ASSESSING THE READINESS OF SRI LANKAN GOVERNMENT OFFICIALS FOR THE ADOPTION OF GENERATIVE ARTIFICIAL INTELLIGENCE TECHNOLOGIES

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DECLARATION

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ABSTRACT

Artificial Intelligence technologies are sparking a revolution in the government sector, paving the way for smarter governance, streamlined public services, and a burst of innovation in how things are done. This study focuses on assessing the readiness of Sri Lankan government officials for adopting Generative Artificial Intelligence technologies, examining factors such as Awareness of Generative AI, Level of Exposure and Familiarity with Generative AI applications, Training and Skill development, Barriers to Generative AI adoption, Benefits of Generative AI, and the impact of Organizational Culture and Leadership. Data were collected through an online survey questionnaire, with responses from 206 officials across various government institutions, and analyzed using quantitative methods. The data analysis highlights the significant predictors of readiness for adopting Generative AI technologies: Level of Exposure and Familiarity with Generative AI applications, Training and Skill development, and Organizational culture and Leadership. The non-significant results for Awareness of Generative AI, Barriers to Generative AI Adoption, and Benefits of Generative AI suggest that while these factors might be conceptually important, they did not have a statistically significant impact within the context of this study. These insights indicate that enhancing practical exposure to AI technologies, developing relevant skills through comprehensive training programs, and fostering a supportive organizational culture and leadership are important for increasing the readiness for the adoption of Generative AI within the Sri Lankan government sector. The findings provide valuable guidance for policymakers and relevant government authorities, offering actionable strategies to facilitate the successful integration of Generative AI technologies into government operations. Such integration aims to improve public service delivery and governance by leveraging the potential of Generative AI.

Keywords: Generative AI, AI Readiness, AI Adoption, GAI in Government, GAI in Sri Lanka

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List of Abbreviations

Abbreviation	Description
AI	Artificial Intelligence
GAI	Generative Artificial Intelligence
GAN	Generative Adversarial Network
LLM	Large Language Model
SL	Sri Lanka
TAM	Technology Acceptance Model
VAE	Variation Auto Encoder

1. INTRODUCTION

1.1. Background

Artificial Intelligence has marked a significant milestone in technology, changing the way tasks are performed in many areas. This section introduces AI and its specialized branch, Generative Artificial Intelligence (GAI), focusing on their roles and capacity.

1.1.1. An overview of AI and Generative AI

The development of Artificial Intelligence indicates a turning point in computer technology, enabling machines to perform tasks previously done manually by humans. AI enhancements include language understanding, learning, decision-making, and problem-solving, along with utilizing advanced algorithms like machine learning and deep learning. Generative Artificial Intelligence is a subset of AI that can generate new data models like text, images, audio, and video (Houde et al., 2020). With sophisticated algorithms like Generative Adversarial Networks (GANs), Variational Autoencoders (VAEs), and transformers, GAI can generate content resembling real-life examples. There is impact of GAI on enhancing institutional performance and work productivity, with a specific focus on sectors including academia, research, technology, communications, agriculture, government, and business.

1.1.2. The potential usage of gai in the government sector

The integration of GAI within government operations promises to revolutionize policy development, communication strategies, administrative efficiency, public service delivery, and economic and tourism promotion. Through the simulation of policy outcomes, GAI supports more informed decision-making, potentially leading to policies that are both effective and sustainable. Furthermore, GAI's ability to generate personalized content can significantly enhance the clarity and accessibility of government communications, thereby improving public engagement. Regarding operational efficiency, automation of administrative tasks such as report generation and data analysis through GAI technologies can save valuable time and resources, contributing to a more agile government instrument (Kar et al., 2023).

Moreover, the deployment of AI-driven chatbots for handling routine public inquiries can streamline service delivery, enhancing citizen satisfaction. GAI's role in creating detailed

action plans for government projects by analyzing extensive data sets underscores its potential to improve project outcomes significantly. Additionally, by facilitating access to economic information and promoting tourism through interactive and personalized digital platforms, GAI can play a crucial role in boosting the economy and showcasing Sri Lanka's cultural and natural heritage to a global audience.

1.1.3. Risks and ethical considerations related to GAI

The risks and ethical aspects of GAI include the creation of deep fakes and the spreading of false information, which can harm public trust and safety. Job displacement, especially in creative and administrative fields, along with data privacy and security concerns, add complexity to GAI's use in government. Regulation, ethical discussions, and risk management should be overseen by the government (Yee & You, 2020)

1.1.4. Sri Lanka's digital transformation journey

Sri Lanka's commitment to embracing digital technology is evident in its "Digital Sri Lanka Vision" initiative, which aims to enhance economic growth, public service efficiency, and citizen welfare through digital inclusivity and technological adoption.

A committee has been appointed by the Sri Lankan Government to develop the country's AI strategy, anchored under the Presidential Secretariat. As part of this effort, the United Nations Development Program (UNDP) Sri Lanka has introduced the AI Readiness Assessment (AIRA) to evaluate Sri Lanka's current AI landscape and contribute to the upcoming AI strategy. (UNDP, 2023)

1.1.5. Motivation

Generative artificial intelligence technologies are revolutionizing digital transformation, creating opportunities for better public service delivery worldwide. In Sri Lanka, government officials are willing to embrace these technologies but face challenges in adaptation. Comprehending the intricacies of generative artificial intelligence, shifting towards innovation, and receiving organizational support are crucial for successful implementation. The unique socio-cultural context of Sri Lanka adds complexity to this transition, necessitating a comprehensive assessment of officials' readiness from various perspectives. This study aims to link the gap between the potential benefits of generative AI

and the current readiness of Sri Lankan government officials. By identifying barriers and influencing factors, targeted strategies can be developed to facilitate a smoother transition to digital governance. This research provides insights into readiness for generative AI adoption, informing policy recommendations and capacity-building initiatives aligned with the country's digital transformation objectives.

1.1.6. Research scope

The scope of this study focuses on assessing the readiness of Sri Lankan government officials to incorporate generative artificial intelligence technologies into government sector operations. Specifically, the research aims to understand the level of comprehension, readiness, and barriers officials may encounter when adopting generative AI, which can generate new content through data analysis. It will evaluate the infrastructure, skills, and attitudes within government officials and institutions towards embracing this technology to enhance efficiency and service delivery. Additionally, the study will examine the benefits and challenges of implementing generative AI in government, including improving information accessibility, automating tasks, and promoting better governance. The research aims to provide insights and recommendations for policy development, capacity building, and creating a supportive environment for generative AI integration to improve government services in Sri Lanka.

1.2. Problem statement

In the era of rapid technological advancement, Generative Artificial Intelligence technologies hold substantial promise for enhancing public sector operations and service delivery. However, a critical challenge that has emerged is the obvious lack of a comprehensive understanding and assessment of the readiness among Sri Lankan government officials to adopt and effectively utilize these innovative technologies.

Despite the potential benefits of GAI technologies, there is a lack of comprehensive understanding regarding the readiness of Sri Lankan government officials to embrace these technologies. Consequently, this study aims to evaluate the current state of readiness among Sri Lankan government officials for adopting GAI technologies, identify the existing gaps in knowledge and readiness, and determine the necessary steps that should be taken to facilitate an effective and continuous adoption process. Through this assessment, the

research aims to link the knowledge gap, paving the way for a strategic approach towards the adoption of GAI technologies in the public sector of Sri Lanka.

1.2.1. Research objectives

- To identify the factors that affect the readiness of Sri Lankan government officials to adopt GAI technologies.
- To evaluate the readiness of Sri Lankan government officials to adopt GAI technologies in their operations.
- To suggest potential strategies to adopt GAI technologies in the government sector of Sri Lanka.

1.2.2. Research questions

Main research questions aim to find the readiness of the adoption of generative artificial intelligence technologies within the Sri Lankan government. It seeks to explore the underlying challenges hindering the adoption process, assess the readiness level of government officials to integrate GAI technologies into their administrative and operational tasks, and identify effective strategies for facilitating the adoption of GAI technologies in Sri Lanka's government sector. These questions are essential for developing a comprehensive understanding of the current landscape and for formulating targeted interventions to enhance the integration of GAI technologies in government operations.

1.2.3. Research significance

This study explores the significance of assessing the readiness of Sri Lankan government officials to adopt Generative Artificial Intelligence technologies in the government sector. It is essential to assess the readiness of officials in Sri Lanka, as governments globally are implementing advanced AI technologies. By identifying their knowledge, attitude, and operational readiness, this research aims to enhance governance, public services, and policy making using GAI technologies. The adoption of GAI can revolutionize government operations, but it requires a technologically adept and ethically conscious workforce. This study aims to uncover gaps in readiness among officials to facilitate capacity building and policy development for the successful adoption of GAI technologies. It provides valuable

insights for policymakers, government institutions, and the IT community to strategically implement GAI initiatives for the public good. Additionally, it promotes innovation within the government and citizen engagement by using GAI to solve complex challenges. This study will add to academic conversations about the use of AI in the government sector in Sri Lanka and provide suggestions for addressing barriers to readiness among government officials, facilitating successful GAI technology integration in the modern. Digital era.

1.3. Structure of the thesis

The thesis is structured into five chapters to provide a comprehensive guide through the research process, findings, and implications. Chapter One introduces the significance of generative artificial intelligence technologies in Sri Lankan government operations, outlining the research problem, objectives, and significance. Chapter Two reviews existing literature on GAI adoption in government sectors to establish a theoretical foundation.

Chapter Three explains the research methodology, including sample selection and data collection techniques. In Chapter Four, data analysis presents results and insights on the readiness of government officials for GAI adoption. Chapter Five summarizes key findings, offers recommendations for policymakers, and discusses limitations and future research directions.

This structured approach ensures a clear flow of information and analysis, guiding the reader through the research process effectively. Whether discussing the theoretical foundation or practical implications, each chapter builds upon the last to offer a comprehensive assessment of the readiness of Sri Lankan government officials for GAI technology adoption.

2. LITERATURE REVIEW

2.1. Introduction to the literature review

The literature review is the starting point for study on how ready Sri Lankan government officials are to use generative Artificial Intelligence technologies. This section will explain the purpose and the scope of the literature review within the broader context of study.

2.1.1. Purpose of the literature review

The literature review is a key part of our study on the "Assessing the Readiness of Sri Lankan Government Officials for the Adoption of Generative Artificial Intelligence Technologies." The target here is to look at what other researchers have already discovered about introducing generative AI technologies in government settings, focusing on Sri Lanka whenever previous research is available.

I will review previous work to understand the main factors that affect how ready government officials are to use these new technologies, what obstacles they might face, and what can be done to help them succeed. This section will also point out any areas that haven't been fully explored yet, showing why our research is important. By doing this detailed review, I hope to not only get a better picture of where Sri Lankan government officials stand in terms of being ready for generative AI but also to suggest ways to improve their readiness.

2.1.2. Scope of the literature review

This literature review is to gather the most relevant and current insights on the adoption of generative Artificial Intelligence technologies in the public sector. The selection of sources is designed to ensure a comprehensive understanding of the topic.

The main source of information comes from academic journals. These journals provide detailed studies and scholarly discussions on the integration of AI technologies in government operations. They offer a solid foundation of researched information, making them invaluable for this review.

In addition to academic journals, government reports play a crucial role. These reports come from various government institutions, and offer insights into policy directions, strategies for implementation, and the outcomes of AI technology adoption within the government.

Articles on AI adoption from reputable sources are also included to capture broader trends, challenges, and opportunities within the public sector.

While the focus is mainly on literature published in the last ten years, to ensure the information is up-to-date, consideration may be given to seminal works from earlier periods. This structured approach ensures the literature review offers a detailed exploration of how ready Sri Lankan government officials are for adopting AI technologies, informed by both recent developments and significant historical context.

2.2. Background on Generative Artificial Intelligence technologies

Artificial Intelligence refers to machines' ability to replicate human functions, the ability to learn and solve problems. The goal of AI is to tackle complex issues, in a similar way humans do (Gupta & Pal, 2021) page 37.

GAI technologies is a branch of artificial intelligence focused on creating new, original content or data that closely mimics the characteristics of the training material it has been trained on (Houde et al., 2020). Unlike traditional AI, which primarily analyzes and interprets data, generative AI goes a step further by producing new content, offering solutions, or suggesting outcomes that didn't previously exist in the input data.

This is achieved through advanced machine learning models and algorithms, such as Generative Adversarial Networks (Goodfellow et al., 2020), Transformer models, and Variational Autoencoders (Liu, 2023), which enable the AI to learn from vast datasets and generate outputs that can be texts, images, videos, music, or even synthetic data that resembles real-world information (Lawton, 2024).

GAI has seen significant advancements in recent years, leading to their widespread availability and application in various domains, including software engineering and content generation ((Inie et al., 2023); The use of complex networks in GAI, particularly in the creation of deep fake videos, has raised concerns about public perception, trust in digital media, and the need for transparency and accountability in AI systems (Enholm et al., 2022)

In the workplace, generative AI technologies, such as ChatGPT, have been perceived to improve efficiency, trust, and comfort in their use, highlighting the potential benefits of

these technologies in organizational settings (Floridi et al., 2018). However, the integration of AI technology into various domains, including psychology, clinical pharmacology, and decision-making processes, necessitates a deeper understanding of human trust in AI-infused systems and the development of models and measures to evaluate and enhance trust in human-AI interactions (Cardon et al., 2023)

Key Characteristics of Generative AI (Cevallos et al., 2023)(Sanhita Kar et al., 2023)

- Learning from Data: Generative AI systems are trained on large datasets, learning patterns, structures, and nuances. This training enables them to understand the underlying distribution of the data.

- Content Creation: Post-training, these systems can generate new content that matches the original training data but is novel and unique. This capability extends to creating realistic images, text, speech, or complex data structures.

- Adaptability: GAI models can be fine-tuned to specific tasks or domains, making them highly adaptable to diverse applications, from creative arts to technical fields.

- Interactivity: Some generative AI models can interact dynamically with users, adjusting their output based on real-time input, which is especially useful in conversational AI and decision support systems.

2.3. Development of Generative AI

The development of Generative Artificial Intelligence technologies has been marked by significant milestones that have broad implications, including for governmental use.

2.3.1. Early foundations: 1950s-1970s

The historical development of neural networks can be traced back to the early 1950s. In 1951, Minsky and Dean Edmunds developed the first neural network called the stochastic neural analog reinforcement calculator (Shao & Shen, 2023). This marked the beginning of research into artificial neural networks that mimic the structure and function of biological neural networks. The inception of AI research laid the groundwork for future generative technologies.

2.3.2. Neural Networks and Machine Learning: 1980s-1990s

The development of neural networks such as recurrent neural networks (RNNs), Long short-term memory (LSTM) networks, Convolutional neural networks increased the capability for machines to learn from data. For governments, this meant potential applications in data analysis for public services, forecasting, and simulation of complex systems.

2.3.3. Generative Models: 2000s-2010s

Generative Adversarial Networks are a type of artificial intelligence algorithm designed to address the generative modeling problem. The main objective of a generative model is to analyze a set of training examples and understand the probability distribution that generated them. GANs are good at generating additional examples based on the estimated probability distribution they have learned. They are considered highly successful generative models, especially known for their ability to create realistic high-resolution images. Governments could use this technology for simulations in urban planning, training simulations for emergency response, and enhancing security measures through facial recognition technologies. (Goodfellow et al., 2020)

Natural Language Processing (NLP) Advances: Progress in NLP, including models like LSTM (Long Short-Term Memory) (Hochreiter & Schmidhuber, 1997) networks, improved machine translation, content generation, and data extraction from unstructured sources.

2.3.4. Large Language Models: Late 2010s-Present

GPT Series (2018-2023): The release and subsequent iterations of OpenAI's GPT models marked a watershed moment for generative AI. With each version, from GPT to GPT-4, these models demonstrated remarkable abilities in generating human-like text, summarizing information, translating languages, and generating programming code. (Han et al., 2021)

BERT and Its Impact on Information Retrieval: Google's BERT model, introduced in 2018, significantly enhanced the ability to understand and process natural language, improving search algorithms and information retrieval. This technology aids governmental agencies in organizing and accessing vast databases, improving public access to information, and enhancing decision-making processes.(Devlin et al., 2018)

2.4. Theoretical Frameworks

2.4.1. Technology Acceptance Model

The Technology Acceptance Model (TAM), developed by Davis in 1989(Davis, 1989; Davis et al., 1989), stands as a pivotal framework in understanding the adoption and utilization of new technologies within various sectors, including government. TAM proposes that two primary factors, perceived usefulness (PU) and perceived ease of use (PEOU), significantly influence an individual's decision to use a technology. This model has been extensively applied to study the acceptance of technology across different fields, offering insights into how and why technologies are adopted.(King & He, 2006)

2.4.1.1. Perceived Usefulness

Perceived usefulness is defined as the degree to which a person believes that using a particular technology will enhance their job performance. In the context of generative artificial intelligence technologies within the Sri Lankan government, PU could be seen as the extent to which government officials believe that these technologies could improve efficiency, decision-making processes, and service delivery to the public. For instance, if officials perceive that generative AI can automate routine tasks, thereby freeing up time for more critical functions, they are more likely to view the technology favorably.

2.4.1.2. Perceived Ease of Use

Perceived ease of use refers to the degree to which a person believes that using a technology will be free of effort. This factor is crucial because even if a technology is perceived as useful, its perceived complexity may discourage individuals from using it. In the scenario of adopting generative AI technologies, if Sri Lankan government officials find these technologies easy to understand and implement, their readiness to adopt and use the technology is likely to be higher. Ease of use becomes particularly important in environments where users may not have advanced technical skills.

2.4.1.3. Application of TAM in government sector

The application of TAM in the government sector, especially for assessing the readiness for generative AI adoption, provides a structured approach to understanding the behavioral intentions of government officials. By evaluating PU and PEOU, researchers can identify

potential barriers and facilitators to technology adoption. This understanding can guide the development of strategies to enhance the perceived usefulness and ease of use of generative AI technologies, thereby encouraging their adoption.

In summary, the Technology Acceptance Model provides a valuable lens through which to examine the readiness of Sri Lankan government officials for the adoption of GAI technologies. By focusing on perceived usefulness and ease of use, this model offers insights into how to effectively facilitate the integration of innovative technologies in government operations, ultimately contributing to more efficient and effective public service delivery.

2.4.2. Diffusion of Innovations Theory

Diffusion of Innovations Theory, created by E.M. Rogers in 1962, describes how a new idea or technology spreads within a group (Murray, 2009). It highlights the role of communication in encouraging the adoption of this new idea or technology over time. The theory is built on four main elements: the innovation itself (anything new), how information about it is shared, the time it takes for it to be adopted, and the social system or group of people involved.

The adoption process includes five stages: (Rogers, 1983)

1. Knowledge - Learning about the new idea.
2. Persuasion - Forming an opinion about it.
3. Decision - Choosing to use or ignore it.
4. Implementation - Starting to use the idea.
5. Confirmation - Deciding to continue using it based on its benefits.

People are categorized into five groups based on how quickly they adopt new ideas:

1. Innovators - The first to try new things.
2. Early Adopters - Influential and often guide others.
3. Early Majority - Careful but open to new ideas.
4. Late Majority - Cautious and adopt ideas later than most.
5. Laggards - The last to adopt, preferring traditional ways.

For the topic of the readiness of Sri Lankan government officials to use generative AI

technologies, this theory can be used to understand and predict how these technologies might be accepted. It can guide us in creating a questionnaire to measure officials' awareness and readiness, by considering their position in the adoption process and tailoring communication strategies to address their specific needs and concerns. This approach emphasizes the importance of improving awareness and providing training in encouraging the adoption of new technologies.

2.5. Global and regional adoption of AI in government

Generative AI technologies have been increasingly implemented in government settings worldwide, showcasing a variety of applications and benefits. For example, AI has been utilized in the postal services in America, digital farming technology in Japan, Lawbots in China, AI-based electoral candidates in New Zealand, military surveillance in Australia, AI-based healthcare in Africa, and Roads & transportation improvement in Europe (Gupta & Pal, 2021). These applications demonstrate the diverse range of areas within the public sector that have successfully integrated AI for automated decision-making processes.

The growing interest in Artificial Intelligence and related technologies presents a valuable opportunity for policy makers and government organizations to improve their operations and offer significant benefits to the public. AI technology can enhance government functions by improving sensing, thinking, and action capabilities. It also helps in reducing paperwork, clearing backlogs, and making better predictions.

However, introducing AI into the public sector comes with its challenges. Governments around the world have started to include AI in their operations, but this integration faces significant hurdles (Maalla, 2021). Furthermore, studies have shown that the use of AI in government tends to focus on everyday operational tasks rather than on high-level strategic roles like policy making (Loukis et al., 2020). This situation highlights the necessity for more research and development on how AI can be applied in important decision-making processes within government agencies.

The Indian Government has launched the National Artificial Intelligence portal, which is managed by National Association of Software and Service Companies (Nasscom) and backend by e-Governance division of Ministry of Electronics and Information Technology

(MeitY), with an objective of one platform for AI advancement in India (https://indiaai.in/). The portal provides information on the entire ecosystem of AI and serves as a platform for AI resources. Similarly, many countries are now adopting AI in various sectors for decision making by the Government (Gupta & Pal, 2021) (National Institution for Transforming India, 2019).

China aims to be the leading AI innovator by 2030, investing significantly in AI with notable investments in a technology park and an AI fund, and its startups received a large share of global AI venture funding in 2017 (Eggers et al., 2017) .

Europe, known for its strong research, startups, and computing facilities, has developed a detailed strategy for AI. This strategy aims to enhance its technical and industrial abilities, get ready for changes in society and economy, and make sure there are ethical and legal rules for using AI. (Salami, 2020)

In conclusion, the adoption of GAI technologies in government settings globally has shown promising results in various sectors, ranging from healthcare to transportation. While there are challenges to overcome, the increasing interest and investments in AI by governments underscore the potential for transformative change in public service delivery and governance.

2.6. Government applications

The application of Generative AI in the government sector presents both opportunities and challenges. Generative AI has the potential to enhance communication effectiveness within government organizations (Cardon et al., 2023). However, the deployment of automated decision-making systems in the public sector can cause concerns about governance and regulatory practices (Kuziemski & Misuraca, 2020).

Governments are starting to turn to AI as a solution to address inefficiencies and resource constraints in the public sector. The use of Artificial Intelligence by governments confirms a significant shift in governance, offering the potential for personalized and cost effective services.

In (Bruce et al., 2023) the authors propose a 4Cs Framework for the government agencies

to prioritize the delivery the public services as a critical area for AI-driven improvements. This framework is built around four key areas. The authors argue that most Generative AI implementations fall into one of those four categories, which could apply to both private and public sector enterprises.

1. Content summarization and synthesis
2. Coding and software
3. Customer engagement
4. Content generation.

Content summarization and synthesis involves selecting the most important information from extensive databases. This will help reduce the time spent on long documents.

Generative AI can speed up the Coding and software creation to make the process more efficient by generating code and conducting automated tests. Projects in this area should be chosen based on their impact, practicality, and risk levels.

Customer engagement and the services provided to citizens can be enhanced using Generative AI applications. For example, government offices might provide chatbots to respond to citizens' inquiries or tailor services to individuals' needs. Heidelberg, a city in Germany, introduced Lumi, the nation's first digital citizen assistant chatbot, to help residents with tasks like applying for ID cards, and driver's licenses, and registering addresses (Bruce et al., 2023).

The next section covers the applications of GAI in the Government sector.

2.6.1. Automated help desks and chatbots

Generative AI is identified as particularly appropriate for customer service, given the characteristics of interactions between customers and agents, as it involves identifying problems and selecting the best sequence of actions to resolve them (Brynjolfsson et al., 2023). These interactions require understanding the issue, proposing solutions, and managing the customer's emotional response. Since customer service conversations are extensively recorded, large language models (LLMs) can be trained with examples of both successful and unsuccessful interactions to improve service quality.

Within the context of Sri Lanka, chatbots can be programmed to offer updates on unfinished tasks, enabling generative AI to examine different subsystems and deliver comprehensive updates to stakeholders. This approach has the potential to decrease the amount of time government workers spend on the phone responding to various inquiries from citizens.

A chatbot could be integrated into the Government Information Center – 1919. This generative AI could be trained using the existing government knowledge base, including circulars and guidelines. This would enhance both the availability and the quality of the service offered.

2.6.2. Personalized communications

Generative AI enables the creation of personalized messages for citizens, including detailed notifications about community events or reminders about public services, in their preferred language and format. This technology ensures that every citizen gets information tailored to their specific needs in a language they understand. Such an approach will improve the efficiency of public communication and engagement. (Cardon et al., 2023).

2.6.3. Informed policymaking through AI

GAI's ability to examine and interpret vast amounts of data from different sources allows policymakers to develop policies that are closely informed by current social trends, crime statistics, and infrastructure needs. This method of relying on data leads to a more calculated distribution of resources and the creation of policies that precisely target the unique requirements and issues faced by communities (Eggers et al., 2017).

In the context of Sri Lanka, policymakers can utilize generative AI to simulate the impacts of policies and leverage the technology's capacity to analyze extensive data sets. This enables the identification of potential challenges associated with new policies prior to their implementation.

2.6.4. Streamlining administrative processes

Generative AI has the potential to streamline everyday administrative duties, like handling forms and granting permits, with unmatched speed and precision. This advancement not only allows government employees to dedicate their efforts to more intricate matters but

also markedly enhances the speed and efficiency of public services, offering direct advantages to citizens (Eggers et al., 2017).

2.6.5. Engaging public and internal content creation

AI can play a crucial role in crafting engaging and pertinent content for public communications, making sure that information is both accessible and attractive to a wide audience. This encompasses the automatic cultural adjustment of content, rendering government communications more inclusive and successful in connecting with diverse communities. Although AI models are proficient in generating text, there is a possibility of inaccuracies or misinformation (Wirtz et al., 2019). It is crucial to implement quality control practices, such as human reviews, to ensure the accuracy of content before its distribution.

In the context of Sri Lanka, generative AI can be employed to create draft versions of letters, emails, circulars, and other documents. Additionally, generative AI can be utilized for proofreading and making cultural adjustments to these documents, enhancing their clarity and relevance for the intended audience.

2.6.6. Personalized educational tools

AI-powered tools in education can customize learning materials to match the unique needs and learning preferences of students, offering personalized learning experiences that can enhance educational results. This method accommodates various learning settings and can contribute to closing educational disparities. Given the extensive potential applications of generative AI in education, this research will not focus on this aspect of generative AI.

2.7. Benefits of Generative AI

Following the discussion on the section 2.6 Government applications, we can identify the following benefits of using generative AI in the government sector.

2.7.1. Improve the efficiency and productivity.

Generative AI can automate routine tasks like help desks and chatbots, making it faster to respond to public inquiries. This reduces the workload on staff, allowing them to focus on more complex tasks, thereby improving overall efficiency and productivity in the public sector (Brynjolfsson et al., 2023).

Streamlining Administrative Processes also makes the decision making process more efficient and effective (Eggers et al., 2017)

2.7.2. Improve the quality and accessibility.

With personalized communications, Generative AI can generate messages and services to the individual needs of the public. This improves the quality of services provided and makes them more accessible to a broader audience, ensuring that more people can benefit from public sector offerings (Wirtz et al., 2019).

2.7.3. Improve decision making and policy formulation

Generative AI can analyze vast amounts of data to provide insights that inform policymaking. This leads to more informed decisions that are based on comprehensive data analysis. By understanding trends and patterns, policymakers can formulate strategies that are more aligned with the public's needs. (Eggers et al., 2017)

2.7.4. Foster innovation in public sector projects and services

Generative AI can also streamline administrative processes, freeing up resources that can be redirected towards innovation. Engaging public and internal content creation and personalized educational tools are examples of how AI can foster innovation by creating new ways to engage with the public and by providing educational materials that are tailored to the learner's needs. This encourages creative solutions and innovative projects that can improve public sector services. (Eggers et al., 2017)

In summary, the adoption of Generative AI in the public sector can significantly enhance efficiency, quality, decision-making, and innovation. By automating routine tasks, personalizing communications, informing policy decisions, and fostering innovation, Generative AI holds the potential to transform public sector projects and services, making them more effective and accessible to the public.

2.8. Barriers for government while adopting AI

When incorporating Generative AI into organizations or government institutions, various obstacles may hinder the integration process. The literature discussing the challenges of adopting Generative AI specifically within the Sri Lankan context or globally is limited.

Therefore, the literature review was conducted with a focus on identifying the barriers to adopting AI in organizations, including government entities.

2.8.1. Lack of skill and understanding of AI.

Lack of skills and understanding of AI among staff members can hinder the successful implementation of Generative AI (Bérubé et al., 2021). This barrier highlights the importance of providing adequate training and upskilling opportunities to ensure that employees are proficient in utilizing AI technologies effectively.

2.8.2. Concerns about data privacy and security

Concerns regarding data privacy and security are crucial factors affecting the adoption of Generative AI (Bérubé et al., 2021). To mitigate these concerns, organizations must put in place strong data protection strategies and adhere to applicable regulations, thereby establishing confidence in the technology.

2.8.3. Infrastructure and budgetary constraints

Adopting Generative AI technology requires significant investment, not just in the technology itself but also in training and development, data security, and ethical considerations. Budgetary constraints can therefore severely limit an institution's ability to integrate Generative AI effectively.

2.8.4. Negative attitudes regarding AI implementation

Negative attitudes regarding AI implementation, including concerns about job loss, can lead to resistance towards embracing Generative AI (Bérubé et al., 2021). Counteracting these apprehensions with clear communication and showcasing the advantages of AI can aid in reducing opposition within organizations.

In summary, for the effective integration of Generative AI in organizations and government institutions, it is essential to tackle obstacles associated with skill deficiencies, data privacy, budget constraints, and adverse opinions about AI. By surmounting these hurdles, institutions can fully leverage AI technologies to spur innovation and enhance efficiency.

2.9. Assessing readiness for adoption of GAI in Sri Lankan government sector

Assessing the readiness for the adoption of Generative Artificial Intelligence in the Sri Lankan government sector involves evaluating the current infrastructure, skills, and attitudes of officials towards integrating these technologies into public services. This section will discuss about how the existing literature asses the readiness to implement GAI.

2.9.1. Criteria for readiness

Readiness for Artificial Intelligence adoption within the Sri Lankan government needs adequate technological infrastructure, the skill level of officials, and an organizational culture and support. Technological infrastructure includes necessary hardware and software and processing capabilities. Skill level refers to the competency of government officials in using AI technologies. Organizational culture signifies the institution's adaptability and openness to technological advancements. These elements are critical in ensuring a seamless integration of AI technologies, aimed at enhancing efficiency and service delivery within the public sector.

2.9.2. Measurement and evaluation

Evaluating the readiness for AI adoption requires a multifaceted approach, incorporating both qualitative and quantitative assessments. This includes surveys among government officials, benchmarking against technological. This will support evaluating the readiness levels, highlighting areas of strength and opportunities for improvement in the context of GAI integration within the government sector.

In a previous study by authors have assessed the readiness of the selected government agencies in adopting AI using the following factors (Campued et al., 2023)

2.9.2.1. Willingness to integrate AI

The readiness to adopt AI technologies significantly correlates with the willingness of government officials to integrate these tools into their daily work processes. This willingness is a vital aspect of the organizational culture, indicating openness and flexibility towards change. A favorable attitude towards AI integration points to readiness at the individual level, which is crucial for the collective adoption process within the institution.

2.9.2.2. Informed about benefits and challenges

Adequate information regarding the benefits and potential challenges of AI integration forms the foundation of a well-informed decision-making process. This aspect of readiness emphasizes the importance of knowledge dissemination and awareness campaigns tailored to the specific context of the government sector, ensuring that officials are well-equipped to leverage AI technologies effectively.

2.9.2.3. Familiarity with AI tools

Familiarity with Generative AI tools is indicative of the skill level criterion for readiness. The proficiency of government officials in using and integrating AI into their work processes is crucial for overcoming technical barriers and facilitating smooth adoption. This underscores the need for targeted training programs and workshops designed to enhance AI literacy among government employees.

2.9.2.4. Training and learning opportunities

The availability of training and learning opportunities directly impacts the capability of government institutions to incorporate AI technologies. This reflects both the organizational culture of continuous learning and the technological infrastructure that supports skill development. An emphasis on educational initiatives is paramount for building AI readiness within the government sector.

2.9.2.5. Benefits vs Barriers

The perception that the benefits of adopting AI outweigh the perceived barriers is central to overcoming resistance and fostering a positive attitude towards AI integration. This perception is influenced by a thorough understanding of AI's potential to enhance efficiency, transparency, and service delivery within the government sector.

2.9.2.6. Support for AI adoption

Sufficient support from leadership, coworkers, and infrastructure is fundamental for facilitating AI adoption. This includes the provision of necessary resources, the establishment of a supportive network, and the creation of an enabling environment that encourages innovation and experimentation with AI technologies.

2.9.2.7. Strategies and guidelines

The existence of initiatives to formulate strategies, plans, and clear guidelines for AI integration signifies a strategic approach to readiness. This involves preparing the institutional framework for AI adoption, including policy formulation, ethical considerations, and the establishment of best practices for AI use in government operations.

In conclusion, assessing readiness for the adoption of AI technologies within the Sri Lankan government sector requires a holistic approach that encompasses technological, skill-based, and cultural dimensions. The alignment of survey questions with these criteria facilitates a nuanced understanding of the current state of readiness, guiding targeted interventions to enhance AI adoption in the public sector.

2.10. Conclusion

In conclusion, this literature review has thoroughly examined the integration of generative Artificial Intelligence technologies within the Sri Lankan government framework. By reviewing the historical background, theoretical models, global adoption practices, and specific applications of generative AI, we have gained important insights into both the potential advantages and the challenges of implementing these technologies in the public sector. The review highlights the essential need for technological readiness, a supportive organizational culture, and adequately skilled government officials to ensure the successful adoption of AI technologies.

Moreover, the discussion on the barriers to AI adoption emphasizes the importance of developing comprehensive strategies to address issues such as skill shortages, privacy and security concerns, and the need for improved infrastructure. The exploration of theoretical frameworks like the Technology Acceptance Model (TAM) and the Diffusion of Innovations Theory provides a solid basis for understanding the determinants that influence the adoption and effective use of AI technologies in governmental operations.

Looking forward to assessing the readiness of Sri Lankan government officials for the adoption of GAI technologies, it becomes clear that a concerted effort is needed to enhance understanding, build capacities, and create an enabling environment. This entails not just tackling technological and infrastructural challenges but also ensuring that the perceived

advantages of adopting AI outweigh the perceived obstacles.

This literature review lays a strong foundation for further research, offering a comprehensive overview of the existing state of knowledge and pinpointing areas where additional investigation can make a significant contribution. As Sri Lanka progresses with the implementation of generative AI in government functions, leveraging these insights will be crucial for guiding policy development, strategic planning, and practical execution efforts. Through meticulous planning and targeted initiatives, the full potential of generative AI can be realized, leading to more efficient government operations, improved service delivery, and a more responsive and effective government.

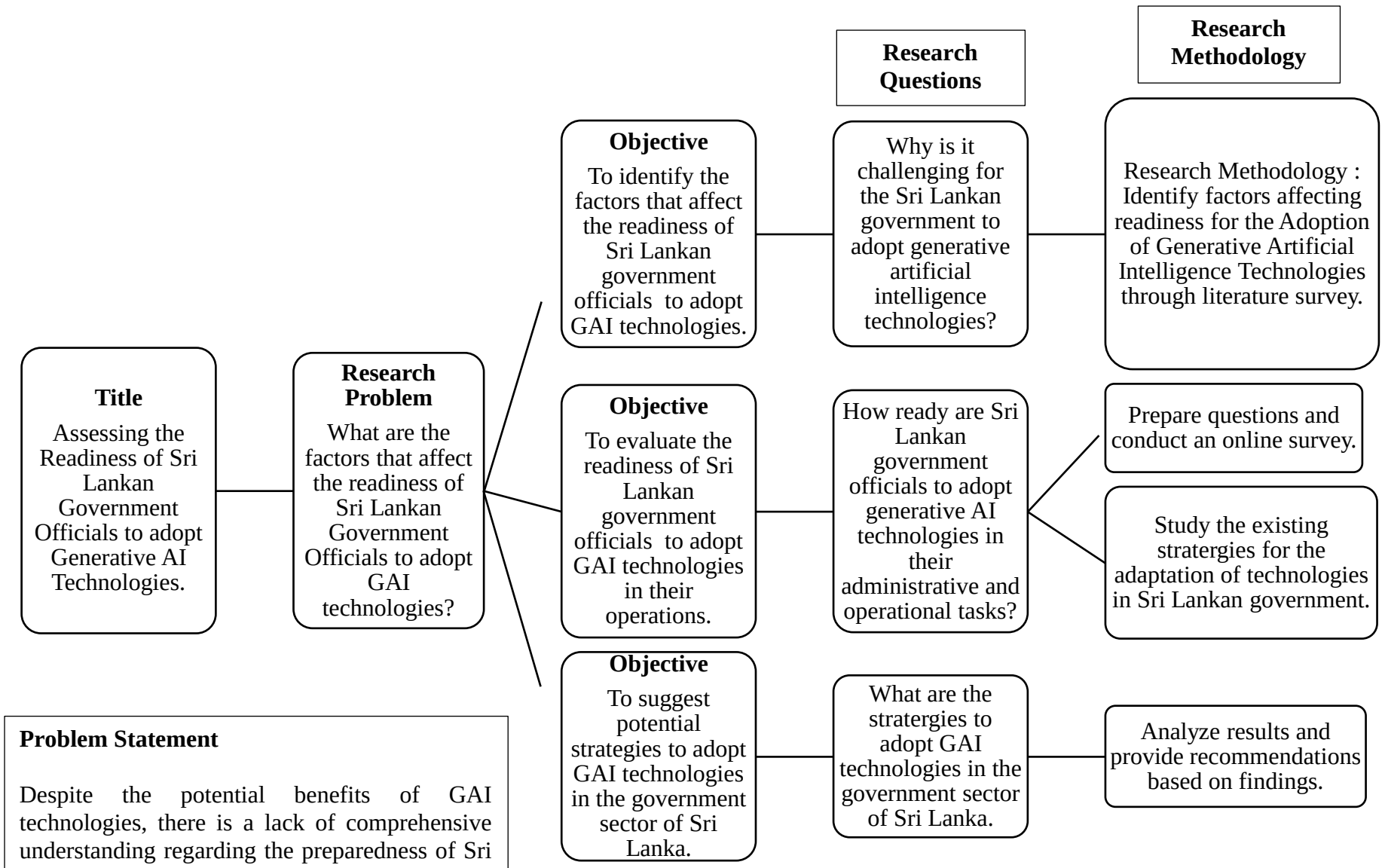
3. RESEARCH METHODOLOGY

The methodology section plays a significant role in the research study. Its purpose is to validate the study by outlining the research design and methods used to accomplish the research objectives and address the research questions presented in the introduction chapter.

Furthermore, this chapter provides information about the research approach, data collection methods, population, and sample size determination. Thereafter, the chapter explains the data analysis method that has been applied. In conclusion, this chapter wraps up with an overview of the entire methodology.

3.1. Research approach

The research approach in this study, based on Saunder's Research Onion model, uses a quantitative method to analyze data collected through an online questionnaire (Saunders et al., 2019). The study aims to explore the relationship between various variables related to generative AI adoption. These variables will be measured and analyzed using statistical procedures and hypothesis testing, providing a generalized view of the research findings. This prevalence study will collect data from government officers at a specific time to understand the readiness for adoption of GAI technologies. The cross-sectional method is best suited for this study to examine the prevalence of readiness factors in government officials. Through a descriptive research design and an inductive approach, the study aims to assess the readiness factors of Sri Lankan government officials and their relationship with AI adoption. By utilizing a mapping diagram in Figure 1, the research objectives and questions are clearly outlined, along with the methods that will be employed in the study. Overall, this research will provide valuable insights into the factors influencing the adoption of GAI technologies in the Sri Lankan government sector, contributing to the existing knowledge, and understanding in this area.



Problem Statement

Despite the potential benefits of GAI technologies, there is a lack of comprehensive understanding regarding the preparedness of Sri Lankan government officials to embrace these technologies. This study aims to evaluate their readiness, identify existing gaps, and determine the necessary steps to facilitate effective adoption.

Figure 1: Mapping Diagram

3.2. Research data collection method

The data collection process is an essential part in the research study because the conclusions drawn from the research are based on the collected data. Therefore, any discrepancies or inaccuracies in the data collection process may lead to invalid and unreliable research outcomes. Hence, it is crucial to ensure that the data collection process is accurate and reliable to obtain valid results.

3.2.1. Primary data

Initial data was gathered directly from participants through an online questionnaire. The primary data has a reliable level of decision-making with a reliable interpretation that is in connection with the occurrence of events. Primary data sources are preliminary interviews and online questionnaires with Government officials. The method of online questionnaire was chosen due to its reliability, speed, and convenience in gathering data from multiple respondents efficiently.

3.2.2. Secondary data

Secondary data refers to information that has already been gathered and analyzed in the past. These data sources offer valuable insights into various fields of study, such as the adoption of GAI technologies in the Sri Lankan government sector. By analyzing this secondary data, researchers can identify gaps in current research and gain a comprehensive understanding of the topic. To accomplish the research objectives, the documents including ICTA, UNDP, and the World Bank reports have been reviewed. This secondary data provides a foundation for research to compare the collected primary data.

3.3. Sample design

To explore the readiness of Sri Lankan government officials for the adoption of generative artificial intelligence technologies, this section **explains** the methodology for sample design, focusing on the population of **Government** officials **in Sri Lanka.**

3.3.1. Population

The population is defined as the entire set of elements used for making inferences. In this study, the population consists of government officials in the Sri Lankan Government. According to the Economic & Social Statistics of Sri Lanka 2023 report by CBSL, there were 934,646 government employees in Sri Lanka in the year 2022. From the report of the Department of Census and Statistics, it was found that 15.1% of employees in Sri Lanka are government employees (in the year 2022). Based on the definitions given in the Public Administration Circular No. 06/2006, there are four levels of government employees, namely Senior Level, Tertiary Level, Secondary Level, and Primary Level. For this research study, data were collected from government officers who belong to the Senior Level, Tertiary Level, and Secondary Level. Therefore, the population size for this study is 682,790 government officers. The hierarchy of public sector employment is shown in *Figure 2*.

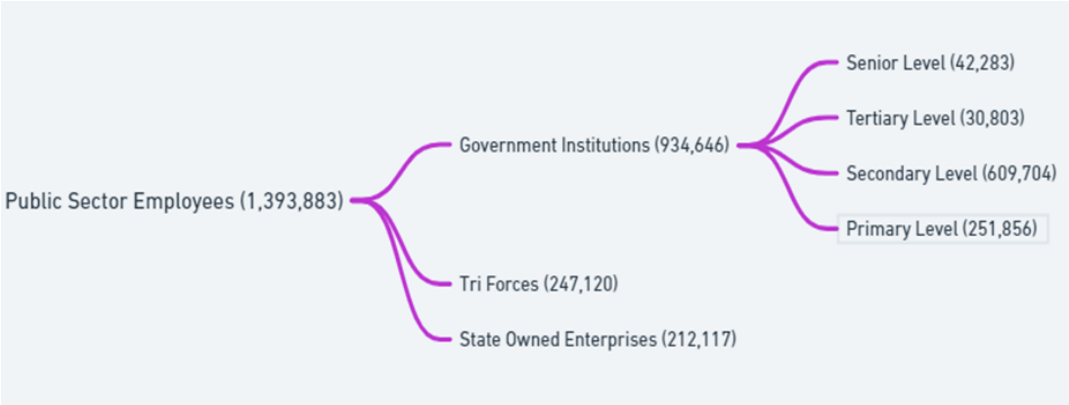


Figure 2: The hierarchy of public sector employment

3.3.2. Sample size

This study used Convenience Sampling to select participants from Sri Lankan government officials for insights into their readiness for generative AI technologies. Convenience Sampling, a non-probability method, was chosen for practicality and efficiency in data collection. The sample may not fully represent all government officials. Due to the exploratory nature of the research and logistical constraints, the sample size was based on availability rather than statistical calculations. This method allows for a diverse range of participants with varying experiences and perspectives

on generative AI. While the findings cannot be generalized with confidence to the entire population, they will provide valuable insight into the readiness levels of participating officials.

3.3.3. Research instrument

A research instrument is a mechanism used to collect, measure, and analyze data that is scientifically significant. Here the researchers have used descriptive analyses to convert the collected data into summarized and organized forms such as tables, charts, and frequency distribution. Correlation and regression Analysis were used to examine the effect of factors on the adoption of GAI Technologies and the readiness of Sri Lankan government officials.

3.4. Conceptual diagram

A conceptual diagram illustrates the relationship between independent and dependent variables, supporting researchers in understanding and testing research phenomena. Researchers create a conceptual framework by conducting a literature review, allowing them to make recommendations based on findings (Elangovan N. & Rajendran R, 2020). In this study, six independent variables were identified, including Awareness of Generative AI, Level of Exposure and Familiarity with AI applications, Training and Skill Development, Barriers to AI Adoption, Benefits of Generative AI, and Organizational Culture and Leadership. The outcome variable is Readiness for Adoption of GAI technologies. Awareness of Generative AI relates to officials' understanding of GAI capabilities, while Exposure to AI Applications reflects their familiarity with AI tools. Training and Skill Development provide opportunities for acquiring GAI skills, Barriers to AI Adoption address obstacles to integration, and Benefits of Generative AI highlight advantages and Organizational Culture and Leadership influence technology adoption. Readiness for Adoption of GAI technologies is determined by these variables. Here, the researcher developed the hypotheses based on independent variables and dependent variables.

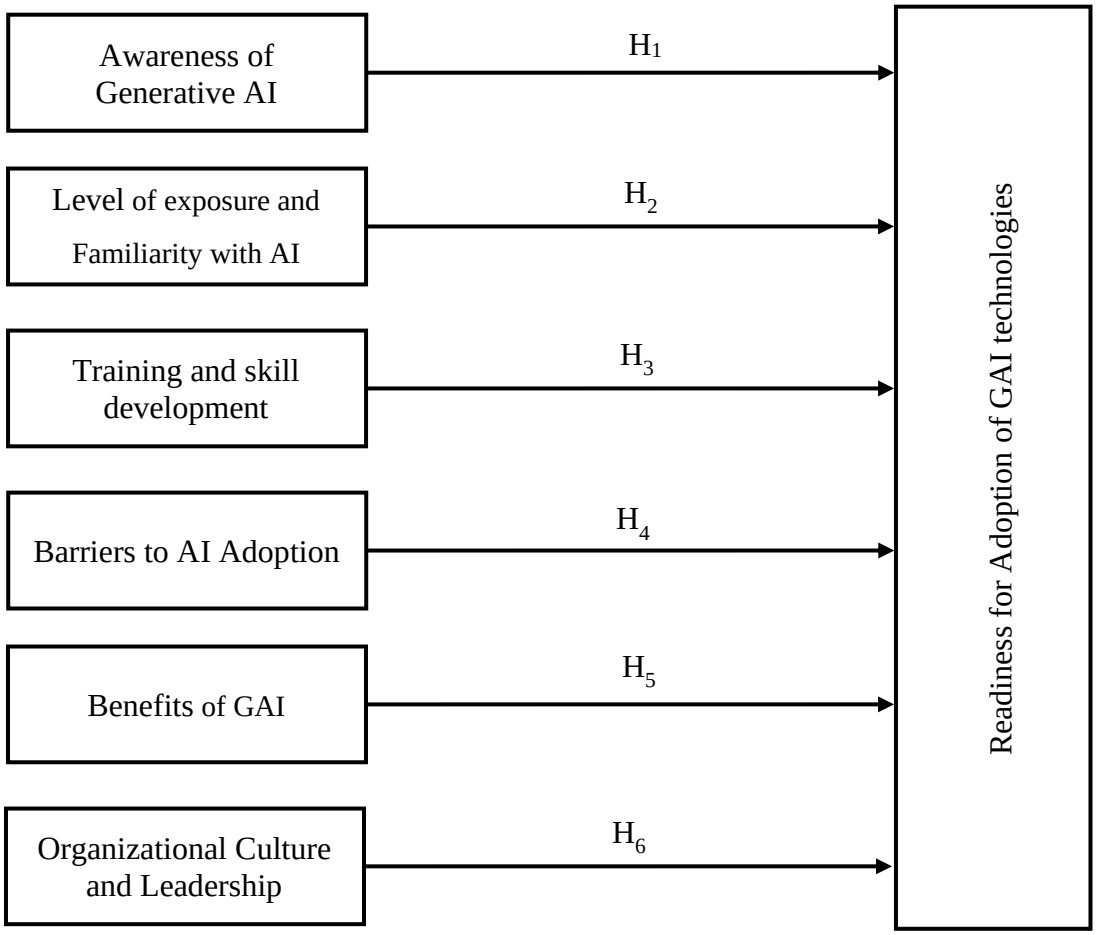


Figure 3: Conceptual Framework

3.5. Hypothesis

A hypothesis guides to explanation the research problem and objectives into a comprehensive description or forecast of the expected results of the study. As noted by (Saunders et al., 2019) hypotheses are precise, predictive statements about possible outcomes, typically utilized within a quantitative research framework. These hypotheses are systematically formulated based on the relationships between independent and dependent variables illustrated in the conceptual framework.

H1: There is a relationship between the awareness of GAI among Sri Lankan government officials and their readiness for the adoption of GAI technologies.

H2: There is a relationship between the level of exposure and familiarity with AI applications among Sri Lankan government officials and their readiness for the adoption of GAI technologies.

H3: There is a relationship between the training and skill development for SL government officials and their readiness for the adoption of GAI technologies.

H4: There is a relationship between barriers to AI adoption and the readiness of Sri Lankan government officials for the adoption of GAI technologies.

H5: There is a relationship between the benefits of GAI adoption and readiness among Sri Lankan government officials for the adoption of GAI technologies.

H6: There is a relationship between the organizational culture and leadership in Sri Lankan government institutions and the readiness for the adoption of GAI technologies.

The acceptance or rejection of these hypotheses will provide valuable insights into the factors that significantly impact the readiness of Sri Lankan government officials to adopt Generative AI technologies.

3.6. Data acquisition

This section explains the process of preliminary interviews with senior Sri Lankan government officials, aiming to identify critical factors for adopting GAI technologies.

3.6.1. Preliminary interview

A preliminary interview has been explained as a strategy that research uses to find factors significant for the research population which will provide information on specific areas. The main objectives of the preliminary interview are to identify appropriate data-collection instruments for the survey and to find useful data for the research purpose.

In this study, preliminary interviews were conducted with senior government officials in Sri Lanka, using open-ended questionnaires to understand their perspectives. Ten officials were chosen based on the priority of their institution on technology adoption in government. The interviews exposed shortcomings in policies and technical skills for incorporating technology. These insights guided the research towards developing more structured data collection methods and focused analyses. They also highlighted the need for capacity building, policy development, and strategic planning for the adoption of GAI technologies in Sri Lankan government institutions. The findings

from these interviews have shaped the direction of the research, guided for preparation of research questions, and provided a deeper understanding of factors in adopting new technologies in the Sri Lankan government sector.

3.7. Questionnaire design

This section explains the design of an online questionnaire for collecting data from government officials, focusing on their readiness to adopt GAI technologies.

3.7.1. Design aspects

An online questionnaire was used as the main instrument to collect primary data from the sample. The questionnaire items were designed in a specific format to ensure that all the survey respondents were presented with the same type of questions. This helps the researcher to clarify the research's intent and increase the likelihood of receiving completed forms in return. It is important to note that designing a questionnaire is a multi-disciplinary process that should be considered in detail. Since surveys can ask topics with different interpretations, different approaches can be used to ask questions. Also, the questions asked at the beginning of the study will affect how people answer the following questions (Saunders, Philip Lewis, & Adrian Thornhill, 2019).

To develop the research questionnaire, the conceptual model developed from the literature review and preliminary interviews was used. Identifying dependent and independent variables through a conceptual framework supports in developing accurate questions. The conceptual model in developing a questionnaire ensures that the research reflects all relevant variables, and any impertinent variables can be omitted. The responses from the preliminary interviews have been used to identify the most common facts, and that experience has been used to develop closed-ended questions. The developed questionnaire was tested with a small sample to identify and correct any flaws in the questioning before the main survey.

The questionnaire was designed using a Likert scale. The responses to each question were given on a five-point Likert scale, ranging from 1 indicating "Strongly Disagree" to 5 indicating "Strongly Agree". The questionnaire was organized based on six main independent variables, including Awareness of Generative AI, Level of Exposure and

Familiarity with AI Applications, Training and Skill Development, Barriers to AI Adoption, Benefits of GAI, and Organizational Culture and Leadership. Under these main factors, there are sub-questions designed to evaluate how Sri Lankan government officers are ready to adopt GAI technologies in their work processes and institutions.

3.7.2. Pilot survey

A pilot survey is conducted to determine the validity of the content in questionnaire. The aim is to ensure that all key points are addressed, questions are relevant to the researcher's objectives, and the results can be generalized to the entire population. The pilot survey is conducted to validate the questionnaire before distributing the final survey for data collection. This pilot questionnaire was distributed among randomly selected 20 government officers.

3.7.3. Reliability analysis

The reliability analysis helps to determine the error-free extent and ensures the persistency of measurement over the duration and across different items. In this study, reliability is measured using Cronbach's alpha value. A reliability coefficient of 0.70 or higher is considered ‘satisfactory’ in most research studies. Therefore, this research study uses this standard to assess the reliability of the instrument.

3.8. Conclusion

The whole research methodology of this research is represented by the research methodology and design. The study aims to measure the readiness of Sri Lankan government officials to adopt Generative Artificial Intelligence technologies in their work processes. To achieve this, a questionnaire has been developed, which will capture the opinions of the respondents concerning the factors for readiness to the adoption of GAI technologies in the government sector. The questions in the questionnaire are structured on a five-point Likert scale. In this study, correlation and regression analysis use to determine whether the association between the factors considered and the readiness for adoption of GAI technologies is significant or not. To ensure ethical consideration, all the information gathered will be kept confidential and will be used only for research purposes.

4. DATA ANALYSIS AND DISCUSSION

This chapter demonstrates the use of statistical techniques to analyze data collected from Sri Lankan government officials about readiness for adopting GAI technologies. The aim is to extract valuable insights and derive accurate conclusions. The questionnaire was distributed online, and responses were analyzed using Google Sheets and SPSS software.

The chapter includes reliability and descriptive analyses, inferential analyses to establish relationships between variables, and hypothesis validation to provide a comprehensive understanding of officials' readiness for GAI adaptation.

4.1. Pilot study

A pilot study was conducted among a selected group of 20 Sri Lankan government officers to test the data collection instrument before the main data collection process. The Cronbach's alpha value was used to measure the validity and reliability of the questions. A value over 0.7 is considered sufficient. Some items had a lower alpha value than 0.7, so those questions were refined in terms of order and phrasing. The pilot survey ultimately confirmed that the questionnaire was solid in all areas, with a Cronbach alpha value greater than 0.7, which is considered adequate.

4.2. Data collection

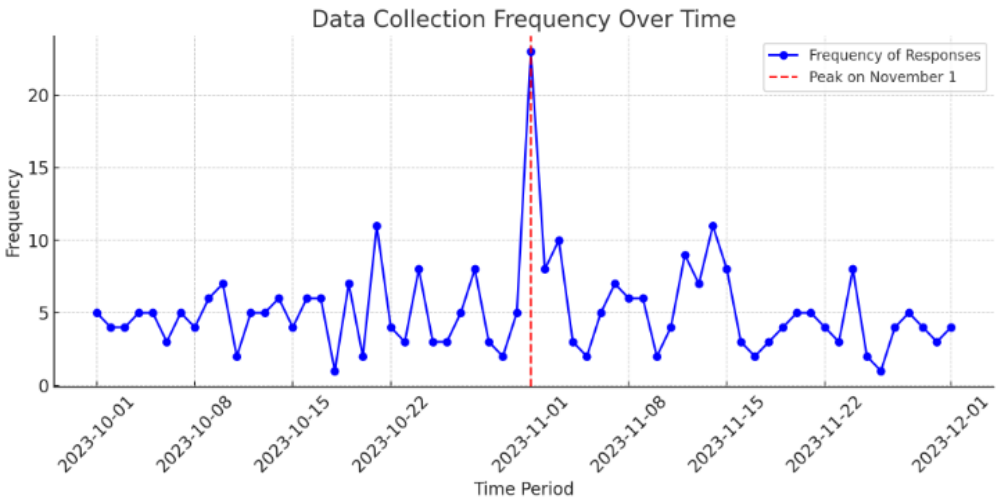


Figure 4: Time for Data Collection

An online survey questionnaire was created using Google Forms to gather responses. Data collection was conducted for around two months and *Figure 4* shows the pattern of data collection. The survey was distributed through WhatsApp, and social media like Facebook, LinkedIn, and email among SL government officers. The questionnaire was distributed among more than 1000 government officers.

4.3. Data preparation

Data cleaning is an essential process that ensures the accuracy of data analysis, which investigates the readiness of Sri Lankan government officials for the adoption of GAI technologies. The questionnaire was made available online, and some incomplete and deviated values were identified. These values were manually removed before conducting data analysis. Missing values and outliers may cause the erroneous outcomes to be erroneous and SPSS software applied for Statistical Analysis would neglect those. After the cleaning process, a total of 206 responses were considered for conducting the analysis.

The ordinal responses from 5-point Likert scale questions were converted into numerical values to enable interval data analysis techniques. This conversion facilitates for statistical analyses such as calculating mean values and conducting parametric tests (e.g., t-tests and ANOVAs) to evaluate differences and correlations in collected data. (The practicality of treating the equidistance between Likert scale points as approximately equal). This methodological approach is important in gaining a broad understanding of officials' readiness for adopting generative AI technologies, ensuring the accuracy and comprehensiveness of analysis.

4.4. Reliability analysis

The Reliability Analysis evaluates the accuracy and consistency of the questionnaire and the data obtained. The Cronbach Alpha coefficient was used to evaluate the internal accuracy of the questionnaire items. Before distributing the questionnaire online, a pilot survey was conducted, and changes were made based on suggestions of respondents. Table 8 and Figure 5: Summary of Cronbach’s Alpha Values present an overview of the reliability analysis, which was carried out with Google Sheets and

SPSS Software.

4.4.1. Awareness of Generative AI

Table 1: Reliability Statistics for Awareness of Generative AI

Reliability Statistics

Cronbach's Alpha	N of Items
.953	4

According to the above Table 1, Awareness of Generative AI consisted of 4 items that were accepted to be reliable (α=.953) which indicated very high internal consistency among the items to determine the specific variable.

4.4.2. Level of exposure and familiarity with AI applications

Table 2: Reliability Statistics for Level of exposure and Familiarity with AI applications

Reliability Statistics

Cronbach's Alpha	N of Items
.912	4

According to Table 2 above, the Level of exposure and Familiarity with AI applications has 4 items that indicate very high internal consistency (α=.912).

4.4.3. Training and skill development

Table 3: Reliability Statistics for Training and Skill Development

Reliability Statistics

Cronbach's Alpha	N of Items
.878	4

According to Table 3, Training and skill development has 4 items that indicate high internal consistency (α=.878).

4.4.4. Barriers to AI adoption

Table 4: Reliability Statistics for Barriers to AI Adoption

Reliability Statistics

Cronbach's Alpha	N of Items
.861	4

According to Table 4, Barriers to AI Adoption consisted of 4 items that indicate high internal consistency (α=.861).

4.4.5. Benefits of Generative AI

Table 5: Reliability Statistics for Benefits of Generative AI

Reliability Statistics

Cronbach's Alpha	N of Items
.993	4

According to the Table 5 , Benefits of Generative AI has 4 items that indicate very high internal consistency (α=.993).

4.4.6. Organizational culture and leadership

Table 6: Reliability Statistics for Organizational Culture and Leadership

Reliability Statistics

Cronbach's Alpha	N of Items
.858	4

According to the Table 6 , Organizational Culture and Leadership consisted of 4 items that indicate high internal consistency (α=.858).

4.4.7. Readiness for adoption of Generative AI technologies

Table 7: Reliability for readiness to adopt generative AI Technologies

Reliability Statistics

Cronbach's Alpha	N of Items
.880	7

According to Table 7, Readiness for adoption of GAI technologies consisted of 7 items that indicate high internal consistency (α=.880).

4.4.8. Summary of reliability tests for all independent Variable

Table 8: Summary of reliability analysis

Factor	Cronbach's Alpha	No. of Items
Awareness of Generative AI	0.953	4
Level of exposure and Familiarity with AI	0.912	4
Training and skill development	0.878	4
Barriers to AI Adoption	0.861	4
Benefits of Generative AI	0.993	4
Organizational Culture and Leadership	0.858	4
Readiness for Adoption of Generative AI	0.880	7

Table 8 presents the Cronbach alpha reliability coefficient for each variable in the questionnaire. It provides evidence that all the items were considered reliable. According to Table 9 , the Cronbach Alpha statistic for the overall instrument was .970 with a significance of $P < 0.005$. Therefore, it can be stated that the internal consistency was good, and the research instrument was reliable and will provide consistent results.

Table 9: Reliability for Overall Instrument

Reliability Statistics

Cronbach's Alpha	N of Items
.970	31

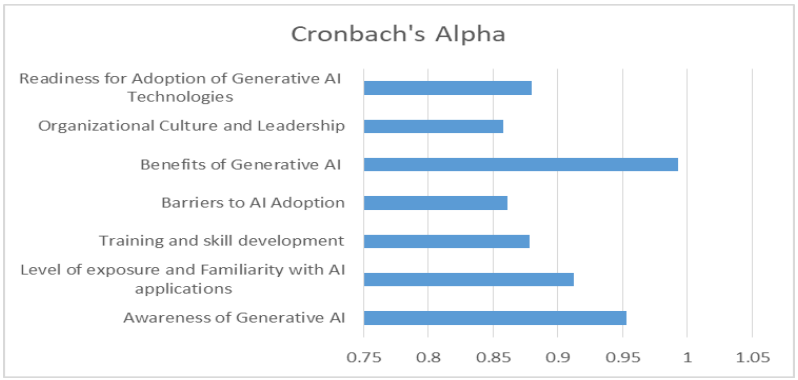


Figure 5: Summary of Cronbach's Alpha Values

4.5. Descriptive statistics of demographic data

4.5.1. Analysis of demographic data

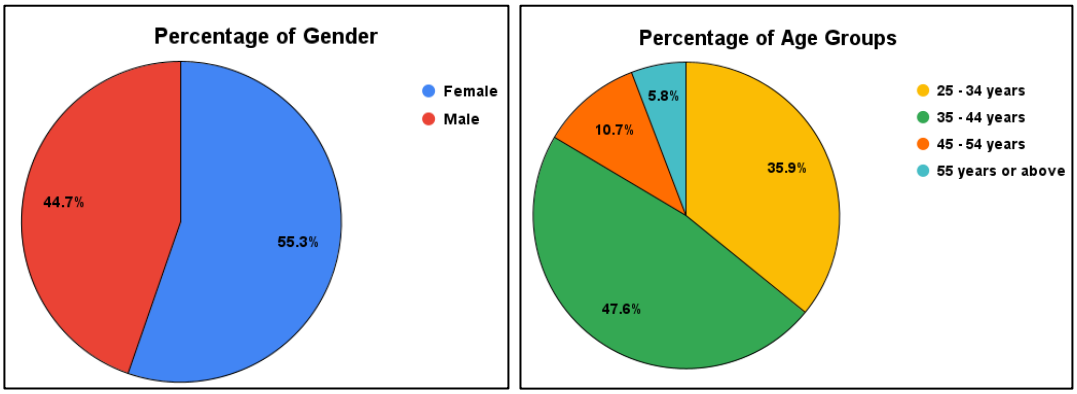


Figure 6: Gender and Age Group

The gender distribution of the sample indicates a relatively balanced composition, with a slight majority being female. Females constitute 55.3% of the respondents and Males represent the remaining 44.7%. This distribution reflects a moderate level of gender diversity within the sample population. The age distribution among survey respondents is skewed towards the middle-aged groups. The predominant age group is 35 to 44 years, comprising nearly half of the participants (47.6%, n=98). The subsequent age group, 25 to 34 years, forms 35.9% of the sample (n=74). The 45 to 54 years age group is less represented, with 10.7% participation (n=22), and the 55 years or above category is the least represented at 5.8% (n=12). There are no participants under the age of 25. This distribution suggests that the survey mainly captured the perspectives of working-age adults, with a potential gap in insights from younger adults. These distributions are illustrated in Figure 6.

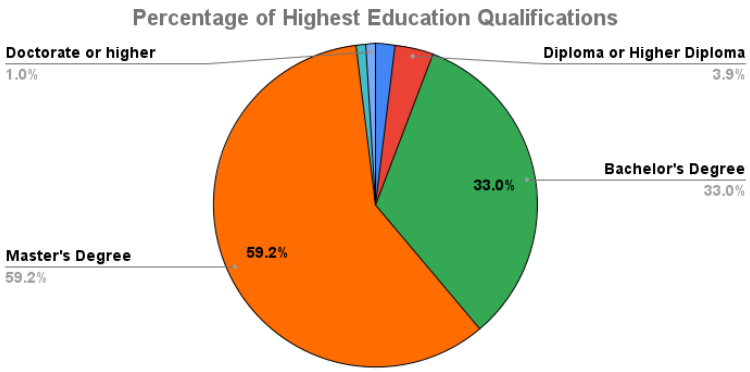


Figure 7: Highest Education Qualification

Figure 7 indicates the highest educational qualification of the survey participants. The majority of the respondents, 59.2%, possess a master's degree. This indicates that the survey predominantly captured the input of individuals with advanced postgraduate education. Bachelor's degree holders constitute a third of the sample, suggesting a solid foundation of undergraduate-level education among the participants. A smaller segment, 3.9%, have completed education up to a diploma or higher diploma level. There is less representation (1.0%) of participants with the highest academic qualifications such as M.Phil or Ph.D.

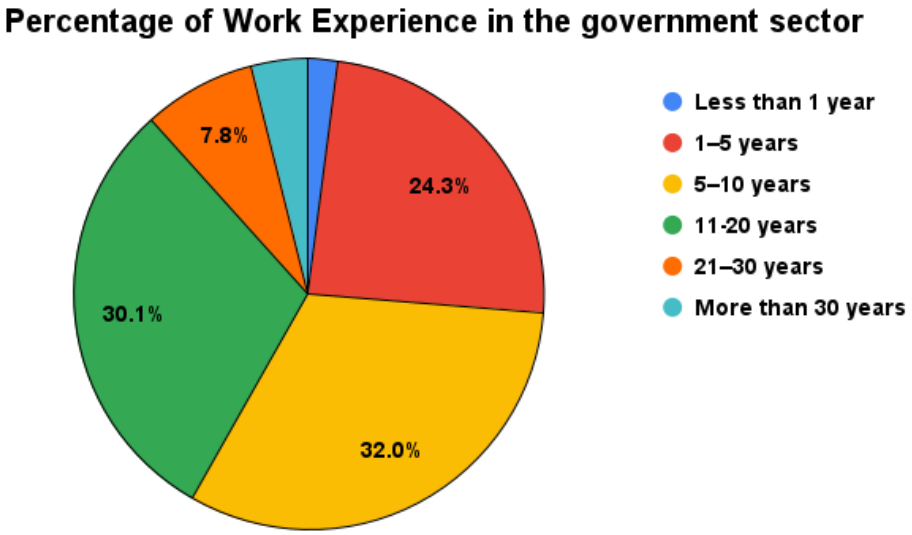


Figure 8: Work Experience in the government sector

The *Figure 8* illustrates the work experience distribution of individuals in the Sri Lankan government sector. About 32% have 5-10 years of experience, indicates the mid-level professionals. Following closely, 30.1% have 11-20 years of experience. Additionally, 24.3% have 1-5 years of experience, including new recruits likely more adaptable to new technologies. A smaller group, 7.8%, has 21-30 years of experience, indicating a seasoned understanding. The analysis does not cover those with less than 1 year or more than 30 years.

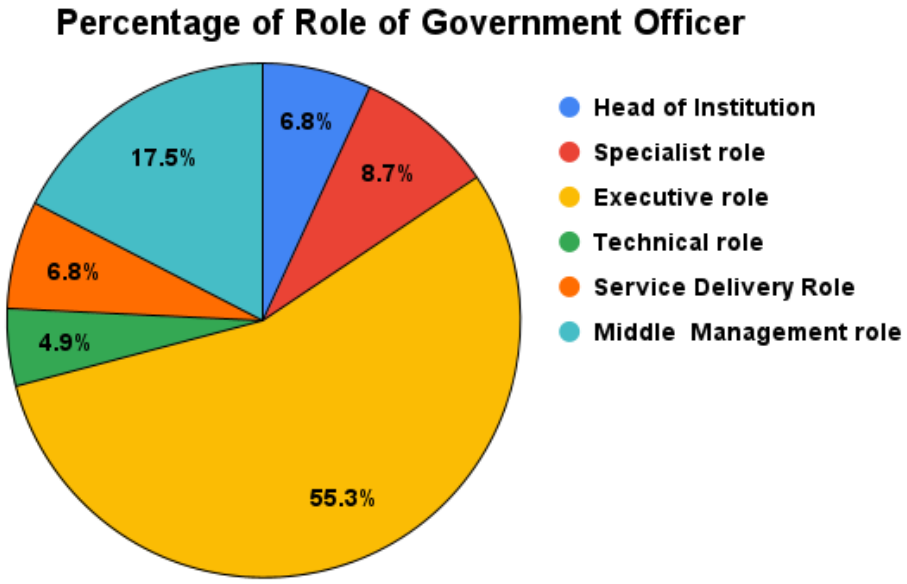


Figure 9: Role in the government sector

Figure 9 shows the respondents' roles within the Sri Lankan government sector. The majority, 55.3% (n=114), hold positions in the Executive level, signifying a significant representation of decision-making. Middle management roles such as Development Officers or Management Service Officers, make up the second-largest group at 17.5% (n=36). Specialists and professional roles for 8.7% (n=18) of the respondents. Heads of Institutions and those in Service Delivery roles each constitute 6.8% of the participants.

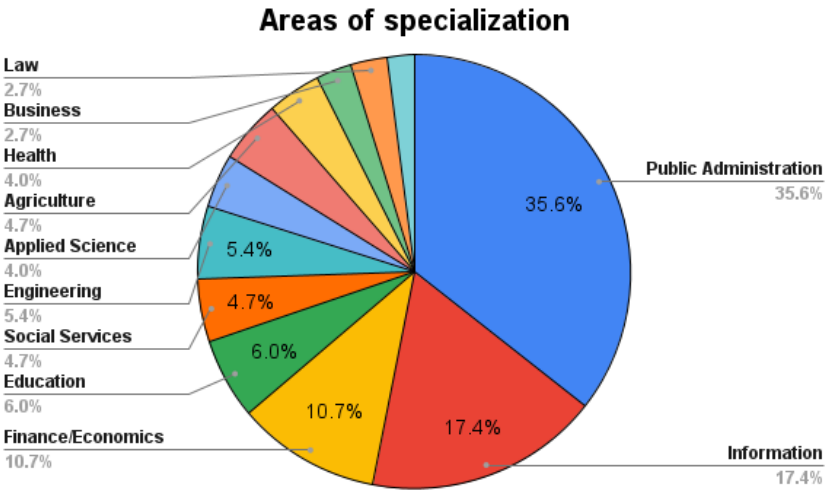


Figure 10: Areas of specialization

Figure 10 illustrates areas of specialization in the Sri Lankan government sector, with Public Administration being the most prevalent at 35.6%, indicating a large number of respondents involved in policymaking. The information Technology sector represents 17.4% of respondents' specialization, indicating participants with IT skills who are keen to use new technologies and important for generative AI adoption.

4.5.2. Discussion on results of the demographic data

In Section 4.5, the demographic data analysis results were used to describe the characteristics of the respondents. It was found that the highest number of government officials who participated in the survey, accounting for 47.6% out of 206 participants, were between the ages of 35 to 44 years. This indicates that many respondents, over 80%, were government officials between the ages of 25 to 44 years who are interested in adopting new technologies such as Generative AI technologies.

According to the data presented in Figure 8, out of a total of 206 respondents, 59.2% of them held a master's degree, while 33% held a bachelor's degree. It was also observed that over 90% of the respondents who were government officials had educational qualifications equal to or higher than a bachelor's degree. When considering the roles of the respondents in the Sri Lankan government, more than half of them were Executive level Officers (55.3%) who were involved in public policy and administrative responsibilities.

In terms of the readiness of adopting AI technologies in the government sector, it was observed that Executive Officers in the middle age range were particularly keen to adapt to new technologies. It should be stated that completing higher educational qualifications such as a master's degree is a requirement for promotions of Government executive-level services, as per the Service Minutes provisions. Also, many Sri Lankan Executive-level Government officers have opportunities for local and foreign higher education.

Out of 206 respondents, 32% of them have 5-10 years of work experience and 30.1% belong to the 11-20 years category. The high percentage of participants with 5 to 10 years of experience and in the 35-44 age group may have contributed to this value.

4.6. Inferential Analysis

The inferential analysis utilizing Pearson correlation in this study aimed to quantify the strength and significance of the relationships between the dependent variable: Readiness for Adoption of GAI technologies and six independent variables.

4.6.1. Correlation analysis for all variables

The p-value, which helps determine statistical significance, indicates the probability of finding the current results if the correlation coefficient was zero. If the p-value is less than the significance level (often $p < 0.05$ or $p < 0.01$), then the result is statistically significant.

In Table 10, a Pearson Correlation value greater than zero suggests a positive relationship between variables, where an increase in one variable correlates with an increase in another. Conversely, a value less than zero would suggest a negative relationship. A value equal to zero indicates no relationship.

Table 10: Correlation Matrix

Correlations

		ReadinessforAdoptionofGenerativeAITechnologies	AwarenessofGenerativeAI	LevelofexposureandFamiliaritywithAIapplications	Trainingandskilldevelopment	BarrierstoAIAdoption	BenefitsofGenerativeAI	OrganizationalCultureandLeadership
ReadinessforAdoptionofGenerativeAITechnologies	Pearson Correlation	1	.577**	.727**	.705**	.302**	.433**	.688**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001	<.001
	N	206	206	206	206	206	206	206
AwarenessofGenerativeAI	Pearson Correlation	.577**	1	.724**	.487**	.199**	.455**	.418**
	Sig. (2-tailed)	<.001		<.001	<.001	.004	<.001	<.001
	N	206	206	206	206	206	206	206
LevelofexposureandFamiliaritywithAIapplications	Pearson Correlation	.727**	.724**	1	.603**	.366**	.530**	.498**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001	<.001
	N	206	206	206	206	206	206	206
Trainingandskilldevelopment	Pearson Correlation	.705**	.487**	.603**	1	.095	.169*	.644**
	Sig. (2-tailed)	<.001	<.001	<.001		.176	.015	<.001
	N	206	206	206	206	206	206	206
BarrierstoAIAdoption	Pearson Correlation	.302**	.199**	.366**	.095	1	.518**	.165*
	Sig. (2-tailed)	<.001	.004	<.001	.176		<.001	.018
	N	206	206	206	206	206	206	206
BenefitsofGenerativeAI	Pearson Correlation	.433**	.455**	.530**	.169*	.518**	1	.308**
	Sig. (2-tailed)	<.001	<.001	<.001	.015	<.001		<.001
	N	206	206	206	206	206	206	206
OrganizationalCultureandLeadership	Pearson Correlation	.688**	.418**	.498**	.644**	.165*	.308**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	.018	<.001	
	N	206	206	206	206	206	206	206

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.7. Hypothesis testing

If the significance value is less than 0.01, the null hypothesis is rejected in favor of the alternative hypothesis; otherwise, the null hypothesis is accepted.

4.7.1. Awareness of Generative AI and readiness for the adoption of GAI

Table 11: Awareness of Generative AI and Readiness for the Adoption of GAI

Correlations

		AwarenessofGenerativeAI	ReadinessforAdoptionofGenerativeAITechnologies
AwarenessofGenerativeAI	Pearson Correlation	1	.577**
	Sig. (2-tailed)		<.001
	N	206	206
ReadinessforAdoptionofGenerativeAITechnologies	Pearson Correlation	.577**	1
	Sig. (2-tailed)	<.001	
	N	206	206

**. Correlation is significant at the 0.01 level (2-tailed).

According to the statistical analysis in Table 11, the Pearson correlation coefficient for Awareness of Generative AI and Readiness of Sri Lankan Government Officials for the adoption of GAI Technologies is 0.577 (r= .577), (p = 0.000 and p < 0.01 for the 2-tailed test). The statistical analysis reveals a Pearson correlation coefficient of 0.577 (r= .577) with a p-value of 0.000, which is less than the significance level of 0.01 in a two-tailed test. This result derived from 206 complete observations, indicates a significant, moderately strong positive correlation between the awareness of GAI and the readiness to adopt GAI technologies. This means that as awareness of GAI increases, the readiness for its adoption among these officials also tends to increase. In terms of hypothesis testing, two hypotheses were initially proposed:

Null hypothesis: $H1_0$ – There is no relationship between the awareness of GAI among SL government officials and their readiness for the adoption GAI technologies.

Alternative hypothesis: H1a - There is a relationship between the awareness of GAI among SL government officials and their readiness for the adoption GAI technologies.

Based on the Pearson correlation coefficient and the p-value obtained, the null hypothesis is rejected in favor of the alternative hypothesis. This decision is based on the statistically significant relationship found between awareness of GAI and readiness for GAI adoption among Sri Lankan government officials.

4.7.2. Level of exposure and familiarity with AI applications and readiness for the adoption of GAI

Table 12: Level of Exposure and Familiarity with AI Applications and Readiness for the Adoption of GAI

Correlations

		LevelofexposureandFamiliaritywithAIapplications	ReadinessforAdoptionofGenerativeAITechnologies
LevelofexposureandFamiliaritywithAIapplications	Pearson Correlation	1	.727**
	Sig. (2-tailed)		<.001
	N	206	206
ReadinessforAdoptionofGenerativeAITechnologies	Pearson Correlation	.727**	1
	Sig. (2-tailed)	<.001	
	N	206	206

**. Correlation is significant at the 0.01 level (2-tailed).

According to the results in Table 12, two hypotheses were initially proposed:

H20 - There is no relationship between the level of exposure and familiarity with AI applications and the readiness of SL Gov. Officials for the adoption of GAI.

H2a- There is a relationship between the level of exposure and familiarity with AI applications and the readiness of SL Gov. Officials for the adoption of GAI.

Based on the Pearson correlation coefficient and the p-value obtained, the null hypothesis is rejected in favor of the alternative hypothesis: H2a. This decision is based on the statistically significant relationship found between level of exposure and familiarity with AI applications and readiness for GAI adoption among Sri Lankan government officials.

4.7.3. Training and skill development and readiness for the adoption of GAI

Table 13: Training and Skill Development and Readiness for the Adoption of GAI

Correlations

		Trainingandskilldevelopment	ReadinessforAdoptionofGenerativeAITechnologies
Trainingandskilldevelopment	Pearson Correlation	1	.705**
	Sig. (2-tailed)		<.001
	N	206	206
ReadinessforAdoptionofGenerativeAITechnologies	Pearson Correlation	.705**	1
	Sig. (2-tailed)	<.001	
	N	206	206

**. Correlation is significant at the 0.01 level (2-tailed).

According to the results in Table 13, two hypotheses were initially proposed:

H30 - There is no relationship between the training and skill development for SL Gov. Officials and their readiness for the adoption of GAI technologies.

H3a- There is a relationship between the training and skill development for SL Gov. Officials and their readiness for the adoption of GAI technologies.

Based on the Pearson correlation coefficient and the p-value obtained, the null hypothesis is rejected in favor of the alternative hypothesis: H3a. This decision is based on the statistically significant relationship found between training and skill development and readiness for GAI adoption among Sri Lankan government officials.

4.7.4. Barriers to AI adoption and readiness for the adoption of GAI

Table 14: Barriers to AI Adoption and Readiness for the Adoption of GAI

Correlations

		BarrierstoAIAdoption	ReadinessforAdoptionofGenerativeAITechnologies
BarrierstoAIAdoption	Pearson Correlation	1	.302**
	Sig. (2-tailed)		<.001
	N	206	206
ReadinessforAdoptionofGenerativeAITechnologies	Pearson Correlation	.302**	1
	Sig. (2-tailed)	<.001	
	N	206	206

**. Correlation is significant at the 0.01 level (2-tailed).

According to the results in Table 14, two hypotheses were initially proposed:

H40 - There is no relationship between barriers to AI adoption for SL Gov. Officials and their readiness for the adoption of GAI technologies.

H4a- There is a relationship between barriers to AI adoption for SL Gov. Officials and their readiness for the adoption of GAI technologies.

Based on the Pearson correlation coefficient and the p-value obtained, the null hypothesis is rejected in favor of the alternative hypothesis: H4a. This decision is based on the statistically significant relationship found between barriers to AI adoption and readiness for GAI adoption among Sri Lankan government officials.

4.7.5. Benefits of Generative AI and readiness for the adoption of GAI

Table 15: Benefits of Generative AI and Readiness for the Adoption of GAI

Correlations

		BenefitsofGenerativeAI	ReadinessforAdoptionofGenerativeAITechnologies
BenefitsofGenerativeAI	Pearson Correlation	1	.433**
	Sig. (2-tailed)		<.001
	N	206	206
ReadinessforAdoptionofGenerativeAITechnologies	Pearson Correlation	.433**	1
	Sig. (2-tailed)	<.001	
	N	206	206

**. Correlation is significant at the 0.01 level (2-tailed).

According to the results in Table 15 , two hypotheses were initially proposed:

H50 - There is no relationship between the benefits of Generative AI adoption for SL Gov. Officials and their readiness for the adoption of GAI technologies.

H5a- There is a relationship between the benefits of Generative AI adoption for SL Gov. Officials and their readiness for the adoption of GAI technologies.

Based on the Pearson correlation coefficient and the p-value obtained, the null hypothesis is rejected in favor of the alternative hypothesis: H5a. This decision is based on the statistically significant relationship found between the benefits of GAI and readiness for GAI adoption among Sri Lankan government officials.

4.7.6. Organizational culture, leadership and readiness for GAI adoption

Table 16: Organizational Culture and Leadership and Readiness for the Adoption of GAI

Correlations

		OrganizationalCultureandLeadership	ReadinessforAdoptionofGenerativeAITechnologies
OrganizationalCultureandLeadership	Pearson Correlation	1	.688**
	Sig. (2-tailed)		<.001
	N	206	206
ReadinessforAdoptionofGenerativeAITechnologies	Pearson Correlation	.688**	1
	Sig. (2-tailed)	<.001	
	N	206	206

**. Correlation is significant at the 0.01 level (2-tailed).

According to the results in Table 16 , two hypotheses were initially proposed:
H60 - There is no relationship between the organizational culture and leadership for SL Gov. Officials and their readiness for the adoption of GAI technologies.
H6a- There is a relationship between the organizational culture and leadership for SL Gov. Officials and their readiness for the adoption of GAI technologies.
Based on the Pearson correlation coefficient and the p-value obtained, the null hypothesis is rejected in favor of the alternative hypothesis: H6a. This decision is based on the statistically significant relationship found between organizational culture and leadership and readiness for GAI adoption among SL government officials.

4.7.7. Summary of hypothesis testing

Table 17: Summary of Hypothesis Testing

Hypothesis	Null Hypothesis	Alternative Hypothesis	Strength of the Relationship	Direction
There is a relationship between the awareness of Generative AI and the readiness of Sri Lankan government officials for the Adoption of GAI technologies.	Refused	Approved	Medium	Positive
There is a relationship between the level of exposure and familiarity with AI applications and the readiness of Sri Lankan government officials for the Adoption of GAI technologies.	Refused	Approved	High	Positive
There is a relationship between the training and skill development and the readiness of Sri Lankan government officials for the	Refused	Approved	High	Positive

Adoption of GAI technologies.				
There is a relationship between barriers to AI adoption and the readiness of Sri Lankan government officials for the Adoption of GAI technologies.	Refused	Approved	Low	Positive
There is a relationship between the benefits of Generative AI and the readiness of Sri Lankan government officials for the Adoption of GAI technologies.	Refused	Approved	Medium	Positive
There is a relationship between the organizational culture and leadership and the readiness of Sri Lankan government officials for the Adoption of GAI technologies.	Refused	Approved	High	Positive

4.7.8. Discussion on results of hypothesis testing

This analysis uses Pearson correlation coefficients to test hypotheses concerning the influence of awareness, exposure, training, barriers, benefits, and organizational culture and leadership on the readiness for adoption of GAI technologies.

The hypothesis testing indicates a significant positive correlation between awareness of GAI and the readiness of officials for GAI adoption, with a Pearson correlation coefficient of 0.577, indicating a moderate positive linear relationship. Similarly, exposure and familiarity with AI applications (r=0.727) and training and skill development (r=0.705) show strong positive correlations with readiness, highlighting the importance of practical engagement and capacity building in fostering GAI adoption readiness.

The analysis indicates weak but positive relationship between barriers to AI adoption and readiness (r=0.302), that while barriers may slightly influence readiness, their impact is minimum. This contrasts with the moderate positive impact of perceived

benefits of GAI (r=0.433) and the strong positive influence of organizational culture and leadership (r=0.688) on readiness, highlighting the importance of supportive organizational culture and leadership in promoting GAI adoption.

The hypothesis testing results indicate influences on the readiness for the adoption of GAI technologies among Sri Lankan government officials, from moderate to strong positive relationships across different factors. Regardless of the minimum impact of barriers, the overall positive trends across the variables highlight strategic areas for policymakers and government institutions to focus on, to facilitate and accelerate the adoption of GAI technologies for improved governance and public service delivery.

4.8. Confidence Intervals for Likert Scale Variables

To provide a robust estimate of the mean responses to Likert scale questions, confidence intervals were calculated for key variables. These intervals offer a range within which we can be 95% confident that the true population mean lies, thus providing more precise insights into the data collected from the survey.

For example, the mean of the variable “Awareness of Generative AI” was found to be 3.694 on a 5-point Likert scale. With a standard deviation of 0.922 and a sample size of 206, the standard error of the mean was calculated to be 0.064. Using a 95% confidence level, the margin of error was determined to be 0.126. Thus, the confidence interval for the mean response is (3.633, 3.758).

Similarly, the mean of the variable “Level of Exposure and Familiarity with AI” was 3.476. With a standard deviation of 0.876 and a sample size of 206, the standard error of the mean was 0.061. Using a 95% confidence level, the margin of error was 0.120. Therefore, the confidence interval for the mean response is (3.415, 3.537).

For “Training and Skill Development,” the mean response was 2.750. With a standard deviation of 0.829 and a sample size of 206, the standard error of the mean was 0.058. The margin of error at a 95% confidence level was calculated to be 0.113, resulting in a confidence interval of (2.692, 2.808).

The mean response for the variable “Barriers to AI Adoption” was 3.583. With a standard deviation of 0.885 and a sample size of 206, the standard error of the mean was 0.062. The margin of error at a 95% confidence level was 0.121, giving a confidence interval of (3.521, 3.644).

For “Benefits of Generative AI,” the mean was found to be 4.216. With a standard deviation of 0.854 and a sample size of 206, the standard error of the mean was 0.060. Using a 95% confidence level, the margin of error was determined to be 0.117. Thus, the confidence interval for the mean response is (4.157, 4.276).

The variable “Organizational Culture and Leadership” had a mean response of 3.169. With a standard deviation of 0.861 and a sample size of 206, the standard error of the mean was 0.060. The margin of error at a 95% confidence level was 0.118, resulting in a confidence interval of (3.109, 3.229).

Lastly, for the variable “Readiness for Adoption of Generative AI,” the mean response was 3.129. With a standard deviation of 0.643 and a sample size of 206, the standard error of the mean was 0.045. The margin of error at a 95% confidence level was 0.088, giving a confidence interval of (3.084, 3.174).

These confidence intervals provide a clear range within which we can be 95% confident that the true population means lies, offering more precise insights into the data collected from the survey.

The Confidence Level Calculations related to all the factors are mentioned in Appendix 4 as a table.

4.9. Linear Regression Analysis

To determine the strength and relationship between the independent variables and dependent variables, simple linear regression is used.

4.9.1. Significance of awareness of Generative AI

Table 18: Model Summary for Awareness of Generative AI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.577[a]	.333	.330	.526586

a. Predictors: (Constant), AwarenessofGenerativeAI

R and R^2 values are depicted in the Model Summary Table 18. Simple correlation is denoted by the R value which is .577 and it was a considerable amount of correlation. The R^2 value demonstrates the amount of complete variation in the dependent variable readiness for the Adoption of GAI technologies where it has been portrayed by the independent variable, Awareness of Generative AI. Here, the 33.3% difference in

readiness for the Adoption of GAI technologies is explained by Awareness of GAI.

Table 19: ANOVA for Awareness of Generative AI

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.246	1	28.246	101.863	<.001[b]
	Residual	56.568	204	.277		
	Total	84.814	205			

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

b. Predictors: (Constant), AwarenessofGenerativeAI

The Table 19 indicates the appropriateness of the regression equation to suit the data. Here, the significance of the regression $p<0.01$, and demonstrates that the regression model comprehensively predicts the dependent variable, Readiness of Sri Lankan Government Officials for the Adoption of GAI technologies.

$F(1,204) = 101.863, p<0.01$

Table 20: Coefficient for Awareness of Generative AI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.641	.152		10.802	<.001
	AwarenessofGenerativeAI	.403	.040	.577	10.093	<.001

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

The coefficients in Table 20 provides the essential information to predict Readiness for the Adoption of GAI technologies through Awareness of Generative AI, as well as determine whether the Awareness of Generative AI involves the model statistically and significantly. Hence, the B value of Awareness of Generative AI is .403, which indicates that for every unit increase in Awareness of Generative AI, a .403 unit increase in Readiness for the adoption of GAI technologies can be predicted. The beta value of .577 represents a positive association between the two variables. To increase the opportunities for the Readiness of Sri Lankan Government Officials for the adoption of GAI technologies, it needs to have more awareness about Generative AI.

4.9.2. Significance of level of exposure and familiarity with AI applications

Table 21: Model Summary for Level of exposure and Familiarity with AI applications

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.727[a]	.528	.526	.442902

a. Predictors: (Constant), LevelofexposureandFamiliaritywithAIapplications

R and R^2 values are depicted by the Model Summary Table 21. Simple correlation is denoted by the R value which is .727 and it was a considerable amount of correlation. The R^2 demonstrates the amount of complete variation in the dependent variable, Readiness for the adoption of GAI technologies where it has been portrayed by the independent variable, Level of exposure and Familiarity with AI applications. Here, the 52.8% difference in Readiness for the adoption of GAI technologies is explained by the Level of exposure and Familiarity with AI applications.

Table 22: ANOVA for Level of exposure and Familiarity with AI applications

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44.797	1	44.797	228.364	<.001[b]
	Residual	40.017	204	.196		
	Total	84.814	205			

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

b. Predictors: (Constant), LevelofexposureandFamiliaritywithAIapplications

Table 22 indicates the appropriateness of the regression equation to suits the data.

Here, the significance of the regression $p<0.01$, and demonstrates that the regression model comprehensively predicts the dependent variable, Readiness of Sri Lankan Government Officials for the adoption of GAI technologies.

$F(1,204) = 228.364, P<0.01$

Table 23: Coefficient for Level of exposure and Familiarity with AI applications

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.274	.127		10.064	<.001
	LevelofexposureandFamiliaritywithAlapplications	.534	.035	.727	15.112	<.001

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

The coefficients in Table 23 contains the essential information to predict Readiness for the adoption of GAI technologies from Level of exposure and Familiarity with AI applications, as well as to assess if the Level of exposure and Familiarity with AI applications statistically and substantially involve the model. Hence, the B value of level of exposure and Familiarity with AI applications is .534 which indicates that for every unit increase in Level of exposure and Familiarity with AI applications, a .534 unit increase in Readiness for the adoption of GAI technologies can be predicted. The beta value of .727 represents a positive relationship between the two variables. To increase the opportunities for the Readiness of Sri Lankan Government Officials for the adoption of GAI technologies, it needs to have more exposure and Familiarity with AI applications.

4.9.3. Significance of training and skill development

Table 24: Model Summary for Training and Skill Development

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.705[a]	.498	.495	.457049

a. Predictors: (Constant), Trainingandskilldevelopment

R and R^2 values are depicted in the Model Summary Table 24. Simple correlation is denoted by the R value which is .705 and it was a considerable amount of correlation. The R^2 value demonstrates the amount of complete variation in the dependent variable Readiness for the adoption of GAI technologies where it has been portrayed by the independent variable, Training, and skill development. Here, 49.8% of the difference in Readiness for the adoption of GAI technologies is explained by the Training and skill development.

Table 25: ANOVA for Training and Skill Development

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.199	1	42.199	202.014	<.001[b]
	Residual	42.614	204	.209		
	Total	84.814	205			

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

b. Predictors: (Constant), Trainingandskilldevelopment

Table 25 indicates the appropriateness of the regression equation to suits the data. Here, the significance of the regression $p<0.01$ and demonstrates that the regression model comprehensively predicts the dependent variable.

$F(1,204) = 202.014, p<0.01$

Table 26: Coefficient for Training and Skill Development

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.625	.111		14.697	<.001
	Trainingandskilldevelopment	.547	.038	.705	14.213	<.001

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

The coefficients in Table 26 provides the necessary information to predict Readiness for the adoption of GAI technologies from Training and skill development, as well as determine whether the Training and skill development involves the model statistically and significantly. Hence, the B value of Training and skill development is .547 which indicates that for every unit increase in Training and skill development, .547 unit increase in Readiness for the adoption of GAI technologies can be predicted. The beta value .705 represents a positive relationship between the two variables. To increase the Readiness level of Sri Lankan Government Officials for the adoption of GAI technologies it needs to have more opportunities for Training and skill development.

4.9.4. Significance of barriers to AI adoption

Table 27: Model Summary for Barriers to AI Adoption

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.302[a]	.091	.087	.614647

a. Predictors: (Constant), BarrierstoAIAdoption

R and R^2 values are depicted by the Model summary Table 27. Simple correlation is denoted by the R value which is .302. The R^2 value demonstrates the amount of complete variation in the dependent variable Readiness for the adoption of GAI technologies where it has been portrayed by the independent variable, Barriers to AI Adoption. Here, 9.1% of the difference in Readiness for the adoption of GAI technologies is explained by Barriers to AI Adoption.

Table 28: ANOVA for Barriers to AI Adoption

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.744	1	7.744	20.499	<.001[b]
	Residual	77.069	204	.378		
	Total	84.814	205			

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

b. Predictors: (Constant), BarrierstoAIAdoption

Table 28 indicates the appropriateness of the regression equation to suits the data. Here, the significance of the regression $p<0.01$ and demonstrates that the regression model comprehensively predicts the dependent variable, Readiness of Sri Lankan Government Officials for the adoption of GAI technologies.

$F(1,204) = 20.499, p<0.01$

Table 29: Coefficient for Barriers to AI Adoption

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.342	.179		13.088	<.001
	BarrierstoAIAdoption	.220	.049	.302	4.528	<.001

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

The coefficients in Table 29 provides the necessary information to predict Readiness for the adoption of GAI technologies from Barriers to AI Adoption, as well as determine whether the Barriers to AI Adoption involves the model statistically and significantly. Hence, the B value of Barriers to AI Adoption is .220 which indicates that for every unit increase in Barriers to AI Adoption, .220 unit increase in Readiness for the adoption of GAI technologies can be predicted. The beta value .302 represents a positive relationship between the two variables. To increase the Readiness of Sri Lankan Government Officials for the adoption of GAI technologies it is needed to consider Barriers to AI Adoption.

4.9.5. Significance of benefits of Generative AI

Table 30: Model Summary for Benefits of Generative AI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.433[a]	.188	.184	.581101

a. Predictors: (Constant), BenefitsofGenerativeAI

R and R^2 values are depicted by the Model summary Table 30. Simple correlation is denoted by the R value which is .433. The R^2 value demonstrates the amount of complete variation in the dependent variable Readiness for the adoption of GAI technologies where it has been portrayed by the independent variable, Benefits of Generative AI. Here, a 18.8% difference in Readiness for the adoption of GAI technologies is explained by the Benefits of Generative AI.

Table 31: ANOVA for Benefits of Generative AI

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.927	1	15.927	47.167	<.001[b]
	Residual	68.886	204	.338		
	Total	84.814	205			

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

b. Predictors: (Constant), BenefitsofGenerativeAI

Table 31 indicates the appropriateness of the regression equation to suits the data. Here, the significance of the regression p<0.01 and demonstrates that the regression model comprehensively predicts the dependent variable, Readiness of Sri Lankan Government Officials for the adoption of GAI technologies.

F (1,204) = 47.167, p<0.01

Table 32: Coefficient for Benefits of Generative AI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.753	.204		8.575	<.001
	BenefitsofGenerativeAI	.326	.048	.433	6.868	<.001

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

The coefficients in Table 32 provide the necessary information to predict Readiness for the adoption of GAI technologies from Benefits of Generative AI, as well as determine whether the Benefits of Generative AI involve the model statistically and significantly. Hence, the B value of Benefits of Generative AI is .326 which indicates that for every unit increase in Benefits of Generative AI, a .326 unit increase in Readiness for the adoption of GAI technologies can be predicted. The beta value .433 represents a positive relationship between the two variables. To increase the Readiness of Sri Lankan Government Officials for the adoption of GAI technologies it needs to consider the Benefits of Generative AI.

4.9.6. Significance of organizational culture and leadership

Table 33: Model Summary for Organizational Culture and Leadership

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.688[a]	.473	.471	.467992

a. Predictors: (Constant), OrganizationalCultureandLeadership

R and R^2 values are depicted by the Model Summary Table 33. Simple correlation is denoted by the R value which is .688 and it was a considerable amount of correlation. The R^2 value demonstrated the amount of complete variation in the dependent variable, Readiness for the adoption of GAI technologies where it has been portrayed by the independent variable, Organizational Culture and Leadership. Here, the 47.3% difference in Readiness for the adoption of GAI technologies explained by Organizational Culture and Leadership.

Table 34: ANOVA for Organizational Culture and Leadership

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.134	1	40.134	183.247	<.001[b]
	Residual	44.679	204	.219		
	Total	84.814	205			

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

b. Predictors: (Constant), OrganizationalCultureandLeadership

Table 34 indicates the appropriateness of the regression equation to suits the data. Here, the significance of the regression $p<0.01$ and demonstrates that the regression model comprehensively predicts the dependent variable Readiness of Sri Lankan Government Officials for the adoption of GAI technologies.

$F(1,204) = 183.247, p<0.01$

Table 35: Coefficient for Organizational Culture and Leadership

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.501	.125		12.048	<.001
	OrganizationalCultureandLeadership	.514	.038	.688	13.537	<.001

a. Dependent Variable: ReadinessforAdoptionofGenerativeAITechnologies

The coefficients in Table 35 provides the necessary information to forecast Readiness for the adoption of GAI technologies from Organizational Culture and Leadership, as well as to assess if the Organizational Culture and Leadership involves the model

statistically and significantly. Hence, the B value of Organizational Culture and Leadership is .514 which indicates that for every unit increase in Organizational Culture and Leadership, .514 unit increase in Readiness for the adoption of GAI technologies can be predicted. The beta value .688 represents a positive relationship between the two variables. To increase the Readiness of Sri Lankan Government Officials for the adoption of GAI technologies it needs to have Organizational Culture and Leadership.

4.10. Multiple Linear Regression Analysis

4.10.1. Model summary

Multiple linear regression analysis in Table 36 shows significant results, highlighting the ability of the model to explain the readiness for the adoption of Generative AI.

Table 36: Model Summary for multiple linear regression analysis

Model Summary[b]

		Model
		1
R		.842[a]
R Square		.709
Adjusted R Square		.701
Std. Error of the Estimate		.351907
Change Statistics	R Square Change	.709
	F Change	80.979
	df1	6
	df2	199
	Sig. F Change	<.001
Durbin-Watson		1.930

a. Predictors: (Constant), OrganizationalCultureandLeadership, BarrierstoAIAdoption, Awareness_of_Generative_AI, BenefitsofGenerativeAI, Trainingandskilldevelopment, Level_of_exposure_and_Familiarity_with_AI_applications

b. Dependent Variable: Readiness_for_Adoption_of_Generative_AI_Technologies

- Strong Positive Correlation: The R value at 0.842, indicates a strong positive linear relationship between the independent variables and the dependent variable, showcasing that these variables collectively have a significant linear association with the readiness for GAI adoption.
- High Model Explanation Capability: The R Square value of 0.709 indicates that approximately 70.9% of the variation in the dependent variable is

explained by the independent variables in the model, demonstrating the model's significant explanatory capability.

- Adjusted R Square: With a value of 0.701, the Adjusted R Square approximately aligns with the R Square value, adjusting for the number of predictors. This high value confirms that the model is well-fitted and generalizable, accurately reflecting the explanatory capability of the independent variables when considering the number of observations.
- Standard Error of the Estimate: The value measured at 0.351907, suggests that the actual values closely align with the model's predicted values, showing an accurate estimation of the data points near the regression line.
- Significant Model Improvement: The F Change statistic, at 80.979, and the Sig. F Change, being less than 0.001, collectively demonstrate that the model significantly improves the prediction of the dependent variable over a model with no predictors, indicating a strong, statistically significant relationship between the predictors and the outcome.
- No Serious Autocorrelation: The Durbin-Watson statistic is 1.930, which exist within the acceptable range, indicating slight autocorrelation among the residuals. This suggests that the residuals are independently distributed, supporting the regression model's assumptions.

4.10.2. Significance of Level of Exposure and Familiarity with AI Applications

The high level of exposure and familiarity with AI applications among the respondents was found to be a significant predictor of readiness for adopting Generative AI technologies. The confidence interval for the proportion of respondents with high exposure levels was calculated to be between 51.5% and 64.9%, reinforcing the reliability of this finding. This indicates a strong foundation upon which to build further training and development initiatives.

4.10.3. Analysis of Variance

The results of Analysis of Variance (ANOVA) in Table 37 indicate the model's overall

significance in predicting the Readiness for Adoption of GAI.

Table 37: ANOVA for multiple linear regression analysis

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.170	6	10.028	80.979	<.001[b]
	Residual	24.644	199	.124		
	Total	84.814	205			

a. Dependent Variable: Readiness_for_Adoption_of_Generative_AI_Technologies

b. Predictors: (Constant), OrganizationalCultureandLeadership, BarrierstoAIAdoption, Awareness_of_Generative_AI, BenefitsofGenerativeAI, Trainingandskilldevelopment, Level_of_exposure_and_Familiarity_with_AI_applications

- Sum of Squares: The model explains a variance of 60.170 (Regression Sum of Squares) in the dependent variable, leaving a residual (unexplained) variance of 24.644.
- Total Variance: The total variance in the dependent variable is 84.814.
- Degrees of Freedom: The model has 6 degrees of freedom for regression, corresponding to the number of predictors, and 199 residual degrees of freedom, indicating the observations minus the number of parameters estimated.
- Mean Square: The regression mean square is 10.028, and the residual mean square is approximately 0.124, calculated by dividing the sum of squares by the corresponding degrees of freedom.
- F Statistic: The F statistic is 80.979, with a significance level (p-value) of < .001, indicating the regression model significantly predicts the dependent variable, with a less than 0.1% probability of this result.

The results of the ANOVA table indicate that the multiple regression model is statistically significant. These independent variables significantly predict the dependent variable and are important in explaining the variance in readiness of Government officials for Adoption of Generative AI.

4.10.4. Coefficients

Table 38: Coefficients for multiple linear regression analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.505	.150		3.375	<.001
	Awareness_of_Generative_AI	.026	.040	.038	.665	.507
	Level_of_exposure_and_Familiarity_with_AI_applications	.231	.050	.314	4.641	<.001
	Trainingandskilldevelopment	.223	.045	.288	4.962	<.001
	BarrierstoAIAdoption	.046	.033	.063	1.386	.167
	BenefitsofGenerativeAI	.058	.039	.077	1.475	.142
	OrganizationalCultureandLeadership	.221	.039	.296	5.703	<.001

a. Dependent Variable: Readiness_for_Adoption_of_Generative_AI_Technologies

The Table 38 provides detailed results of the multiple linear regression analysis. It includes both unstandardized (B) and standardized (Beta) coefficients, their standard errors, t-values, and significance levels (p-values).

- Constant (Intercept): The constant B value is 0.505 with a standard error of 0.150. The t-value is 3.375, and it is significant ($p < .001$), which means the model predicts a baseline level of readiness for GAI adoption when all independent variables are at 0. This is a hypothetical situation since independent variables are on a Likert scale starting from 1.

- Awareness of Generative AI: The unstandardized coefficient ($B = 0.026$) is not statistically significant ($p = .507$), indicating that awareness of generative AI does not have a statistically significant impact on the readiness for GAI adoption in the model.

- Level of exposure and Familiarity with AI applications: Has a significant positive unstandardized coefficient ($B = 0.231$, $p < .001$), indicating that for each unit increase in the level of exposure and familiarity, the readiness for adoption increases by 0.231 units. The high Beta coefficient (0.314) implies that it is one of the strongest predictors in the model.

- Training and skill development: This variable also shows a significant positive unstandardized coefficient ($B = 0.223$, $p < .001$), indicating that training and skill development are important predictors of readiness for GAI adoption. The

relatively high Beta value (0.288) implies that it is one of the strongest predictors in the model.

- Barriers to GAI Adoption: The unstandardized coefficient (B = 0.046) is not statistically significant (p = .167), indicating the barriers do not significantly predict readiness for GAI adoption in the model.
- Benefits of GAI Adoption: The unstandardized coefficient (B = 0.058) is not statistically significant (p = .142), indicating the benefits do not significantly predict readiness for GAI adoption in the model.
- Organizational Culture and Leadership: This variable also shows a significant positive unstandardized coefficient (B = 0.221, p < .001), indicating that Organizational Culture and Leadership are important predictors of readiness for GAI adoption. The relatively high Beta value (0.296) implies that it is one of the strongest predictors in the model.

These results indicate that in the context of the model, the Level of exposure and Familiarity with AI applications, Training and skill development, and Organizational Culture and Leadership are significant predictors of the readiness of Sri Lankan government officials for the adoption of GAI technologies.

Awareness of Generative AI, Barriers to AI Adoption, and Benefits of Generative AI, while included in the model, did not show a statistically significant impact based on this analysis. It is important to consider these findings within the broader context of the research, including theoretical considerations and practical implications.

4.10.5. Residuals Statistics

Table 39: Residuals Statistics for multiple linear regression analysis

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.54753	4.28611	3.12896	.541767	206
Residual	-1.072043	.838633	.000000	.346719	206
Std. Predicted Value	-2.919	2.136	.000	1.000	206
Std. Residual	-3.046	2.383	.000	.985	206

a. Dependent Variable: Readiness_for_Adoption_of_Generative_AI_Technologies

The Residuals Statistics in Table 39 provides information about the distribution of the residuals from the regression model, which are the differences between the observed values and the values predicted by the model. Key findings include:

- Predicted Value Range: The model predicts values for readiness ranging from 1.54753 to 4.28611 on a 1 to 5 Likert scale, with an average predicted readiness value of 3.12896 and a standard deviation of 0.541767. This indicates a moderate level of predicted readiness predicted by the model and the variability of these predictions.
- Residual Analysis: Residuals range from -1.072043 to 0.838633, with a mean of zero and a standard deviation of 0.346719. zero means indicates that the model does not systematically overestimate or underestimate readiness. The relatively low standard deviation of the residuals suggests that the predictions are close to the observed values, indicating good model accuracy.
- Standardized Predicted Value and Residuals: The standardized predicted values and residuals have means of zero, with standard deviations of 1 and 0.985, respectively. The range of standardized predicted values is from -2.919 to 2.136, and for standardized residuals, it is from -3.046 to 2.383. The values of standardized residuals (z-scores) beyond ±2 considered as potential outliers or influential points that may impact the model's strength.

The analysis demonstrates that the regression model provides a reasonably accurate prediction of the readiness for the adoption of GAI technologies, with residuals indicating a good model fit. However, the detection of potential outliers suggests a need for further investigation to ensure the model's strength.

4.11. Discussion on results of Multiple Linear Regression Analysis

This section presents the multiple linear regression analysis conducted to assess the readiness of Sri Lankan government officials for the adoption of GAI technologies. The analysis included six independent variables: Awareness of Generative AI, Level of Exposure and Familiarity with AI Applications, Training and Skill Development, Barriers to AI Adoption, Benefits of GAI, and Organizational Culture and Leadership.

The model summary indicates a strong positive correlation (R = 0.842) between the predictors and the readiness for GAI adoption, with the coefficient of determination (R Square) that approximately 70.9% of the variance in readiness can be explained by the model. The Adjusted R Square value of 0.701 ensures that the model's explanatory power is accurately represented when accounting for the number of predictors. The standard error of the estimate is 0.351907, which states the model's precision.

An ANOVA was conducted to determine the overall model fit. The F-statistic was significant ($F = 80.979$, $p < .001$), indicating the model significantly predicts readiness for GAI adoption. The Durbin-Watson statistic of 1.930 suggests that the assumption of independent errors was encountered.

The regression coefficients indicate that Level of Exposure and Familiarity with AI Applications ($B = 0.231$, $p < .001$), Training and Skill Development ($B = 0.223$, $p < .001$), and Organizational Culture and Leadership ($B = 0.221$, $p < .001$) are significant predictors of readiness for adoption. However, Awareness of Generative AI ($p = .507$), Barriers to AI Adoption ($p = .167$), and Benefits of Generative AI ($p = .142$) were not significant predictors in this model.

Residual statistics were analyzed to evaluate the prediction accuracy and model assumptions. The mean of the residuals was 0, with a standard deviation of 0.346719, indicating no bias and a strong fit for the model.

4.12. Further Discussion

The study found that the level of exposure and familiarity with AI applications, training and skill development, and organizational culture and leadership are significant predictors of readiness for adopting Generative AI technologies among Sri Lankan government officials.

These findings align with previous studies (e.g., Gupta & Pal, 2021) that emphasize the importance of exposure and training in AI adoption. However, contrary to some studies, awareness of GAI and perceived benefits did not have a statistically significant impact. This discrepancy may be due to the socio-cultural context of Sri Lanka.

The results suggest that practical exposure to AI technologies and comprehensive training programs are crucial for increasing readiness. Policymakers should focus on creating supportive organizational cultures that foster innovation and technology adoption.

4.13. Conclusion

This section provides a detailed interpretation of the data analysis process conducted on information gathered from an online survey sent to Sri Lankan Government officers. A pilot survey was conducted, and the questionnaire was modified based on feedback and reliability analysis outcomes. Demographic analysis of the data set was done in Google Sheets and Statistical analysis of the data set was done using IBM SPSS software. Pearson correlation analysis was carried out to investigate the association between the dependent variable and the independent variables and to examine the hypothesis. Finally, regression analysis was conducted to illustrate the impact of the independent variables on the dependent variable. The results indicate a positive linear relationship between the correlation (r) and the independent variable factors, which have a significant influence on the dependent variable.

According to the multiple linear regression model analysis, it is indicated that the Level of exposure and Familiarity with AI applications, Training and skill development, and Organizational Culture and Leadership are significant predictors of the readiness of Sri Lankan government officials for the adoption of GAI technologies.

5. RECOMMENDATIONS AND CONCLUSION

The previous chapter presented the results of the data analysis process that aimed to assess the readiness of Sri Lankan government officials for adopting Generative AI technologies. This section intends to provide the conclusion to the study based on the interpretations presented in the previous chapter. The conclusion aims to summarize the study, drawing on conclusions from the analyses conducted in previous sections. It highlights the critical implications of the findings for the adoption of generative AI technologies within the government sector and offers recommendations considered to improve the readiness of Sri Lankan government officials to adopt these transformative technologies. The section identifies potential gaps and areas for improvement, proposes strategies to facilitate a smoother transition toward the integration of AI, and discusses the limitations encountered during the research. It also suggests directions for future studies to further explore and address the challenges of adopting generative AI technologies in the government sector of Sri Lanka.

5.1. Conclusion on results

The objective of this study is to determine the factors that are associated with Sri Lankan Government Officials' readiness for the adoption of GAI technologies. These factors are Awareness of Generative AI, Level of exposure and Familiarity with AI applications, Training and skill development, Barriers to AI Adoption, Benefits of Generative AI, and Organizational Culture and Leadership.

5.1.1. Conclusion on results of Correlation Analysis

According to the values of the correlation in Section 4.6.1, the highest influencing factor for Readiness for the adoption of GAI technologies in the Sri Lankan government sector is the Level of exposure and Familiarity with AI applications of Sri Lankan Government Officials.

Training and skill development related to AI technologies and Organizational Culture and Leadership in the Sri Lankan Government sector also highly impact on Readiness of Sri Lankan Government Officials for the adoption of GAI technologies.

Awareness of Generative AI and the Benefits of Generative AI are the moderately influencing factors, while Barriers to AI Adoption have low impact on Readiness for the adoption of GAI technologies in Sri Lankan government sector.

The intensity of each factor's correlations with the dependent variable is shown in the below Figure 11. The colors reflect the intensity of the variables, with dark green denoting a strong correlation, green denoting a moderate correlation, and light green denoting a weak correlation.

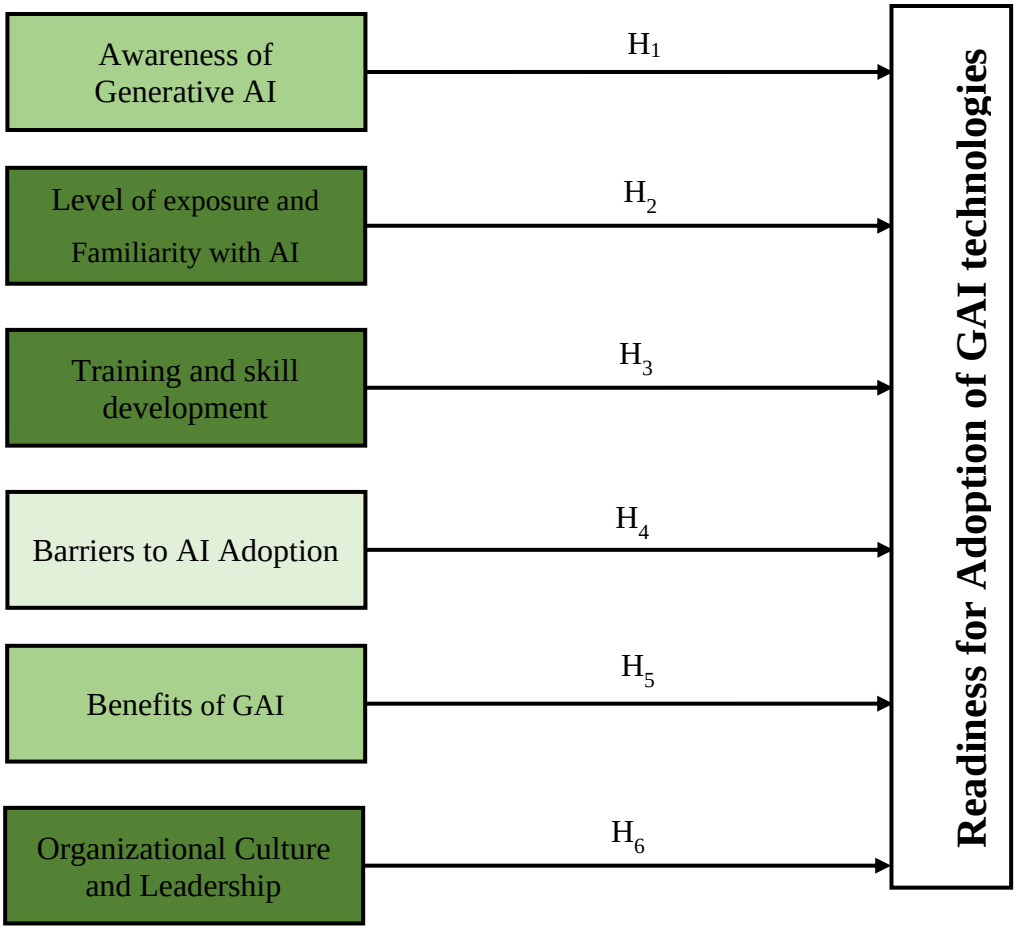


Figure 11: Summary of Correlation Analysis

It suggests that if an institution need to increase its readiness for adopting GAI, it should focus on enhancing awareness and exposure to AI, investing in training and skill development, highlighting the benefits of AI, and fostering a supportive organizational culture led by visionary leadership. It also indicates that while barriers to adoption do exist, their impact may be mitigated by these other positive factors.

5.1.2. Conclusion on results of Multiple Linear Regression Analysis

The multiple linear regression analysis provided valuable insights into the factors influencing the readiness of Sri Lankan government officials for adopting Generative AI Technologies. The significant predictors identified by the model were Level of Exposure and Familiarity with AI Applications, Training and Skill Development, and Organizational Culture and Leadership of which highlights the importance of an up-to-date, trained, and supportive organizational environment for technological adoption.

The non-significant results for Awareness of Generative AI, Barriers to AI Adoption, and Benefits of Generative AI suggest that while these factors might be conceptually important, they did not have a statistically significant impact within the context of the other variables in this study. This finding suggests that mere awareness or perceived benefits alone are insufficient to drive readiness without the underpinning of practical exposure, skills, and cultural support.

The residuals analysis stated that the model predictions were accurate and unbiased, with most residuals falling within a reasonable range, indicating a strong model. However, the presence of some outliers, as indicated by the standardized residuals, suggests the need for monitoring and potential follow-up analysis to ensure these do not improperly influence the model's predictions.

5.2. Recommendations

Based on these findings, it is recommended that strategies to enhance the adoption of GAI technologies within the Sri Lankan government sector should focus on enhancing practical exposure to AI, developing relevant skills, and fostering a supportive organizational culture. Awareness campaigns and highlighting benefits, while important, should be complemented with skill development and cultural exchange initiatives. Future research could further investigate the interaction of these factors in greater depth, potentially examining qualitative aspects.

5.2.1. Recommendation 1: Increase awareness and understanding of GAI

The rapid development of generative artificial intelligence technologies has the potential to significantly improve public sector efficiency and service delivery. However, the successful adoption and utilization of these technologies by government officials depend on their foundational awareness and understanding of them. A Pearson correlation analysis identified moderate impact of awareness on adoption readiness. Therefore, to address this issue, this recommendation proposes a structured approach to increase the awareness and understanding of generative AI technologies among Sri Lankan government officials.

The goal is to elevate the baseline knowledge of generative AI technologies across all levels of government officials. This can be achieved by designing a multi-faceted awareness program that caters to the diverse learning preferences and informational needs of government officials. The program should include the following components:

- Workshops and Seminars: Interactive sessions led by AI experts that focus on the basics of generative AI, its current applications in the public sector, and potential benefits for governance and service delivery. These sessions should encourage participation and provide opportunities for officials to engage directly with AI practitioners.
- Webinars and Online Courses: Utilizing digital platforms, the program can offer accessible and flexible learning opportunities that can cater to different levels of prior knowledge, ensuring inclusivity. Webinars can facilitate real-time interaction with AI experts and practitioners worldwide, broadening the perspective of government officials.
- Case Studies and Success Stories: Learning materials should include case studies of successful generative AI implementations, both locally and internationally. Highlighting tangible examples of how AI can enhance public services will help officials visualize the potential impact within their own contexts.

- Demonstration Projects: Implementing small-scale AI projects within government agencies can serve as demonstrative examples for officials to witness firsthand the development, deployment, and benefits of generative AI applications, increasing their understanding and support for AI initiatives.

5.2.2. Recommendation 2: Enhance exposure and familiarity to AI applications

The adoption of GAI technologies by Sri Lankan government officials depends largely on their exposure and familiarity with AI applications. The Pearson correlation analysis has identified this factor as the most critical determinant of adoption readiness. To bridge the knowledge gap and build confidence in utilizing these technologies, it is important to enhance exposure and familiarity among government officials. This will facilitate a smoother transition towards the integration of AI in public services.

To increase government officials' practical understanding, comfort level, and overall familiarity with the potential and operation of these technologies within a governance context, we propose a strategic plan to systematically increase their direct interaction with AI applications. This strategic plan should include the following steps:

- Pilot Projects: Launch targeted pilot projects within various government departments to incorporate AI technologies in non-critical, low-risk areas. These projects serve as practical demonstrations, allowing officials to observe and engage with the technology in a controlled environment, thereby reducing apprehension and increasing familiarity.
- Hands-on Workshops: Organize hands-on workshops where government officials can directly interact with AI tools and applications. These sessions should be designed to cater to different skill levels, ensuring that participants can engage with the technology at a pace that matches their learning curve.
- Technology Fairs and Exhibitions: Host technology fairs and exhibitions showcasing the latest AI applications relevant to public services. These events provide a platform for officials to interact with technology providers, witness

live demonstrations, and discuss potential applications within their own departments.

- Site Visits: Arrange visits to institutions and organizations that have successfully implemented AI technologies. Seeing these applications in action and discussing the implementation process with peers can provide valuable insights and inspire confidence among officials.

5.2.3. Recommendation 3: Expand training and skill development programs

In order to fully utilize the potential of generative artificial intelligence technologies in the public sector, providing education and training to government officials is crucial. The Pearson correlation analysis highlights the significant impact of training and skill development on the readiness of officials to adopt AI technologies. To address the existing knowledge gap and equip government officials with the necessary skills to navigate the complexities of AI, it is imperative to expand training and skill development programs.

To cultivate a comprehensive framework for continuous learning and skill acquisition in IT and AI technologies among Sri Lankan government officials, and to enable them to effectively implement, manage, and use these technologies in their operational workflows, a strategy to enhance IT and AI competencies should include the following:

- Baseline IT Literacy Programs: Introduce foundational training programs aimed at improving the baseline IT literacy of all government officials. These programs should cover essential digital skills, including basic computer operations, data literacy, and cybersecurity awareness, ensuring that officials are well-prepared for more advanced AI-focused training.
- Specialized AI Training Modules: Develop and implement specialized training modules focused on AI and its applications in public services. These modules should range from introductory courses on AI concepts and technologies to advanced workshops on AI integration, data analysis, and ethical considerations in AI use.

- Customized Learning Pathways: Create customized learning pathways that cater to the diverse roles and responsibilities of government officials. These pathways should allow officials to progress at their own pace and provide opportunities for both generalists and specialists to develop relevant AI competencies.
- Partnerships for Expertise and Resources: Establish partnerships with academic institutions, industry leaders, and technology providers to access cutting-edge knowledge and resources. These collaborations can improve the quality and relevance of training programs, offering exposure to real-world AI applications and best practices.

5.2.4. Recommendation 4: Foster an organizational culture conducive to innovation in GAI technologies

The integration of generative artificial intelligence technologies into public service operations requires more than just technological readiness. It also entails cultivating an organizational culture that embraces innovation, experimentation, and continuous learning. The Pearson correlation analysis findings indicate that organizational culture and leadership are pivotal in influencing the readiness for adopting generative AI technologies. A culture that supports innovation can significantly enhance the willingness and ability of government officials to engage with and deploy AI technologies effectively.

To foster an organizational culture in Sri Lankan government entities that is inherently supportive of innovation, particularly in the adoption and implementation of generative AI technologies, several strategic initiatives should be taken. These initiatives should encourage risk-taking, experimentation, and the exploration of new ideas, thereby facilitating the seamless integration of AI into public services.

- Leadership Development and Training: Equip leaders and managers with the necessary skills and knowledge to promote innovation within their teams. Training programs should focus on leadership in the digital age, emphasizing

the importance of fostering a culture of innovation and how to manage change effectively.

- Innovation Incentive Programs: Implement incentive programs that recognize and reward innovative ideas and successful implementation of AI projects. These programs can motivate individuals and teams to explore new technologies and approaches, contributing to a more dynamic and innovative organizational culture.
- Cross-Departmental Collaboration: Encourage collaboration between departments and teams to facilitate the sharing of ideas and best practices related to AI and innovation. Establishing cross-functional teams or task forces focused on exploring AI applications can help break down silos and foster a more cohesive and innovative organizational environment.
- Open Communication Channels: Create open channels for communication where employees at all levels can share ideas, feedback, and suggestions related to AI technologies and innovation. Tools such as internal forums, suggestion boxes, and regular innovation meetings can help cultivate a culture where every voice is valued and considered.
- Continuous Learning and Development: Promote a culture of continuous learning by providing access to resources, training, and development opportunities related to AI and emerging technologies. Encouraging employees to pursue ongoing education and professional development can keep the organization at the forefront of technological advancements.

5.2.5. Recommendation 5: Address barriers to AI adoption proactively

Adopting generative artificial intelligence technologies in the public sector can be challenging and hinder progress. The Pearson correlation analysis has identified several barriers to AI adoption, although they have a lower impact on readiness compared to other factors. Addressing these barriers proactively is crucial to facilitate successful AI integration and ensure that government officials can effectively use AI technologies.

To identify, assess, and proactively address the obstacles to the adoption of GAI technologies among Sri Lankan government entities, it is necessary to develop strategies to mitigate these barriers and ensure a more efficient and effective adoption process. A proactive approach to addressing barriers involves several key strategies:

- Comprehensive Barrier Assessment: Conduct thorough assessments to identify specific barriers to AI adoption within government entities. This could include technological limitations, financial constraints, and lack of expertise, regulatory challenges, and cultural resistance to change. Understanding the nature and extent of these barriers is the first step in developing effective mitigation strategies.
- Resource Allocation and Funding Strategies: Develop strategies to secure the necessary resources and funding for AI initiatives. This may involve reallocating existing budgets, seeking additional funding from the government, or exploring partnerships with the private sector and international organizations.
- Capacity Building and Training: Address the lack of AI expertise and familiarity by expanding training and skill development programs. Focus on building internal capacity to understand, implement, and manage AI technologies.
- Policy and Regulatory Frameworks: Work with policymakers to review and adapt existing regulations that may impede AI adoption. Establish clear guidelines and frameworks that support the ethical and effective use of AI technologies while protecting citizen privacy and data security.
- Change Management Programs: Implement change management strategies to address cultural resistance and organizational inertia. These programs should focus on communicating the benefits of AI, engaging stakeholders at all levels, and creating a shared vision for the future of public services powered by AI.
- Pilot Projects and Demonstrations: Launch pilot projects to demonstrate the potential benefits of AI technologies in a controlled, low-risk environment.

Success stories from these pilots can help build support and momentum for broader AI adoption.

5.2.6. Recommendation 6: Promote collaborative learning and knowledge sharing

The adoption of GAI technologies in the public sector greatly benefits from collaborative learning and knowledge sharing. This approach is vital due to AI's complexity and fast evolution, requiring a united effort among government officials to build mutual understanding and expertise. To enhance this collaborative environment in Sri Lanka, several key initiatives are proposed:

- Communities of Practice (CoPs): Formation of CoPs focused on AI and digital transformation to serve as forums for sharing experiences and discussing AI-related challenges and solutions.
- Knowledge Sharing Platforms: Development of accessible digital platforms for sharing AI resources, tools, and case studies, promoting active participation across government levels.
- Workshops and Seminars: Regular organization of events bringing together government officials, AI experts, academia, and the private sector for direct knowledge exchange and networking.
- Cross-agency Collaboration Projects: Support for joint projects on AI, allowing agencies to combine resources and expertise, facilitating practical, hands-on learning.
- Mentorship and Peer Learning Programs: Creation of programs pairing less experienced officials with AI project veterans to offer personalized learning and support.

5.2.7. Recommendation 7: Leverage Public-Private Partnerships

The adoption of generative artificial intelligence technologies in the public sector can be significantly accelerated through strategic public-private partnerships (PPPs). These collaborations can combine public oversight and reach with private innovation

and efficiency and harness the strengths and resources of both sectors. PPPs offer a pathway to access cutting-edge expertise, technologies, and funding, which might otherwise be out of reach for public entities alone.

To establish and leverage public-private partnerships that aim to facilitate the adoption and integration of generative AI technologies within Sri Lankan government operations, several key actions must be taken:

- Identify Partnership Opportunities: Conduct a comprehensive analysis to identify areas within government operations where AI technologies can have the highest impact. Based on this analysis, determine potential private sector partners that have the expertise, technologies, and interest in collaborating on these opportunities.
- Develop a Framework for Collaboration: Establish a clear and transparent framework for public-private partnerships that outlines the roles, responsibilities, benefits, and risks for all parties involved. This framework should include mechanisms for accountability, oversight, and dispute resolution to ensure that the partnerships align with public interest and ethical standards.
- Initiate Pilot Projects: Start pilot projects as a first step in these partnerships. These projects can serve as test beds for innovative AI applications, providing valuable insights into their feasibility, effectiveness, and impact on public services.
- Capacity Building and Knowledge Transfer: Incorporate capacity building and knowledge transfer components into the partnerships. This ensures that government officials gain the skills and knowledge necessary to sustain and expand AI initiatives beyond the life of the partnership.
- Funding and Resource Mobilization: Leverage these partnerships to mobilize additional resources and funding for AI initiatives. This could include direct investment from private partners, access to proprietary technologies at reduced costs, or assistance in securing external funding.

5.3. Research limitations

This study encounters several limitations that must be recognized to contextualize its findings appropriately. Firstly, the reliance on self-reported data may introduce response bias. The sample size limits the generalizability of the findings, and the selection of participants is restricted to a subset of Sri Lankan government officials rather than providing comprehensive coverage of all levels within the government. One of the most challenging aspects of the research was collecting responses from many respondents, despite sharing the questionnaire with over 2000 government officials. This difficulty likely arises because many government officials are less familiar with terms like AI, GAI, and technology perspectives.

This limitation may affect the generalizability of the study's conclusions across the entire spectrum of government operations in Sri Lanka. Additionally, given that the adoption of generative artificial intelligence technologies is a rapidly evolving field, officials' readiness may be influenced by external factors that were not fully captured at the time of this study. Furthermore, the methodology relied mostly on self-reported measures of readiness, introducing a degree of subjectivity and potential bias in the responses. Perceptions of readiness could be influenced by individuals' awareness, understanding, and personal attitudes toward generative AI technologies, which might not accurately reflect their actual readiness or the organizational capabilities to adopt such technologies.

5.4. Future research direction

The exploration of the readiness of Sri Lankan government officials for the adoption of generative artificial intelligence technologies opens various pathways for future research within this rapidly emerging field. There are numerous ways to explore that can help us gain a deeper understanding of the effective integration of generative AI technologies in government operations.

Future researches could focus on longitudinal studies to to assess changes in readiness over time and monitor the progress of readiness over time, as generative AI technologies evolve and become more integrated into public sector workflows.

Additionally, comparative studies that involve different government Institutions and government levels can reveal differences in readiness and adoption strategies, offering insights into tailored implementation plans.

Another promising direction is to examine case studies from other countries to identify best practices and lessons learned that can inform policymaking and specific training interventions in Sri Lanka. Engaging in Qualitative research, such as interviews and focus groups with a wider range of stakeholders, including IT professionals, policymakers, and end-users within the government, can also provide more comprehensive and nuanced insights into the opportunities and challenges of generative AI adoption.

This multi-dimensional research approach will not only enhance the understanding of current readiness levels but also generate more robust frameworks for the successful adoption of GAI technologies across governmental sector Sri Lanka.

5.5. Conclusion

This research study is aimed to analyze the readiness of Sri Lankan government officials for adopting generative artificial intelligence technologies considering readiness factors: awareness of generative AI, level of exposure and familiarity with AI applications, opportunities for training and skill development, barriers to AI adoption, perceived benefits of generative AI, and the influence of Training and skill development and leadership. These factors were examined as independent variables influencing the dependent variable, the readiness for adoption of GAI technologies.

Data collection involved reviewing existing literature and conducting a survey among government officials to gauge their perceptions and readiness for AI integration into their work processes.

The analysis revealed that awareness, exposure, and familiarity with AI applications significantly influence officials' readiness for adopting generative AI technologies. Training and skill development opportunities also emerged as crucial for enhancing this readiness. However, barriers to AI adoption, such as resource limitations and resistance to change, were identified as significant challenges. Nonetheless, the

perceived benefits of generative AI and supportive Training and skill development and leadership were found to positively impact the willingness and readiness of officials to adopt these technologies.

Based on these findings, the study offers recommendations aimed at overcoming the identified barriers and enhancing the factors that positively influence AI adoption readiness. This includes strategies for increasing AI awareness and familiarity, improving access to training, and fostering a supportive Training and skill development conducive to innovation.

Moreover, this chapter acknowledges the limitations of the research and suggests directions for future studies to further explore the complexities of AI adoption in the public sector, particularly focusing on developing comprehensive strategies to mitigate the challenges and maximize the benefits of generative AI technologies for Sri Lankan government officials.

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APPENDIX A: PRELIMINARY INTERVIEW QUESTIONNAIRE

Understanding of Generative AI

1. General Awareness: Could you explain your present understanding of generative artificial intelligence technologies and their capabilities?
2. Applications: Based on your perspective, what are the possible applications of GAI technologies in the government sector?

Present State of AI Adoption

3. Existing Use: What AI technologies are you using in your department right now? If so, are you able to give any examples?
4. Digital Transformation: What is your opinion of the present state of technology adoption and digitalization in your department and the government sector?

Attitudes and Perceptions

5. Advantages and Disadvantages: What are the main advantages and difficulties associated with implementing GAI technologies in government operations?
6. Organizational Readiness: To what extent do you believe your department is operationally prepared to integrate GAI technologies into its workflow?

Barriers to Adoption

7. Resource Restrictions: What are the main barriers (e.g., financial, skill gaps, infrastructure related) your institution faces in adopting GAI technologies?
8. Security and Privacy Concerns: How do concerns about data privacy and security impact the readiness of your institution to adopt GAI technologies?

Training and Development

9. Skill Development: What steps has your institution taken, if any, to increase the capacity and skills necessary to adopt GAI technologies?
10. Learning Resources: Are there enough opportunities and resources available for staff members to learn about GAI technologies? How could these be improved?

Policy and Strategy

11. Strategic Plan: Please describe the key elements of your institution's strategic plan for digital transformation related to the adoption of GAI technologies.
12. Leadership and Support: How does leadership at top government levels support the adoption of GAI technologies?

Future Plans

13. Implementation: In the future, how do you think your institution will incorporate GAI technologies into its day-to-day operations and the services it provides?
14. Service Delivery: How do you think GAI technologies could affect the quality and efficiency of public services provided by your institution?

Additional Question:

15. Are there any other opinions, concerns, or insights you would like to share regarding the adoption of GAI technologies in the government sector?

APPENDIX B: FINAL SURVEY QUESTIONNAIRE

This questionnaire aims to gather insights from government officials in Sri Lanka on their awareness and readiness for adopting generative artificial intelligence technologies. Your valuable inputs will contribute to understanding the current landscape and future directions for implementing AI solutions in government operations. All responses will remain confidential and will be used solely for research purposes.

Your honest and thoughtful responses are appreciated.

Section 01: Demographic Questions

1. Age group
    - Under 25 years
    - 25-34
    - 35-44
    - 45-54
    - 55 years or above
2. Gender
    - Male
    - Female
3. Education Qualifications
    - G.C.E. (O/L and A/L)
    - Diploma or Higher Diploma
    - Professional Qualification (e.g., CIMA or Chartered)
    - Bachelor's Degree
    - Master's Degree (e.g., M.Sc. or MBA)
    - Doctorate or higher (e.g., PhD or MPhil)
4. Area of specialization:
    - Information Technology
    - Public Administration
    - Finance/Economics

- Law
- Engineering
- Social Sciences
- Health
- Education
- National Security
- Other

5. Role of Government Officer

- Head of Institution
- Professional and Specialist role (e.g. Medical Officer, Engineer, Legal officer, Scientist)
- Executive and Administrative role (e.g., Administrative, Accountant, Planning Service)
- Technical and Support role (e.g. IT Operations)
- Service Delivery Role (e.g. Teacher, Nurse)
- Middle Management role (e.g. DO , MSO)
- Other:

6 Current workplace (Ministry, Department, or Institution) :

7. Work Experience in the government sector

- Less than 1 year
- 1–5 years
- 5–10 years
- 11-20 years
- 21–30 years
- More than 30 years

Section 2: General Questions

1. How would you rate your overall digital literacy?
    - Very high
    - High
    - Moderate
    - Low
    - Very low
2. How willing are you to try new and emerging technologies like generative AI?
    - Very willing
    - Somewhat willing
    - Neutral
    - Somewhat unwilling
    - Not willing
3. Do you currently use any AI-powered tools or technologies in your work?
    - Yes
    - No

Section 3

Please read each statement carefully.

Indicate your agreement or disagreement using the 5-point Likert scale provided:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

1. Awareness of Generative AI
    1.1. I have a basic understanding of applications, capabilities, and limitations of generative AI technologies
    1.2. I recognize specific areas within the government sector where generative AI could be applied
    1.3. I am aware of successful generative AI applications in sectors outside the government. (e.g. private sector, international organizations)

1.4. I am aware of current developments and trends in generative AI technologies.

2. Level of exposure and Familiarity with AI applications
   2.1. I am familiar with some AI powered tools related to text content generation. (e.g. ChatGPT, Bard, Bing, Grammarly, QuillBot)
   2.2. I am familiar with AI powered tools related to image or code generation. (e.g. DALL-E, Midjourney, Copilot, Amazon CodeWhisperer)
   2.3. I feel comfortable experimenting with new AI technologies.
   2.4. I feel confident explaining simple AI concepts to colleagues.
3. Training and skill development
   3.1. I have received training or learning opportunities related to AI technologies
   3.2. I know how/where to access the resources (e.g., guides, tutorials) available to improve my understanding of generative AI
   3.3. Most of the people in my staff have the potential to update their AI related skills through training and self-study
   3.4. My institution has strategies for attracting and retaining technically skilled personnel.

Barriers to AI Adoption

   3.5. Insufficient skill and understanding of AI within the staff of my institution is a barrier to implementing Generative AI
   3.6. Concerns about data privacy and security influence generative AI adoption
   3.7. Budgetary constraints affect my institution's ability to integrate generative AI.
   3.8. The negative attitudes regarding AI implementation will badly affect adopting generative AI. (e.g. job displacement)
4. Benefits of Generative AI
   4.1. Generative AI can improve the efficiency and productivity of government operations. (e.g. automate routine and time-consuming tasks)
   4.2. Generative AI can improve the quality and accessibility of government services. (e.g. AI-powered chatbot)
   4.3. Generative AI supports improved decision-making and policy formulation in

the government sector. (e.g. Analyze large volumes of data faster and more accurately.)

4.4. Adopting generative AI could foster innovation in public sector projects and services. (e.g. Urban planning and Environmental protection)

5. Organizational Culture and Leadership
   5.1. Leadership has a positive attitude towards the integration of AI into government operations.
   5.2. Leaders clearly communicate the potential benefits and risks of adopting AI technologies.
   5.3. My Organizational culture supports digital transformation and the adoption of AI technologies.
   5.4. There are enough technical champions (people with technical competency) in my institution who can help others troubleshoot and resolve issues related to AI applications.
6. Dependent Variable: Readiness for Adoption of GAI technologies
   6.1. I am willing to integrate generative AI technologies into my day's work processes.
   6.2. I feel adequately informed about the benefits and potential challenges of integrating AI into government sector.
   6.3. I feel that I have enough familiarity with GAI tools to use and integrate AI into my work.
   6.4. There are enough training and learning opportunities to incorporate generative AI technologies into the Sri Lankan government sector.
   6.5. I think that the benefits of adopting generative AI outweigh the perceived barriers in my institution.
   6.6. My institution provides sufficient support (Leadership, Coworkers, and Infrastructure) to facilitate the adoption of GAI technologies.
   6.7. There are initiatives to formulate strategies or plans, clear guidelines and protocols to incorporate AI technologies into the Sri Lankan government sector.

Additional Comments:

APPENDIX C: FINAL SURVEY RESULTS SUMMARY

Questions	% of Responses				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Awareness of Generative AI					
1.1. I have a basic understanding of the applications, capabilities, and limitations of generative AI technologies	4%	5%	22%	42%	27%
1.2. I recognize specific areas within the government sector where generative AI could be applied	6%	5%	20%	49%	20%
1.3. I am aware of successful generative AI applications in sectors outside the government. (e.g. private sector, international organizations)	5%	13%	20%	35%	27%
1.4. I am aware of current developments and trends in generative AI technologies	5%	13%	22%	39%	21%
2. Level of exposure and Familiarity with AI applications					
2.1. I am familiar with some AI powered tools related to text content generation. (e.g. ChatGPT, Bard, Bing, Grammarly, QuillBot)]	4%	5%	16%	37%	39%

2.2. I am familiar with AI powered tools related to image or code generation. (e.g. DALL-E, Midjourney, Copilot, Amazon CodeWhisperer)	14%	24%	31%	23%	8%
2.3. I feel comfortable experimenting with new AI technologies	6%	12%	19%	34%	29%
2.4. I feel confident explaining simple AI concepts to colleagues	10%	13%	22%	34%	21%
3. Training and skill development					
3.1. I have received training or learning opportunities related to AI technologies	44%	28%	12%	12%	5%
3.2. I know how/where to access the resources available to improve my understanding of generative AI	9%	16%	24%	38%	14%
3.3. Most of the people in my staff have the potential to update their AI related skills through training and self-study	15%	32%	27%	20%	6%
3.4. My institution has strategies for attracting and retaining technically skilled personnel	19%	30%	25%	22%	3%
4. Barriers to AI Adoption					
4.1. Insufficient skill and understanding of AI within the staff of my institution is a barrier to implement Generative AI	6%	7%	19%	41%	27%

4.2. Concerns about data privacy and security influence generative AI adoption	4%	16%	25%	41%	15%
4.3. Budgetary constraints affect my institution's ability to integrate generative AI	7%	13%	27%	24%	29%
4.4. The negative attitudes regarding AI implementation will badly affect adopting generative AI.	4%	15%	29%	29%	23%
5. Benefits of Generative AI					
5.1. Generative AI can improve the efficiency and productivity of government operations.	2%	4%	11%	34%	50%
5.2. Generative AI can improve the quality and accessibility of government services.	2%	3%	9%	38%	49%
5.3. Generative AI supports improved decision-making and policy formulation in the government sector.	4%	3%	9%	37%	48%
5.4. Adopting generative AI could foster innovation in public sector projects and services.	3%	2%	10%	40%	46%
6. Organizational Culture and Leadership					
6.1. Leadership has a positive attitude	6%	9%	24%	37%	24%

towards the integration of AI into government operations					
6.2. Leaders clearly communicate the potential benefits and risks of adopting AI technologies	7%	20%	32%	29%	12%
6.3. My Organizational culture supports digital transformation and the adoption of AI technologies	9%	20%	27%	30%	14%
6.4. There are enough technical champions in my institution who can help others troubleshoot and resolve issues related to AI applications	20%	19%	32%	23%	5%
7. Readiness for Adoption of GAI technologies					
7.1. I am willing to integrate generative AI technologies into my day today's work processes	2%	3%	15%	38%	43%
7.2. I feel adequately informed about the benefits and potential challenges of integrating AI into government sector	4%	11%	29%	36%	20%
7.3. I feel that I have enough familiarity with GAI tools to use and integrate AI into my work	7%	27%	28%	27%	11%
7.4. There are enough training and learning opportunities to incorporate generative AI technologies into the Sri	29%	37%	18%	10%	6%

Lankan government sector					
7.5. I think that the benefits of adopting generative AI outweigh the perceived barriers in my institution	4%	17%	32%	29%	17%
7.6. My institution provides sufficient support to facilitate the adoption of GAI technologies	13%	28%	37%	17%	5%
7.7. There are initiatives to formulate strategies or plans, clear guidelines and protocols to incorporate AI technologies into the Sri Lankan government sector	10%	28%	36%	21%	5%

Appendix D: Confidence Level Calculations

	Factor	Mean	Standard Deviation (s)	Standard Error (SE)	For 95% confidence level, Margin of Error (ME):	Confidence Interval
1	Awareness of Generative AI	3.694	0.922	0.064	0.126	(3.63,3.758)
2	Exposure Level and Familiarity with AI	3.476	0.876	0.061	0.120	(3.415,3.537)
3	Training and skill development	2.750	0.829	0.058	0.113	(2.692,2.808)
4	Barriers to AI Adoption	3.583	0.885	0.062	0.121	(3.521,3.644)
5	Benefits of Generative AI	4.216	0.854	0.060	0.117	(4.157,4.276)
6	Organizational Culture and Leadership	3.169	0.861	0.060	0.118	(3.109,3.229)
7	Readiness for Adoption of GAI	3.129	0.643	0.045	0.088	(3.084,3.174)