher-order thinking could enable teachers to both maximize AI benefits (discerning when to trust algorithmic recommendations and when to challenge them) and fill gaps (personal motivation, emotional guidance for students, etc.).

04.

Integrating AI into pedagogy: as AI-based systems advance teachers would find growing opportunities to progressively incorporate AI into teaching methods. This involves recognizing where AI adds value to learning and developing pedagogical design skills to blend AI tools with traditional teaching—for example, using an AI tutor to help struggling students practice, with supervision and strategies that support students in learning underlying concepts. Educators can evaluate ed-tech tools based on their impact on student outcomes and select those aligned with evidence-based teaching practices.

05.

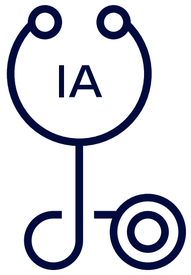
Adapting assessment methods: teachers are already reviewing their assessment tools to contemplate AI-generated work, which could also help maintaining student engagement in an AI-rich environment.

06.

Fostering collaboration: as with all other fields in the public sector and beyond, leveraging on the flourishing Spanish edtech startup ecosystem, sharing learnings and practices would greatly enhance and accelerate successful implementation. With only 20% peer evaluation in Spain compared to the 60% OECD average, there's significant opportunity for growth in collaborative practices.

Overall, teachers are likely to lead growingly hybrid learning environments, motivating students and themselves to use AI as a companion to reflect, debate, and question.

Beyond Admin - **Doctors would benefit from some extra training oriented towards their practice**



Beyond assisting administrative tasks or augmenting communication capabilities, doctors are already encountering AI in their daily medical practice. Using AI in healthcare involves two particular characteristics that suggest a slightly different training and skills approach, emphasizing additional aspects: (1) healthcare settings involve high-stakes decisions, thus requiring appropriate regulatory awareness; and (2) specialized AI developments tailored specifically to medical contexts are increasingly likely, surpassing general-purpose tools. This scenario suggests a slightly more refined, tailored skill set, ideally initiated during medical education, which could include:

01.

Clinicians-focused AI literacy: Doctors would benefit from understanding how AI tools function, including recognizing their strengths (such as rapid data analysis) and their limitations (potential inaccuracies). Familiarity with key metrics (like sensitivity and specificity of AI diagnostics) and staying updated on emerging medical AI technologies would significantly enhance clinical practice.

02.

Correct interpretation of inputs: Doctors could enhance their clinical effectiveness by skillfully interpreting AI-generated information, strategically designing their interactions with AI tools to obtain clinically relevant insights. Proper interpretation would enable AI outputs to robustly complement clinical decisions, clearly delineate potential risks, and provide genuinely valuable supplementary information.

03.

Data Security and Ethical Practice: Given the critical importance of privacy and ethics in healthcare, doctors would thrive with enhanced training on data management in compliance with regulations. Recognizing which patient data is appropriate for AI processing and consistently following consent and transparency protocols—even within approved hospital AI systems—would safeguard ethical practice.

04.

Proficiency with AI-Integrated systems: Unlike general consumer-oriented AI tools, clinical systems require practical knowledge of digital workflows—such as navigating new interfaces, reviewing AI-generated clinical content critically, and efficiently integrating accurate data into clinical processes.

05.

Continuous learning: Doctors would thrive by engaging in ongoing professional development to keep pace with rapidly evolving medical AI capabilities and guidelines. Regular updates and continuous learning would ensure sustained effectiveness and clinical relevance.

06.

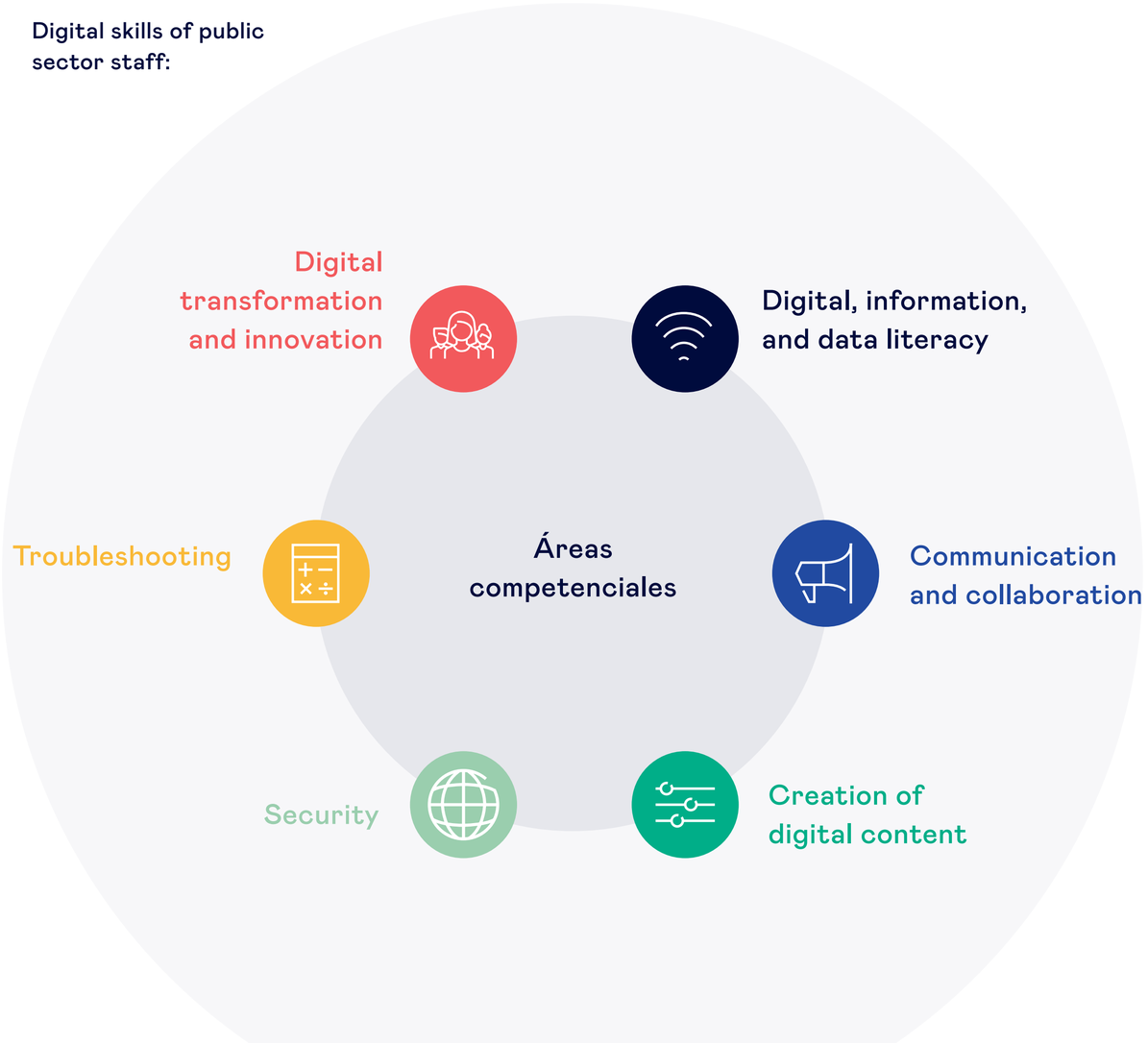
Fostering collaboration: interdisciplinary collaboration is key – working with data scientists, AI engineers, healthcare administrators and private providers (particularly startups and scale-ups) to implement AI solutions effectively. A doctor doesn't need to code an AI model, but if they can articulate clinical needs and evaluate AI outcomes in partnership with developers, the tools will be more useful.

The existing government framework for skills and AI

The National Institute of Public Administration recently developed the **Digital Competence Framework for Public Employees.** This framework **expands the existing EU's DIGCOMP.**

Within these frameworks, the Spain's National AI Strategy and Plan Nacional de Competencias Digitales are equipping civil servants with practical AI skills (via training labs, modular courses, etc.) aiming to enhance digital literacy across government roles that already match the two broad skill profiles outlined, They also integrate more strategic elements such as articulating innovation and digital transformation plans.

Digital skills of public sector staff:



While the National Digital Skills Strategy has initiated targeted training programs it should be kept in focus that, **generative AI's low barrier to entry can enable immediate benefits** for a wide variety of public-sector roles

–

At the same time, the **fast-evolving and changing nature of AI capabilities** means that skill acquisition frameworks must remain flexible.

Appendix

Methodological notes

Primary sources

Task-based economic modelling

The method in this paper is in line with the methodology developed by Briggs and Kodnani (2023) in “The Potentially Large Effects of Artificial Intelligence on Economic Growth”.

Automation potential of work activities: First, the exposure to generative AI is calculated by breaking down the automation potential of 39 different work activities/tasks in the occupational task database O*NET. The database includes an estimate of the share of each activity (e.g. getting information, performing administrative activities etc.) that can be automated by generative AI (if the activity is above level 4 on an O*NET-defined scale of difficulty 1-7, no automation potential is assumed).

Mapping automation potential of work activities to occupations: The automation potential of work activities is related to sector O of the CNAE for Spain. First, 39 work activities from 900 US occupations are detailed using medium-importance activities for each occupation, providing an estimate of the portion of each occupation's total workload that AI has the potential to automate. Second, this figure for US occupations is projected to European occupations through the correspondence between ESCO and O*NET established by the European Commission and, finally, is aggregated into aggregate occupations (using sub-occupational employment). This gives us three intensity groups: medium, low, and high AI potential. For the extrapolations of absolute numbers, approximations were used based on microdata from the four waves of the 2023 EPA survey, focusing on government workers, who correspond to CNAE group O, which may mean they are subject to some minor margins of error or variation when compared with the cross-references published by the INE.

Quantifying productivity gains in each sector: Generative AI is assumed to affect the productivity of the work activities for each occupation as follows. Low-potential work activities are considered unaffected by generative AI. Medium-potential work activities experience a productivity increase due to automation. High-potential work activities are those in a sector that can be expected to become fully automated. These workers are expected to return to somewhat less productive jobs. The three effects are calculated for individual sectors and adjusted for the value added of each sector to determine the total productivity potential/new job creation from generative AI once the technology's adoption reaches its peak.

Aggregate impact: Only part of the total long-run productivity increases from generative AI is expected to materialise in the economy during the initial ten-year period of technology adoption following an S-curve adoption trajectory.

Methodological notes

Primary sources

Public First Survey

The survey was conducted online and distributed among a panel of respondents representative of Spanish society. The initial sample was subsequently filtered to obtain a subsample consisting exclusively of 333 public administration workers, as they constitute the target group of this study. Therefore, direct health care or education providers (teachers, doctors, nurses) are excluded to maximize alignment with previous Sections of the report. Level of administration (national, regional, local) and whether the person is in a leading/managing position within her institution or not are also included as key analytical variables.

Please take into account that, due to methodological constraints, it was not possible to interview only public sector workers from the outset, preventing the application of quotas to the subsample.

Methodological notes

Primary sources

The quantitative analysis was complemented with a qualitative methodology. To accomplish this, we developed a stakeholder map encompassing all government levels. At the central government level, we focused on departments and agencies involved in the adoption, management, and regulation of artificial intelligence.

For the autonomous community governments, we identified both the relevant departments and the officials responsible for implementing AI initiatives, typically at the General Director level.

At the local government level, we prioritized larger cities and municipalities known for successful AI-related practices or innovative initiatives.

Additionally, we identified key strategic (and, where applicable, regulatory) instruments intended to foster AI adoption within public administration and enhance its capabilities:

- For the central government, we catalogued various strategies and plans specifically addressing artificial intelligence and digital transformation.

- Within autonomous communities, we focused on AI strategies where available; otherwise, we examined broader digitalization strategies or analogous frameworks.

We further enriched the stakeholder map by including the leadership of Public Administration Institutes responsible for training and skill enhancement among public servants, both at the national level (INAP) and within the autonomous communities.

Following stakeholder identification, we gathered additional insights by conducting either further direct interviews or online qualitative questionnaires.

Methodological notes

Secondary sources with own data exploitation

Encuesta de Población Activa - Labour Force Survey

The Spanish Labour Force Survey (EPA) is standardized with all European Union labour force surveys through Eurostat. It is a quarterly survey targeting families. A total of 130,000 surveys are conducted, corresponding to 55,000 households. The sampling is two-stage: the first sample is selected from the census (5,298 in 2024) and the second sample is selected from households. Finally, the data collection method is in-person and by telephone. The analyses using this source use data from the four waves in 2023. When we talk about public sector workers, we refer to those whose employer is the public sector, regardless of their employment relationship. Administrative workers are those who correspond to CNAE group O. For the extrapolations of absolute numbers, approximations were used based on microdata from the four waves, which may mean they are subject to some minor margins of error or variation when compared with the cross-references published by the INE

CEDEFOP's Second European Skills and Jobs Survey (ESJS2)

A 2021 survey focused on collecting information on the skill requirements, skill mismatches and initial and continuing learning of adult workers in EU labour markets. It is carried by the European Centre of Development of Vocational Training (CEDEPOF). Its population target is adults aged 25 to 64 years who are salaried employees, residing in private households in the territory of each of the 27 EU Member States, Iceland and Norway. The sample design is mixed, first a sample of 500 random telephone surveys. In addition to another part of the sample using online panel surveys to meet certain representativeness quotas. A total of 46,213 surveys were carried out at European level, 3,000 for Spain, but around 1,600 for the rest of the countries. In addition, to ensure representativeness, weights are calculated and provided. This survey is also used in Implement Report.

Methodological notes

Secondary sources with own data exploitation

Public Sector Tech Watch dataset

The Public Sector Tech Watch dataset is a database of European AI projects. Five verifiable data sources are used to compile the cases, which are selected following an internal quality assurance process. The database utilizes existing case collections (OECD, national registries, etc.), web searches for news in different languages, analysis of scientific literature, direct contact with institutions, and open-access databases. It is updated monthly. Its authors caution that the PSTW does not necessarily provide a statistically representative sample of all countries; therefore, we prefer to use relative percentages within the dataset itself, rather than the absolute figure, for illustrative purposes. Furthermore, some applications may not be made public for security reasons, particularly in the areas of public security and defense. Data collection, recording, and categorization are also susceptible to inconsistencies in definitions (the authors reduce this risk by including multiple coders.

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