# Written evidence submitted by Dr Alina Maria Vaduva (UAIG0005)

## Introduction

I am Dr Alina Maria Vaduva, Senior Lecturer in Business Strategy at the University of East London. I am also a member of Local Government, Councillor in Dartford.

In the last two years I have become actively involved in research and research dissemination for the public in the theme of AI applicability in various fields.

I am submitting this report driven by my willingness to contribute to new and relevant AI policies.

## Short Overview

Artificial Intelligence (AI) could transform public services and has the potential to generate massive savings. Lately, AI has become increasingly used in local and central government. AI could be seen as a "growing resource of interactive, autonomous, and often self-learning agency" with many applications and the potential to redefine our environment (Hine & Floridi, 2022). With the arrival of Industry 5.0, artificial intelligence (AI) has swiftly risen as a rapidly expanding technology with vast potential for government (Vaduva & Chang, 2024). Future AI use cases may include energy infrastructure monitoring; prediction and analysis of demographic changes; central government data management; predictive analytics for resource allocation; fraud detection; civic engagement; public safety and security and many more.

A recent NAO (UK's National Audit Office) Report (2023) revealed that there is great potential for large-scale productivity gains from the use of AI in the public sector. According to the same report, AI was not yet widely used across UK government, yet 70% of respondents stated were aiming at and piloting AI use cases. The report further recommends a "drastic plan to tackle barriers to AI use".

However, despite its exceptional potential benefits, the use of AI has also risen ethical and responsibility related concerns.  It will also transform the way decisions are made in essential state areas such as health, education, defences, welfare, social care or transport.

This report offers an overview of *the process of decision making and analysis the main positive and negative implications related to the use of AI in government*. It also analysis principles and laws that are relevant for the application of AI in governance and aims to provide insights and further guidance for governments and public sector organisations for setting effective governance to tackle AI related risks.

## Understanding AI Decision Making. Positive and negative implications of the use of AI in government

In simple terms, **AI decision-making** refers to the use of artificial intelligence techniques to analyse data and recommend or automate choices. It leverages various AI subfields like machine learning and deep learning to process massive datasets and identify patterns that might be undetectable by humans.

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The exploration of the social and ethical implications of artificial intelligence (AI) is still in its early stages, with contributions to the field striving to keep pace with the rapid advancements in the thriving AI industry (Erman and Furendal, 2022).

Using AI in decision-making could lead to a wide range of both positive and negative implications as detailed below.

## Positive Implications

Among the positive implications we could consider increased **efficiency and productivity**. AI could support the automation of routine tasks. Derby City Council, for example, partnered with ICS.AI to develop Darcie AI Helper. This AI assistant is available on the council's website and phone lines and can answer questions about a variety of services, including Council Tax, Street Pride, Parking, and more. By automating responses to common inquiries, Darcie AI (Derby City Council, 2024) frees up council staff to handle more complex issues. This "AI-powered front door" has significantly reduced resource usage and is proving valuable for non-emergency services.

Furthermore, AI could contribute to **improved accuracy and consistency.** AI can analyse large volumes of data quickly and accurately, leading to more informed and data-driven decisions. Algorithms can reduce human errors and biases, ensuring consistent application of rules and policies (Ribeiro et al., 2021).

The use of AI in government could also lead to **enhanced public services** by providing customised and timely responses to citizens' needs. For instance, AI-powered chatbots and virtual assistants can provide tailored recommendations round the clock (24/7) (Camilleri and Troise, 2022).

Yet another great benefit for using AI in administration results from **better resources allocation**. AI predictive analytics could support in forecasting needs and allocating resources is more effective and efficient way by identifying patterns and trends and thus contributing to planning and management of funds and resources (Javaid et al., 2021).

Moreover, potentially an essential aspect of the use of AI in government is that it could **contribute to participatory democracy** by massively influencing the generation and implementation of policies. It could both analyse large amounts of data to provide insights that inform policy decisions, and it could help predicting the impact before the implementation (Savaget, Chiarini and Evans, 2018).

## Negative Implications

Disruptive AI technologies may also be used in an irresponsible manner and their adoption in government could challenge the mission of these organisations to protect the interests and rights of various stakeholders. When we speak about AI governance, we refer to minimising risks such as privacy violations, misuse of personal information, bias, discrimination, and similar concerns.

The main concerns, when it comes to the use of AI in government, are related **to privacy and security.** The use of AI implies processing large amounts of personal data, and these

must properly use and administrated. In terms of data protection, the use of AI is subject to provisions of GDPR, legislation related to equality and administrative law. Many governments around the world have established centres for Data Ethics, Data Protection, AI or Innovation to advice on regulation and monitor implementation.

Another major negative effect of the use of AI in government is related to AI systems **perpetuating and even enhancing the existing biases** if they are trained on biased data. This is a particularly important aspect when AI systems are used in critical domains such as law enforcement, the healthcare, defence or even employment.

A recent article by Emilio Ferrara (2024) analysis ***the concept of Butterfly Effect*** (derived from chaos theory) is especially valid in the sphere of AI fairness and bias. The Butterfly Effect emphasizes how minor biases or distorted data inputs during different stages of algorithm development can lead to substantial and unforeseen unfair outcomes. This effect can appear in several forms, including slight changes to input data, inherent biases within the data or algorithms, shifts in data distributions, adversarial attacks, or feedback loops that enhance existing biases. Given the interconnected nature of AI systems and their significant societal impact, it is essential to consider the Butterfly Effect's influence on AI fairness and bias.

***Accountability and transparency*** issue could also be negative implications as AI decision-making is often considered opaque and it is often difficult to understand how decisions are made. In order to ensure and promote individual and societal well-being, responsible AI governance should be in place for AI systems to be designed and developed in an ethical, transparent and accountable manner (Ben Chester Cheong, 2024).

Another significant negative impact of using AI in government is considered to be related to **job displacement**. According to a recent report by Amanda Russo for the World Economic Forum (2024), the workforce is automating at a faster pace than anticipated, leading to the displacement of 85 million jobs over the next five years. However, the robot revolution is also projected to generate 97 million new jobs, necessitating support from businesses and governments for the communities most at risk from this disruption.

The use of raises **ethical questions regarding autonomy, consent, and the right to appeal** decisions made by machines. Alhosani and Alhashmi (2024) advocate for a strategic approach to the adoption of AI in government, based on organisational theory, that considers organisational, ethical and societal associations.

Another aspect to consider in terms of potential negative impacts of the use of AI in the delivery of public services is related to ***dependency and reliability.*** Over-reliance on AI could lead to issues if the systems fail or are not properly maintained**.** Clement-Jones and Darling (2024, a) warn about these aspects and offer potential solutions to address by recommending to governments to have risk policies and contingency plans in place.

### Ethical Considerations in AI Decision Making

When we refer to AI ethics and responsibility, the concept encompasses a collection of values, principles, and methodologies that apply universally acknowledged standards to

steer ethical behaviour in the creation and deployment of AI systems. Originating from the necessity to mitigate potential harms to individuals and society, the concept addresses concerns arising from unintentional consequences.

This report looks into principles that could be the basis for the adoption of AI in government as well as a few of the regulatory frameworks that apply to the decision-making process.

In the UK, The Seven Principles of Public Life, also known as **the Nolan Principles**, apply to everyone in public office. This includes individuals elected or appointed to public positions at national and local levels, as well as those working in the Civil Service, local government, police, courts, probation services, non-departmental public bodies (NDPBs), and health, education, social, and care services. All public officeholders serve the public and manage public resources. These principles also extend to those in other sectors delivering public services.

**These principles are strong and relevant for the application of AI for public service delivery**. The Committee on Standards in Public Life (2020) analysed the challenged posed by AI to the three of the principles: openness accountability and objectivity. Under *the principle of openness*, the current lack of information about government use **of AI risks undermining transparency**. Under the principle of accountability, there are three risks: AI may obscure the chain of organizational accountability, undermine the attribution of responsibility for key decisions made by public officials, and inhibit public officials from providing meaningful explanations for AI-driven decisions. Under the principle of objectivity, the prevalence of data bias risks embedding and amplifying discrimination in everyday public sector practices.

According to the above-mentioned report of the Committee on Standards in Public Life (2020, b) to uphold public standards, government and public sector organisations should implement effective governance to mitigate the identified risks. In this regard, AI presents a new challenge that can be addressed using existing tools and established principles. A traditional risk management approach can uphold public standards. This challenge cannot be tackled by public sector organizations alone. **The government needs to identify and embed authoritative ethical principles and provide accessible guidance on AI governance for public sector use.** Additionally, the government and regulators must establish **a coherent regulatory framework that sets clear legal boundaries for AI usage in the public sector.**

## Regulatory Frameworks

A global voice on AI, Lord Tim Clement-Jones, co-founded and co-chair of Britain's All- Party Parliamentary Group on Artificial Intelligence offers valuable insights into both the decision-making process and the regulatory framework for it (Clement-Jones and Darling, 2024; Artificial Intelligence and You, 2024). His Lordship sees himself as a "tech optimist and a regulatory optimist" and, with wide expertise in digital regulation, and advocates for what he calls "proportionate regulation", that assess the kinds of risks involved and guides stakeholders towards designing and implementing the technology in an ethical and safe manner which is beneficial for humanity. He believed that regulation drive things forward

rather than hindering innovation as it offers AI creators boundaries to develop within and gives consumers the reassurance and the trust so that they make informed decisions.

In the recent years, we have witnessed many intensified efforts towards regulation from various national and international entities, as well as individual authors who have engaged with the topic of creating rules for AI. Moreover, AI is now on the lips and minds of the general public as well with them being more aware than ever of its use and potential effects.

Table 1 below offers a glimpse into existing regulation frameworks and the main responsibility dimensions for each of the frameworks.

**Table 1. Regulatory frameworks for AI governance**

| **Institution / Organisation/ Business** | **Entity** | **Responsibility dimensions** |
|---|---|---|
| Policymakers | European Union (EU)'s Artificial Intelligence Act<br>(Madiega, 2024) | A horizontal EU legislative instrument applicable to all AI systems placed on the market or used in the Union.<br><br>Accuracy; Clear and adequate information; Detailed documentation; High quality datasets that reduce risks and discrimination; Human oversight measures; Logging of activities to trace any tampering of data; Robustness; Security |
| | Singaporean government's National AI Strategy<br>(Singapore Government, 2019) | Explainable; Fair; Reproducible; Robustness; Transparent. |
| | United States' AI Bill of Rights<br>(National Archives, 2023) | Algorithmic discrimination protection; Data privacy; Human alternatives consideration and fallback; Notice and explanation; |

| | | |
|---|---|---|
| | | Safe and effective systems. |
| Non-governmental organisations | Institute of Electrical and Electronics Engineers (IEEE)'s AI Ethics and Governance Standards | Addressing ethical issues during design; Child-friendly digital services framework; Ongoing evaluations on the impacts of automated systems on human well-being; Data privacy process; Ontological standards for ethically driven automation systems and robotics; Transparency of autonomous systems; Transparent employer data governance. |
| | Organization for Economic Cooperation and Development (OECD)'s AI Principles (OECD, 2019) | Accountability, transparency and explainability; Fairness and human-centred values; Inclusive growth, sustainable development and well-being of humans; Robustness, safety and security. |
| Businesses | Microsoft's Responsible AI | Accountability and transparency; Fairness; Inclusiveness; Privacy, safety and security; Reliability and safety. |
| | IBM's AI Governance | Explainability; Fairness; Privacy; Robustness; Transparency. |

Source: Adapted by the author from the sources: Camilleri and Troise (2022) & Camilleri, M. A. (2024); (Madiega, 2024)

While the EU and US have already introduced AI regulations, the UK is expected to regulate AI under the UK's new Labour government, a fact that was confirmed by the King's Speech (Wold, 2024). The new Digital Information and Smart Data Bill (Department for Science, Innovation and Technology), announced during the same speech will offer a legal tool for the British Government to ensure that data power is harnessed for economic growth and to improve people's lives.

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The Bill aims to facilitate the safe development and deployment of innovative data uses, enhancing public services through improved data sharing and standards (Local Government Association, 2024). It will empower scientists and researchers to make life-enhancing discoveries by refining data laws and ensure robust data protection by strengthening the regulator (the ICO) with new powers and a modernized structure. These initiatives begin to fulfil the Government's pledge to better serve the British public through advancements in science and technology.

## Responsibility, accountability and future directions

Over the past few years, we have witnessed an increase in the adoption of algorithmic decision-making (ADM) and prediction in both national and local governments in various functions such as tax, social security, benefits or welfare provision. This led to increased scrutiny for algorithmic decision-making. The debate became more intense after the UK's government's dreadful attempt in 2020 to use an algorithm to establish A-Level and GCSE grades instead of exams, which had to be cancelled.

Another example of rather controversial use of AI in local government was revealed by the Guardian in 2019 and 2020 – half of local councils in England, Wales, and Scotland were using 'privately developed AI tools as risk assessment for determining eligibility for benefits and other entitlements despite concerns for their reliability and without any consultation of the public on their use (Clement-Jones and Darling, 2024, b).

National governments were also guilty of using controversial AI based systems. For examples, a tool used by New York Police Department called 'Patternizer' to identify potential future patterns of criminal activity has raised multiple questions related to AI bias (Griffard, 2019).

A recent paper by Giyosjon Jumaev (2024) emphases the importance of human-AI collaboration models and showcases examples where AI systems have enhanced human productivity and decision-making.

Ferrara (2024, b) concluded that **the Butterfly Effect in AI** has deep societal consequences that require "a vigilant approach to AI development, where fairness and biases are not afterthoughts, but integral elements of the design and implementation" and calls for stronger mitigation strategies, through interdisciplinary collaboration so that AI systems could become socially responsible. Another aspect that was discussed is **the focus on user-centric design,** the author advocates for ensuring that the AI systems are ready for diverse needs and contexts.

Additionally, a recent paper by Akinrinola et al. (2024) calls for **robust regulation and ethical guidelines to protect individuals in terms of privac**y and also advocate for reskilling initiatives, lifelong learning programmes and global collaboration to ensure AI ethics and transparency.

AI should be implemented used and guided in away that promotes individual and/or societal good, rather than a push for more automation.

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Governments must seek, obtain and retain public confidence and democratic endorsement when developing and using AI solutions. Moreover, the governments must lead by example and ensure human control during all stages of AI solutions development and implementation.

## Conclusion

This report defined the process of decision-making when it comes to using AI in government and offered an overview of potential positive and negative implications of this process.

The AI fast advancement is unprecedented, but it offers us the opportunity to reassess the way we organise our resources, the way we share them and how we make decisions. Stephen Barber, in his book Reclaiming the Revolution (2023), writes “openness, free thinking, inclusiveness, trust and deliberation are paths to a successful future”. This is a humanistic and optimistic perspective that this author would like to take forward, by seeing technology not as weapon but a manageable co-pilot that could take humanity further than we even dared to dream before.

AI should be implemented, used and guided in a way that promotes individual and/or societal good, rather than a push for more automation. Adoption, governance and frameworks should be developed in ways that encourage accountability and transparency, and it is designed to gain, maintain and enhance all stakeholders’ trust.

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