



## AI & the Public Sector

Commissioned by Google Cloud

18 Nov 2024



# EXECUTIVE **SUMMARY**



## AI provides a once in a generation opportunity to boost productivity, improve working conditions and enable new innovations in the public sector.

Overall, Public First has estimated that generative AI tools could create over £400 billion a year in value for the UK economy by 2030. In this study, we look deeper at the potential value for the public sector in particular.



## This is particularly important as the public sector faces increasing pressures with budget, staff workload, and morale.

61% of all public administration workers tell us that overwork has increased in the last five years, and 70% that employee morale has decreased. For the next year, the Treasury has set a target to find around £12 billion in efficiency savings - but overall public sector productivity has not increased in over 25 years.



## In this presentation, we find multiple significant benefits from the greater use of generative AI.

- **Freeing up time.** Building off detailed time diaries from public sector workers, our research finds that up to a third of daily tasks in the public sector could be performed by generative AI.
- **Saving costs.** In total, we find that greater deployment of generative AI could free up to £38 billion across the public sector by 2030 to be deployed elsewhere or to reduce pressure for future tax rises.
- **Increasing quality.** As well as saving time, greater use of generative AI could free up resources to significantly improve quality and reduce waiting times in the public sector: allowing an extra 3.7 million GP appointments, a 16% increase in the teacher to student ratio and freeing up the equivalent of over 160,000 police officers.



### **For the public sector workforce as a whole, AI tools are overwhelmingly a complement rather than a substitute for the current workforce.**

We estimate that over 56% of public may be complemented by generative AI at work.



### **Public administration workers recognise the potential of AI.**

Two-thirds of public administration managers agreed that AI will change the way the public sector operates forever.



### **However, most of the upside to adopting AI lies ahead.**

Just 12% of public administration leaders said that they had already significantly deployed AI tools. Only 23% of all public administration workers are currently using AI tools regularly, turning to them at least weekly - this falls to 15% of female employees over 45.



### **For the next few years, progress is likely to focus on supporting public sector workers with administrative tasks.**

These were the most valuable use public administration managers recognised in our sample, with 81% saying reducing the time to fill out paperwork would be valuable, 79% performing basic data analysis and 75% recording transcripts or taking meeting notes.



### **In the longer term, AI will enable more significant innovations: increasing efficiency, reducing waste, and ultimately allowing for redesign of how public sector services and jobs roles work.**

This will take a few years however, as technology such as AI agents matures, and the wider public sector works to put in place supporting data and skills infrastructure.



## In order to take full advantage of AI, we recommend that the Government:

- 1. Works to join together datasets.** 55% of public administration managers agreed that they would need access to different or better structured datasets to fully take advantage of AI tools in their daily roles.
- 2. Provide legal clarity on potential use cases.** 60% of public sector administration managers agreed that there were legal or regulatory barriers that would make them cautious about using AI tools more extensively.
- 3. Support workers to learn new skills.** Only around a third (34%) of public administration managers were confident that their workforce had the right skills to take advantage of AI. While early adopters have largely found and discovered AI tools themselves, the next wave of adopters are likely to need much more and early encouragement to implement them into their workflows.



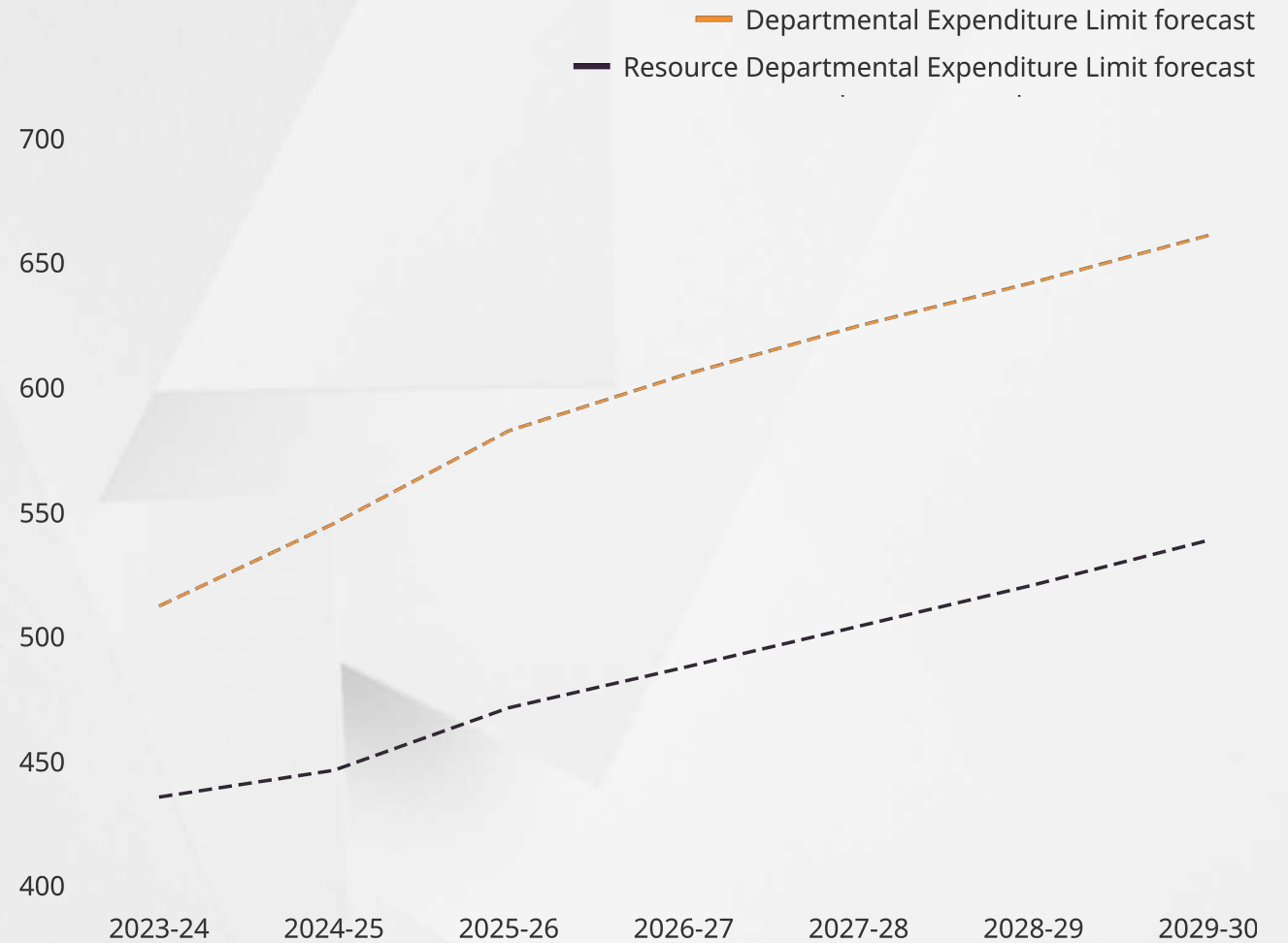


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**THE PUBLIC SECTOR FACES  
INCREASING PRESSURES WITH  
BUDGET, WORKLOAD, AND  
MORALE**

## FISCAL PRESSURE IN THE PUBLIC SECTOR WILL CONTINUE TO RISE STEADILY

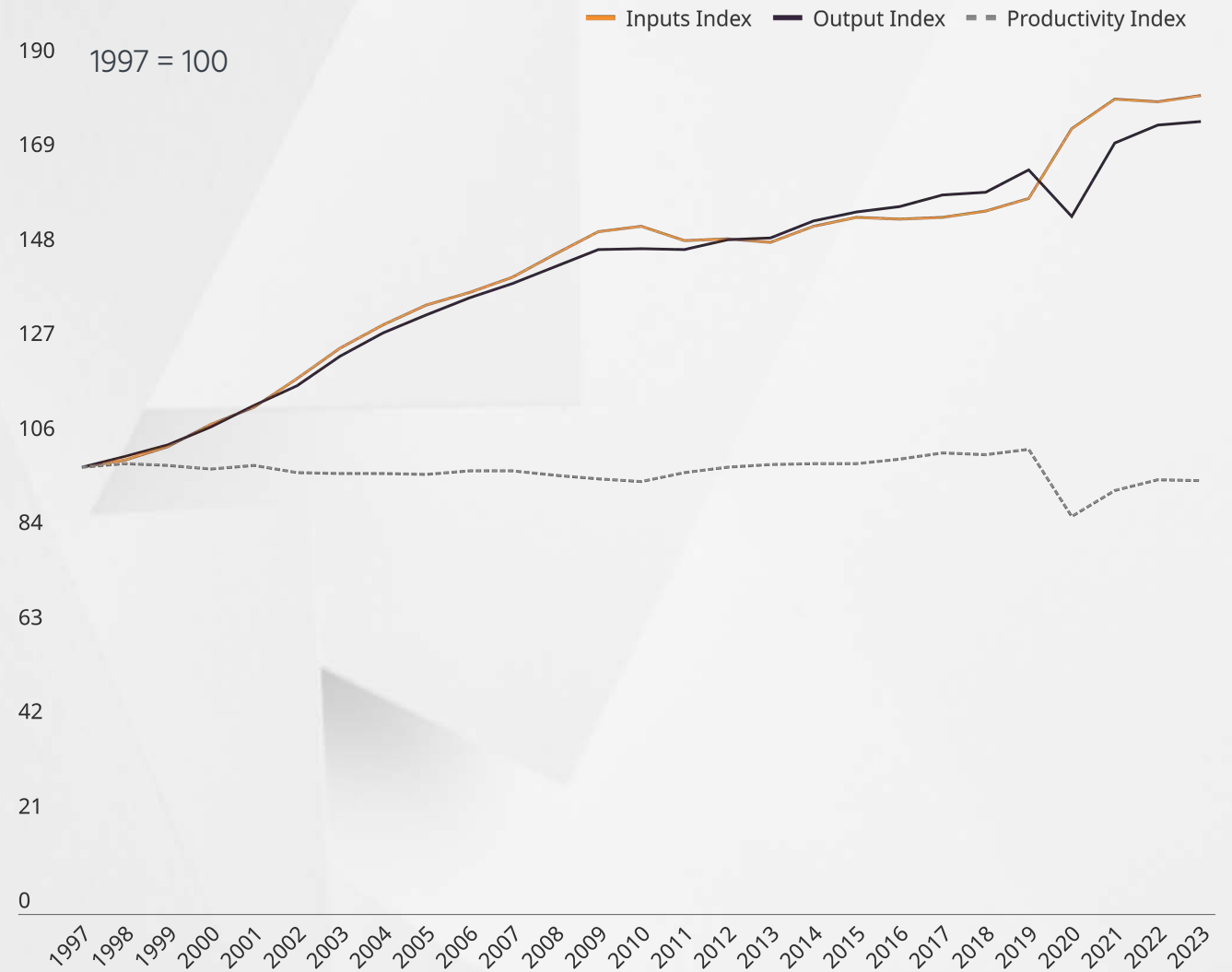
Over the last quarter century, crossing Governments from both political parties, public sector productivity has stayed flat. At the same same time, public demand from greater expectations and an ageing population continues to grow. The latest Office for Budget Responsibility (OBR) forecast suggests that the day-to-day running costs of the public sector will rise to £545bn by the 2029/30 fiscal year, or around 20% over its current levels.



OBR post-Budget forecasts (£ bn)

Source: OBR, Economic and fiscal outlook, 30 October 2024

As part of its planning, the Treasury has assumed that departments can find 2% productivity, efficiencies and savings in the next year. That's equivalent to around £12 billion in savings. Leveraging AI across the public sector will be a key part of boosting public sector productivity in line with this target.



**Public sector productivity**

Source: OBR, Economic and fiscal outlook, 30 October 2024

## LABOUR SHORTAGES ARE INCREASING

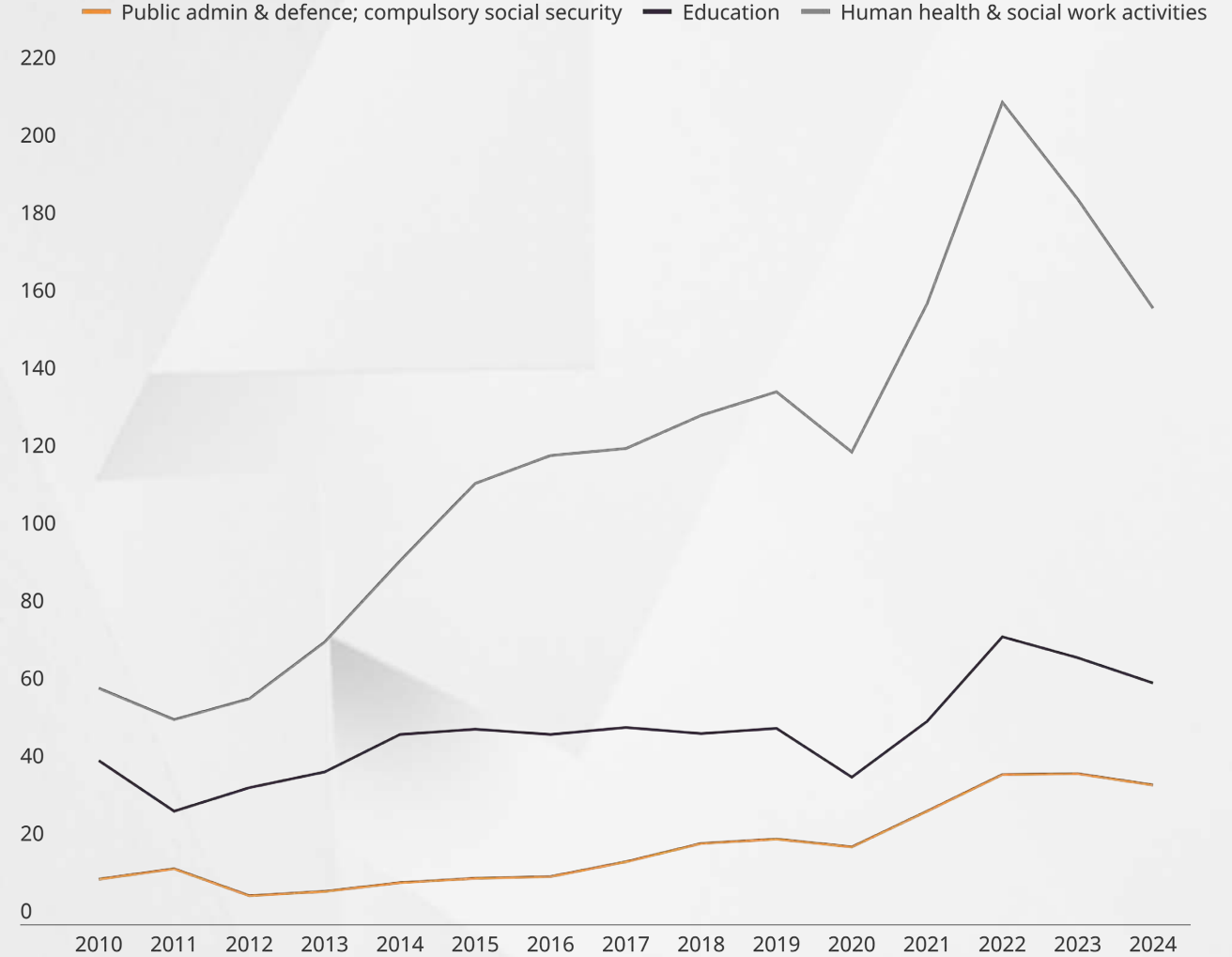
Demand for public sector workers is outstripping supply:

# 79%

of respondents report that employee workload in the sector feels like it has increased over the last five years.

# 61%

of respondents report that they have personally experienced being overworked at their current job.



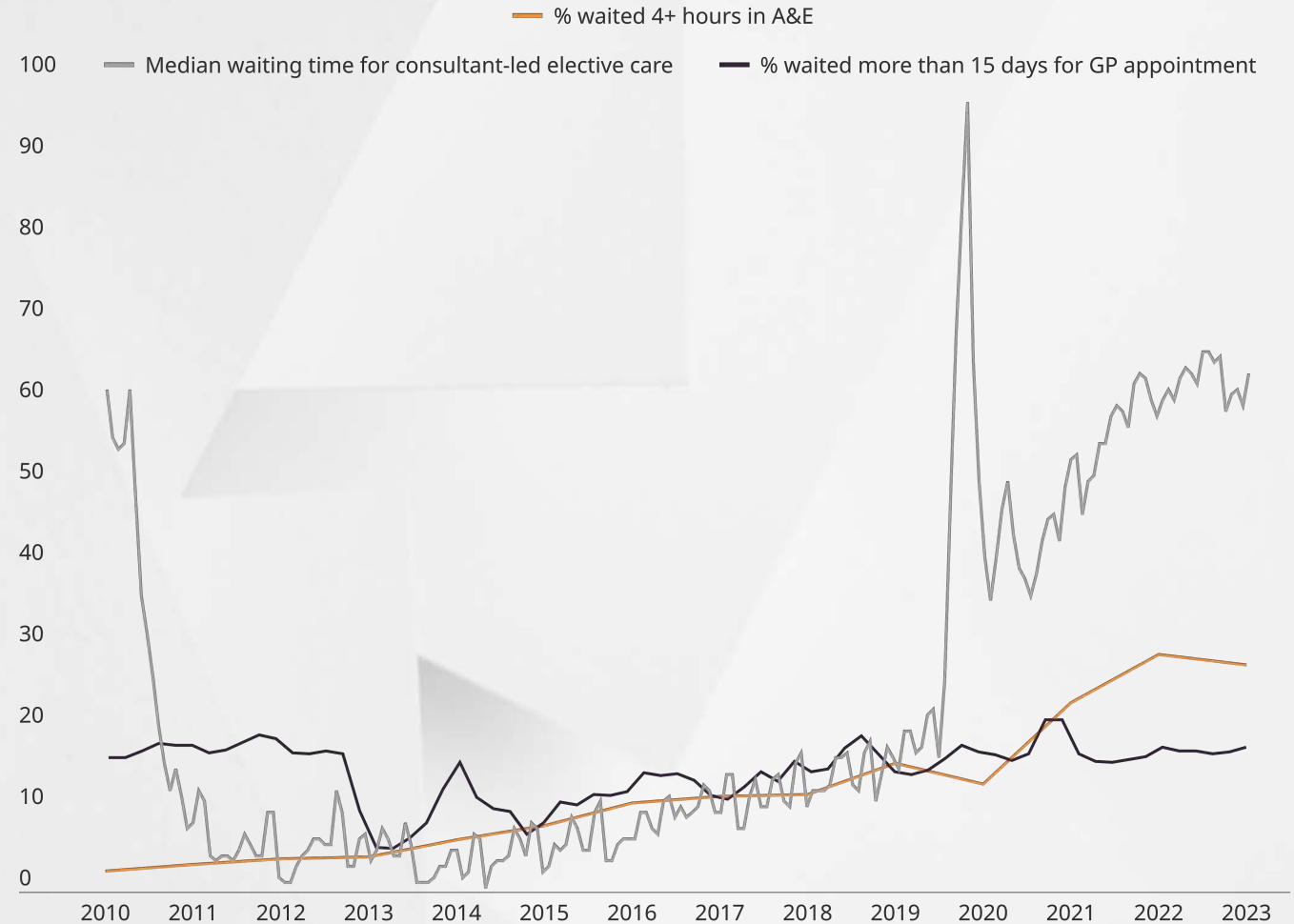
**Vacancy levels (thousands)**

Source: ONS, VACS02: Vacancies by industry, October 2024

## THE CAPACITY CHALLENGE FACING THE NHS IS PARTICULARLY PRONOUNCED

Key NHS services are also under strain, with waiting lists for elective procedures in hospitals and A&E admissions which fail to meet the targeted four-hour waiting seeing a sustained rise after the pandemic. GP appointment waiting times, which had trended downwards before the pandemic, are now back at a five-year peak.

A 2024 Ipsos poll found that user satisfaction had dropped by 30 or more percentage points (pp) since 2021 for GPs and 39 pp for hospitals.



### Capacity metrics for key NHS services (normalised)

Source: NHS Digital, Appointments in General Practice, October 2018 - September 2024; NHS England A&E Attendances and Emergency Admissions 2010 - 2024; NHS England Referral to Treatment (RTT) Waiting Times 2011 - 2024; Hughes, L. 2024. Satisfaction with UK public services sees sharp drop since 2021. The Financial Times. URL: <https://www.ft.com/content/7eb75107-c195-40d1-9f78-893d1c7c28b0>

## EMPLOYEE MORALE IS AT A NADIR

Source: Public First polling, October 2024



# 70%

of public administration workers say employee morale across the sector has decreased in the past 5 years, compared to 8% who say it has increased.

# 58%

of public administration workers feel that employee retention has decreased in the last five year

# 35%

of public administration workers say the amount of unpaid overtime they have had to do has increased in the past 5 years compared to just 7% who said it has decreased.



## 2

# USING AI TO IMPROVE PUBLIC SECTOR PRODUCTIVITY

# THE PRESENT CAPABILITIES OF AI AND GENERATIVE AI COULD CREATE UP TO THREE SIGNIFICANT BENEFITS FOR THE PUBLIC SECTOR



## FREEING UP TIME

AI tools can help augment existing workers in the public sector, allowing them to focus more on their core work.



## REDUCING COSTS

By increasing efficiency, AI systems can help reduce the current fiscal pressures in the public sector.



## IMPROVING QUALITY

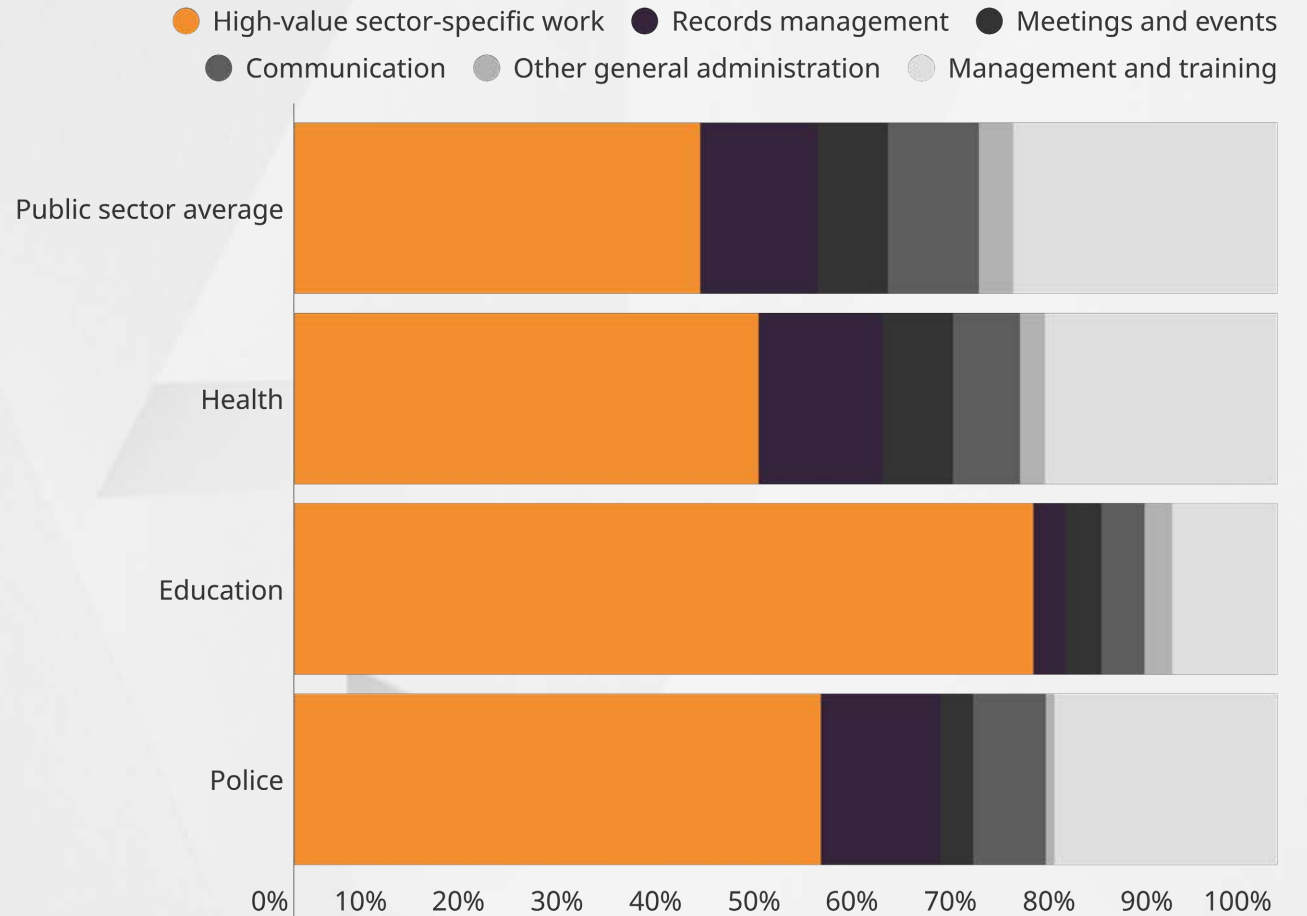
This will not just save money for the public sector, but allow it to deliver higher quality services.

## FREEING UP TIME

Our research finds that up to a third of the time spent on daily tasks in the public sector could be augmented by generative AI tools.

This includes tasks such as:

- record management
- data processing
- administrative duties
- project management,
- administration around meetings



**Minutes spent on the following tasks across the UK public sector each day**

Source: ONS, Time use in the public sector, Great Britain: February 2024

## REDUCING COSTS

This could also mean significant cost savings in terms of the public sector budget, which can translate to re-investment in other areas or avoiding the need for future tax rises.

### Estimated gains from generative AI adoption in the public sector



**£38bn** saved from the public purse by 2030



of the public sector budget freed for re-investment **8.3%**

This sits alongside previous Public First research, which estimates that generative AI could create over £400bn a year across the UK economy by 2030. Spending on the day-to-day running of the public sector was £432bn in the 2033/4 fiscal year, while the value of the national economy came to £2.3tn.

## INREASING QUALITY

Alternatively, for an administration focused on improving public service delivery and quality, generative AI could make it easier to improve experience in the public sector: reducing waiting times, increasing the amount of attention each public sector worker can pay to people, and enabling new innovations

### Estimated gains from generative AI adoption in the public sector



**16%**

**increase in the ratio of teachers to students**



**3.7m**

**additional GP appointments each week**

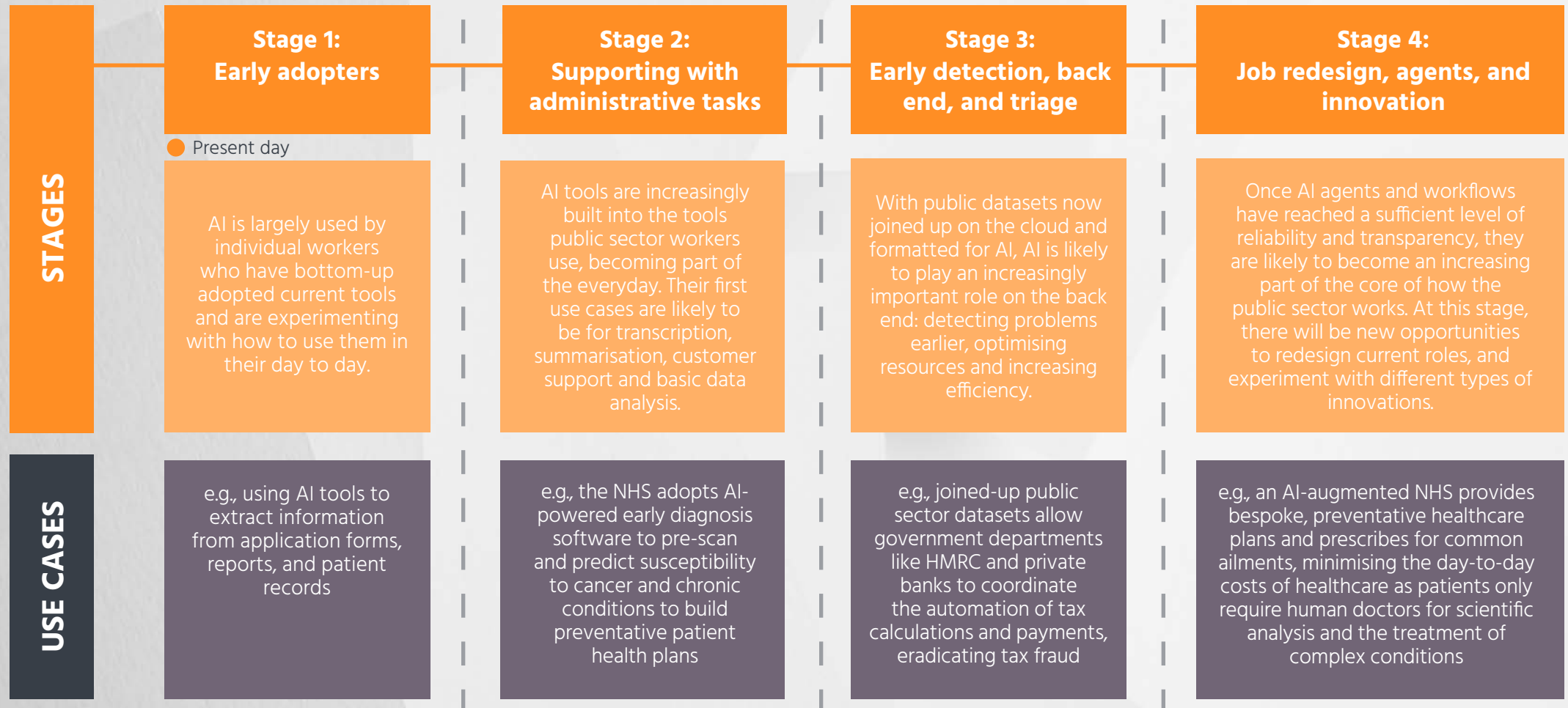


**164k**

**equivalent additional police officers to engage in incident response**

These estimates represent the quality improvements available when generative AI has been fully adopted across the public sector. We model a ten-year adoption period from present day for this technology which will require the public sector to adopt AI tools and systems rapidly over the next parliament, and overcome its current lag in adoption relative to the private sector. We estimate that this expeditious adoption could create a cumulative value of up to £358 bn for the public sector by 2034.

# AT THE MOMENT, WE ARE LARGELY IN THE FIRST STAGE OF THE AI ADOPTION PROCESS, FOCUSED ON EXPERIMENTATION - A SUPPORTIVE INSTITUTIONAL ENVIRONMENT IS KEY TO FURTHER PROGRESS



## AS WE MOVE TO MORE ADVANCED STAGES OF DEPLOYMENT, THE BENEFITS FROM AI ARE LIKELY TO INCREASE IN LINE

INITIAL GENERATIVE AI ADOPTION	Applications	Use cases	Augmented job roles	Daily proportion of work freed up by AI
	<p>Artificial intelligence is used to automate basic processes, such as records management and data analysis through making the necessary programming techniques to do so user-accessible.</p>	<ul style="list-style-type: none"> <li>Automation of records management</li> <li>Automation of administration</li> <li>Automation of data processing</li> <li>Of the 74 use cases of AI where it is already deployed in public sector bodies, 66% was to support operational decision-making (e.g., via digital assistants in HMRC to sort and help customers completing tax tasks) and 59% were to support monitoring (e.g., an AI tool identifying differences between application forms in HM Land Registry)</li> </ul>	<p>Book-keepers, payroll managers and wages clerks</p> <p>Data analysts</p> <p>Receptionists</p>	<p><b>15.0%</b></p>
ADVANCED GENERATIVE AI ADOPTION	<p>Artificial intelligence is used to automate basic processes, and generative AI replicates standard management tasks such as delivering training, staff management, and research.</p>	<ul style="list-style-type: none"> <li>Organising training and research</li> <li>Project management</li> <li>Meetings and event organisation</li> <li>Of the government bodies piloting or planning to deploy AI tools, some of the most common use cases were the use of computer vision (e.g., to extract data from documents to build more accessible case management systems) and virtual assistants (e.g., to generate documents, spreadsheets and other simple tools).</li> </ul>	<p>Medical practitioners</p> <p>Teachers and other educational professionals</p> <p>Administrative occupations</p>	<p><b>33.6%</b></p>

\*(as a % of total public sector running costs in 2023/4)

Source: Public First modelling, November 2024; National Audit Office, Use of artificial intelligence in government, Cabinet Office & DSIT, March 2024



# 3

## WHAT WILL AI MEAN FOR THE PUBLIC SECTOR WORKFORCE?

## WE ANTICIPATE THAT GENERATIVE AI WILL AUGMENT MOST JOBS IN THE PUBLIC SECTOR

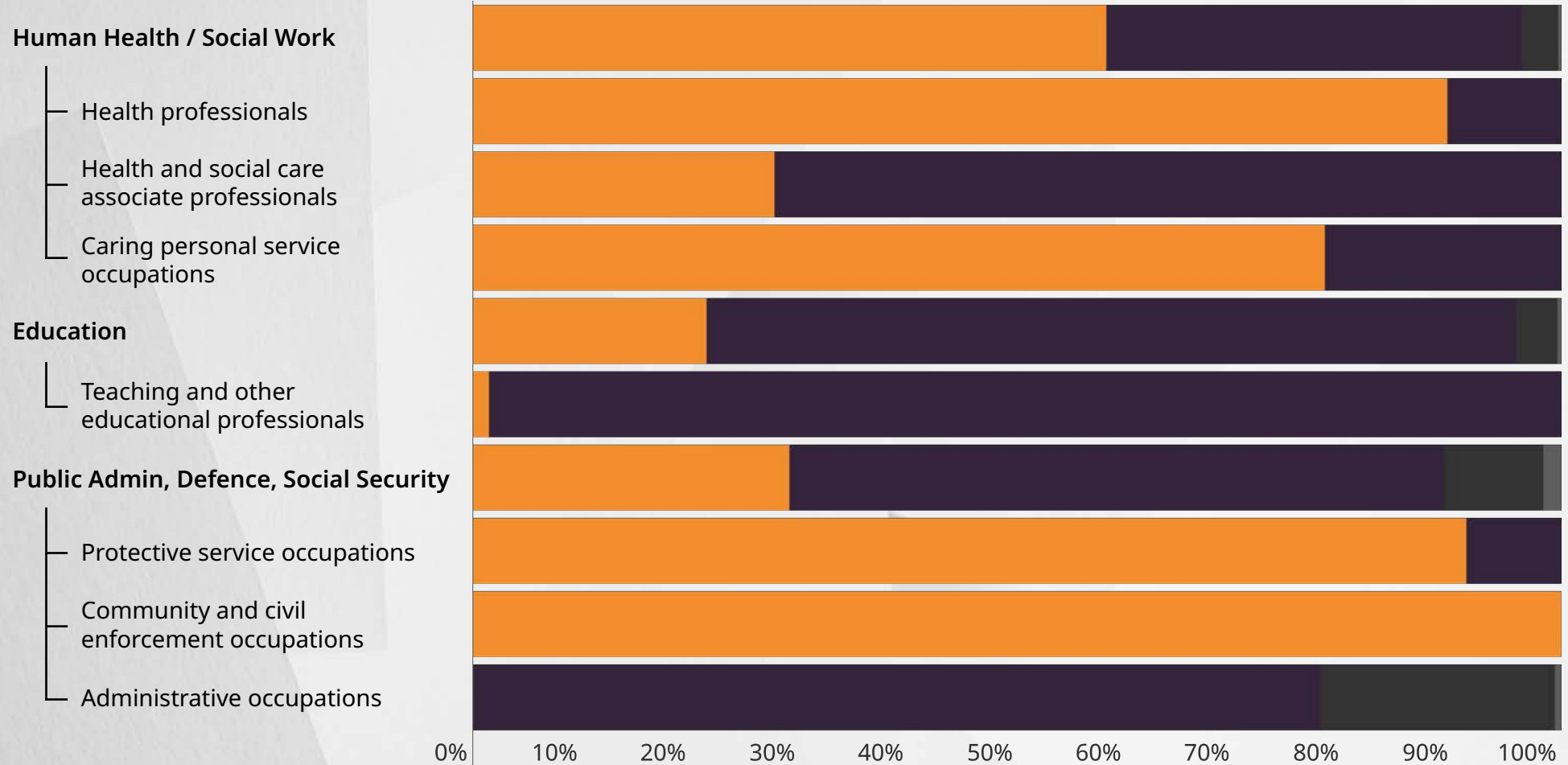
We find that over 56% of jobs are likely to be **augmented** by generative AI, with significant time savings that allows them to focus more on sector-specific work such as classroom teaching.

A further 38% will be largely **insulated**, due to an inability for AI to support their tasks or their inherent sensitivity.

The remaining 6% of roles are likely to see a reallocation to other responsibilities in the long-term, with generative AI able to carry out a majority of their administrative and managerial functions. However, we anticipate that labour demand in the public sector during this period is likely to outpace any reallocation, estimating that demand for public sector labour could grow by approximately 6.6% over the next ten years even as generative AI adoption occurs.



● Insulated jobs
 ● Augmented jobs
 ● Displaced jobs
 ● Phased out jobs



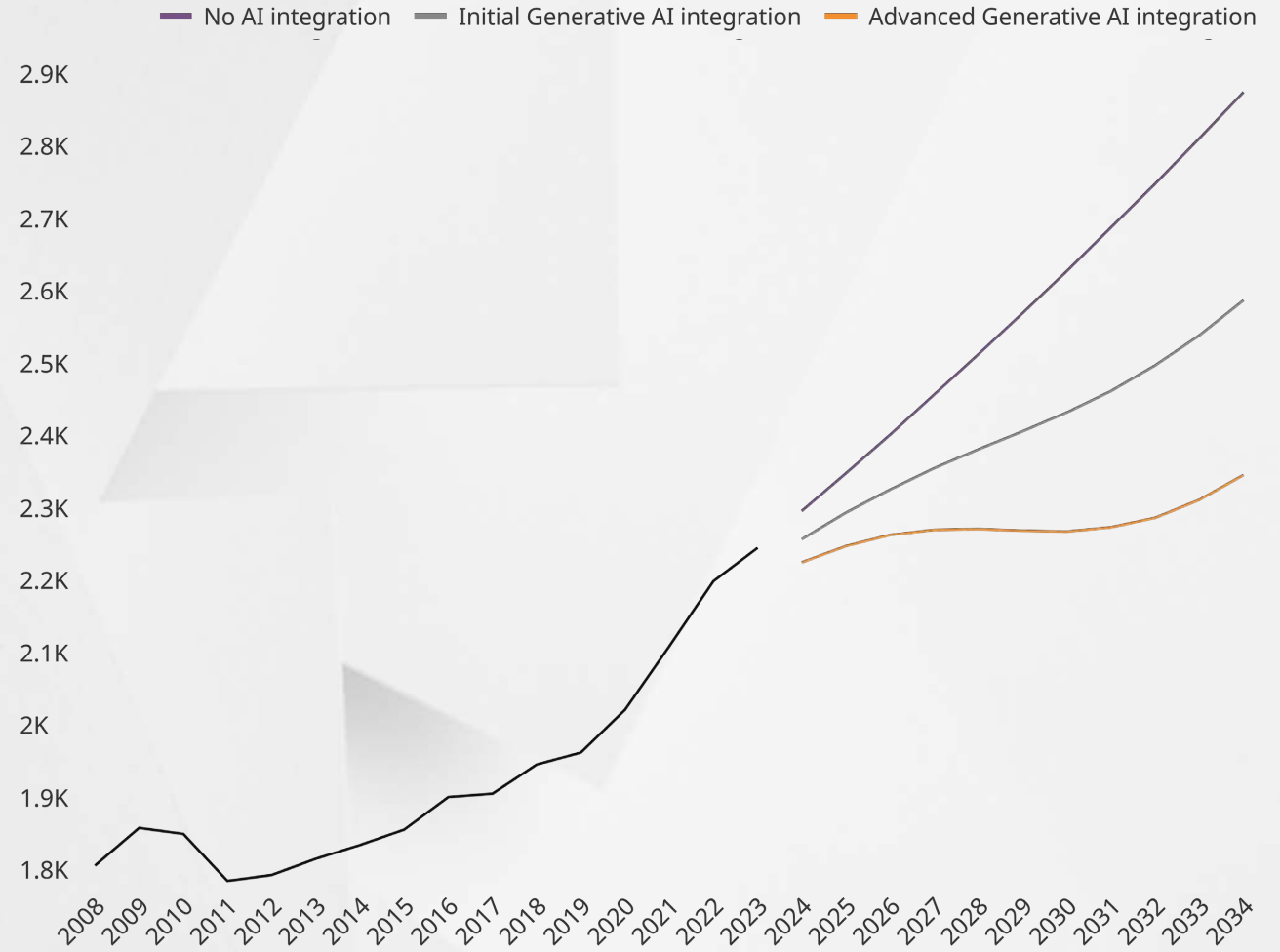
**Impact of AI adoption on public sector industries (1-digit SOC and 2-digit SIC within these)**

Source: Public First modelling, November 2024

## IN HEALTH, WE EXPECT THAT THE ADOPTION OF GENERATIVE AI WILL RESULT IN DEMAND FOR LABOUR RISING AT MORE MANAGEABLE RATES

We model the impact of generative AI adoption on total demand for labour (defined as the number of jobs in addition to the number of vacancies), forecasting forward on the basis of past data.

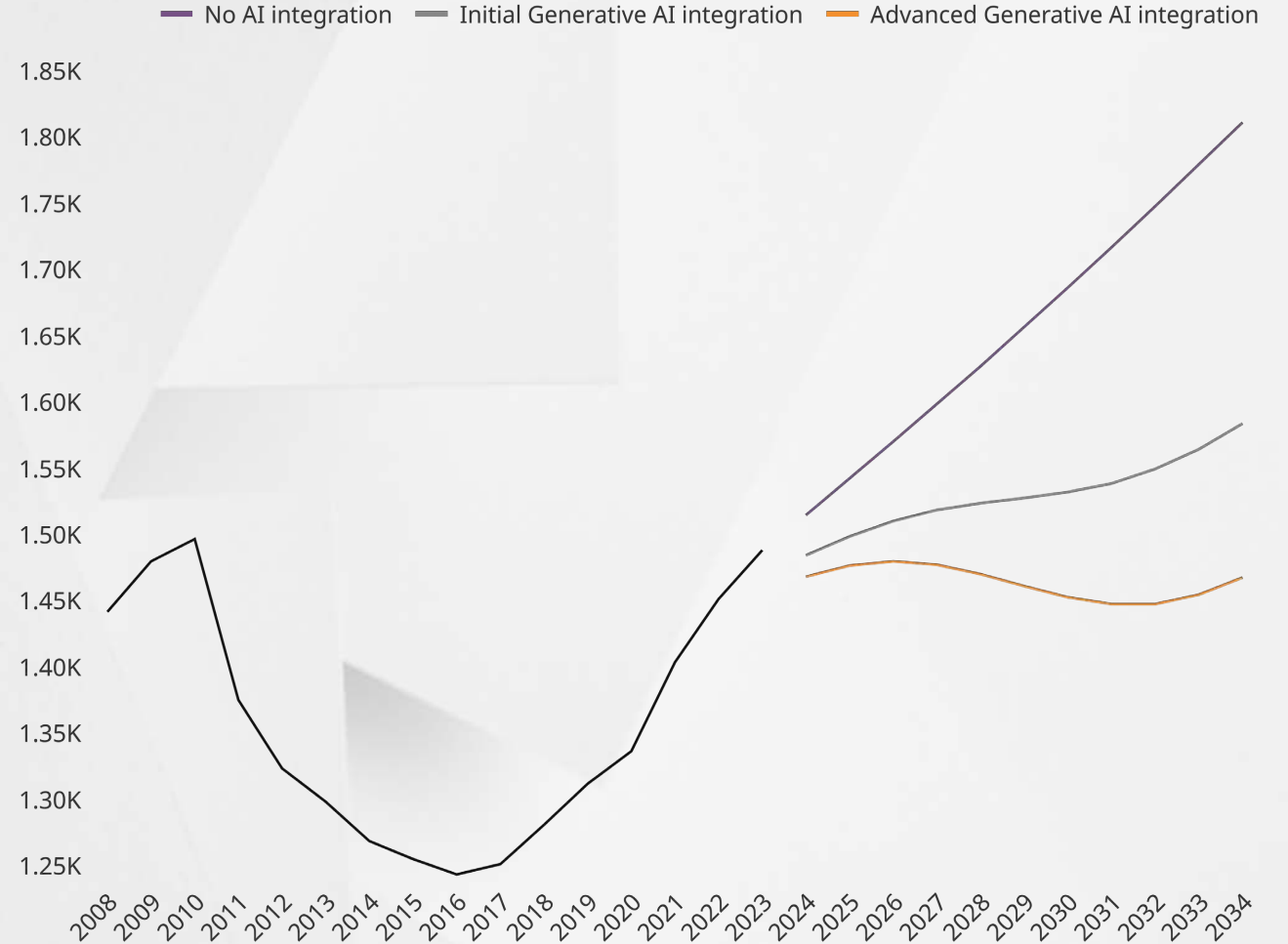
We find that even in the scenario where the bolder advanced integration of AI is fully achieved over the next ten years, labour demand in health will temporarily stabilise before continuing to rise at a slower pace, allowing policymakers more breathing room in which to train up medical staff to meet NHS needs.



**Forecasted labour demand in health  
(thousands of workers)**

Source: Public First modelling, November 2024; ONS Broad Industry Group (Standard Industrial Classification) – Business Register and Employment Survey (BRES): Table 1, November 2024; ONS, VACS02: Vacancies by industry, October 2024

**SIMILARLY, THE ADOPTION OF GENERATIVE AI WILL SEE LABOUR DEMAND IN PUBLIC SECURITY AND ADMINISTRATION CONTINUE TO GROW BUT AT A SLOWER PACE**



**Forecasted labour demand in public security and administration (thousands of workers)**

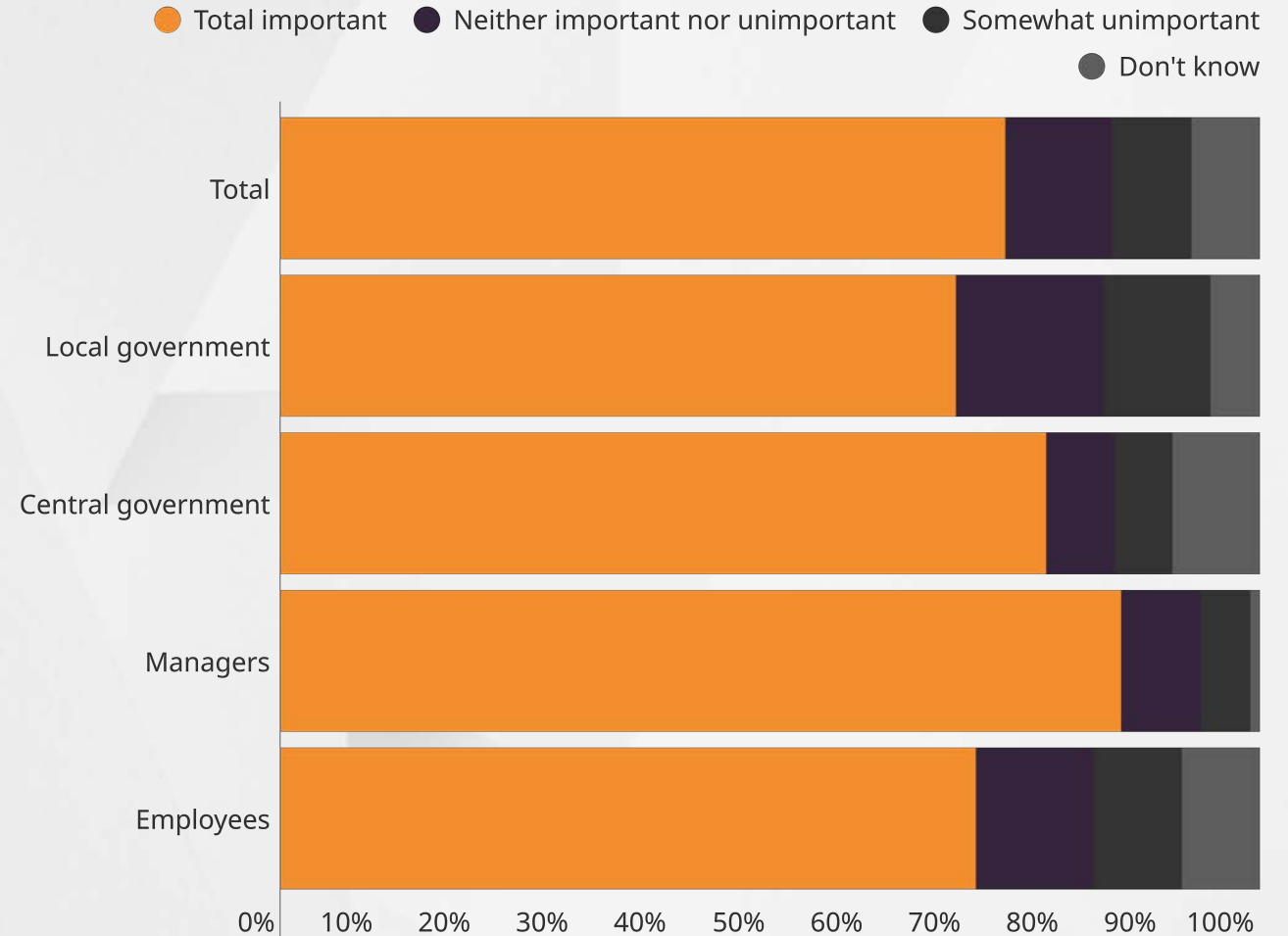
Source: Public First modelling, November 2024; ONS Broad Industry Group (Standard Industrial Classification) – Business Register and Employment Survey (BRES): Table 1, November 2024; ONS, VACS02: Vacancies by industry, October 2024



# 4

**WHAT DO PUBLIC  
ADMINISTRATION WORKERS  
THINK ABOUT AI?**

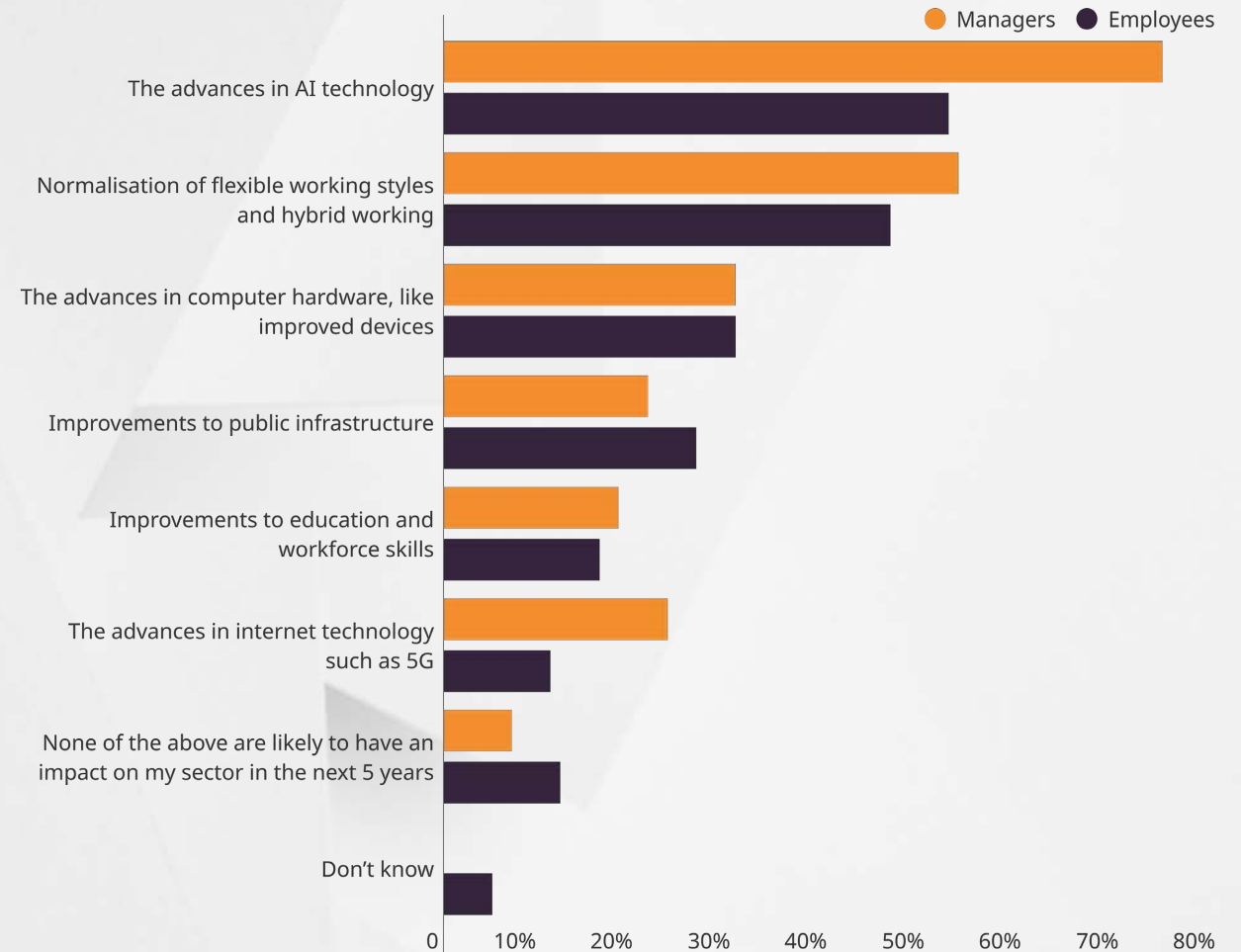
**ACROSS THE BOARD,  
THOSE WE SURVEYED  
RECOGNISED THE LIKELY  
IMPORTANCE OF AI IN THE  
PUBLIC SECTOR OVER THE  
NEXT TEN YEARS**



**How important or unimportant do you think AI tools will be for the public sector in the next ten years?**

Source: Public First polling, October 2024

**FOR MANAGERS IN PARTICULAR, THIS WAS SEEN AS MUCH LIKELY TO HAVE A SIGNIFICANT IMPACT THAN OTHER POTENTIAL CHANGES TO SKILLS, TECHNOLOGY OR WORKING PRACTICES**

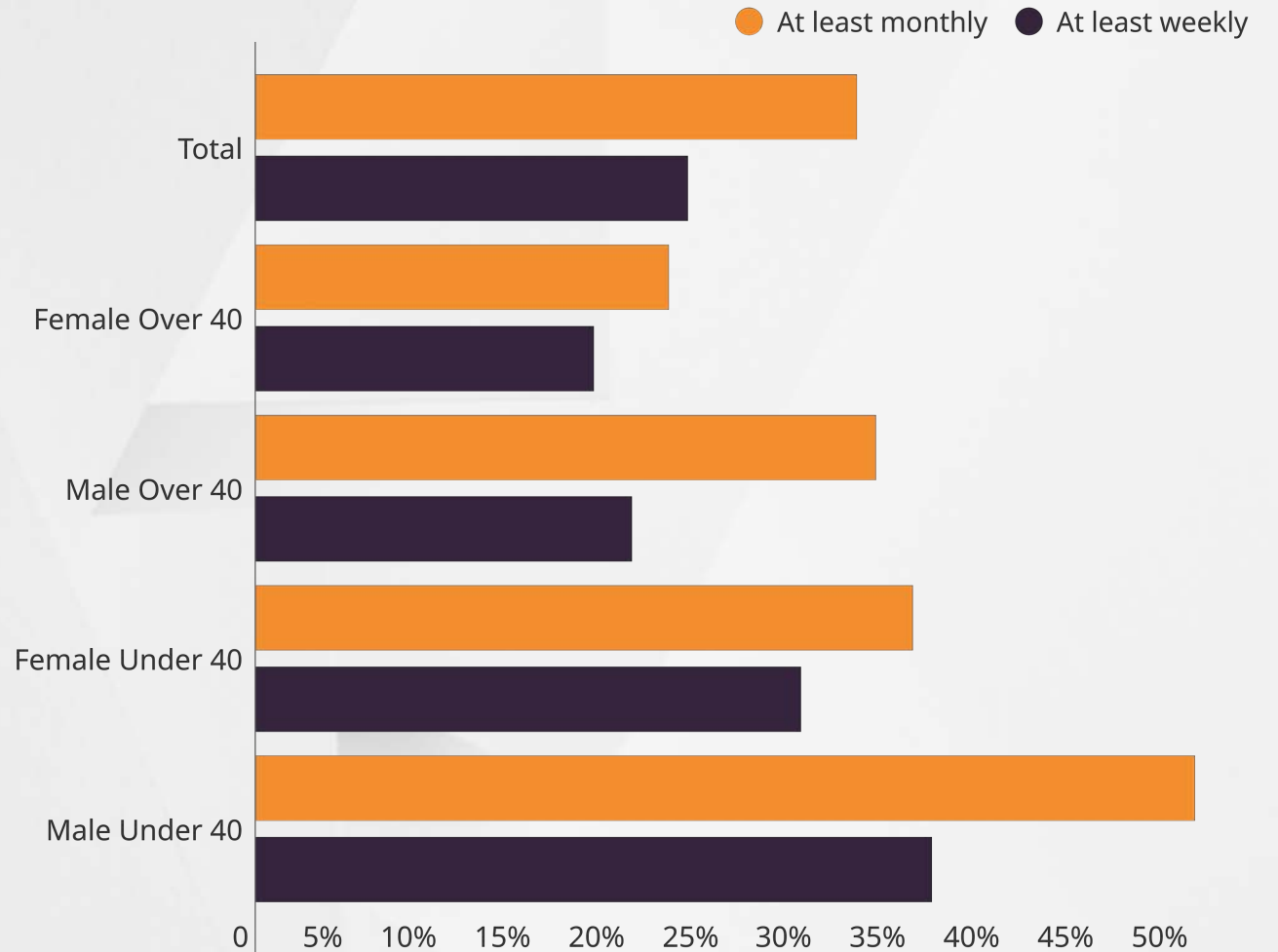


**Which of the following, if any, do you think will have the biggest impact on the public sector area that you work in over the next 5 years?**

Source: Public First polling, October 2024

## AT THE SAME TIME IT IS STILL EARLY IN THE PROCESS OF ADOPTION.

Only around a quarter (23%) of workers say they use AI tools at least weekly - and this is heavily concentrated among young men

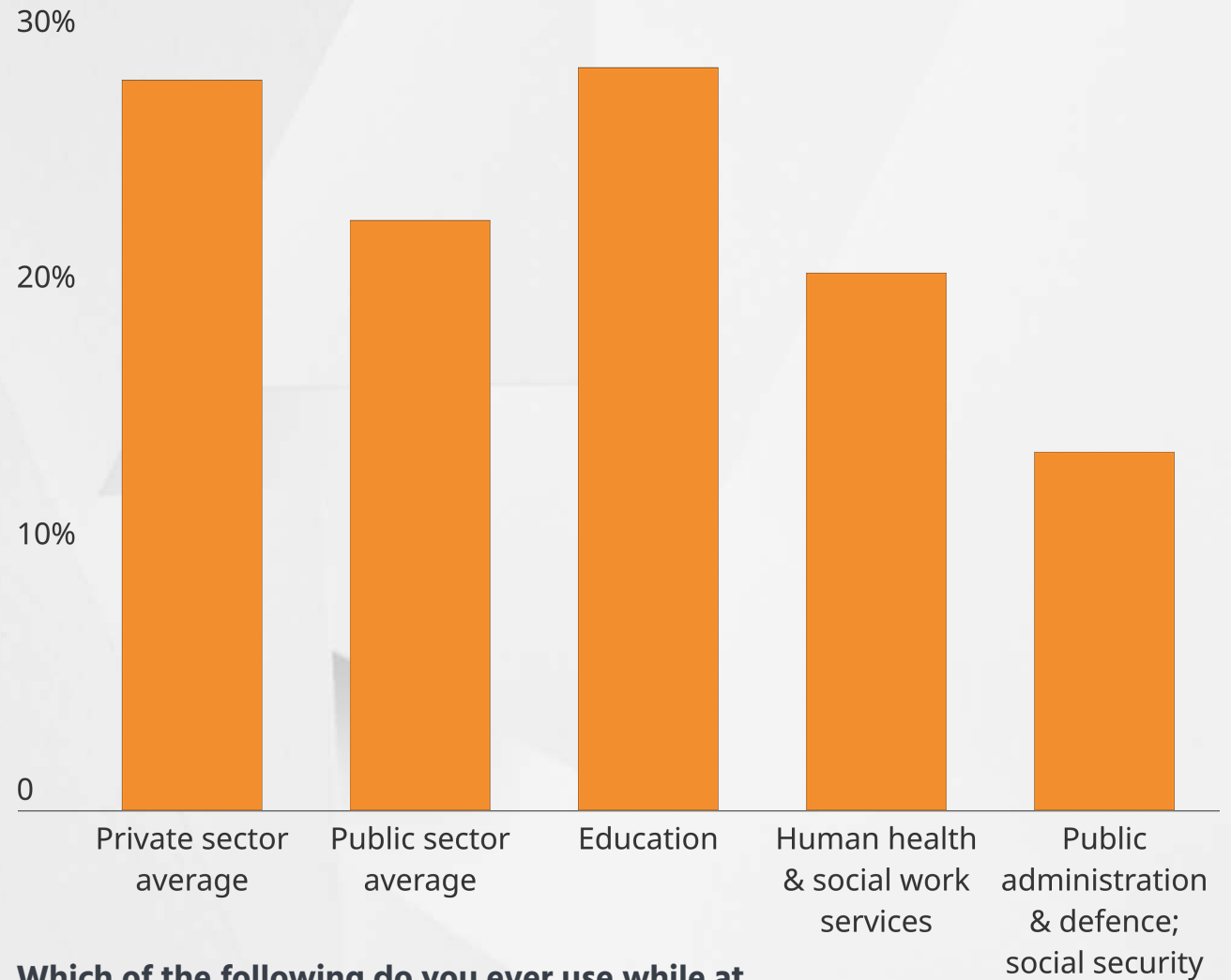


Which of the following have you personally used AI tools for? Select any which apply.

Source: Public First polling, October 2024

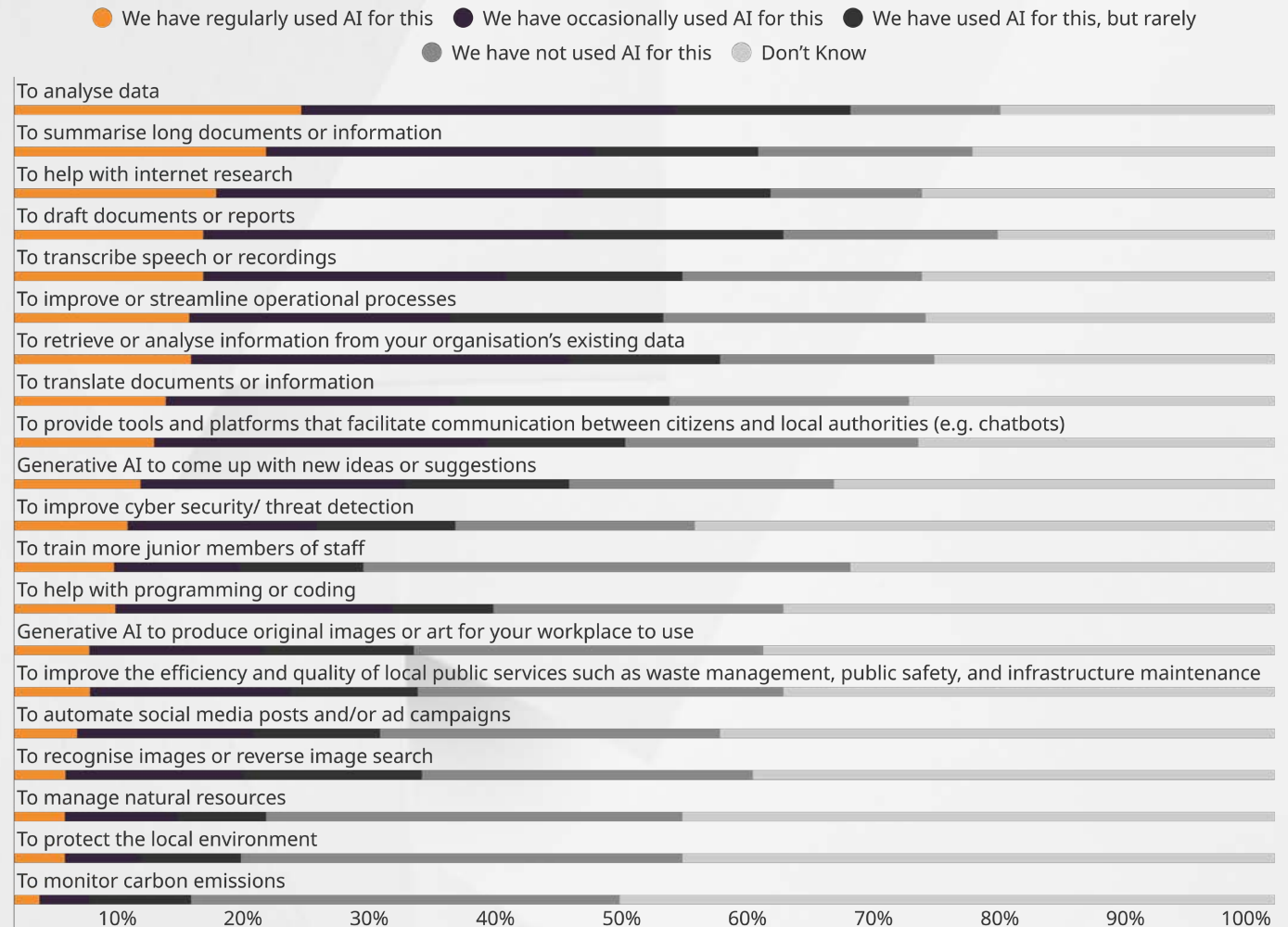
## EDUCATION WORKERS HAD AROUND THE SAME LEVEL OF AI ADOPTION AS WORKERS IN THE PRIVATE SECTOR

But public administration and health workers  
saw much lower levels of adoption



Source: Public First polling, August 2024

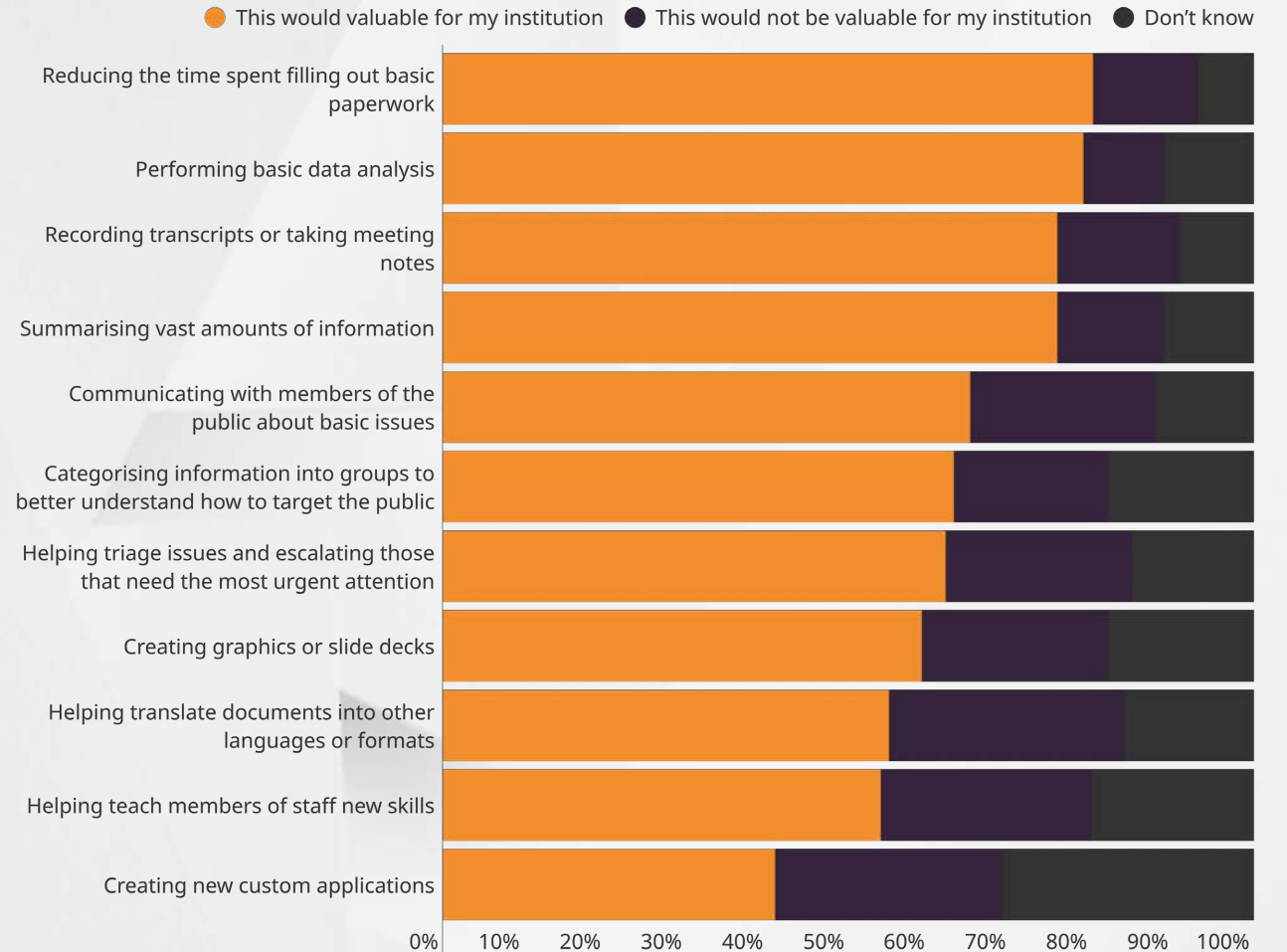
# THE MOST COMMON CURRENT USES OF AI IN THE PUBLIC SECTOR ARE FOR ANALYSING DATA, SUMMARISING OR DRAFTING DOCUMENTS AND HELPING WITH INTERNET RESEARCH



**Has the institution that you work for ever used artificial intelligence to do any of the following?**

Source: Public First polling, October 2024

**AND WHEN PRESENTED WITH A VARIETY OF USE CASES, USING AI FOR SUPPORT WITH BASIC ADMINISTRATIVE TASKS RESONATED WITH OUR SAMPLE THE MOST**

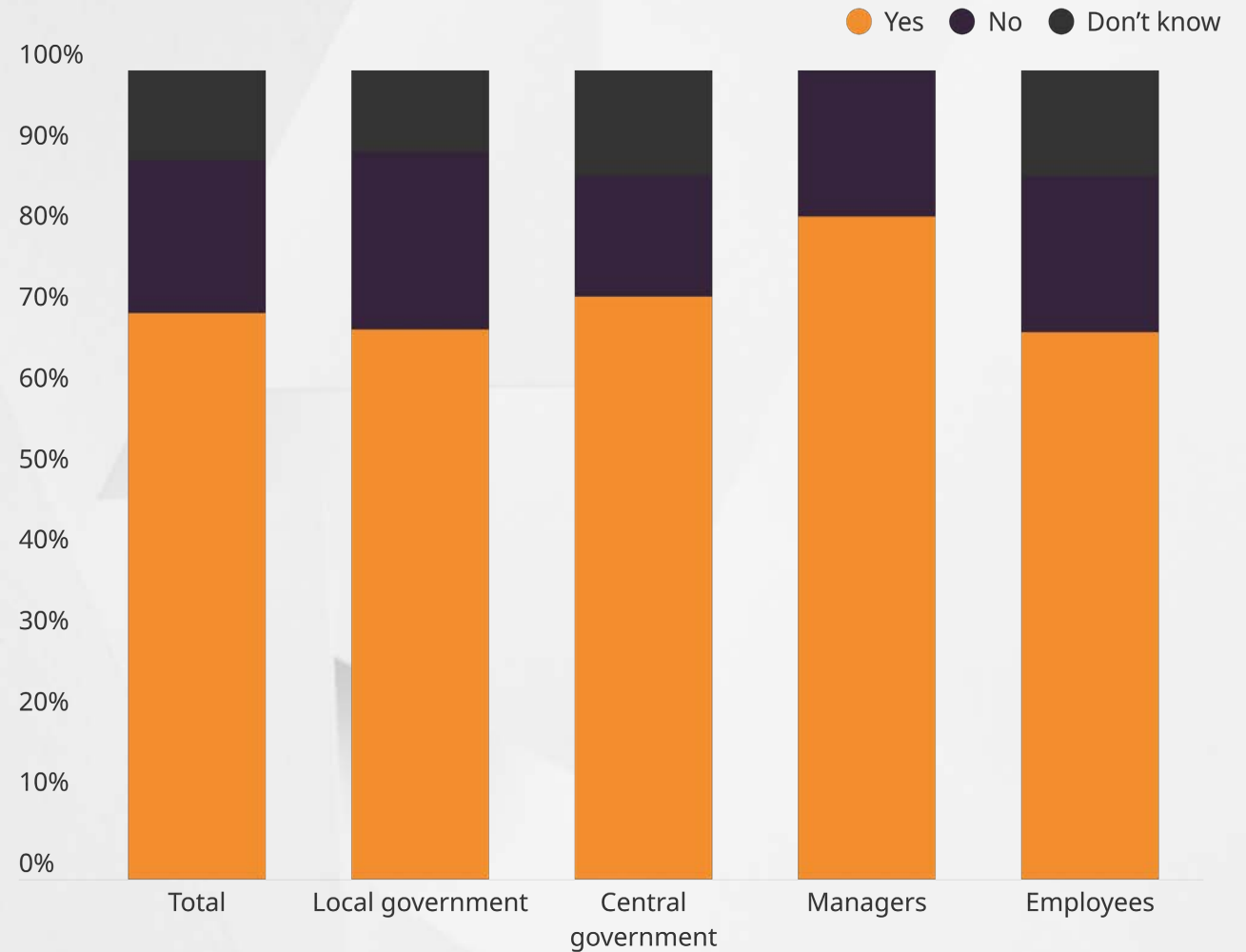


**Thinking about the future, which of the following do you think could be potentially valuable use cases of AI tools for your organisation?**

Source: Public First polling, October 2024

# ONLY AROUND A THIRD OF MANAGERS (34%) WERE CONFIDENT THEIR STAFF HAD THE RIGHT SKILLS TO TAKE FULL ADVANTAGE OF AI

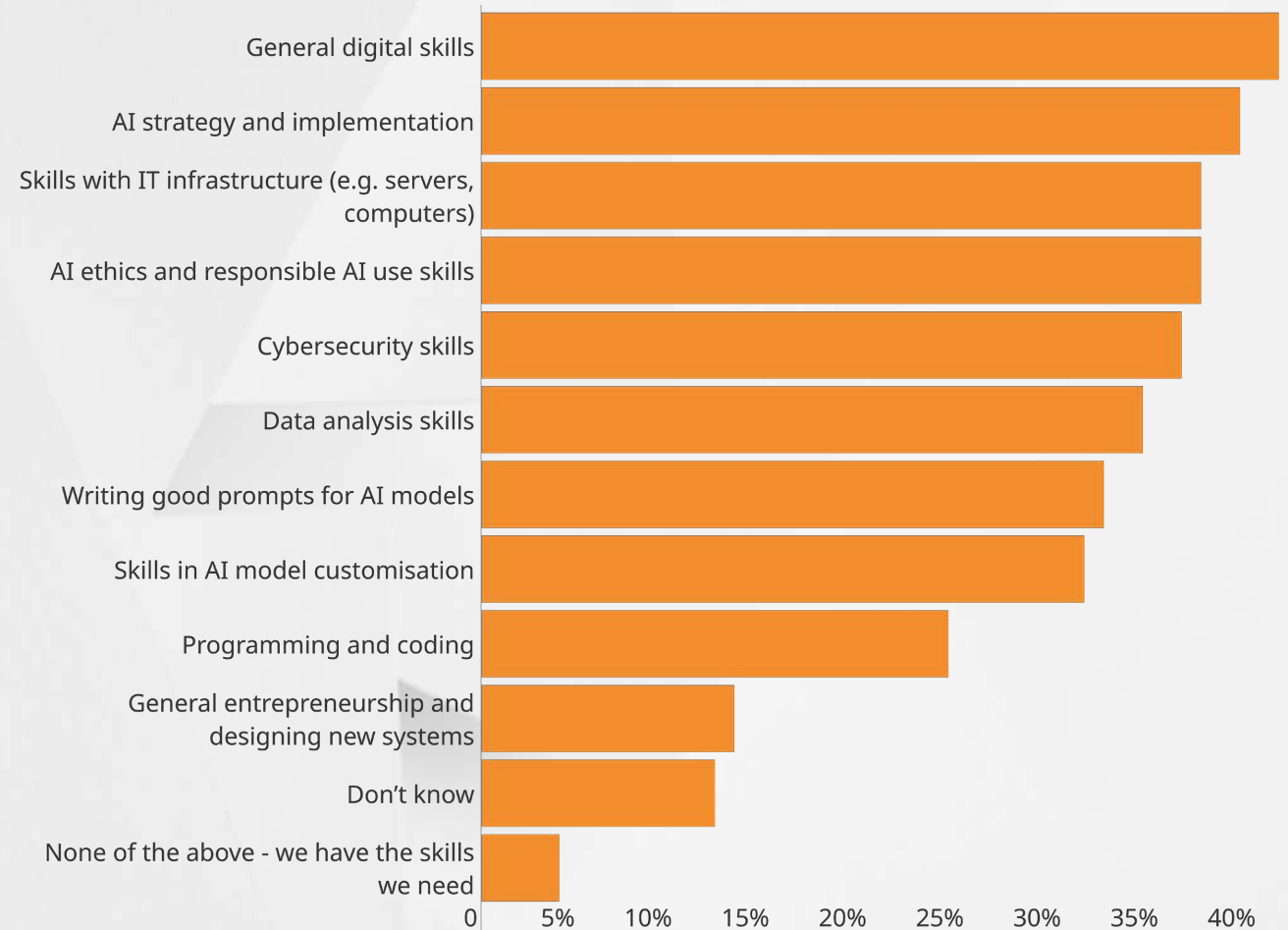
But across the survey, 70% said they would be interested in training on using AI in their job



**If offered by your organisation, would you be interested in attending a training programme specific to adopting and using AI in your job?**

Source: Public First polling, October 2024

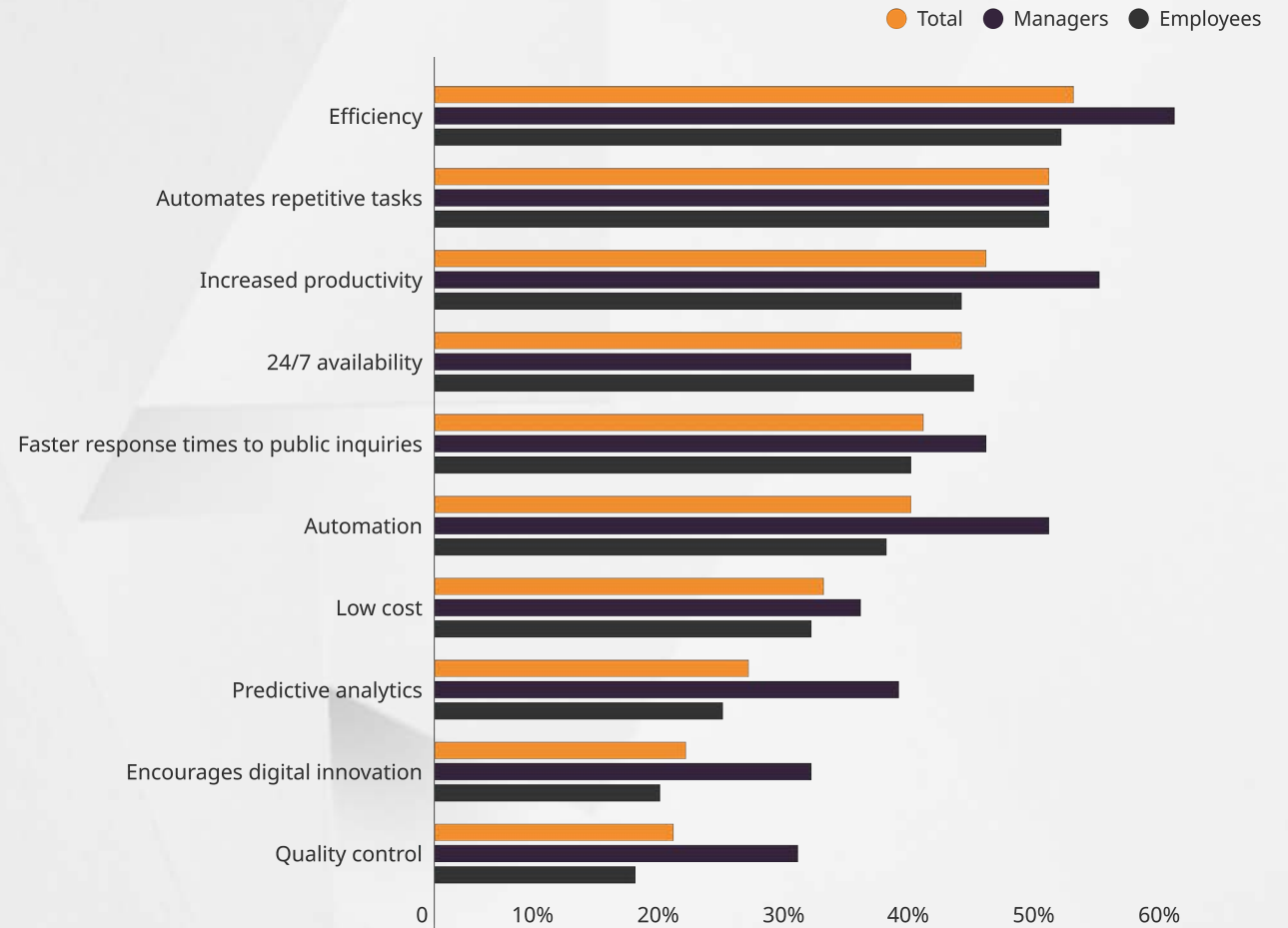
Those polled noted that additional digital skills would be important in order for workers across the board to harness the full potential of AI tools in the workplace.



**In particular which, if any, of the following types of skills would you say your workplace needs more of to take full advantage of AI? Please select all that apply.**

Source: Public First polling, October 2024

# GREATER EFFICIENCY, PRODUCTIVITY AND AUTOMATION WERE SEEN AS PARTICULARLY IMPORTANT BENEFITS TO PUBLIC ADMINISTRATION MANAGERS



**Which of the following, if any, do you consider to be potential strengths of generative AI being used in the workplace? Select all that are relevant.**

Source: Public First polling, October 2024



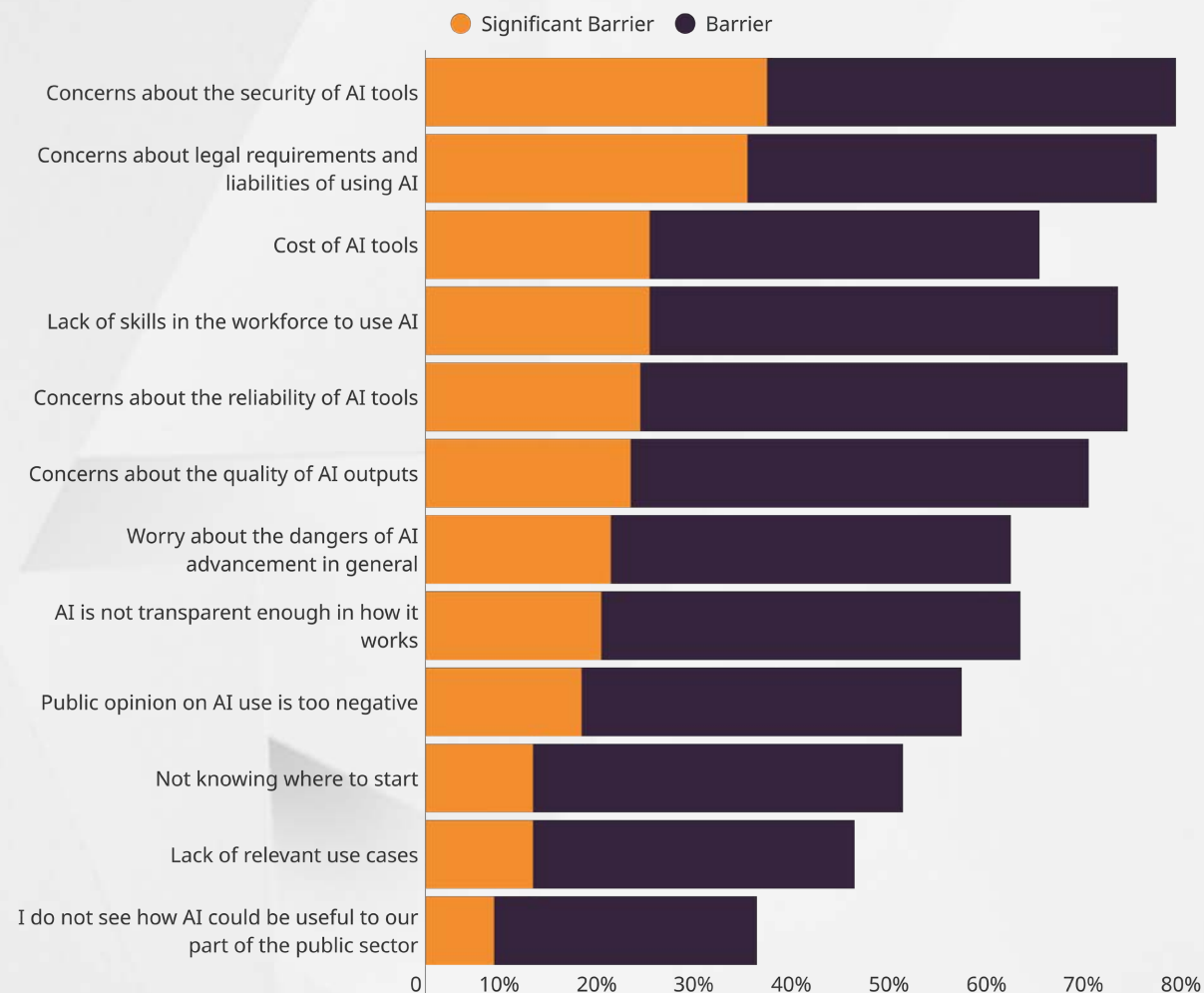
# 5

## BARRIERS TO ADOPTION

## AROUND HALF OF THOSE WE SPOKE TO (47%) THOUGHT THAT AI ADOPTION IN THEIR INSTITUTION WOULD TAKE PLACE SLOWER THAN OTHER TECHNOLOGIES SUCH AS THE CLOUD OR SOCIAL MEDIA

When we asked them about the barriers to their institution making more use of AI, it became clear that this was not because they could not think of good use cases.

Instead, the larger concerns seemed to be around concerns over security, legal requirements, lack of skills and reliability.



**In particular which, if any, of the following types of skills would you say your workplace needs more of to take full advantage of AI? Please select all that apply.**

Source: Public First polling, October 2024

**WHILE SOME OF THESE WORRIES AROUND ISSUES SUCH AS RELIABILITY ARE LIKELY TO FADE ON THEIR OWN AS THE TECHNOLOGY BECOMES MORE MATURE, OTHERS ARE LIKELY TO NEED MORE ACTIVE PREPARATION BY THE PUBLIC SECTOR**

**55%**

of public administration managers agreed that they would need access to different or better structured datasets to fully take advantage of AI, compared to 16% who disagreed.

**60%**

of public administration managers agreed that there were legal or regulatory barriers that would make them cautious about using AI tools more extensively

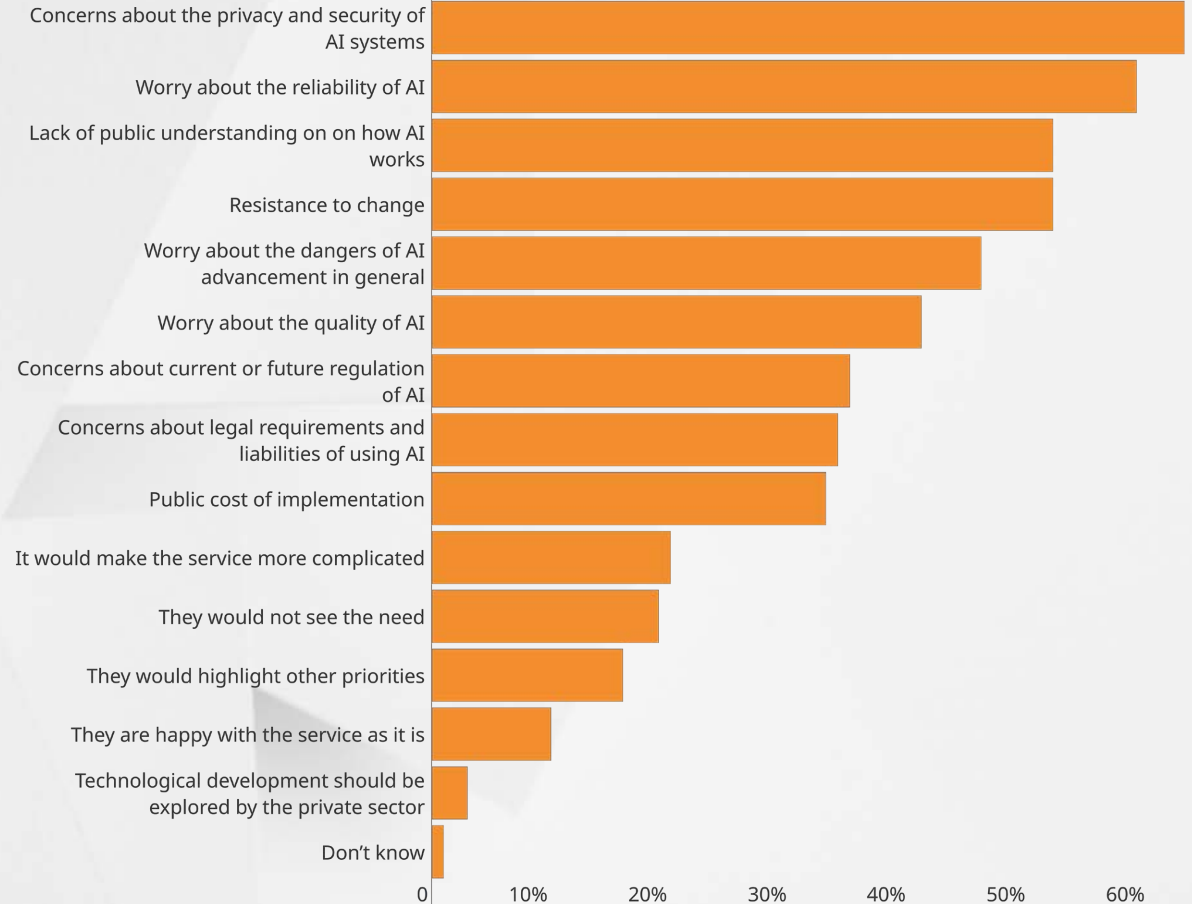
**71%**

of public administration managers agreed that a lack of skills in the workforce was a barrier to their institution making more use of AI

**58%**

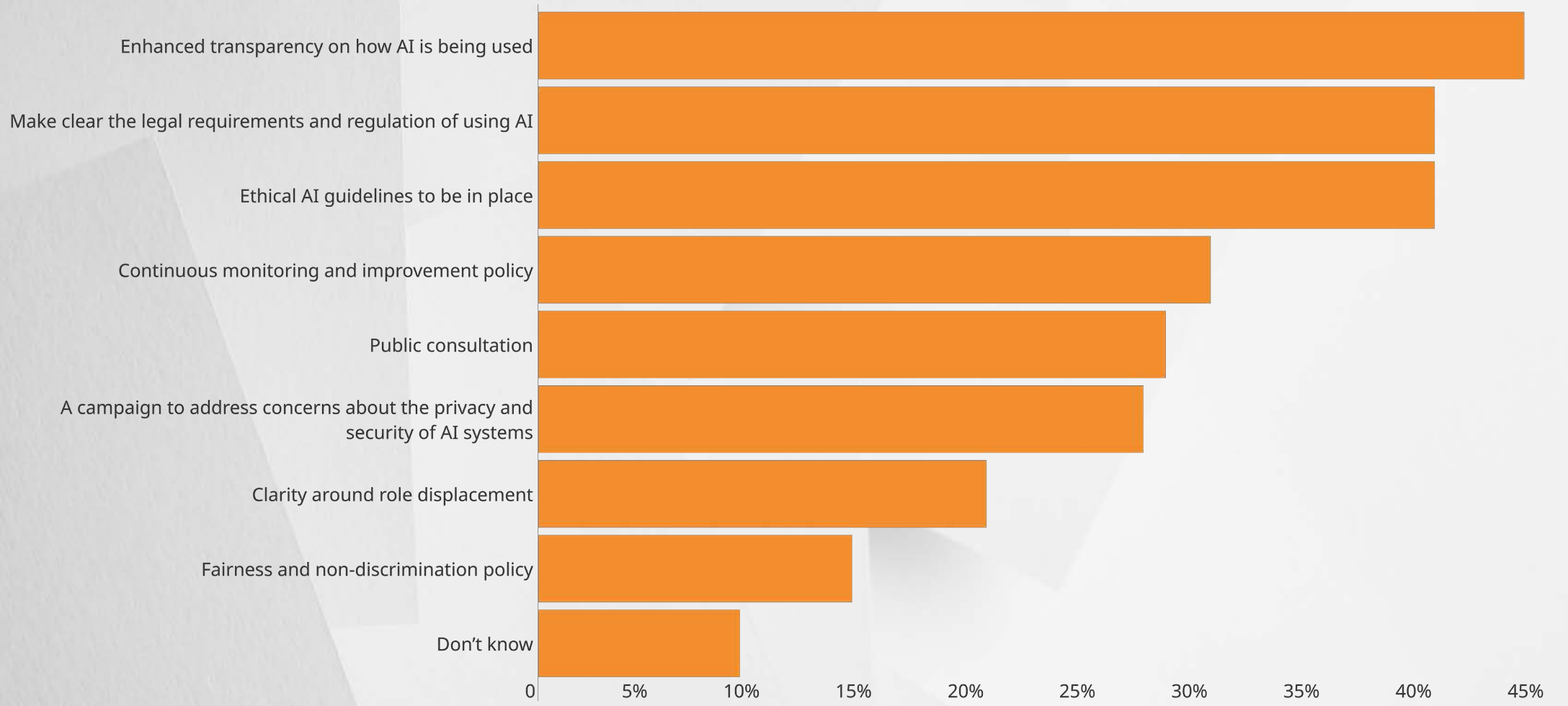
of public administration managers agreed that vendor lock-in makes it harder for their organisation to experiment with new workflows

**IN ORDER TO MAINTAIN PUBLIC TRUST AROUND PRIVACY, SECURITY AND RELIABILITY, PUBLIC SECTOR WORKERS BELIEVE IT IS IMPORTANT TO HAVE TRANSPARENCY OVER HOW AI IS BEING USED AND THE LEGAL REQUIREMENTS IT IS OPERATING UNDER**



**You said that you think the public would not be in favour of greater AI adoption. Which of the following reasons, if any, explain why you think the public are against AI adoption in your institution?**

Source: Public First polling, October 2024



**In your opinion, which of the following policies would be most helpful in maintaining public trust in AI use in public services?**

Source: Public First polling, October 2024



# 6

## PRINCIPLES & POLICY RECOMMENDATIONS

## PRINCIPLE 1: DATA

AI will work best when existing public sector datasets are linked together in a secure and private way. The lesson from previous examples of digital government reform is that this often takes a strong lead and enforcement from the centre.



### Examples of Best Practice

The Government's **Data (Use and Access) Bill** aims to free up 1.5 million hours of police time and 140,000 hours of NHS staff time by standardising the format of data across healthcare providers and simplifying requirements for police officers accessing personal data.

The Bill provides a good example of early data standardisation and access simplification while ensuring that strong protections remain on personal data to retain public trust. Building on this to bring about further standardisation and unification of key public sector datasets while ensuring access remains secure is key to ensuring that AI tools can be used to their full potential.

## PRINCIPLE 2: PROVIDE LEGAL CLARITY

A lack of clarity over what was and was not allowed was one of the key barriers identified in our survey. Central Government should work to identify key potential use cases for AI, and give clear guidance on how to safely, securely and legally implement them.

Legal clarity and transparency around data security will also be important in building public acceptance of widespread AI adoption and dispelling the sense of concern around AI agents identified in our survey.



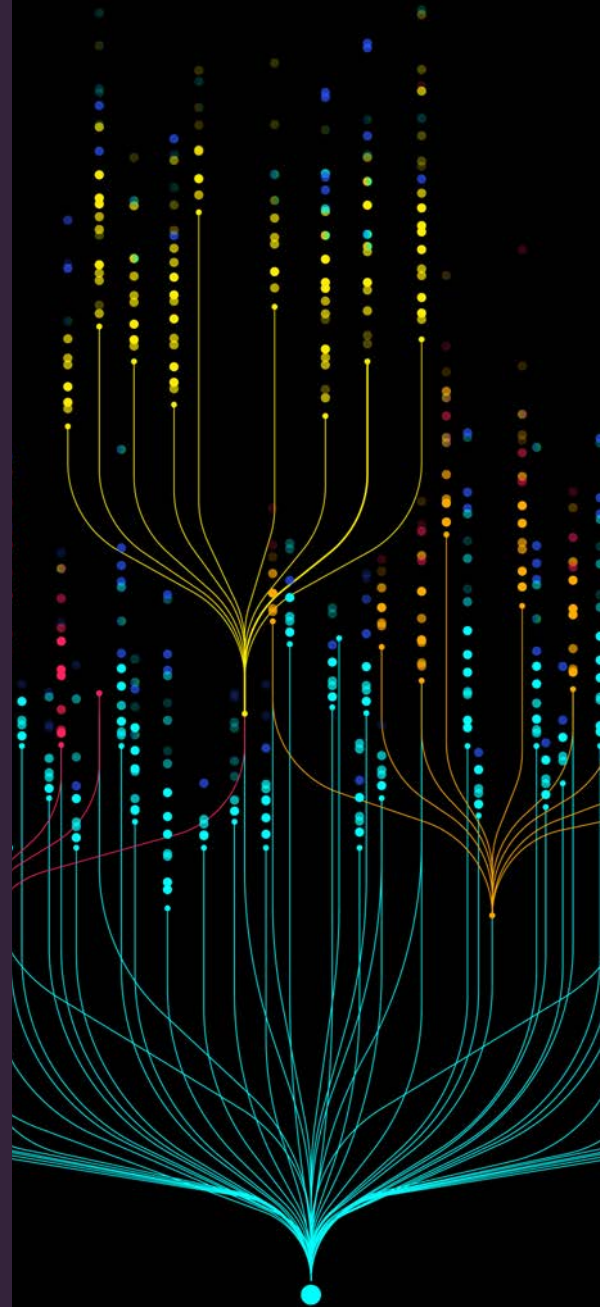
### Examples of Best Practice

Initiatives like the **NHS AI Lab's Regulations Programme** seek to address uncertainties as to who will be held to account if AI products are used to make clinical decisions that lead to patient harm.

Clarifying the responsibilities of the clinician user, deploying organisation, and the industry innovator who developed the technology is crucial to securing workforce confidence in deploying AI tools. Central Government involvement can expand the scope and weight of such programmes, as well as public trust in their decisions.

## PRINCIPLE 3: SUPPORT WORKERS TO LEARN NEW SKILLS

Our polling identified that a sense of lacking digital skills was considered a barrier to the greater use of AI tools in the workplace. Early adopters have largely found and discovered AI tools themselves, but the next wave of adopters are likely to need much more and early encouragement to implement them into their workflows.



GENERATIVE AI



### Examples of Best Practice

Collaboration is key between the Government and private sector pilots such as **Google's AI Works**, which seeks to support and empower workers to use AI tools by giving them the skills, confidence and contextual knowledge (e.g., on trust and safety) to integrate AI into their working lives.

Programmes like Google's AI Works can help us better understand what interventions are likely to be most helpful here. In conjunction with supportive policy, this would provide strategy for a more systematic adoption of AI at work.

# GOOGLE CLOUD IDENTIFIES THE WIDESPREAD GOVERNMENTAL ADOPTION OF AI AS A KEY FACET OF WIDER AI ADOPTION



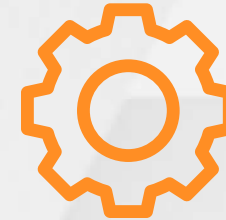
## Conduct AI adoption assessments as part of Government commitments to use AI in public services

This should begin with sectors that most impact public life such as health, education, and transport. Here, Government agencies should also identify barriers to the deployment of AI in key sectors.



## Empower and upskill procurement teams on the importance of AI adoption

Procurement roadblocks often limit the adoption of new technologies. It is crucial that procurement teams understand the opportunities from AI, adopt an AI-first approach, and have the necessary skills to leverage AI's potential.



## Modernise Government IT infrastructure to ensure that AI is built on secure, efficient cloud computing foundations

Legacy IT, data storage capacity and the absence of advanced cloud data analytics tools are key barriers to overcome in the development of integrated datasets and optimisation of AI for Government.

# EARLY APPLICATIONS OF GOOGLE AI TOOLS DEMONSTRATE THEIR VALUE FOR THE PUBLIC SECTOR WHEN DATA IS AMALGAMATED AND EMPLOYEES ARE EMPOWERED

**Google DeepMind** and **Google Health** have collaborated with **Moorfields Eye Hospital NHS Foundation Trust** to build an AI algorithm powered by Google Cloud which can diagnose sight-threatening conditions. Moorfields is continuing to develop this technology for the benefit of patients and the NHS. This early use case of AI-powered diagnosis indicates the potential for scaling up solutions to address public sector challenges through the deployment of big data and AI.



Source: Google Cloud. How Moorfields is using AutoML to enable clinicians to develop machine learning solutions. 2019



# Appendix

# METHODOLOGY

## **METHODOLOGY: POLLING**

Public First conducted an online poll of 415 public administration workers in the UK (fieldwork: 24th - 28th October 2024). Regional and sectoral quotas were employed in data collection to ensure a representative sample and data was collected from a range of panel providers and aggregators to minimise any in-house provider effects to the data.

Sample was collected via an online platform and subjected to within-survey quality checks on the identity and attention span of participants to ensure that meaningful responses were collected. Additionally, manual quality checks were conducted following data collection to remove bot and low-quality responses.

## **METHODOLOGY: ECONOMIC MODELLING**

Public First employed used a large language model to analyse granular job classifications at scale, revising the results to build a robust forecast for employment automatability at the 1-digit and 2-digit ONS Standard Industrial Classification level.

In conjunction with granular ONS data on time use in the public sector, we created estimates of the proportion of time freed up by generative AI in key public sector occupations due to be augmented by the technology.

Additionally, we modelled labour demand and the projected public sector wage bill using employment data and vacancy rates, modelling an S-curve shaped adoption path for AI augmentation into final labour demand rates and their knock-on effects on the costs of public sector pay.

## DATA SOURCES

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