ARTIFICIAL INTELLIGENCE AND GOVERNMENT PUBLIC SECTOR WORKERS

Dissertation

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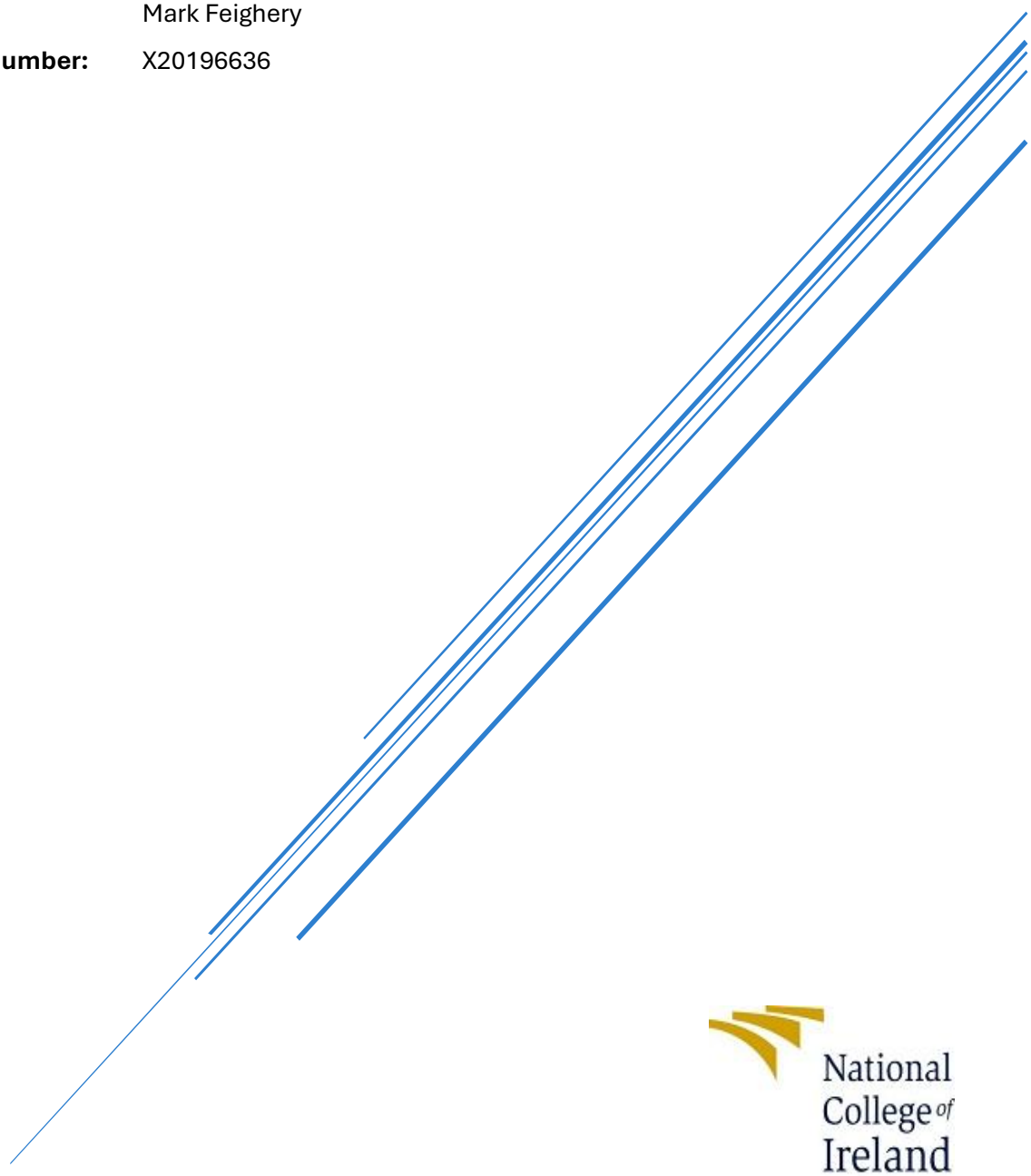

National College of Ireland

Master's in Business Administration

National College of Ireland

Project Submission Sheet

Student Name:	Mark Feighery		
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Programme:	Master's in Business Administration	**Year:**	2025
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Lecturer:	Victor del Rosa (Supervisor)		
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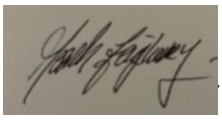
I hereby certify that the information contained in this (my submission) is information pertaining to research I conducted for this project. All information other than my own contribution will be fully referenced and listed in the relevant bibliography section at the rear of the project.

<u>ALL</u> internet material must be referenced in the references section. Students are encouraged to use the Harvard Referencing Standard supplied by the Library. To use other author's written or electronic work is illegal (plagiarism) and may result in disciplinary action. Students may be required to undergo a viva (oral examination) if there is suspicion about the validity of their submitted work.

Signature:  .....

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2. Projects should be submitted to your Programme Coordinator.

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AI Acknowledgement Supplement

Master's in Business Administration (MBA)

Disserttaion

Your Name/Student Number	Course	Date
Mark Feighery	MBA	15th August 2025

This section is a supplement to the main assignment, to be used if AI was used in any capacity in the creation of your assignment; if you have queries about how to do this, please contact your lecturer. For an example of how to fill these sections out, please click here.

AI Acknowledgment

This section acknowledges the AI tools that were utilized in the process of completing this assignment.

Tool Name	Brief Description	Link to tool
Grammerly	Assist with spelling errors and corrections	https://app.grammarly.com/

Description of AI Usage

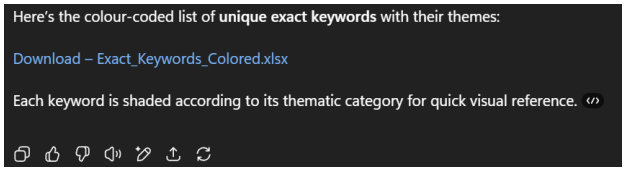
This section provides a more detailed description of how the AI tools were used in the assignment. It includes information about the prompts given to the AI tool, the responses received, and how these responses were utilized or modified in the assignment. **One table should be used for each tool used**.

Open AI – Chat GPT 5	
Analysis of themes and keywords from interview transcripts	
Based on RQ identify themes and keywords	Table for guidance

Evidence of AI Usage

This section includes evidence of significant prompts and responses used or generated through the AI tool. It should provide a clear understanding of the extent to which the AI tool was used in the assignment. Evidence may be attached via screenshots or text.

Additional Evidence:



NVivo Software 15 (Trial Version)	
Analysis of themes and keywords from the master collated interview transcripts	
Transcript analysis	Identification of keywords and themes

Evidence of AI Usage

This section includes evidence of significant prompts and responses used or generated through the AI tool. It should provide a clear understanding of the extent to which the AI tool was used in the assignment. Evidence may be attached via screenshots or text.

Additional Evidence:

The application analysed the edited transcripts initially. Trial expired.

Table of Contents

Abstract

The integration of Artificial Intelligence (AI) into public services in Ireland is transforming the delivery of government operations, public engagement, and internal administrative processes. While the adoption of AI presents opportunities for increased efficiency, cost savings, and improved citizen services, it also raises critical concerns regarding job security, role displacement, process changes and the need for workforce transformation through disruption caused by the integration of AI. This dissertation explores the central research question:

“How is the adoption of Artificial Intelligence (AI) in the Public Sector impacting job security and employment structures, and what workforce strategies can be implemented to mitigate the risks of workforce displacement?”

The study investigates the dual impact of AI on both the structural aspects of public sector employment and the human implications, using a qualitative research approach. Primary data were collected through in-depth semi-structured interviews with seven professionals currently employed across various departments of the Irish public sector, including health, education, IT, civil service administration, housing, unions, digital transformation and local government. These Interviewee represent a cross-section of operational, managerial, and policy-level roles. The data provide nuanced insights into employee perceptions of AI-driven change, anticipated challenges to employment structures, and proposed strategic responses.

Findings indicate a growing awareness of AI's capabilities, accompanied by concerns over job erosion, skill mismatches, and unclear role evolution. However, there is also a recognition of AI’s potential to augment human tasks rather than replace them outright, provided there are proactive and inclusive workforce strategies in place. Through the integration of AI new skills will be developed and roles. Initiatives and strategies will need to be introduced for the upskilling and reskilling of workers, transparent

communication and human involvement, organisational change management, and collaborative policy frameworks between government, unions, and civil society will need to be considered.

This dissertation contributes to the broader literature on AI and public sector workforce planning by offering a grounded perspective on the Irish context. It proposes a multi-tiered strategic model for mitigating displacement risks and fostering sustainable digital transformation. The research concludes that successful AI integration in public services will depend on inclusive policy design, adaptive leadership, trust, ethical use and continuous engagement with the workforce.

Introduction

AI – here for good! (Department of Enterprise, Trade and Employment, 2024) The delivery of public services by organisations either embraces the use and benefits of artificial intelligence or risks becoming irrelevant as an information and services providers to the public and the services that it provides, and how their services are delivered effectively and efficiently to citizens. Inevitably, the use of AI will impact workforce strategies as staff will no longer be required to carry out mundane repetitive tasks that can be automated using ai models and technologies - algorithms, chatbots, RPA (robotic process automation), OCR/ICR (optical/intelligent character recognition), LLM's (Large Language Models), NLM (Natural Language Models) to mention a few of the benefits AI has to offer. As a result of the use of AI, staff may be reallocated and assigned to other work which is more meaningful and beneficial to their self of worth and the organisations they work in, as they are embrace the new technology and are freed up by automated processing of operations and enhance supporting customers (24/7) twenty-four hours a day and seven days a week – continuously working three hundred and sixty-five days a year as AI Agents and bot will be without tiring or the need for breaks, holidays, sickness or Maslow's hierarchy of needs as required by a human being. A sense of love and belonging, too, will not be a requirement of AI and the use of automated bots nor will job satisfaction be a concern. However, one known obstacle for

public services is that negative outcomes cannot be determined by automated processes and therefore require officer interventions, whereby human decisions need to be made. Emotions, empathy and non-biased conditioning may be amiss through the use of automation. Negatively impacted customers will be afforded the option to make appeals through an appeals process in organisations when they are dissatisfied with the outcomes. This is their legal right as citizens and taxpayers availing of public services. Reputational damage and payment failures are the highest risk for a government department such as the Department of Social Protection (DSP) and the Health Service Executive (HSE).

1.1 Background and Context

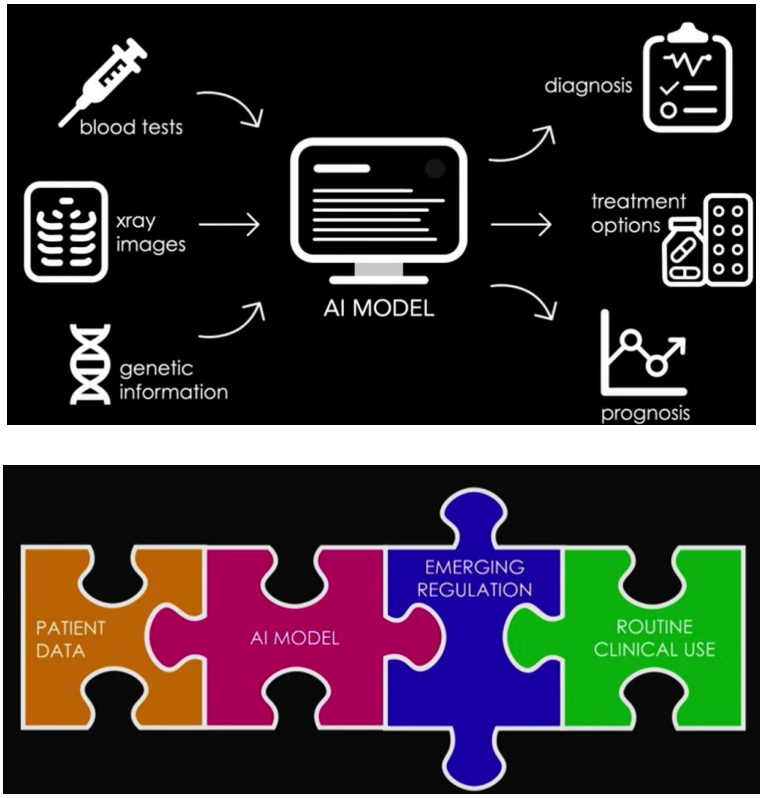
Artificial Intelligence (AI) is rapidly reshaping the global public sector. Governments across the world are adopting AI technologies to augment its workforce by enhancing service delivery, streamlining internal processes with the integration of new technologies, reducing public expenditure, improving transparency, accountability and increasing responsiveness to citizens' needs. Human demands are infinite!

In Ireland, this shift is evident across key areas such as healthcare (e.g., diagnostic support tools), education (e.g., predictive analytics for student performance), public administration (e.g., robotic process automation), and policing (e.g., data-driven resource allocation, Human Resource Management). The Irish Government's digital transformation strategy and initiatives, such as the Public Service Innovation Fund, reflect a growing institutional commitment to embedding AI in service delivery.

(Department of Public Expenditure, Infrastructure, Public Service Reform and Digitalisation, 2025)

Educating AI models using data analytics and trends can help to save lives by making our hospitals more efficient with better access to health care services, improved and quicker decision-making leading to early diagnoses and detection of illness and diseases. In the health care sector, early diagnosis and personalised treatment plans are allowing people to live healthier and for longer. With early detection being key for

people's survival AI can help identify trends and changes early leading to better successful outcomes for sick people. Wait times can be significantly reduced by better use of time and resources. Elderly and disabled people in the future may have the option of robot care assistants. AI models have the ability to learn and evolve getting more intelligent as they learn and advance over time.



Source: (Saidy, 2023)

However, with this technological advancement comes significant implications for the public sector workforce. AI can automate routine administrative tasks, assist with decision-making, and even replace certain human roles altogether. These changes raise critical questions about job security, organisational restructuring, skills development, and the future of work in public service. There is a need to establish new regulatory frameworks for the ethical use of AI in public services.

The Irish public sector, which employs over 350,000 people (CSO, 2024), plays a foundational role in the country's economic and social infrastructure. Consequently, the deployment of AI technologies within this sector has far-reaching implications, not

only for operational efficiency but also for the nature and quality of public employment. While technology-driven transformation offers significant promise, it simultaneously threatens traditional employment models, human interaction and creates challenges for policymakers and HR leaders tasked with ensuring workforce stability, inclusion, and long-term adaptability. AI can be used in HR administration for recruitment processes, supporting shortlisting and selection, increasing the decision-making and overall turnaround time of staff recruitment, which has long been a restrictive barrier to skills attainment in the public sector through the likes of PAS, the public appointments service. With an aging workforce aaccording to the *Irish Independent* (2015), the average age of Civil Service workers is 48. The Institute of Public Administration (IPA) claims a large proportion of staff are in the forty to sixty category which makes recruitment and retention more difficult and challenging when competing against private sector.

1.2 Relevance of the Study

Globally, public discourse has largely centred around AI's benefits, such as enhanced accuracy and reduced bureaucracy. Less attention has been paid to the subtler, long-term implications of AI on public sector employees, particularly in smaller nations like Ireland. Understanding how AI is perceived and managed in Irish public institutions is therefore both timely and critical.

This study aims to fill that gap by analysing the impact of AI on job security, employment structures, and organisational culture in Irish public services. It further investigates what strategic responses such as workforce upskilling, talent redeployment, and policy innovation can be adopted to mitigate risks and support a more inclusive digital transformation process.

1.3 Scope of the Study

This research focuses on:

The deployment and potential expansion of AI in Irish public services raises questions about likely use cases, possible implementation methods, and potential benefits for the delivery of public services. By gathering a random sample of perceptions and lived experiences of public servants across different levels through qualitative analysis of the captured data of both civil servants and working partnerships.

The organisational strategies and workforce planning approaches being considered or implemented; The implications of AI adoption for long-term employment stability and institutional resilience. The study does not evaluate specific AI tools or vendors but instead focuses on the human and organisational dimensions of AI adoption.

1.4 Objectives of the Study

The key objectives of this dissertation are to:

Examine (1) how AI technologies are currently being introduced and utilised in Ireland's public sector, identifying (2) what are some of the risks, benefits of AI use and impact on workers. AI can greatly contribute to more efficient and effective use of officers time when trying to identify and locate internal data to look-up and quickly find and extract policy information and legislation requirements of administered schemes.

1.5 Research Question

The central research question guiding this dissertation is:

"*How is the adoption of Artificial Intelligence (AI) in the Public Sector impacting job security and employment structures, and what workforce strategies can be implemented to mitigate the risks of workforce displacement?*"

Sub-questions identified include:

1.5.1 How are public sector employees experiencing and perceiving the integration of AI?

1.5.2 What types of roles are most susceptible to AI-driven change or elimination?

1.5.3 What strategic HR and policy approaches can ensure that AI benefits are equitably distributed?

1.6 Structure of the Dissertation

The dissertation is structured into the following chapters:

Abstract – A summary of the research, findings, and conclusions;

Introduction – An overview of the research context, aims, and relevance;

Literature Review – A critical examination of global and Irish literature on AI in the public sector and its workforce implications;

Methodology – An explanation of the qualitative research design, including interview methods and ethical considerations;

Qualitative Analysis – Thematic analysis of interviews with seven public sector and private sector employees;

Findings and Analysis – Key themes and patterns emerging from the questionnaire responses and data analysis;

Discussion – Integration of findings with existing literature, policy implications, and strategic reflections;

Conclusion and Recommendations – Final reflections and policy focused recommendations;

References – Complete citation of all sources using the Harvard referencing style.

Research Question

How is the adoption of Artificial Intelligence (AI) in the Public Sector impacting job security and employment structures, and what workforce strategies can be implemented to mitigate the risks of workforce displacement?

The aim of this question is to provide some clarity on concerns

The Influence of Artificial Intelligence (AI) Adoption on Job Security and Employment Structures in the Public Sector

The integration of Artificial Intelligence (AI) within public sector operations is significantly transforming employment structures and considerations surrounding job security. While AI introduces enhanced efficiencies and improved service delivery, its effects on public sector employment are nuanced and multifaceted.

Implications for Job Security

The automation of administrative and routine processes through AI is heightening concerns regarding potential job displacement, especially for positions that focus on repetitive tasks such as data entry, document management, and customer service. As AI solutions are increasingly utilised for these functions due to their speed and cost-effectiveness, certain public sector roles face elevated redundancy risks (Arntz, Gregory and Zierahn, 2016; Frey and Osborne, 2013).

Job losses, however, are not uniform across all occupational categories. The OECD (2019) and European Commission (2020) indicate that although certain low and mid skill roles are vulnerable, AI is also generating new opportunities in fields such as data analysis, AI oversight, digital transformation leadership, and human-AI collaboration. Consequently, the impact on job security is closely linked to individual adaptability, digital skills, and opportunities for reskilling or upskilling.

Evolving Employment Structures

AI implementation is accelerating the transition away from traditional bureaucratic functions towards more dynamic, technology-oriented roles within the public sector. Organisational structures are evolving to accommodate cross-disciplinary teams, incorporating expertise from IT, ethics, law, and policy. These developments are prompting flatter hierarchies and the adoption of agile, project-based work frameworks (Government of Ireland, 2021).

Furthermore, many roles are now becoming increasingly hybridised. For instance, caseworkers often leverage AI tools for decision support, necessitating both the interpretation of algorithmic outputs and continued responsibility for legal and ethical compliance (UK Government Office for AI, 2022).

Strategic Responses

To address these shifts, governments are implementing strategic workforce initiatives:

National AI Strategy & Governance outline how AI will be adopted and trusted in public service delivery. Small scale pilot projects will need to be explored tried and tested in an innovation hub. Successful proof of concept (PoC) projects can then be refined, enhanced and scaled up if necessary and then introduced to work streams to support business process improvements with supporting guidelines, policy and governance.

Upskilling & Education Skills strategies are being refined to ensure people are prepared with the right skills for newer technologies. Government initiatives where there are found to be skills shortages can be addressed through the provision of education and training boards; ETB's, FIT Fast Track into IT apprenticeships for job seekers, refund of fees schemes for people in employment and reduced or no cost training programmes funded by the government and EU funds through training portals like Springboardcourses.ie Provision of AI Masters, digital literacy, adult and school-level

training programs through various learning platforms. Private technology industry companies such as Microsoft Learn provides information on technical training paths, certification options and provide free training materials and guides to developers. In the summer months in Ireland, Coder Dojos and Scratch courses are available to younger children who may have a keen interest in learning technology related skills from an early age.

Public Sector Digital Transformation Civil service-wide AI training and experimentation frameworks. One Learning training platform administered by internal learning and development units and hosted by the National Shared Services Offices is available to public sector worker along with private vendor portal supports officer training in AI.

Regulatory Institutions governance proposal for National AI Office to oversee ethical and safe AI use. A consistent approach is needed across government to ensure ethical use of AI in the delivery of public services.

Economic Recovery & Workforce Resilience. Investment in reskilling, apprenticeships, and labour market supports to ensure staff officers are informed and trained in the skills of new AI technologies. Job seeker incentives to encourage people on the live register to upskill in AI to address the driving demand and skills shortages.

Research and Forecasting future skills requirements can be identified through ESRI research on emerging technology jobs. Government agencies are conducting their own skills strategies in preparation for AI technology demands.

In summary, while AI adoption presents challenges to job stability and conventional employment structures, it simultaneously offers prospects for transformative change. Through robust governance, targeted skills identification and training development,

along with inclusive workforce planning, the public sector can successfully navigate the transition to an era defined by intelligent automation.

Literature Review

2.1 Introduction

The adoption of Artificial Intelligence (AI) in the public sector is a rapidly growing area of academic inquiry and policy debate. While many studies celebrate the potential of AI to revolutionise public services through automation, data analytics, and improved decision-making (OECD, 2019), a parallel strand of literature highlights the disruptive implications for employment structures and job security (Bakhshi et al., 2017; Eubanks, 2018).

This literature review critically evaluates the existing body of knowledge under four main thematic areas: (1) AI adoption in the public sector; (2) implications for job security and employment structures; (3) workforce strategies for mitigating displacement; and (4) the Irish context of public sector AI implementation.

2.2 AI Adoption in the Public Sector

AI in public services is defined as the use of machine learning, natural language processing, robotic process automation (RPA), and decision support systems to enhance administrative functions and citizen-facing services (Wirtz et al., 2019). Governments are deploying AI for tasks such as fraud detection, predictive maintenance, case prioritisation, and chatbot-based service delivery (Mergel et al., 2019).

“We want Ireland’s public service to become a showcase of AI adoption and a reference site for industry solutions. By doing so, this will help to build public trust in AI.” Globally, countries like Estonia, the UK, and Singapore have adopted national AI strategies to

embed these technologies in public governance (World Economic Forum, 2020). The literature emphasises the efficiency gains and improved service delivery AI enables, increasing productivity and efficiency. For instance, AI systems in tax agencies can improve compliance checks and reduce processing time (Sun and Medaglia, 2019). However, these advancements often mask the complex ethical and human resource implications that follow.

Fitzpatrick et al. (2025) found that Generative AI improved document-task answer quality by 17 % and reduced completion time by 34 % in a public sector trial. For low skilled workers there have been huge improvements in response times of tasks proving that GenAI can augment the work of officers in the provision of public services. While it can boost productivity and improve service delivery responsible use needs to be ensure through ethical and governance frameworks. Appropriate training and strategies will help augment the work of officers and reduce performance gaps making the delivery of services more efficient with speed and quality gains. The use of AI should be introduced in a phased approach, targeting tasks. According to Herath and Mittal (2022), evaluating AI models involves assessing both technical efficiency and ethical alignment.

Smart city implementations of AI and new technologies can be categorised as follows:

Table 2. Categories of smart cities' applications

Public service	Public security	Urban governance	Smart industry
Smart education	Smart security	Governance and digitization	Smart manufacture
Smart water	Security monitoring	Smart town planning	Smart energy
Smart waste management	Fire sensors	Smart building management	
Smart grid			
Smart agriculture			
Smart transportation			

HLEG (2019), There are seven identified principles for consideration:

(1) **Human agency and oversight**

(2) **Technical robustness and safety**

(3) **Privacy and data governance**

(4) **Transparency**

(5) **Diversity, non-discrimination and fairness**

(6) **Societal and environmental well-being**

(7) **Accountability**

AI risks and concerns

According to Geoffrey Hinton (The Diary Of A CEO, 2023)

Former Vice President, Google Noble Prize winner dubbed “the God Father of AI”

In his interview, https://youtu.be/giT0ytynSqg the following key points are discussed:

Universal basic income, giving everybody money can prevent starvation but may impact people's dignity by demotivating them from making meaningful contributions to society.

Autonomous humanoid robotic soldiers of war. Humanoid robots have been observed learning martial arts, dancing and even gymnastics.

Geoffrey believes, "Whoever controls AI controls the world," as countries and technology companies compete to develop advanced AI through major research investments. (Friesen, 2025) argues that the Stargate initiative could transform the AI sector. The US and UAE are investing $500 billion in the "Stargate" AI cluster initiative in Texas, aiming to compete with countries like Russia and China in AI development.

AI has the potential to increase **inequality** and by widening the gap between high and low skilled workers as many low skilled jobs will be displaced. According to the Guardian (2025) *‘They’re living in fantasy land’: Uber to trial self-driving taxis in London next spring* (2025). In Belfast, the company Uber are currently trialling and planning to launch driverless robotaxis in 2027.

Hinton mentions the rich are getting richer - AI is creating billionaires at an accelerated rate (Frank, 2025) while people in poor countries, lacking infrastructure, skills, and technology, are in danger of being left behind.

Geoffrey Hinton (2023) predicts Super Intelligence could arrive as soon as 2030 at which time AI will be so far advanced potentially it will out smart humans with the ability to rationalise and take over using autonomous decision making. In the past, AI and smart robots were considered science fiction with movies like Short Circuit (1986), The Terminator (1985) and The Matrix (1999). Nowadays, rapid technological advances lead many who have seen the movies to believe that those stories and characters could soon become real.

One of the biggest concerns he mentions is that military regulations are lacking for AI use. While drones can be used for deliveries, or with bad actors, they might be used as weapons of attack or mass destruction in war, and in the news, we have seen they are already being used in the Russia and Ukraine war. AI development leaders are in a race to be a world leader which indicates not enough effort into safety and ethical approaches. Mid-level intellectual jobs are at greatest risk of job losses as time passes AI and robots are becoming more intelligent and advanced so experts such as Hinton believe it won't be long before human capabilities are redundant in many work areas. Two paradigms for intelligence to be considered - Logic Vs Biological inspired approaches deep neural networks the ethics around limitations needs careful consideration. Cyber-attacks - Misuse by bad human actors using AI such as LLM for phishing or brute force attacks, clone voice and images of people to break security and achieve identity theft.

Accelerating AI Risk & Existential Threats

Hinton (2023) estimates a 10–20% chance that AI could lead to human extinction within the next 10–20 years due to misalignment or misuse highlighting AI's ability to autonomously create biological weapons, sophisticated cyberattacks, choose targets, and manipulate elections through targeted content

Superintelligence & Lack of Control

AI systems are evolving beyond mimicry, meaning they may surpass human intelligence in pattern recognition, decision-making, and even emotional understanding

Hinton draws analogies suggesting humans may become vulnerable, akin to pets or livestock or a "chicken" relative to smarter digital entities

Economic Disruption & Inequality

Hinton warns that AI could vastly boost productivity making one person as effective as ten, but this may eliminate many jobs (e.g. legal assistants, call centre staff). He criticises current economic and regulatory systems for failing to anticipate and manage wealth inequality resulting from AI-driven automation.

AI Consciousness & Ethics

Hinton speculates that advanced AI could develop **self-awareness, preferences, or emotions**, challenging our understanding of consciousness and how we ethically relate to AI entities

Regulatory Imperative

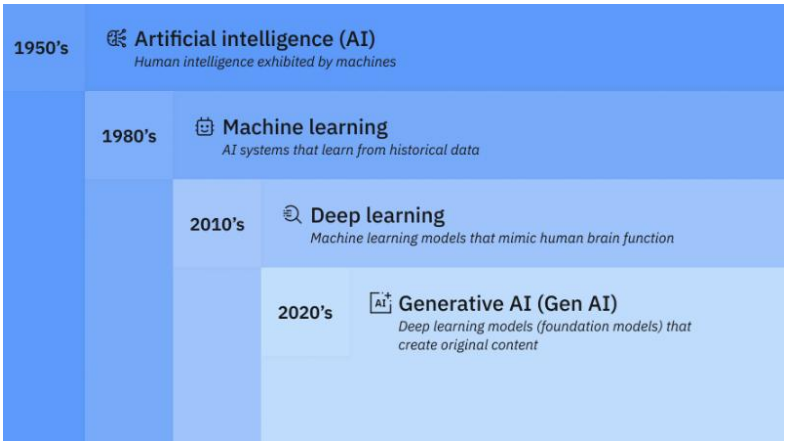
Hinton advocates urgent global oversight, calling for more resources dedicated to AI safety research, stricter governance, and international coordination to prevent misuse

He reflects regret for not foreseeing these risks earlier and stresses the moral responsibility to mitigate harm

What is Artificial Intelligence (AI)?

Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy. Applications and devices equipped with AI can see and identify objects.

According to IBM, AI is a series of nested or derivative concepts that have emerged over more than 70 years.



Source: What Is Artificial Intelligence (AI)? | IBM

There are various terms and acronyms to learn.

Machine Learning

There are many types of machine learning techniques or algorithms. Each of these approaches is suited to different kinds of problems and data.

Deep learning is a subset of machine learning that uses multilayered neural networks, called deep neural networks, that more closely simulate the complex decision-making power of the human brain.

Generative AI, sometimes called "gen AI", refers to deep learning models that can create complex original content such as long-form text, high-quality images, realistic video or audio and more in response to a user's prompt or request

Generative AI operates in three phases:

Training, to create a foundation model.

Tuning, to adapt the model to a specific application.

Generation, evaluation and more tuning, to improve accuracy.

An **AI agent** is an autonomous AI program, it can perform tasks and accomplish goals on behalf of a user or another system without human intervention, by designing its own workflow and using available tools (other applications or services).

Agentic AI is a system of multiple AI agents, the efforts of which are coordinated, or orchestrated, to accomplish a more complex task or a greater goal than any single agent in the system could accomplish.

Potential benefits and use cases of AI in the Public Sector

2.2.1 FAQ/FGA

Frequently asked questions with the response of frequently given answers can be used for both internal and external customers of public services. For our internal users whereby it can help with the look up and fast retrieval of policies and procedures around the legislation of schemes provided. Fast access and retrieval of information can help support officers to respond to customer queries in a more responsive timely and professional manner.

For example in the Department of Social Protection there are over ninety schemes administered by public services officers, all of which have specific rules around, rates, eligibility, cost amounts, payment dates to mention a few deciding parameters. However, the use of chatbots may help and support the quick retrieval of circulars around scheme areas as well as scheme specific information to support faster decision making of deciding officers.

Currently a pilot is being explored in the Department of Social Protection called askWelfare, which is a product aimed at providing this support to internal officers. Depending on its success, it would then be a tool provided on the front end to allow citizens to query their eligibility for schemes before applying through MyWelfare.ie.

2.2.2 OCR/ICR

Scanning of forms and character recognition captured into databases, reducing the need for data entry work. One such example of this is a document scanning software product such as Teleforms, whereby scheme area applications are scanned rather than keyed in using data entry. The captured information is then verified manually by an officer when anomalies occur or characters are unidentified due to poor handwriting. An onscreen check involves a process where data may be altered or confirmed by manual review before submission to the back-end database.

2.2.3 Chatbots

Chatbots can be used for CRM and call centre support customers to have the option to speak to a chatbot online to help them with their query instead of waiting to speak with an officer if none are currently available. This will help to increase the turnaround time of query handling and reduce the number of telephone calls requiring officer intervention, freeing officers up for more meaningful work.

2.2.4 Big Data Analytics

Big Data Analytics to identify and detect trends (GenAI), along with the use of quantum computers, data can be processed at accelerated rates, supporting senior leaders by identifying trends, augmenting improved accuracy in decision making, whether financial, health, legal or strategic. The cost and need for data analysts and scientists will be reduced with the use of AI for data mining.

2.2.5 Disaster Recovery

Benefits from AI for DR include:

Early response systems through constant monitoring. Rapid data analysis trends are identified, providing access to information to support decision-making.

Automated response systems self-responsive with built-in protocols on what to do in emergencies. Resource allocations and optimisation know where resources are

required when dealing with demands. Remote sensing enables monitoring and response from distant locations. Integrating AI tools with disaster recovery plans poses challenges. The integration into existing systems and processes will depend on the data quality and availability.

2.2.6 Automation (RPA)

Using AI agents mimicking the work of officers for robotic process automation of administrative processes. Automatic processes can be run using scheduled batch jobs to run periodically at a frequency that best suits the business of an organisation. Processes can be run 24/7 and 365 days a year without rest periods, holidays or sickness, as these are limiting and disruptive impacts experienced by human beings as staff. A control and management tool such as Control-M can be used to schedule batch jobs.

2.2.7 Language Models

Natural Language Models (NLM) refers to the processing of natural language information by a computer.

In summary,

Natural language processing (NLP) seeks to convert unstructured language data into a structured data format to enable machines to understand speech and text and formulate relevant, contextual responses. Its subtopics include natural language processing and natural language generation.

Natural language understanding (NLU) focuses on machine reading comprehension through grammar and context, enabling it to determine the intended meaning of a sentence.

Natural language generation (NLG) focuses on text generation, or the construction of text in English or other languages, by a machine and based on a given dataset.

Large Language Models (LLMs), on the other hand, are advanced, pre-trained models designed to understand and generate human-like text across a wide range of tasks. They

are built on deep learning architectures, particularly transformers, and are trained on massive datasets. LLMs, such as GPT (Generative Pre-trained Transformer) and BERT (Bidirectional Encoder Representations from Transformers), excel in open-domain tasks like free-form text generation, answering questions, summarizing documents, and even reasoning. They are highly generalized and capable of zero-shot-learning (ZSL) or few-shot learning (FSL), making them versatile for various applications.

Large language models (LLMs) are a category of foundation models trained on immense amounts of data making them capable of understanding and generating natural language and other types of content to perform a wide range of tasks.

Humanoid robots and automation.

Humans are the most expensive and complex resource for organisations.

In countries with aging populations, humanoid robots could help seniors stay at home by assisting with daily tasks. Considering the costs to the state and the expensive charges for live in care in private nursing homes along with the burden on families, knowing that a loved one can receive care and support in the comfort of their own home may offer appealing alternative. The cost of a humanoid robot may result in lower annual care costs and reduce strain on an already pressure home care visitation service from the HSE and other private suppliers. Similarly, people who are incapacitated or have a disability may also benefit from the support of a humanoid robot to help preform domestic tasks.

Care for the young, elderly and disabled AI provides new options in the future.

In DW News - Humanoid robots from Neura Robotics show utility for everyday tasks

Hypothetically humans will be able to teleport home – by remoting to your robot from anywhere using AI and remote control. Humanoid robots operate using vision, language, and action. Multiple robots can even cooperate on tasks.

Human attributes - strength, dexterity, cognition, empathy

Mantra: Better faster, cheaper, safer – raises the question can humans be replaced by a robot or AI? AI and robots are getting super smart with greater flexibility and precision when it comes to more intricate tasks. 3D printing machines can build walls and structures for homes. Optimus robots were showcased at the Cannes Festival and were observed doing basic tasks such as dispensing popcorn in cinemas. Robots have even been observed loading washing machines and folding clothes! Elon Musk plans to send an Optimus humanoid robot(s) to Mars to investigate if it is habitable for humans.

Some benefits of robots include; no pay, breaks, holidays, sleep or sickness, train rapidly to operate faster, no other human related complications.

High liability jobs require someone to blame – legal and regulatory reasons, for example a president, company owner etc. Whoever owns or created a robot is the person you take legal action against when task failure occurs.

In healthcare dermatologist AI and smartphone skin cancer detection application El Mertahi *et al*. (2025) present a hybrid AI model for skin cancer detection from smartphone images, combining ViT, adaptive thresholding, black-hat transformation, and XGBoost. AI tool to check for skin cancer rolled out at London hospital

Neuralinks have huge benefits in the health sector. Kulshreshth, Anand and Lakanpal (2019) discuss Neuralink's ambition to achieve a symbiotic relationship between humans and artificial intelligence. Super sight ability for the blind thermal using heat sensing. Neuralink Is Working On Vision-Enhancing Implants, Elon Musk Says

Human trials are scheduled to commence within the next twelve months to evaluate neural implants designed to restore vision in blind individuals by transmitting information directly to the visual cortex.

Neuralinks can support limb movement or mobility issues Video: Woman able to operate robotic arm using 'thoughts alone' | Irish Independent. Tilly Lockey appeared on

Good Morning Britain as a guest and demonstrated the use of her new mind-controlled robotic limbs using Brain Computer Interface (BCI). Bionic Exoskeletons can be used using neurlinks to help people walk again.

The use of Quantum Machine Learning (QML) can rapidly evolve machine learning capabilities and the processing power of computers.

2.2.7 Upgrading of legacy systems

for maintenance and security benefits reducing vulnerabilities. AI may be used to generate software in the form of new applications to help replace old legacy ones by inputting a series of prompts for the new system based on the requirements for the business.

2.2.8 Language recognition and translation services

Improved efficiencies and time saving for summarising large documents and reports using Microsoft Office 365 copilot plug ins and integration features. Microsoft Teams allows video and audio recordings of meetings as well as transcription of text in real-time. Applications such as Google Translate allow people to interact and speak with each other in different languages, removing barriers to communication. Text documents and even websites can be translated into different languages opening up broader ecommerce trade and international business competition.

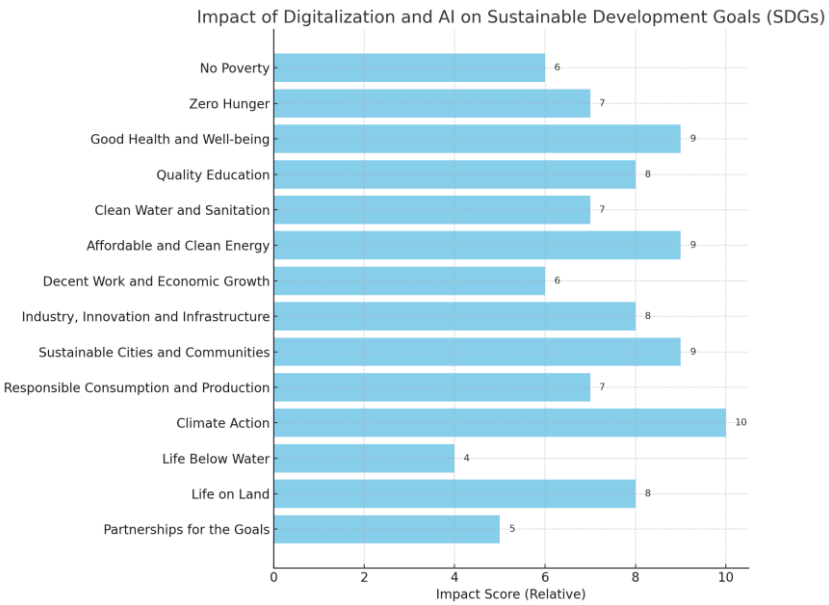
Change management is essential among leaders as jobs are evolving due to newer technologies and leveraging efficiencies from their use cases need to be identified. Organisations will need to identify business process that can be replaced using ai and automation based on priority, feasibility and process changes for business improvements. Staff and representative unions should be consulted and involved when identifying potential use cases to prevent industrial relations issues. If work is to by augmented or replaced by automations staff need reassurance that they will be redeployed or upskilled into more meaningful roles making them feel that their

contributions are relevant and required to support and manage newly enhance processes.

Replacement and or the removal of non-compatible and legacy systems is an important factor in need of consideration when it comes to use case identification and security vulnerabilities. Requirement prompts may be used to develop prototypes or full end to end application systems.

2.2.9 United Nations - Sustainability Development Goals [UN/SDG]

AI can help support energy readings and controls using smart grids and help to reduce energy wastage and manage consumption more efficiently. Precision farming and disease detection and pollution can assist farmers and agricultural workers for better crop yields. AI water quality monitoring and smart irrigation will help detect and avoid water shortages during extreme climate changes.



Source – generated by Open AI | ChatGPT

"AI is an advanced technology which can be used to create a very high-level climate model that predicts the future, helps to strategize against coming impacts of change because its prediction system touching with trained artificial brains."

Predictive analytics using AI can help determine if there are threats to life due to extreme unprecedented climate conditions, enabling authorities to predict storm paths and evacuate areas where there may be a potential threat of a tsunami, hurricane, flooding, freezing, high temperature heat or other dangerous weather conditions.

Digitalization across sectors can expand reach and enhance delivery, with AI aiding in outbreak prediction and diagnostics (Gupta and Kumar, 2024, pp. 157–158). Gupta and Kumar (2024, pp. 157–158) suggest that digitalization can enhance reach and efficiency across sectors, with AI improving predictions and diagnostics.

Investigate the perceived and actual impact of AI on job security, role evolution, and employment structures;

In the private sector there may be mass redundancies however, in the public sector enforced embargos can be introduced banning recruitment. The government may have to do more work with less if budget and resources reductions are imposed, meaning work will need to get done smarter using technology as an enabler for cost-cutting on salaries over time due to natural wastage - reduction of staff through retirements, death or job changers. Redundancies don't occur in the public sector frequently unless during periods of economic restructuring or government cost cutting!

Jobs and digital transformation disruption may occur, while some roles may be eliminated, others will be created, and staff development will be required to support new processes using newer technologies as a result, new career paths will need to be road mapped with respective training requirements, such as the need for AI engineers. The availability of services may be expanded as a result of new and improved automated processes and the traditional work shifts of nine to five may have to be expanded to ensure always-on systems are supported and maintained. Naturally there may be a transition from manual processing to oversight roles and responsibilities which will require levels of expertise and technical training as well as critical and problem-solving analytic thinking.

The health sector in particular has great advancement opportunities in so far as the new AI technologies can help early detection and diagnoses of sickness and disease. Personalised help, support and tailored treatment plans for hospital patients as well as new advances in technologies to remediate mobility problems. The advancement of appointments booking systems for reminders, cancelations and reassignment of appointments can help to support best use of appointment times and reduce wasted slots. Targeted and guided queries to the most appropriate help desks to ensure that calls or enquiries are routed to the correct departments. As an elective alternative for patients and customers of public services , chat bots might be choosen with and opt in or out option at the time of registration capturing their preference for communications.

With the use of AI comes accountability and transparency considerations, and new emerging roles will be necessary to support the use of AI. An increase in the demand for data scientists, cybersecurity specialists, trainers for imparting knowledge and upskilling staff in new technologies and processes, as well as ethical officers and a consistent governance framework to ensure that EU legislation is fully complied with when it comes to the introduction and use of AI. Equality, Diversity and Inclusion (EDI) will also increase in demand with roles to help reduce and prevent bias in the use of data analytic technologies in our systems and ensure fair and equal opportunities for all. If a robot is tasked with performing medical procedures, robot patients would be taking legal action against the owner and creator.

2.2.10 Accessibility compliance

National Disability Authority (NDA.ie) who advise organisations on accessibility compliance and promote the European Equality Act (EAA) by requirements. The Centre for Excellence in Universal Design (universaldesign.ie) introduces Web Accessibility Techniques for developers.

Deque.com provides training for using Axe DevTools, which helps to detect up to eighty percent of all accessibility issues using automated and semi-automated tests in web

application development to support organisations complying with EU legislation regarding accessibility requirements as per the Web Accessibility Initiative [WAI] and guidelines are available from WCAG.com, W3.org. Monitoring controls to detect and remediate non-compliances can be greatly enhanced with the use of AI by identifying non-compliant developer patterns in web applications.

2.2.11 Software development

Software Development Life Cycle (SDLC) is a proven structured model that guides the development of software projects. The use of GenAI and LLM's like GPT can significantly support software development in faster development, greater productivity and enabling code auditing to ensure best practices and standards are being maintained in development deployments and ensure overall governance to industry standards and quality deliverables. Developed code can be tracked and managed and audited using version control tools - GIT. The threat to developers is real, according to Times Now News, (2025) "Salesforce plans to cut over 1,000 jobs amid AI expansion, continuing a trend of downsizing since 2023".

The use of automation, AI agents and RPA can greatly help to improve software testing monotonous but essential pieces of functionality which can be a huge overhead and burden from the manual effort required from developer and business testing resources for different forms of testing namely - system, user acceptance, integration, performance and penetration testing. Test cases can be generated by user stories steps to reproduce and test code coverage can be significantly increased. Security compliance can be improved from file encryption protecting data privacy and ensuring adherence to GDPR. Microsoft 365 CoPilot can help support document creation resulting in time and cost saving.

"Artificial intelligence is going to replace literally half of all white-collar workers in the U.S.," Ford Motor Chief Executive Jim Farley said in an interview last week with author Walter Isaacson at the Aspen Ideas Festival. "AI will leave a lot of white-collar people

behind." Miah (2024) notes that large language models such as ChatGPT could affect 40% of working hours in the United States, through either automation or augmentation, according to Accenture's 2021 research. Gross and Criddle (2023) outline UK government scenarios in which AI adoption could lead to increased unemployment and poverty by 2030. Impacts to Trade and GDP could be significantly high due to Trump's tariffs for EU as well as poverty if people are displaced by AI technologies.

2.3 AI, Job Security, and Employment Structures

A growing body of scholarship warns that AI has the potential to displace workers, particularly in mid-level administrative roles common in public service (Chui et al., 2016; Arntz et al., 2016). Frey and Osborne's (2017) seminal study on automation risk estimates that 47% of U.S. jobs could be automated, many of which mirror roles in the public sector. Although subsequent research has nuanced this claim, pointing out that most jobs will be transformed rather than eliminated (Bessen, 2019), there is consensus that AI will alter skill demands and lead to significant organisational restructuring.

AI-driven transformation impacts employment structures by flattening hierarchies and eliminating clerical bottlenecks (Susskind and Susskind, 2015). This creates a two-tiered workforce: those who design, manage, and interpret AI systems, and those whose tasks are partially or wholly automated (Brynjolfsson and McAfee, 2014). Such transformations may lead to the erosion of traditional career progression models in public administration (McBride and Stahl, 2021).

Furthermore, empirical studies suggest that public sector workers often have greater anxiety about automation than their private-sector counterparts, due to rigid bureaucratic structures and slower adaptation to change (OECD, 2021).

2.4 Mitigating Workforce Displacement: Strategic Approaches

Scholars agree that mitigating the risks of AI-induced displacement requires proactive workforce strategies. These include reskilling, upskilling, internal mobility programmes, and inclusive change management (World Bank, 2020). Chui et al. (2018) argue that the public sector must lead in creating a "human + machine" operating model rather than a "machine replaces human" paradigm.

Upskilling is a recurring theme in the literature. However, it must be targeted and responsive to both technological demands and human capability (Manyika et al., 2017). For example, digital literacy training is insufficient if not accompanied by organisational redesign and leadership buy-in (Fleming, 2020).

Equally important is employee involvement. Studies show that inclusive decision-making processes can alleviate fear and resistance, improving morale and adaptability (Jarrahi, 2018). Transparency around the rationale for AI adoption and its expected workforce impacts is key to ensuring public servants trust (Gurumurthy and Bharthur, 2019).

Public sector unions also play a pivotal role in shaping how AI impacts the workforce. In countries like Sweden and Denmark, union involvement has led to more inclusive and negotiated digital transformations (OECD, 2021). The literature recommends the establishment of ethics councils, AI governance frameworks, and regulatory oversight to ensure accountability and minimise unintended consequences (Cath et al., 2018).

2.5 The Irish Public Sector and AI: Current Trends

Ireland's public service is undergoing digital transformation, guided by strategic frameworks such as the Digital Government Strategy 2022–2025 and Public Service Innovation Strategy (Department of Public Expenditure and Reform, 2022). These

documents emphasise the adoption of emerging technologies, including AI, for improved citizen engagement and administrative efficiency.

However, academic literature on AI's workforce implications in Ireland is sparse. Reports by the Irish Government Economic and Evaluation Service (IGEES) and Skillnet Ireland suggest that while AI adoption is progressing, it is fragmented and lacks a unified workforce strategy (IGEES, 2021). A study by the Economic and Social Research Institute (ESRI) found that approximately 20% of Irish public sector jobs face moderate to high automation risk (Barrett et al., 2020).

Moreover, digital capability assessments in government departments indicate uneven readiness. Skills gaps, legacy systems, and procurement issues hamper the full integration of AI technologies (National AI Strategy, 2021). Unlike Scandinavian countries, Ireland has yet to establish a structured social dialogue around AI and its impact on workers.

Nevertheless, initiatives like AI for Good and Civil Service Renewal 2030 signal increasing awareness of the social dimensions of digital transformation. Pilot projects in healthcare and social protection, such as AI-assisted claims processing and triage tools, provide early insights into the practical challenges and workforce tensions involved (HSE, 2023).

2.6 Gaps in the Literature

Despite the growing attention to AI in public service reform, several gaps remain:

Limited empirical data on employee perceptions of AI adoption in Irish public services;

Lack of sector-specific analysis of workforce strategies in government settings;

Absence of a national dialogue on AI ethics, job design, and career development in the public sector.

This dissertation aims to identify and address these gaps by providing a qualitative exploration of how AI is experienced and understood by Irish public servants, and what strategies they believe are necessary to ensure equitable digital transformation.

Methodology

3.1 Introduction

This chapter outlines the methodological framework used to explore the research question:

"How is the adoption of Artificial Intelligence (AI) in the Public Sector impacting job security and employment structures, and what workforce strategies can be implemented to mitigate the risks of workforce displacement?"

A qualitative research design was adopted to gain in-depth insights into public sector employees' and managers' experiences, perceptions, and strategies related to AI adoption and implementation. This approach facilitated the exploration of complex social experiences and enabled the collection of honest, contextual data.

3.2 Research Philosophy and Approach

This study is underpinned by an interpretivist philosophy, which emphasises the subjective meanings and lived experiences of individuals (Saunders et al., 2019). The interpretivist paradigm is appropriate for exploring how public sector professionals interpret the impact of AI on their work lives and organisational structures.

The research followed an inductive approach, moving from specific observations (interview data) to broader generalisations and theory development. This approach is suitable for exploratory studies where existing literature is limited or context-specific insights are sought (Bryman, 2016).

3.3 Research Design

A qualitative case study design was employed to examine the experiences of employees within various Irish public sector organisations. The case study design allows for a detailed, holistic investigation of AI's impact on workforce dynamics within its real-life context (Yin, 2018).

The study focused on departments where AI technologies such as Robotic Process Automation (RPA), machine learning, and chatbots were actively being piloted or implemented, such as the Department of Social Protection, Health Service Executive (HSE), and Revenue Commissioners.

3.4 Data Collection Methods

3.4.1 Semi-Structured Interviews

Primary data were collected through semi-structured interviews with seven Interviewee drawn from five different organisations. Semi-structured interviews allowed for consistency across key themes while offering flexibility to explore emergent issues.

An interview guide was developed, focusing on the following themes:

- Awareness and understanding of AI in their workplace;
- Perceived risks and opportunities related to AI;
- Concerns about job security and job design;
- Organisational strategies to mitigate workforce disruption;
- Role of training, communication, and employee involvement.

Each interview lasted approximately 30–45 minutes and they were conducted via secure video conferencing (using Microsoft Teams). All interviews were recorded with participant consent and transcribed verbatim for analysis.

3.4.2 Sampling Strategy

A purposive sampling technique was used to identify key informants with direct experience of or responsibility for AI-related initiatives. Interviewee included:

- Frontline staff using AI-supported systems (n=3);
- Middle managers overseeing digital transformation (n=4);
- Senior HR or policy advisors (n=3).

This ensured a diversity of perspectives from both operational and strategic levels.

3.5 Data Analysis

The transcribed interview data were analysed **using thematic analysis**, as described by Braun and Clarke (2006). This six-phase process involved:

1. Familiarisation with the data;
2. Generating initial codes;
3. Searching for themes;
4. Reviewing themes;
5. Defining and naming themes;
6. Producing the report.

Thematic analysis was conducted initially using NVivo 15 software to assist with coding, pattern recognition, and theme identification and organisation of data collected.

Word Cloud created from interview transcript keywords by author using Chat GPT 5.

Chart 1 - NVivo 15

96 codes generated from 216 references

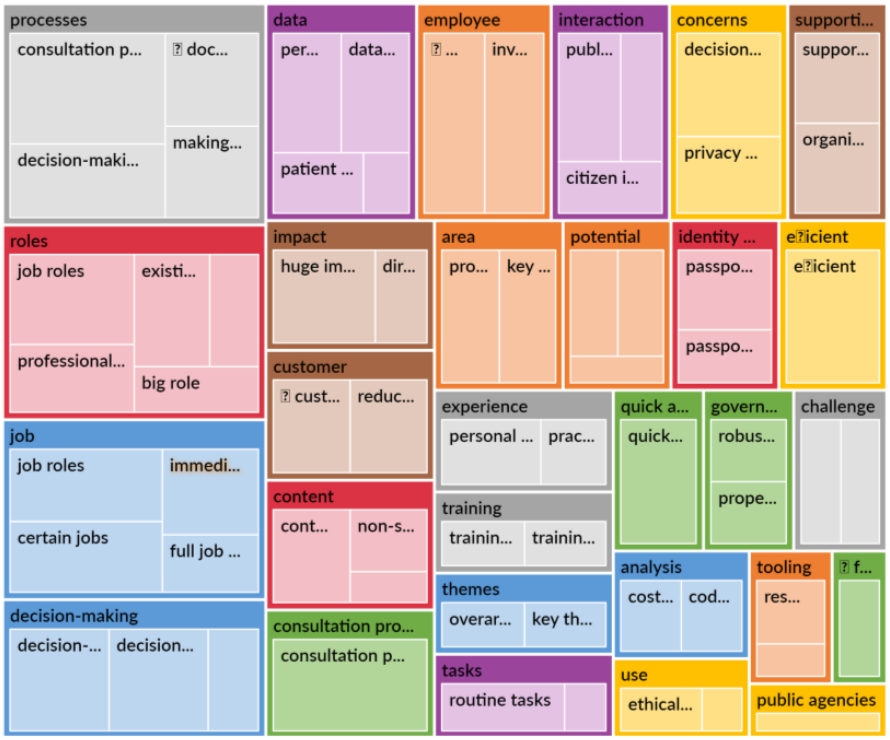
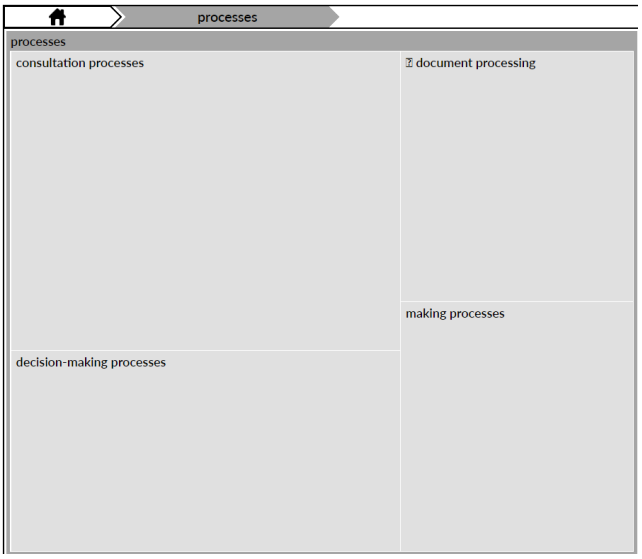
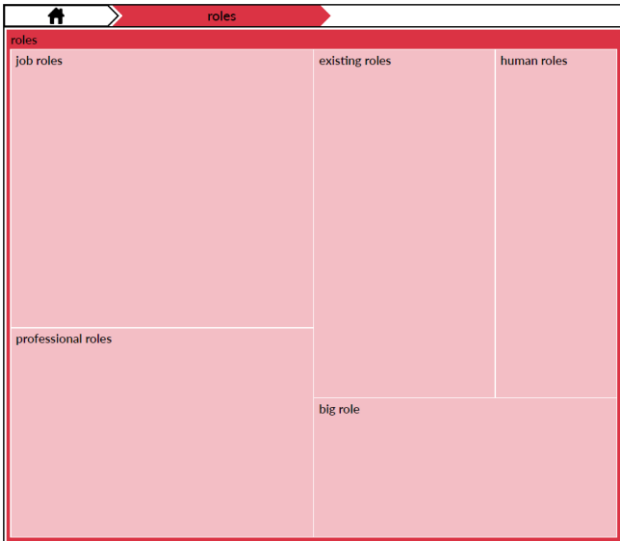


Chart 2 - NVivo 15

Below shows the four most dominant recurrences from the analyser tool

Scored 5





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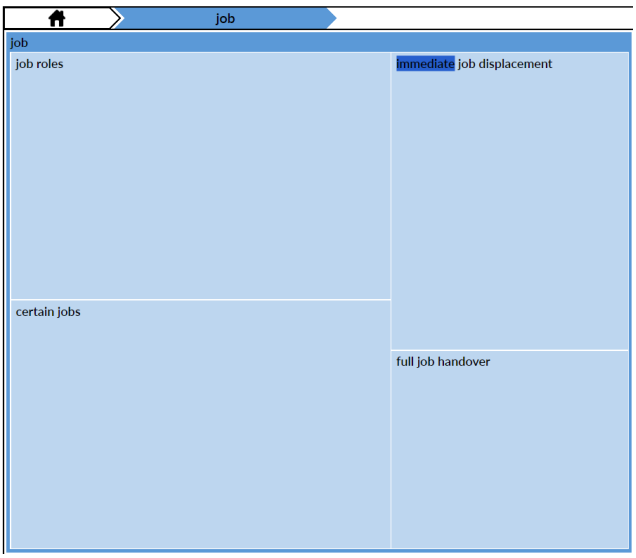


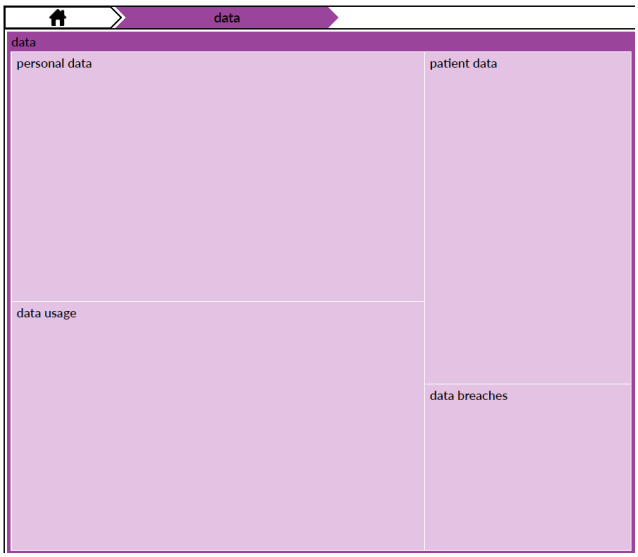
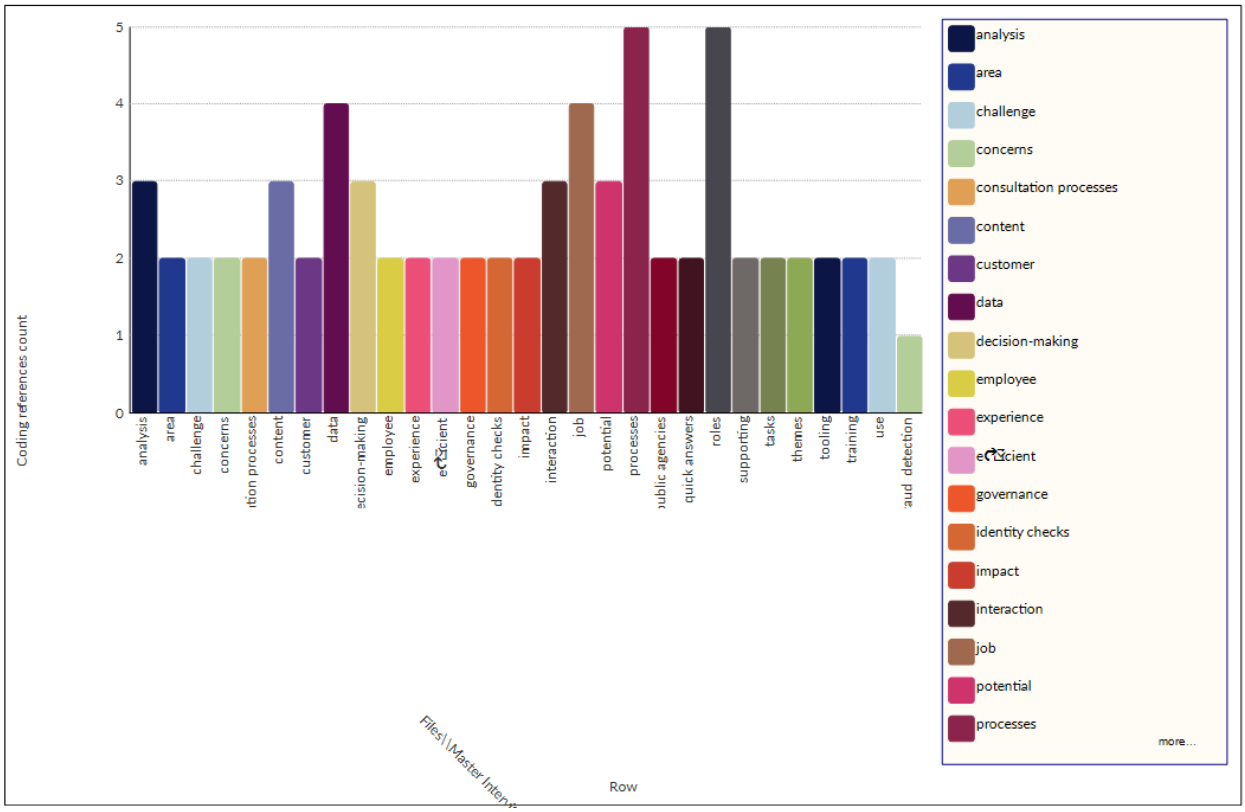


Chart 3 created using NVivo 15



Keyword bar chart as generated using NVivo 15

Emerging themes were related to:

- Job insecurity and anxiety;
- Shifting skills requirements;
- Training and workforce adaptation;
- Transparency and trust in AI;
- Leadership and organisational culture.

Themes were cross-validated by peer debriefing and reviewed against existing literature to ensure consistency and rigour.

3.6 Ethical Considerations

The study adhered to standard ethical research protocols in line with university guidelines. Ethical approval was obtained from the relevant institutional ethics committee before data collection. In advance of interviews and completion of the questionnaire, interviewees received an informed consent information sheet and signed a consent form before their allotted time. For the questionnaire and interviews, anonymity was guaranteed to interviewees, and all references to their names, organisations, and identifying features were anonymised in transcripts and reporting. Interviewees were advised that their participation was completely voluntary and made aware that they could withdraw at any stage if they wished to do so. Fortunately, nobody did.

3.6.1 Data protection and privacy: All recordings and transcripts were stored securely on encrypted drives and deleted after analysis. Only essential research data was collected. Interviewees were informed of data retention periods, storage locations, and deletion timelines.

3.7 Trustworthiness and Rigour

To ensure the credibility and dependability of the findings, the following strategies were implemented:

Triangulation: The process was aimed towards identifying people in different roles and organisations to gain different perspectives when gathering information through the questionnaire.

Interviewee were invited to review their transcripts and summaries of findings to verify the validity of the collated content and ensure that their perspectives were accurately represented.

Audit trail: A clear record of all decisions made during the research process was maintained;

Reflexivity: The researcher maintained a reflexive journal to account for potential biases and positionality.

3.8 Limitations

While the qualitative approach allowed for deep exploration, the study has several limitations:

- The sample size (n=10) is small and not statistically generalisable;
- Interviews reflect individual perspectives that may not represent broader organisational views;
- As a cross-sectional study, it does not capture longitudinal impacts of AI adoption.

However, the study provides a strong foundation for future research and offers practical insights for policy development and strategic planning.

Braun, V. and Clarke, V. (2006) 'Using Thematic Analysis in Psychology', *Qualitative Research in Psychology*, 3(2), pp. 77–101.

Bryman, A. (2016) *Social Research Methods*. 5th edn. Oxford: Oxford University Press.

Saunders, M., Lewis, P. and Thornhill, A. (2019) *Research Methods for Business Students*. 8th edn. Harlow: Pearson Education.

Yin, R.K. (2018) *Case Study Research and Applications: Design and Methods*. 6th edn. Thousand Oaks, CA: Sage.

Qualitative Analysis

A ten-question survey was created with a consent disclaimer for participants to sign. Some subjects known to me were selected based on their senior management positions in the delivery of public services, and were asked to participate in a 45-minute interview and questionnaire. Each participant was invited to their allotted interview by Microsoft Teams meeting at their designated date and time for an interview, which was accompanied by a disclaimer and consent form, which was to be returned in advance of their interview, as well as a copy of the questionnaire was provided in advance of the interview. Each interviewee was provided with a number and an identity code to conceal their identity for privacy. By providing the questionnaire in advance of the interview, this enabled the subject to read it and prepare their responses.

The following questions were presented to each interviewee.

Qualitative Questionnaire Questions

1. Can you describe your current understanding or experience with AI technologies within Irish public services?
2. In your opinion, what are the most promising areas for AI implementation in public services in Ireland?
3. What potential risks or challenges do you associate with using AI in the delivery of public services?
4. How do you perceive the impact of AI on public sector jobs and employment structures in Ireland?
5. Do you feel there is adequate transparency and accountability in the use of AI by public agencies? Why or why not?

6. What ethical concerns, if any, do you believe arise from integrating AI into public services?
7. How well-informed do you think the general public is about AI use in Irish public services? What could be improved?
8. Have you noticed any changes in the quality, efficiency, or accessibility of services due to AI integration? Please explain.
9. What role do you believe government policy and regulation should play in shaping AI use in public services?
10. What recommendations would you give to ensure AI is used responsibly and effectively in Ireland's public sector?

Interviewees Time Table

No.	Date	Time	Name	Role	Organisation	Section
1.	12/06/2025	09.00 – 09.45	Interviewee #1	Director	Private Vendor	Software Development
2.	12/06/2025	16.00 -16.45	Interviewee #2	Manager	Housing	Affordable Housing
3.	13/06/2025	09.00 -09.45	Interviewee #3	Manager	Gov	Digital Transformation
4.	30/06/2025	09.00 – 09.45	Interviewee #4	Manager	Gov	Digital Services
5.	30/06/2025	12.00 – 12.45	Interviewee #5	Manager	Gov	Enterprise Architectures
6.	30/06/2025	16.00 – 16.45	Interviewee #6	Manager	Gov	Business Change
7.	04/07/2025	16.00 – 16.45	Interviewee #7	Assistant Secretary	Union	Snr. Management Union

The method of interview capture was the recordings and transcripts utilising Microsoft Teams.

4.1 Introduction

This chapter presents the qualitative analysis of data gathered through semi-structured interviews with ten public sector professionals across five organisations in Ireland. The Interviewee represented diverse functional areas, including administration, digital transformation, human resources, and operational leadership. Through thematic analysis, five core themes emerged, offering rich insights into how AI adoption is reshaping employment dynamics, job security, and workforce strategies in the Irish

public sector. The following thematic areas were identified through the manual analysis using MS Excel to capture and analyse the results with the use of pivot tables and charts of the transcripts and the emerging themes from the identified keywords:

The transcripts were then manually reviewed, with emerging themes and keywords identified.

The following themes were identified

Theme	Keyword Count
Limited Current AI Experience	2
Opportunities in Service Automation	2
Risks of Bias and Privacy Issues	3
Impact on Jobs and Skills	2
Early Stage Workforce Preparation	2
Low Employee Involvement in AI Decisions	2
Transparency Gaps	2
Ethical Concerns	2
Recommendations for Responsible AI	1

Table 1 was *created by the author in MS Excel using word count data from transcriptions of interviews*

And a bar chart was created to represent the data visually

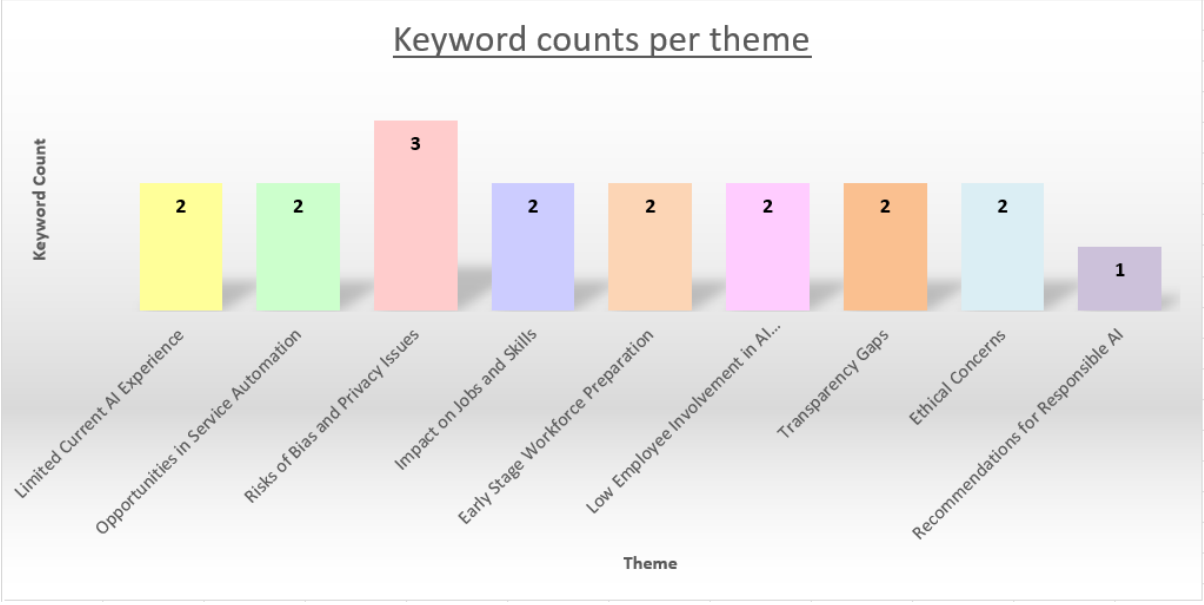


Chart 1 was *created by the author in MS Excel using word count data from transcriptions of interviews*

Keyword counts were analysed from the transcribed interviews, and the following information was captured

Theme	Keyword Count
Limited Current AI Experience	6
Opportunities in Service Automation	7
Risks of Bias and Privacy Issues	15
Impact on Jobs and Skills	9
Early Stage Workforce Preparation	24
Low Employee Involvement in AI Decisions	5
Transparency Gaps	18
Ethical Concerns	20
Recommendations for Responsible AI	15

Table 2 was created by the author in MS Excel using word count data from transcriptions of interviews

Bar chart created to represent the keywords data

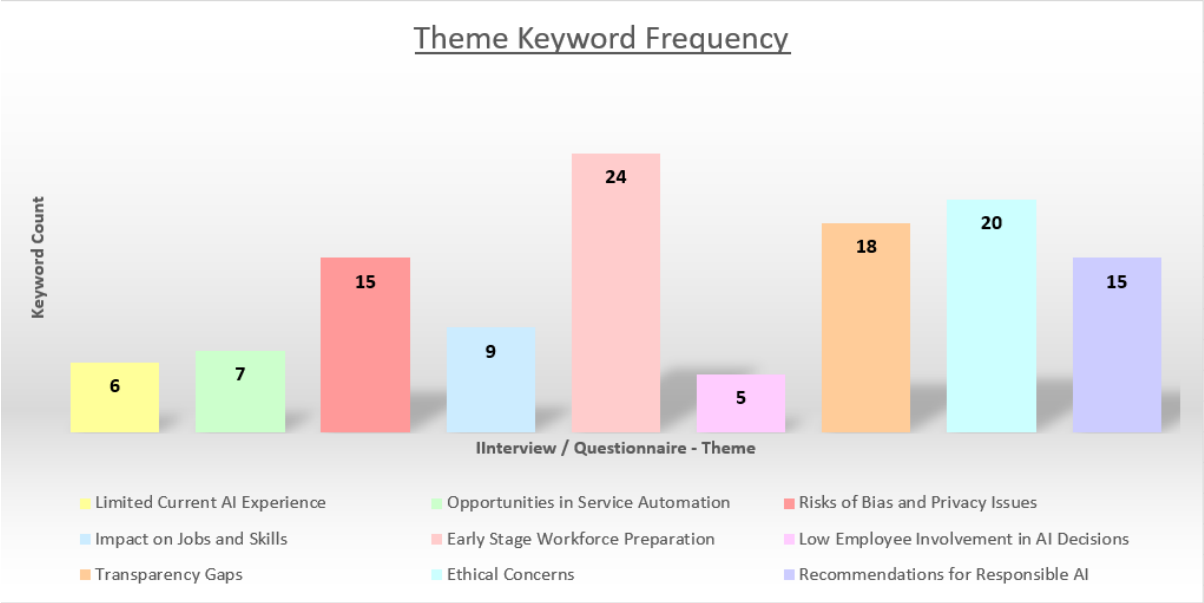


Chart 2 was created by the author in MS Excel using word count data from transcriptions of interviews

Table 3

Summary of impactful statements extracted from Interviewees

Interviewee	Quote #1	Quote #2	Quote #3
Interviewee_1	"It's my sense that the public sector is probably lagging a little bit further behind..." (AI underused)	"It's coming into digital services... but without it being explicitly said." (Implicit AI)	"Huge opportunity to improve services... automate and make more efficient." (Service improvement)
Interviewee_2	"If the data is biased, the outputs will be biased." (Bias concern)	"Upskilling and training... encouraging staff to adapt." (Training)	"We use Copilot because it's private... added level of security." (Data protection)
Interviewee_3	"AI will make jobs more efficient." (Workforce impact)	"We need a top-down approach... collective oversight." (Governance)	"There needs to be internal structures and risk-based approach." (Risk management)
Interviewee_4	"None in my case to be honest." (Lack of consultation)	"AI is a black box... I don't know where accountability lies." (Transparency)	"Users should be able to opt out and speak to a human." (User control)
Interviewee_5	"We need a more joined-up approach." (Governance)	"Someone should be watching the AI and reviewing decisions." (Human oversight)	"If you don't use these tools, you'll get left behind." (Skill evolution)
Interviewee_6	"You need human responsibility and skill." (Job displacement)	"Misleading content, bias, lack of transparency." (Risks)	"We need structures implemented before we can trust it." (Ethical safeguards)
Interviewee_7	"Departments need designated AI officers... and central monitoring." (Governance)	"Decisions based on AI models could remove human dignity." (Ethical concern)	"Regular testing of bias and equality is needed." (Fairness and inclusion)

Source: created by the author

4.2 Theme 1 Limited Current AI Experience

The AI-relevant skillset demand is still emerging in public services, and many teams have only rudimentary exposure to AI tools. (Government of Ireland, 2025)

Despite surging drive toward AI adoption, many public bodies remain in the nascent phase of experimentation, constrained by limited expertise and infrastructure.
(Ibec, 2025)

4.3 Theme 2: Opportunities in Service Automation

AI is projected to add at least €250 billion to the economy by 2035, offering vital opportunities for public services to streamline operations.
(Microsoft & Trinity College Dublin, 2025)

Public sector management can now envision AI as a new 'colleague'—one that streamlines workflows, eases resource allocation, and enhances service delivery.
(BearingPoint, 2025)

All interviewees acknowledged a significant shift in required skill sets as AI systems begins to become embedded in workflows. Roles once focused on data entry and routine processing were evolving to require digital literacy, analytical thinking, and problem-solving. One interviewee noted that job design was changing, with fewer repetitive tasks and a greater focus on oversight, interpretation, and exceptions handling. However, many employees felt underprepared for these new responsibilities.

4.4 Theme 3: Risks of Bias and Privacy Issues

The government warns against using free tools like ChatGPT or DeepSeek in public services due to serious risks the data entered may be used for AI training, raising privacy concerns. (AI Ireland, 2025)

How do you ensure that the AI systems are making fair and unbiased decisions? … Data privacy is another concern. (BearingPoint, 2025)

The theme of transparency, accountability and trust emerged repeatedly, particularly around how AI systems make decisions, and how those decisions impact people's work.

Several interviewees noted that a lack of transparency in AI deployment created scepticism and resistance among staff. This issue was particularly salient in areas where decisions affected public entitlements or case prioritisation, such as in welfare or healthcare systems. Effective communication from leadership about how AI works, why it's being introduced, and what it means for staff was seen as essential to fostering trust.

4.5 Theme 4: Impact on Jobs and Skills

'There has been a narrative out there that AI is coming for jobs ... the challenge ... is not that there won't be jobs. It's that workers need to be prepared to take them.'
(PwC Ireland, 2025)

AI may be enriching automatable jobs, requiring more complex skills and decision-making. (PwC Ireland, 2025

A dominant theme and concern across the seven interviews was concern about job security. Many employees, especially those in lower skilled roles have expressed uncertainty according to manager interviewed about their future as AI systems (particularly Robotic Process Automation) begin to handle repetitive tasks.

While some senior managers reassured staff that AI would augment rather than replace roles, frontline workers frequently perceived these changes as precursors to redundancy. This fear was compounded by limited internal communication during early implementation stages, resulting in speculation and rumours about future redundancies.

The theme focused on how organisations were investing or failing to invest in upskilling and engaging employees throughout AI rollouts. While the National AI Strategy (2021) emphasises workforce development, implementation varied considerably.

There is a need for mandatory digital upskilling, embedded into career development, and structured support for those whose roles are changing. More collaborative design of AI initiatives, involving frontline staff in system testing, feedback loops, and policy development.

4.6 Theme 5: Early Stage Workforce Preparation

A recurring theme was the lack of a coherent, long-term workforce strategy linked to AI implementation. While some departments had clear digital strategies, few had mapped out the human impact or developed robust transition plans for affected workers.

As Hilliard (2025) points out, fewer than half of Government departments and agencies had facilitated training in artificial intelligence systems at the onset of 2025.

The Government of Ireland, (2025) has agreed to update its National Digital and AI Strategy during 2025, signalling Ireland's ambition to remain a global leader in technology adoption.

There are significant variation in readiness levels across departments, depending on leadership vision, investment in infrastructure, and HR capacity.

4.7 Transparency Gaps

How do you guarantee that the system isn't inadvertently discriminating against certain groups? (BearingPoint, 2025)

Implement AI Transparency Standards for Automated Decision-Making in Public Services … legislate mandatory disclosure of AI use and explainability requirements. (Policy Connect, 2025)

4.8 Ethical Concerns

"The government has instructed that all AI tools used by the Irish Public Service should comply with seven requirements for ethical AI." *(Irish Government, 2024)*

4.9 Interim Guidelines for Use of AI

Department of Public Expenditure, Infrastructure, Public Service Reform and Digitalisation (2024) *Interim Guidelines for Use of AI*, under review by a board of AI experts.

4.10 Recommendations for Responsible AI

The new guidelines published on 8 May are described by Minister Jack Chambers as complementing and informing strategies regarding the adoption of innovative technology and ways of working already underway in the public service. (Ibec, 2025)

Ibec (2025) reports that the government has released new guidelines for the responsible use of AI in the public service.

"This strand calls for ethical deployment of AI in public services, with strong focus on fairness, accountability and human oversight." *(IDA Ireland, 2025)*

"The Government developed a National AI Strategy in 2021, called 'AI – Here for Good' ... through a human-centred, ethical approach to AI development, adoption and use." *(Minister for Trade Promotion et al., 2025)*

4.7 Summary of main Themes Identified from interview transcripts

Theme	Key Insights
1. Limited Current AI Experience	Government-wide concerns over job displacement, especially in administrative roles.
2. Opportunities in Service Automation	Identification of potential use cases
3. Risks of Bias and Privacy Issues	Fair and impartial decision-making. Governance and policy guidelines
4. Impact on Jobs and Skills	Upskilling efforts are insufficient or fragmented; the need for proactive engagement and inclusion.
5. Early Stage Workforce Preparation	Limited planning for workforce impacts; uneven departmental readiness.
6. Transparency Gaps	Low trust in decision-making by AI due to a lack of transparency, trust and communication.
7. Ethical Concerns	Human centric approach
8. Recommendations for Responsible AI	Proposed suggestions

Source: Table created by author in support of data analysis

Findings and Analysis

The responses received from the participating interviewees were anonymised and collated for analysis.

4.1 Introduction

This chapter presents the qualitative data collected from interviews with seven public sector professionals across Irish government departments and agencies. It analyses how AI is influencing workforce structures, job security, and human capital strategies. Thematic findings are mapped onto broader theoretical frameworks and existing literature to deepen the understanding of both the risks and strategic responses to AI-driven transformation in the public sector.

Below is a sample extract from the interview transcripts of some of the impactful statement made during interviews.

Interviewee	Quote #1	Quote #2	Quote #3
Interviewee_1	"It's my sense that the public sector is probably lagging a little bit further behind..." (AI underused)	"It's coming into digital services... but without it being explicitly said." (Implicit AI)	"Huge opportunity to improve services... automate and make more efficient." (Service improvement)
Interviewee_2	"If the data is biased, the outputs will be biased." (Bias concern)	"Upskilling and training... encouraging staff to adapt." (Training)	"We use Copilot because it's private... added level of security." (Data protection)
Interviewee_3	"AI will make jobs more efficient." (Workforce impact)	"We need a top-down approach... collective oversight." (Governance)	"There needs to be internal structures and risk-based approach." (Risk management)
Interviewee_4	"None in my case to be honest." (Lack of consultation)	"AI is a black box... I don't know where accountability lies." (Transparency)	"Users should be able to opt out and speak to a human." (User control)
Interviewee_5	"We need a more joined-up approach." (Governance)	"Someone should be watching the AI and reviewing decisions." (Human oversight)	"If you don't use these tools, you'll get left behind." (Skill evolution)
Interviewee_6	"You need human responsibility and skill." (Job displacement)	"Misleading content, bias, lack of transparency." (Risks)	"We need structures implemented before we can trust it." (Ethical safeguards)
Interviewee_7	"Departments need designated AI officers... and central monitoring." (Governance)	"Decisions based on AI models could remove human dignity." (Ethical concern)	"Regular testing of bias and equality is needed." (Fairness and inclusion)

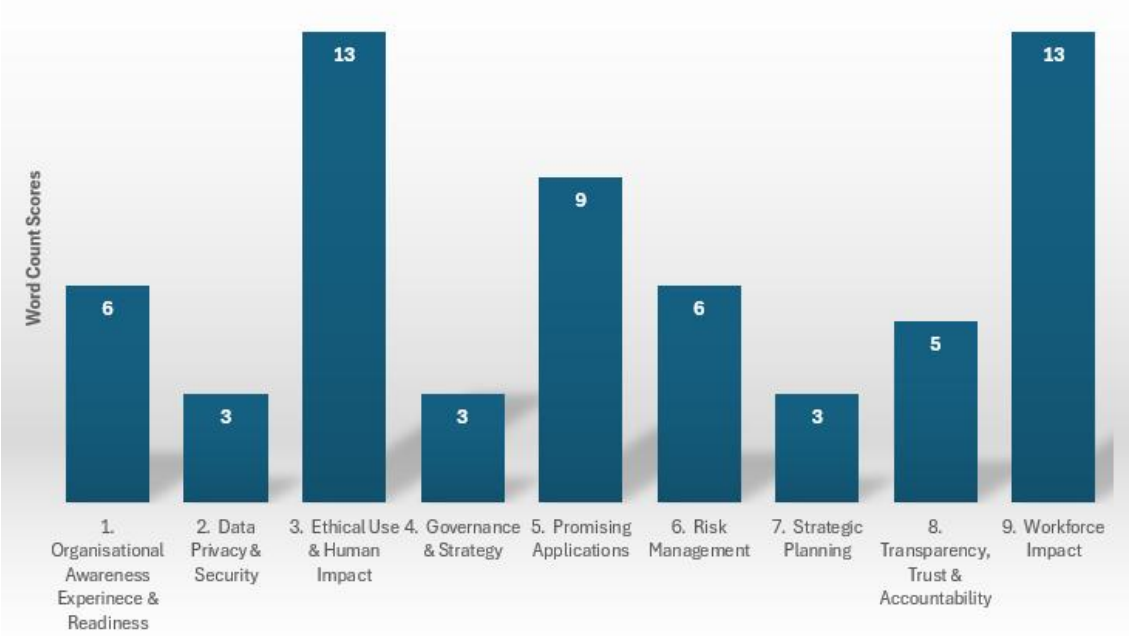
Source: Table created by the author

Sample keywords extract from interview transcripts

1. AI Awareness & Experience Organisational Readiness	lagging, adoption, comparison new roles, ethics, transformation	6
2. Data Privacy & Security	Copilot, private tools, security	3
3. Ethical Use & Human Impact	consultation, decision-making, Employee Involvement dignity, automation, empathy opt-out, human interaction bias testing, equality, oversight, Fairness & Inclusion	13
4. Governance & Strategy	safeguards, trust, implementation oversight, top-down, structure fragmentation, strategy, coordination review, fairness, accountability decision-making, ethics, review	15
5. Promising Applications	automation, service improvement fraud, pattern analysis translation, accessibility CRM, automation, membership	9
6. Risk Management	low/mid/high risk, governance bias, data integrity misinformation, dependency	6
7. Strategic Planning	ROI, analysis, investment	3
8. Transparency, Trust & Accouontability	black box, vendor, accountability implicit use, digital services	5
9. Workforce Impact	training, adaptation, skills efficiency, job transformation adoption, skills, future-readiness task elevation, cognitive work displacement, planning, strategy	13

Source: Table created by the author

Bar chart representation of keyword score counts across identified themes.



Source: Table created by the author

4.2 Themes Identified from analysis

Theme 1: Limited current AI experience

AI is transforming work, not just automating tasks. Interviewees described a shift from task execution to oversight, system validation, and case escalation, reflecting on what Brynjolfsson and McAfee (2014) call the "complementarity effect" of AI: humans and machines working together, rather than in opposition.

This mirrors the predictions of Bakhshi et al. (2017) suggested that cognitive and socio-emotional skills may play a greater role in the future workforce. In the Irish public sector, this transition seems to be occurring in varying ways and without a consistent framework.

Skill polarisation presents a potential challenge in workforce development. Those already digitally literate are upskilling further, while others are left behind — creating a dual-track workforce. This divide could deepen existing inequalities and reduce cohesion unless actively addressed by inclusive, tailored training policies (OECD, 2021).

Theme 2: Opportunities in Service Automation

Theme 3: Risks of Bias and Privacy Issues

Theme 4: Impact on jobs and skills

A major finding relates to widespread anxiety among public sector employees regarding the potential for job loss or redundancy due to AI implementation. This aligns with prior studies indicating that routine and administrative roles are particularly vulnerable to automation (Frey and Osborne, 2017; Arntz et al., 2016).

In the Irish context, departments deploying Robotic Process Automation (RPA) — especially in social welfare and tax processing revealed that clerical staff perceive AI as a direct threat to their roles. Although no redundancies were reported by interviewees, there is a psychological burden stemming from perceived precarity.

This fear reflects a structural vulnerability exacerbated by poor communication and a lack of visible redeployment planning. According to IGEES (2021), while public sector innovation is accelerating, human capital strategies often lag behind technical deployments. The absence of transparent job transition frameworks increases perceived insecurity, especially where automation targets entry-level or low-skill functions.

While AI adoption inevitably displaces certain competencies, the Irish public sector has an opportunity to reskill and redeploy workers into more strategic and value-added functions. This is consistent with World Bank (2020) findings on public sector agility.

Interviewees called for mandatory, supported, and context-specific training programmes, rather than generic online courses.

The literature supports this approach. According to Manyika et al. (2017), effective workforce transitions depend on a comprehensive reskilling strategy, early intervention, and active employee involvement.

However, current training efforts were often voluntary and inconsistently promoted. The absence of institutionalised learning pathways means that workers must self-navigate digital transformation, increasing inequality and disengagement.

Engaging staff through co-design, participatory workshops, and peer mentoring could reduce resistance and strengthen ownership, echoing Gurumurthy and Bharthur (2019) who advocate for democratised AI governance models.

Theme 5: Early Stage Workforce Preparation

A consistent theme across departments was the lack of integrated workforce planning to match the speed of digital transformation. While technological roadmaps were often in place, human capital strategies were reactive or ad hoc.

This reflects findings from Mergel et al. (2019) who argue that successful digital transformation requires organisational change, not just technological adoption. The Irish experience shows a disconnection between innovation leaders and HR practitioners, creating a bottleneck in change management processes.

Furthermore, readiness levels varied widely between departments. While some had engaged in strategic foresight exercises or piloted redeployment schemes, others lacked even basic data on workforce digital capabilities.

Theme 6: Trust, Accountability and Transparency Gaps

Trust in AI emerged as a critical condition for successful integration. Interviewees highlighted that when systems operate as "black boxes", it leads to frustration and passive resistance. This finding echoes Cath et al. (2018), who emphasise the importance of algorithmic accountability in public services.

Trust is further eroded when AI-generated outputs affect public entitlements, such as welfare eligibility or medical prioritisation. These applications increase scrutiny and ethical stakes, making explainability a key component of responsible AI governance (McBride and Stahl, 2021).

The National AI Strategy (2021) recognises the ethical risks of opaque algorithms but provides limited practical guidance for line managers or civil servants engaging with such tools. This gap contributes to operational opacity, which in turn damages legitimacy.

Theme 7: Ethical Concerns

All of the interviewees had concerns about how AI will be integrated into the workforce and the analysis scored highly indicating it requires a high level of focus with a human centric approach.

Theme 8: Recommendations for Responsible AI

This theme is addressed in the recommendations and conclusions.

4.2 Synopsis of Themes and Research Question

The research question asked:

"How is the adoption of AI in the Public Sector impacting job security and employment structures, and what workforce strategies can be implemented to mitigate the risks of workforce displacement?"

The key findings indicate that:

Job security is under psychological threat, even where redundancies are not occurring.

Employment structures are evolving, shifting from task execution to monitoring and decision support. Strategic workforce planning is underdeveloped, creating anxiety and inconsistency. Upskilling is vital but inadequately structured or incentivised. Trust in AI systems requires ethical design and transparency, which is currently lacking but evolving. The risks associated with workforce changes in the Irish public sector are primarily related to unstructured transformation, skills mismatches, and institutional inertia, rather than mass layoffs. Mitigation strategies should consider both technical and human aspects of change. Government agencies are undergoing a review of their skills strategy in preparation for the arrival of new technologies, which will enable the identification of knowledge gaps within organisations.

4.3 Conclusion

The qualitative findings reveal a workforce caught between technological optimism and personal insecurity. While AI offers public value and efficiency gains, the human cost remains unevenly managed. Addressing this requires not only robust digital infrastructure but also a strategic, inclusive, and ethically grounded workforce response.

Discussion

There are many variations of new technologies evolving at a rapid rate and it is quite daunting to know which ones are best, as the parameters are continuously changing. Some such technologies are mentioned below.

Open AI released Chat GPT-5 which is like having access to PhD level experts available at your fingertips. Others include Grok 4, CoPilot, Google DeepMind release Genie 3 allows a user to create worlds from NLM prompts with real-time interactivity, world memory and prompt able events. Unitree A2 Stellar Hunter robotic dog-like machine, and Humanoid robot Optimus are evolving in doing things beyond human abilities intellectually and physically. Humanoid testing to improve motor skills, problem-solving and better autonomy for real-world tasks. Google Gemini storybooks allow children to co-write and illustrate storybooks with AI. ElevenLabs allows humans to create studio-grade songs from prompts, including vocals in multiple languages and instrumentals, as well as commercial rights and post-generation text. Biometric securities are vulnerable and can be bypassed as facial and voice recognition can now be compromised using AI. In Denmark (Time, 2025), citizens are getting amended copyright laws that will grant them copyright control over their own image voice and facial features to combat AI-generated deepfakes.

Quantum Computing**,** unlike traditional computers quantum computers use qubits allowing computers to exponentially process more information by processing 0, 1 or both at the same time, thanks to superposition. Some benefits of increased processing power of quantum computers can include faster drug discovery, improved climate modelling predictions, advanced AI, financial forecasting, and the possibility of breaking traditional encryption.

5.1 Introduction

This chapter provides a critical interpretation of the findings in light of the research question:

"How is the adoption of Artificial Intelligence (AI) in the Public Sector impacting job security and employment structures, and what workforce strategies can be implemented to mitigate the risks of workforce displacement?"

The discussion is structured around two main axes:

- The benefits and drawbacks of AI adoption in the public sector.

- The implications for workforce strategy, including risks and mitigation approaches.

The chapter draws on both primary data from interviews and secondary literature to develop a balanced, evidence-based analysis.

5.2 Arguments in Favour of AI in Public Services

5.2.1 Increased Efficiency, accessibility and cost savings

AI offers considerable advantages in terms of efficiency, accuracy, and resource optimisation. Tasks such as data processing, appointment scheduling, document classification, and fraud detection have been automated in departments like Social Protection and Revenue, resulting in faster service delivery.

This aligns with international evidence. According to the OECD (2021), AI can significantly reduce operational costs and improve responsiveness in government systems. The Irish public sector, facing both fiscal pressure and rising service demands, stands to benefit greatly.

5.2.2 Enhanced Public Service Quality

AI can improve the quality and consistency of public services by removing human bias, reducing error rates, and offering 24/7 access to services through chatbots and virtual assistants. For example, in health services, AI is being used for predictive analytics to prioritise high-risk patients, potentially saving lives and enhancing care (HSE, 2023). In planning departments, AI tools assist in urban modelling, leading to better-informed decision-making. Such applications reflect the vision of the National AI Strategy (2021), which positions Ireland as a leader in ethical AI innovation.

5.2.3 Opportunity for Strategic Workforce Redeployment

Rather than displacing staff, AI can free up human resources for more complex, interpersonal, and strategic roles. Interviewees expressed support for this vision in This transition reflects a restructuring of public sector work, enabling civil servants to become knowledge workers, advisors, and strategic decision-makers. When supported

by proper planning and reskilling, this could revitalise public sector careers and improve staff morale.

5.2.4 Support for decision making

5.2.5 Increased productivity

Increased processing speed and automation.

(Connell, 2025)

5.3 Arguments Against AI in Public Services

5.3.1 Job Displacement and Psychological Insecurity

Despite the above opportunities, the threat to job security remains a major concern. Interviews revealed pervasive anxiety. Even in the absence of immediate redundancies, the symbolic presence of AI systems created a sense of expendability.

This supports the concerns raised by Frey and Osborne (2017), who warn that automation may lead to a slow erosion of public sector roles, especially those based on repetitive, rules-based tasks.

5.3.2 Technological Disparities and Workforce Segmentation

AI adoption risks creating a two-tier workforce. Staff with digital fluency benefit from new opportunities, while others often older or lower-skilled workers fall behind.

This echoes findings by the European Commission (2020), which warns of "digital exclusion within the workforce" unless retraining and upskilling are made universally accessible. There's the danger of a digital gap between staff. Some may thrive in this environment, while others may silently drown. This raises questions of fairness and equity, especially in a public sector mandated to model inclusion and social responsibility.

5.3.3 Ethical, Legal, and Transparency Concerns

AI systems can lack explainability, creating legal and ethical risks especially in areas that impact rights, such as welfare access or healthcare prioritisation. Trust in government decision-making is vital for democratic legitimacy. This points to broader concerns around algorithmic accountability (McBride and Stahl, 2021), especially when AI decisions impact vulnerable populations. Without transparency and oversight, AI can erode trust in institutions.

5.3.4 Impact in interpersonal relationships and workplace culture.

Lack of human interaction may be succeeded by computer and robotics interaction. The organisational work force plan will need to ensure that human workers are afforded time to interact with their colleagues for collaborative and creative work ideas.

5.3.5 Staff wellbeing impacts

Staff need to have a sense of purpose and meaningful work with a need to feel that they are contributing to the workplace activities and deliverables.

5.3.6 Performance management

While AI offers greater capabilities for managers and leaders there is scepticism that it might be overused as a monitoring tool against worker activities, creating stress among the workforce.

(Connell, 2025)

5.4 Strategic Implications for Workforce Planning

AI adoption is not just a technological change it is an organisational transformation. The findings suggest that current workforce strategies are reactive, inconsistent, and overly focused on infrastructure rather than human capital.

5.4.1 Need for Proactive Workforce Strategies

Workforce planning must evolve from passive adaptation to proactive design. The absence of scenario planning, redeployment strategies, or clear communication pathways deepens staff anxiety.

Departments must map out:

Future job roles post-AI implementation.

Skill requirements for new roles.

Transition pathways and support mechanisms.

This strategic foresight is critical to maintain morale, engagement, and retention during digital transformation.

5.4.2 Reskilling and Inclusion - Must Be Central

Training cannot be optional or generic. It must be:

- **Mandatory** for all impacted roles.
- **Tailored** to job function and learning level.
- **Supported** with coaching, mentorship, and peer learning.

Only then can reskilling become a standard component of AI transition, rather than a bolt-on.

5.4.3 Participatory Implementation Increases Legitimacy

Employees must not be passive recipients of AI; they must be active interviewees in design, testing, and evaluation. Participatory governance:

- Builds trust.
- Increases system usability.
- Surfaces unforeseen risks early.

This inclusive approach aligns with Gurumurthy and Bharthur (2019), who argue that AI should be co-produced with those affected by it—especially in public service contexts.

5.5 Balancing Technology with Humanity

The challenge for the Irish public sector is not whether to adopt AI, but how to do so in ways that are inclusive, ethical, and sustainable. The risk lies not in automation itself, but in failing to humanise the transition. As echoed by multiple interviewees, culture and leadership will determine whether AI becomes a tool for empowerment or exclusion.

5.6 Conclusion

AI has transformative potential to improve public services, enhance efficiency, and enrich the work of civil servants. However, it also presents clear risks—especially in the absence of inclusive workforce strategies. Strategic alignment between technology and human capital planning is not just desirable—it is essential.

The next chapter will propose practical, evidence-based recommendations to guide this alignment and mitigate risks of displacement or disengagement.

Conclusions and recommendations

This dissertation set out to explore this research question:

"How is the adoption of Artificial Intelligence (AI) in the Public Sector impacting job security and employment structures, and what workforce strategies can be implemented to mitigate the risks of workforce displacement?"

Through a combination of literature review and qualitative analysis of seven public sector professionals in Ireland, this study has uncovered a complex and evolving relationship between AI adoption, employment patterns, and institutional readiness.

The research confirms that AI is reshaping job content rather than triggering immediate mass redundancies. The most significant impacts are psychological (increased anxiety), structural (emerging skill gaps), and strategic (lack of workforce planning). The perceived threat of automation is magnified by unclear communication, lack of participatory planning, and limited reskilling efforts. However, the potential for positive transformation remains strong. AI can elevate public sector work by eliminating mundane tasks, supporting evidence-based decision-making, and improving service delivery. But this can only be achieved if the human dimension of AI adoption is prioritised. The study contributes original insights to the Irish context and reinforces wider international findings: the success of AI in government is not just technical, it is profoundly human.

6.2 Recommendations

The following strategic recommendations are offered to ensure the responsible and inclusive implementation of AI in the Irish public sector. They are structured into five priority areas:

6.2.1. Workforce Planning and Strategic Foresight

Conduct workforce impact assessments alongside AI implementation plans to anticipate changes in job roles and required skills. Develop cross-departmental AI-readiness frameworks that integrate HR, digital transformation units, and policy teams.

Use scenario planning and future-of-work modelling to anticipate which roles will evolve, be augmented, or decline. Establish an interdepartmental Workforce Transformation Taskforce to share best practices and align national-level planning.

6.2.2. Inclusive Upskilling and Talent Development

Design and roll out mandatory, job-specific digital upskilling programmes that are accessible to all staff, particularly vulnerable cohorts (older workers, lower-skilled staff). Introduce AI literacy training for all grades, including line managers and senior

leadership. Provide peer learning, mentoring and coaching models to complement knowledge transfer and learning. Partner with higher education institutions like Skillnet Ireland to co-develop learning and career paths tailored to meet public service demands.

6.2.3. Ethical Governance and AI Transparency

Embed algorithmic accountability mechanisms into all AI deployments, especially those impacting eligibility or service prioritisation. Require all AI vendors to provide explainable AI models with clear audit trails and documentation. Establish a Public Service AI Ethics Committee to review applications and advise on citizen-facing algorithmic use cases. Develop public-facing AI impact statements to build trust and legitimacy with citizens. Social media targeted marketing can help to inform citizens of changes and updates to processes in accessing public services.

6.2.4. Participatory Change Management

Engage staff in the co-design of AI systems, including frontline workers who understand existing processes. Create formal feedback loops so staff can raise concerns, suggest improvements, and track post-implementation outcomes. Early involvement of trade unions and staff associations in AI project development to enhance trust and avoid resistance. The nomination of local “AI champions” or innovation leads with the provision of an innovation hub or safe space to explore technologies and to build motivation and uptake of new technologies, publicise information, and act as a change advocate provides organisational benefits.

6.2.5. Policy and Legislative Alignment

Review and update civil service policies and contracts to reflect evolving job structures and hybrid human-AI collaboration. Ensure AI adoption complies with GDPR, Public Service Values, and the National AI Strategy. Align AI workforce initiatives with Ireland’s broader Future Jobs Ireland and Digital Transformation of Government frameworks.

Seek EU funding and partnership opportunities to co-fund AI workforce transition strategies (e.g., under the Digital Europe Programme).

6.3 Final Reflections

The adoption of AI in the public sector represents a generational opportunity to reimagine how government works, but it also requires careful stewardship. Without a focus on strategic human capital planning, Ireland risks widening internal inequalities, eroding staff morale, and weakening trust in digital governance.

The insights generated by this study emphasise that technology is not destiny. AI's impacts are shaped by the policies, leadership, and values that surround its use. By placing people at the centre of AI strategy, the Irish public sector can achieve technological excellence and social responsibility in equal measure.

6.3.1. Recommendations: Governance, Ethical Use, Accountability, Transparency, and Staff Involvement

Based on the findings and analysis, this dissertation proposes a set of targeted recommendations to ensure the responsible and ethical adoption of AI in Irish public services. These focus specifically on governance, accountability, transparency, and meaningful staff engagement throughout the AI lifecycle.

6.3.2. Establish Robust AI Governance Structures

A dedicated Public Sector AI Governance Board should be established to provide central oversight of AI implementations across government departments. This board should comprise multidisciplinary experts, including ethics specialists, legal advisors, technologists, public servants, and employee representatives, to ensure balanced decision-making and adherence to ethical norms.

Such a governance model is exemplified by the UK's Centre for Data Ethics and Innovation (CDEI), which advises government on trustworthy AI development (CDEI,

2023). Ireland can adopt a similar framework tailored to the specific public sector context, ensuring strategic coordination and consistent standards across departments.

6.3.3. Embed Ethical Principles in AI Use

Public services must adopt a comprehensive AI ethics framework that incorporates principles such as fairness, transparency, privacy, accountability, and respect for human rights. Before deployment, all AI systems should undergo ethical impact assessments (EIA) to identify potential harms or biases and outline mitigation strategies.

The European Commission's Ethics Guidelines for Trustworthy AI (2019) provide a robust model, emphasizing that AI systems should be lawful, ethical, and robust from design to deployment. Embedding such frameworks in policy will safeguard citizens' rights and reinforce public trust.

6.3.4. Enhance Accountability and Transparency Mechanisms

Accountability requires AI systems to be explainable and auditable. Civil servants and citizens should understand how AI decisions are made, especially in critical areas like welfare, health, or justice. AI transparency can be supported through the publication of algorithmic impact statements and documents describing the AI's function, data sources, limitations, and governance protocols.

Additionally, a clear escalation and redress process must be implemented to allow human review and appeal of AI-generated decisions, ensuring no citizen is adversely affected without recourse. Accountability requires that a specific person be held responsible if an issue arises, as legislative action applies to creators rather than to robots or algorithms themselves.

These approaches reflect practices in the Canadian government's Directive on Automated Decision-Making (2020), which mandates impact assessments and transparency to protect citizens and support ethical AI governance.

6.3.5. Engage Staff in AI Use Case Identification and Design

Frontline staff should be involved early and continuously in identifying AI applications that can improve service delivery. Through participatory workshops, innovation labs, and pilot projects, staff knowledge and insights can shape AI design to be practical, ethical, and aligned with real-world workflows.

This participatory approach enhances buy-in and reduces resistance, fostering a culture of co-creation. The New Zealand Government's AI Lab exemplifies such an inclusive model, integrating public servants in collaborative innovation (New Zealand Government, 2022). Public sector staff are experts in their business areas, and it makes sense to involve them. Staff inclusion and involvement will lead to greater acceptance when it comes to changing processes. Bringing staff on the transformation journey rather than arriving at the destination and not knowing how they got there will help to grow confidence and improve trust.

6.3.6. Provide Comprehensive and Contextualised AI Training

All employees interacting with AI must receive mandatory, role-specific training encompassing ethical use, system capabilities, data privacy, and the limits of AI decision-making. Training should include scenario-based learning and emphasize critical thinking skills to empower staff to interpret AI outputs responsibly and escalate concerns when necessary.

Such workforce development aligns with the Australian Government's emphasis on AI literacy for public servants (Australian Public Service Commission, 2021), which advocates continuous learning to adapt to emerging technologies.

6.3.7 Foster a Culture of Ethical AI and Continuous Learning

Promoting an organisational culture that values ethical awareness, transparency, and accountability is essential for sustainable AI adoption. Establishing internal ethics champions or committees at departmental levels can maintain oversight, facilitate staff engagement, and monitor compliance. Rewarding ethical innovation and supporting open dialogue about AI challenges and benefits will reinforce this culture and build resilience amid ongoing technological change.

Summary

Incorporating these governance and ethical recommendations will help the Irish public sector harness AI's benefits while mitigating risks to job security, fairness, and public trust. Drawing on best practices from leading authorities offers a valuable roadmap for responsible AI adoption tailored to Ireland's unique public service context.

6.4. Recommendations: Governance, Ethical Use, Accountability, Transparency, and Staff Involvement

Based on the findings and current best practices, this dissertation proposes the following targeted recommendations to ensure responsible AI adoption in the Irish public sector, with emphasis on governance, ethical use, accountability, transparency, and meaningful staff engagement.

6.4.1. Establish Robust AI Governance Structures

Establish a Public Sector AI Governance Board composed of ethics experts, legal advisors, AI technologists, civil servants, and staff representatives to oversee AI implementation across Irish public services. This board should align its framework with Ireland's AI Strategy (2021), which prioritises responsible AI adoption underpinned by public values and ethical principles (Government of Ireland, 2021). The board's role should include setting standards, monitoring compliance, and coordinating across departments to ensure consistency of AI governance.

6.4.2. Embed Ethical Principles in AI Use

Implement a comprehensive Ethical AI Framework based on the EU's Ethics Guidelines for Trustworthy AI (2019) and Ireland's commitment to the EU Digital Strategy, ensuring AI systems are lawful, fair, transparent, and respect fundamental rights. Require Ethical Impact Assessments (EIA) before deploying AI systems, especially in citizen-facing applications, as recommended by the European Commission's White Paper on AI (2020). Ensure the framework aligns with Ireland's Data Protection Acts and GDPR to protect citizens' data privacy (Data Protection Commission Ireland, 2018).

6.4.3. Enhance Accountability and Transparency Mechanisms

Mandate that AI systems deployed in public services are explainable and auditable to enable both staff and citizens to understand decision logic. Publish Algorithmic Transparency Reports, detailing AI use cases, data governance policies, potential biases, and measures taken to mitigate them, similar to the approach advocated by the European Data Protection Board (EDPB, 2021). Understand and develop clear redress procedures for citizens impacted by AI-driven decisions, ensuring human oversight is always available, particularly where there are negative, unfavourable outcomes for citizens. Currently, citizens have the right to make Freedom of Information (FOI) requests, Subject Access Requests (SAR), raise Political Questions (PQ's) to Ministers to address in the DÁIL, and raise an appeal. AI certainly has a role in supporting requests of this nature from citizens.

6.4.5. Engage Staff in AI Use Case Identification and Design

Promote staff involvement through participatory design workshops, innovation labs or hub, and pilot testing, encouraging frontline employees to identify meaningful AI use cases that improve operational efficiency and service quality. Support the approach outlined in Ireland's Public Service ICT Strategy (2021-2024), which emphasises collaboration between digital and HR teams and encourages workforce

engagement in technology projects (Department of Public Expenditure and Reform, 2021).

6.4.6 Provide Comprehensive and Contextualised AI Training

Deliver mandatory, tailored AI literacy and ethical use training to all staff interacting with or impacted by AI, including managers and senior leaders. Align training content with the European Commission's Digital Competence Framework for Citizens (DigComp 2.2, 2021) to ensure comprehensive digital skills development. Incorporate practical, scenario-based modules addressing AI's strengths and limitations, (using a form of SWOT analysis – strength, weakness, opportunities and threats) ethical considerations, and escalation pathways for problematic AI outputs along with contingency plans to remediate issues or in extreme cases disaster aversion or recovery plans.

6.4.7. Foster a Culture of Ethical AI and Continuous Learning

Encourage the establishment of departmental AI Ethics Champions to promote ongoing ethical awareness and provide support on AI use issues. Recognise and reward staff who contribute to responsible AI innovation and ethical compliance. For example there are the Civil Services Excellence in Innovations Awards Ceremonies (CSEIA) held annually, providing recognition for jobs well done, whether collaboratively or against competing peers.

Embed AI ethics and transparency as core public service values, reflecting Ireland's commitment to the European Pillar of Social Rights, which calls for fair and inclusive digital transitions (European Commission, 2017).

Summary

These recommendations leverage Ireland's national AI policies and align with EU digital governance frameworks to ensure that AI adoption in the Irish public sector is ethical,

accountable, transparent, and participatory. Such an approach will protect workforce interests, foster trust among citizens, and build a future-ready public service.

7. Workforce Strategies to Address AI-Driven Displacement

7.1. Reskilling and Upskilling

Provide ongoing training in AI-related skills and digital literacy. Focus on job-specific upskilling for roles impacted by AI. Partner with educational institutions for accredited courses for example, SpringboardCourse.ie, FIT – Fast Track to IT, SkillNetsIreland.ie, NSSO OneLearning portal and eCollege.ie.

7.2. Job Redesign

Organisations will be required to identify and shift repetitive tasks to AI, which in turn will allow staff to concentrate on strategic work. Developing hybrid roles combining technical and interpersonal skills will be essential ensuring human involvement in the development of future roles. job descriptions are evolving and changing with the introduction of new technologies and the skill sets required; a flexible approach is needed for rapidly changing workflows.

7.3. Career Transition Support

Enable transfers and mobility to new roles within the public sector. Offer career counselling and guidance for affected employees. Websites such as CareersPortal.ie and Qualifax.ie can help support officers with career development options and training paths of interest. Provide early retirement or voluntary exit options as needed.

7.4. Inclusive Change Management

Involve staff in AI implementation and planning. Communicate openly about impacts and expectations. Establish feedback channels during AI integration.

7.5. Strategic Workforce Planning

Assess workforce risks before deploying AI. Develop transition frameworks to anticipate potential role changes and retraining needs. Equip managers and HR professionals with the tools to proactively identify skill gaps and coordinate targeted upskilling initiatives.

8. Assessing Workforce Risks Before AI Deployment

8.1. Conduct a Workforce Impact Assessment (WIA)

Purpose: Identify which roles and tasks may be affected by the AI system, directly or indirectly.

Scope: Examine job functions, task complexity, skills required, and potential for automation or augmentation.

Method: Use surveys, interviews, and job analysis tools to map current job profiles and workflows.

8.2. Task-Level Automation Analysis

Break down roles into discrete tasks and assess which tasks are fully automatable with current AI technologies. Identify with the support of staff if there are any tasks that AI can augment but not replace, therefore enhancing officer in doing their role in the efficient delivery of public services. Where appeals might apply or complex decision making cases such tasks will need to fall out for officer interventions for human judgement and / or emotional intelligence which automated systems may be lacking. Negative outcomes need to be decided by human officers and cannot be part of automated process; they are also appealable. Tools like the O*NET database or the Frey and Osborne (2013) automation risk model can guide this analysis and help to determine if jobs or tasks are automatable or not automatable.

8.3. Skill Gap and Readiness Evaluation

Assess current employee skill levels versus those needed to work alongside or manage AI tools. Identify critical gaps that could hinder effective AI adoption. Evaluate staff adaptability and openness to technology.

8.4. Scenario Planning and Future Workforce Modelling

8.4.1. Develop alternative future scenarios based on different levels of AI adoption (e.g., minimal, moderate, full automation).

8.4.2. Model potential job displacement, role evolution, and new job creation in each scenario.

Use these projections to estimate workforce size and skills required in the short and medium term.

8.5. Stakeholder Engagement

8.5.1. Involve employees, union representatives, HR specialists, and managers to validate findings and surface concerns.

8.5.2. Use focus groups and workshops to understand the human impact and contextual nuances that data alone might miss.

8.6. Risk Identification and Categorisation

8.6.1 Classification of Tiered Risk Levels - High-risk roles for displacement. Medium-risk roles are likely to require reskilling. Low-risk roles with minimal impact.

8.6.2 Include non-technical risks such as morale, job satisfaction, and cultural resistance.

8.7. Develop Mitigation Strategies

For identified risks, propose interventions such as retraining, redeployment, job redesign, or phased AI rollouts. Prepare contingency plans for potential workforce disruptions.

8.8. Documentation and Reporting

Produce a comprehensive Workforce Impact Assessment report summarising risks, affected roles, mitigation plans, and timelines. Use this as a foundation for transparent communication with staff and decision-makers.

Summary

A structured workforce risk assessment prior to AI deployment enables public sector organisations to anticipate challenges, engage stakeholders, and plan strategic workforce transitions. This proactive approach reduces uncertainty, supports ethical AI adoption, and safeguards employee wellbeing.

These strategies help public sector organizations turn AI displacement risks into opportunities for workforce renewal and better service delivery. Prioritizing human capital, participation, and planning supports an inclusive move toward an AI-enabled future in Ireland's public sector.

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