# EXPLORING THE OPPORTUNITIES AND CHALLENGES OF INTEGRATING ARTIFICIAL INTELLIGENCE IN HUMAN RESOURCE MANAGEMENT: A CASE STUDY OF MINISTRY OF FINANCE, PLANNING AND ECONOMIC DEVELOPMENT

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UGANDA CHRISTIAN UNIVERSITY

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## Declaration

I RUTEERA SHARON KIYONJO hereby declare that this is my original work, and it has not been submitted to any other institution for any award.

Sharon ..... 18/3/2026.....

Signature Date

## Dedication

This work is hereby dedicated to my lovely parents, whose love, sacrifice, guidance, and supplication have been the foundation of my journey. Their encouragement and confidence in me have always challenged me to be the best in whatever I do.

To my lovely siblings, I want to thank you for your unwavering support, understanding, and encouragement. Our shared experiences, camaraderie, and encouragement have strengthened me throughout this academic journey.

Lastly, I dedicate this to myself for the determination, discipline, and perseverance I have shown throughout the journey. Through thick and thin, I have kept my eyes on the prize. This achievement is a testament to hard work, belief in oneself, and the courage to keep moving forward.

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This project would not have been possible without your support and guidance.

## SUPERVISOR'S APPROVAL

This is to certify that this work was done under my supervision..

Signature.....

MR. KIBUUKA DAVID (ACADEMIC SUPERVISOR)

17/3/2026

Date.....

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## LIST OF ABBREVIATIONS

MOFPED – Ministry of Finance, Planning and Economic Development.

AI – Artificial Intelligence

HRM - Human Resource Management

HR - Human Resource

## ABSTRACT

This study examined the opportunities and challenges of integrating Artificial Intelligence (AI) in Human Resource Management (HRM) at the Ministry of Finance, Planning and Economic Development (MOFPED) in Uganda. The study was guided by three objectives: to assess the potential benefits of AI in HR functions, to identify challenges affecting its adoption, and to propose strategies for effective implementation. A mixed-methods research design was employed, combining both quantitative and qualitative approaches. Data was collected from HR personnel, line managers, and IT staff using structured questionnaires and interviews, and analyzed using descriptive statistics and thematic analysis.

The findings revealed that AI offers significant opportunities for improving HRM functions, including enhancing recruitment efficiency, reducing bias in employee selection, supporting data-driven decision-making, improving performance monitoring, and identifying employee training needs. In addition, AI was found to enhance communication between HR departments and employees through automated systems such as chatbots. However, the study also identified key challenges hindering AI integration, including high implementation costs, lack of technical expertise, employee resistance due to fear of job displacement, data privacy concerns, inadequate ICT infrastructure, and the complexity of AI systems.

The study concludes that although AI has strong potential to transform HRM in public institutions, its successful adoption requires strategic planning, investment in infrastructure and skills development, and the establishment of clear policy frameworks. The study recommends gradual implementation of AI systems, continuous staff training, and increased awareness to enhance acceptance and sustainability within the Ministry.

# CHAPTER ONE

## Introduction

Artificial Intelligence (AI), as a concept, relates to computer systems created to perform tasks that typically need human “smarts” or abilities, like learning, thinking, problem-solving, decision-making, and identifying patterns. By utilizing techniques like machine learning, natural language processing, and predictive analytics, AI enables organizations to achieve greater efficiency and insights from enormous datasets. With the advancement in AI, the technology has significantly become a major driver for innovation in various industries and organizations.

It’s undeniable that there’s a global trend towards the digitalization of business processes, and AI is at the forefront, particularly in the transformation of the Human Resource Management (HRM) function. However, the extent and depth of AI’s adoption vary significantly. In the case of Uganda, the Ministry of Finance, Planning and Economic Development (MOFPED), being a central government institution and a major employer, could greatly benefit from the adoption and application of AI in the HRM function.

In this study, the opportunities and challenges associated with the adoption and application of AI in the HR function at MOFPED are discussed. This study seeks to offer a detailed insight into the challenges associated with the adoption and application of technology in the HR function in a major institution in Uganda.

## Background

Artificial Intelligence has evolved rapidly from a "sci-fi" concept to a technology that fuels digital shifts in many industries. "Artificial Intelligence refers to computer systems designed to perform tasks that typically require the 'smarts' of humans, such as learning, reasoning, solving problems, sensing, and understanding natural language" (Upadhyay & Khandelwal, 2018, para. 1). The AI of today includes machine learning, natural language processing, robotics, computer vision, and predictive analytics. Such technology helps companies to automate daily tasks, sort through massive data, and make decisions quickly and accurately..

Globally , AI adoption in business operations has expanded significantly , with companies leveraging AI to enhance efficiency ,improve accuracy , and reduce operational costs .In sectors such as banking, telecommunication , healthcare , and retail , AI tools are being used to streamline

workflows ,improve service delivery , personalize customer experiences and optimize resource allocation .As a result ,AI has become a catalyst for competitive advantage in the modern business environment .

Within Human Resource Management (HRM), AI is transforming how organizations attract, manage, develop and retain talent . Traditional HR processes such as recruitment and workforce planning , onboarding and performance appraisal are increasingly being supported or replaced by AI -driven systems. AI -powered recruitment platforms can scan and shortlist large number of applications within minutes , reducing hiring time and minimizing human bias. Chatbots and virtual assistants now provide 24/7 support to employees by answering HR- related queries , scheduling meetings and guiding new staff during onboarding

However, the use of AI in analytics is revolutionizing the work of HR departments. It helps in the prediction of potential turnover, identifying performance trends, and identifying training needs. The use of such tools enables the HR department to make decisions based on data, not intuition or manual processing. AI in the HR department does not simply aim to increase efficiency; it seeks to create a better future for the organization by building the workforce, building the organizational culture, and building the leadership.

However, there are a number of challenges associated with the use of AI in HR. These challenges involve issues like the security of employment, privacy, ethics, and the costs associated with the use of AI. All these challenges have a bigger impact on developing countries. This has created a wide gap between organizations that use tech ology-based HR and those that use traditional HR.

In the case of Africa, the use of AI technology has started gaining momentum, especially in industries like finance and telecommunications. However, most organizations in the region are still in the experimental stages of using AI technology. There is a lack of literature on the use and challenges associated with the use of AI technology in HRM in organizations across the region, particularly in Uganda. Most literature focuses on the digital transformation and technology adoption in organizations.

The Ministry of Finance, Planning, and Economic Development is located in one of the most competitive and tech-savvy environments. The organization employs a large number of people and is already seen to be embracing the use of digital innovation in its processes. The organization has

already shown commitment to the use of digital innovation in customer relations, finance, and network operations. It is thus an ideal organization from which to draw lessons on the impact of AI on HRM in other Ugandan organizations seeking to adopt the practice.

It is premised on two theoretical frameworks: Davis's Technology Acceptance Model (1989), which will assist in understanding the role of perceived usefulness and ease of use in the acceptance of new technology among the employees. It will concentrate on the perception of the HR staff and the management of the MOFPED in Uganda regarding AI systems. The second is Rogers's Diffusion of Innovations Theory (2003), which will assist in understanding the process of the diffusion of innovation and the factors such as relative advantage, compatibility, complexity, trialability, and observability that influence the acceptance of AI in HRM.

There's a huge potential for the development of the field of HR with the help of AI, but in Ugandan companies, this technology has not been explored much. The aim of this study is to bridge the gap by examining the opportunities and challenges of implementing AI in the human resource department of the Ministry of Finance, Planning, and Economic Development in Uganda..

**Problem Statement**

While there is an increase in worldwide evidence that Artificial Intelligence (AI) is beneficial in terms of efficiency gains, improved decision-making capabilities, and an enhanced employee experience in Human Resource Management (HRM), the actual adoption of AI in major Ugandan institutions like the Ministry of Finance, Planning and Economic Development (MOFPED) is yet to be fully implemented. The Ministry is in an advantageous position to be an early adopter of AI in terms of structural ability, influence, and technology orientation. However, there are a number of challenges that have prevented the actual adoption of AI in the Ugandan Ministry of Finance, Planning and Economic Development. The challenges include high costs of implementation, lack of expertise in AI technology, resistance from employees, and difficulties in handling massive changes in an organization. The gap between AI's potential and actual adoption in a major Ugandan institution is an indication that there is an urgent need to undertake an in-depth study to identify the opportunities that the Ugandan Ministry of Finance, Planning and Economic Development stands to gain from AI adoption in HRM functions as well as the challenges that have prevented the actual adoption of AI in the institution.

**Main Objective**

To investigate the opportunities and challenges of implementing Artificial Intelligence in the field of Human Resource Management in the Ministry of Finance, Planning, and Economic Development.

**Specific Objectives**

1. To examine the potential benefits of implementing Artificial Intelligence in the areas of recruitment, performance management, and engagement of employees in the Ministry of Finance, Planning, and Economic Development.
2. To examine the challenges facing the implementation of Artificial Intelligence in the field of HR in the Ministry of Finance, Planning, and Economic Development.
3. To provide recommendations based on the literature on the strategies and practices that can be used in the implementation of Artificial Intelligence in the field of HR in the Ministry of Finance, Planning, and Economic Development.

**Research Questions**

a) What are the possible benefits and opportunities that could be offered by AI in the areas of recruitment, performance management, training, and engagement in the Ministry?
b) What are the organizational, technical, and human factors hindering the effective integration of AI in the HR practices of the Ministry?
c) What are the recommendations that could be made to strengthen the use and integration of AI in the HR practices of the Ministry?

**Significance of the Study**

This research contributes to our understanding of Artificial Intelligence's application in Human Resource Management, particularly in the context of developing countries and the public sector domain. By providing actual statistics on how AI can be used by the Ministry of Finance, Planning, and Economic Development, it also enlightens us on how organizational, technical, and human factors influence AI adoption in HRM, which may open doors to further research on AI-mediated organizational transformation.

For HR practitioners, it also serves as actual insights on how to apply AI in HRM, which can further help them achieve higher organizational efficiency, improved organizational decision-making, and enhanced employee experiences in HR processes.

For policymakers, it serves as actual evidence on AI adoption in the public sector domain, which can further help them formulate policies and regulations on how to effectively encourage AI adoption by public sector organizations.

**Scope of the Study**

This research is an exploration of how Artificial Intelligence (AI) is being integrated within Human Resource Management (HRM) within the Ministry of Finance, Planning and Economic Development (MOFPED) in Uganda. It is an exploration of where it is already being used in HRM, the potential it has to offer, and the challenges it might face in its implementation. The focus remains only within the realm of HRM and does not extend to other areas of the Ministry. It remains within the geographical boundaries of the Ministry of Finance, Planning and Economic Development headquarters. While the focus remains within the realm of the integration of AI within HRM, the broader regulatory environment within which the human resources of the public sector in Uganda operate is also recognized.

# CHAPTER TWO:

# LITERATURE REVIEW

## Introduction

In this chapter, the literature about the integration of Artificial Intelligence (AI) in the field of Human Resource Management (HRM) will be discussed. It will be based on a thematic approach, as it will discuss the different challenges of integrating AI in large companies in the context of the developing economies of the world, as well as the human element in the success of integrating AI. Finally, it will discuss the theoretical background of the research, as it will be based on the Technology Acceptance Model (TAM) and the Diffusion of Innovations Theory. These two theories will provide a multi-layered approach in the understanding of the acceptance of AI, not only in the context of the employees of the Ministry of Finance, Planning, and Economic Development, but also in the context of the organization as a whole.

## AI in Talent Acquisition and Recruitment

Moreover, AI has completely revolutionized the hiring process, with AI taking up the task of candidate sourcing, CV screening, and the initial rounds of assessment, with the power of machine learning at the core of the process. New research indicates that AI, in the form of predictive analytics, can now assess the fit, potential, and cultural alignment of the candidate through the analysis of multimodal data, including video interviews and psychographic data, to name a few (Nguyen & Pham, 2021). AI can definitely increase the efficiency and precision of the hiring process and can bring down the time to hire substantially.

Nevertheless, the issue of algorithmic bias in AI-based hiring tools cannot be disregarded either, particularly since AI can readily reproduce bias that may exist in the training data, including bias based on gender, ethnicity, age, and socioeconomic status, to mention a few, without any particular training data (Patel & Singh, 2023; Barocas et al., 2021). For businesses that prioritize diversity and inclusion in their employment practices, this kind of bias may prove problematic..

## AI in Employee Engagement and Performance Management

AI plays the central role in the hiring process, completely redefining the way the hiring process works, from the sourcing of the candidate to the screening of the CV and the early stages of the hiring process itself. Recent research indicates that predictive analytics, an AI-based approach, can

assess the fit, potential, and cultural alignment of the candidate through the assessment of various forms of data, including psychographic data and video interview data, among other factors (Nguyen & Pham, 2021; Rahman, 2022).

However, the other side of the coin cannot be ignored, especially the issue of algorithmic bias in AI-based hiring systems, which can easily lead to bias in the hiring process since AI systems can easily replicate the bias in the data used in the hiring process. Such bias can include gender bias, ethnicity bias, age bias, and socioeconomic bias, among other factors, and can easily be replicated in the hiring process if not properly addressed, especially in an organization that highly values diversity and inclusion in the workplace. Channels for gauging employee morale trends, as discussed in Ssenkumba & Mbabazi (2024), provide an organization with the opportunity to detect rising issues before they become full-fledged concerns and intervene before the situation spirals out of control. Despite the benefits that employee monitoring provides, there have been concerns raised regarding the negative implications of employee monitoring, including privacy infringement, data misuse, and the potential for the erosion of the humanistic management relationship, as discussed in Ajunwa (2021) and Chen et al. (2024). If the employees feel that AI monitoring is invasive, it can lead to the erosion of trust and increase employee anxiety in the workplace. AI can function effectively in the workplace if its implementation is transparent and if AI does not become a replacement for the manager, but rather a support tool for the manager.

### 1.1.1 Barriers to AI Adoption in Large Organizations

Yet, while smaller organizations cite cost as a major impediment, larger organizations face a whole new set of challenges. In well-funded organizations in developing economies, there remains a noticeable deficit in AI skills and digital literacy (Kibuuka & Nalubega, 2023; UNESCO, 2023). Technical challenges are also manifested in legacy systems that are no longer maintained and don't integrate well with new AI systems.

And then, of course, there are organizational challenges, where employees and middle management resist AI due to concerns over job displacement, or the loss of autonomy in one's profession (Adebayo & Hassan, 2022; Tschang, 2021). These concerns are compounded by a lack of digital literacy and some common myths associated with AI and its capabilities. Thus, a change management plan is a must-have for a successful AI initiative.

### The Human-Centric Approach to AI Integration

Studies show that it can be made easier to adopt AI by incorporating a human-centric approach to it. Amara & Tusiime (2025) posit that it would be important to involve end users, especially HR and management, during the designing, testing, and testing phases of participatory design. In spite of this, it would still be important to reskill and upskill employees. There has been consensus among scholars that AI can only function effectively when it complements human capabilities rather than replacing them, as posited by Dineen & Allen (2016). To do this, it would be important to develop digital, data, and AI capabilities.

### Technology Acceptance Model (TAM)

**Another popular model that is used to understand human adaptation to new technology is the Technology Acceptance Model, developed by Davis in 1989. This model is based on two fundamental concepts. One of these concepts is "perceived usefulness" (PU), i.e., the idea that the use of AI will improve one's performance at work. From an HR perspective, this includes whether the use of AI will improve hiring, improve decision-making, etc., and whether the use of AI will improve HR's overall effectiveness. Another concept is "perceived ease of use" (PEOU), i.e., the idea that the use of AI is not difficult to understand or use, requiring little training to use the technology. Recent studies have shown that both PU and PEOU are strong predictors of the adoption of AI, particularly in the public sector in developing countries (Khan et al., 2022; Sarkar & Sharma, 2023).**

### Diffusion of Innovations (DOI) Theory

The theory of Diffusion of Innovations, as outlined by Rogers and published in 2003, attempts to describe how technologies are diffused or spread through society. The theory portrays society as having five groups that are classified according to their adoption rate of new ideas. These groups are referred to as innovators, early adopters, early majority, late majority, and laggards. In understanding how AI technologies are diffused or spread through organizations, we can derive important insights on who could be leading the AI initiative, which communication strategy would work best with each group, and what could be slowing down the adoption of AI technologies. Recent studies have also reaffirmed the significance of DOI in understanding digital transformation in government and human resources functions (Al-Khaldi, 2021; Mensah, 2022).

# CHAPTER THREE:

# RESEARCH METHODOLOGY

Research Design

This study will be carried out through a mixed-methods approach, in which numerical data will be used alongside narratives to provide a more in-depth understanding of the subject of interest. This is in line with Creswell & Plano Clark (2021).

This study will be conducted at the headquarters of the Ministry of Finance, Planning, and Economic Development in Kampala, Uganda, and will involve HR personnel, line managers, and a few IT experts. This is because the MOFPED is a formal, information-rich environment, making it an appropriate place to gauge an institution's preparedness to use AI.

## Population and Sampling

Target Population

The target population comprises HR practitioners, line managers, and IT staff supporting HR systems at MOFPED.

Sampling Technique

The simple random sampling technique will be employed in the quantitative part to ensure equal representation for each HR position and hierarchy level (Saunders et al., 2019). Purposive sampling will be employed for the interviews to recruit key informants from the organization who are informed about the issue at hand. These key informants will be the HR Director, Talent Acquisition Manager, and IT Systems Manager.

### Sample Size Determination

The Krejcie and Morgan (1970) sample size formula, widely used for finite populations, will be applied:

$$n = \frac{X^2 \cdot N \cdot p(1-p)}{ME^2(N-1) + X^2 \cdot p(1-p)}$$

Where:

- $X^2 = 3.841$(95% confidence)
- $N = 40$
- $p = 0.5$
- $ME = 0.05$, The resulting sample size is 60 respondents.

**Data Collection Methods and Instruments**

Structured questions with closed-ended questions and Likert scales will be used to assess the level of perception regarding AI opportunities, challenges, preparedness, and hurdles. To further explore the subject, semi-structured questions will be used to extract experiential knowledge from well-chosen experts through interview questions that cover various areas like technology preparedness, risk factors, policy hurdles, and organizational culture..

**Data Quality Control**

The reliability of the questionnaire will be determined through Cronbach Alpha, with a coefficient value of 0.70 or higher (Taherdoost, 2022). The pilot study will be conducted on a small number of employees to refine the tool. The validity of the study will be ensured through expert judgment, triangulation of data from multiple sources, and coherence in methodology (Creswell & Creswell, 2018).

**Data Analysis**

SPSS, a statistical program for evaluating and summarizing data using descriptive statistics like frequencies, means, and standard deviations, will be used to evaluate the data. Tables and charts will be used to illustrate trends. Thematic analysis will be used to examine the interview data, and the coding strategy recommended by Guest et al. (2021) will be applied.

**Ethical Considerations**

The study will be conducted with high ethical standards, and a formal request will be made to the relevant authorities in MOFPED for approval. The study will be purely voluntary, and informed consent will be obtained from all participants. Confidentiality and anonymity of the data will be maintained, and participants will be free to withdraw at any time. Recordings will be stored, and no personal details will be obtained from the participants.

# CHAPTER FOUR

# PRESENTATION, ANALYSIS OF FINDINGS

## Introduction

This chapter presents, analyzes, and discusses the findings of the study on the opportunities and challenges of integrating Artificial Intelligence (AI) in Human Resource Management (HRM) at the Ministry of Finance, Planning and Economic Development. The findings are organized according to the three specific objectives of the study. The analysis integrates both quantitative and qualitative findings and compares them with existing literature reviewed in Chapter Two in order to establish areas of agreement and divergence.

## Opportunities of Artificial Intelligence in Human Resource Management

This section presents the findings regarding the opportunities associated with the integration of Artificial Intelligence in Human Resource Management at the Ministry of Finance, Planning and Economic Development. Respondents were asked to indicate their level of agreement with statements relating to the benefits of Artificial Intelligence in HR operations. Their responses were measured using a five-point Likert scale ranging from strongly agree to strongly disagree.

Table 4.4: AI improves efficiency in recruitment processes

| **Response** | **Frequency** | **Percentage** |
|---|---|---|
| Strongly Agree | 14 | 40% |
| Agree | 12 | 34% |
| Neutral | 5 | 14% |
| Disagree | 3 | 9% |
| Strongly Disagree | 1 | 3% |
| **Total** | **35** | **100%** |

The results in Table 4.4 indicate that the majority of respondents agreed that Artificial Intelligence improves efficiency in recruitment processes. Specifically, 40% of respondents strongly agreed while 34% agreed that AI can streamline recruitment activities such as screening job applications and identifying suitable candidates. Only a small proportion of respondents expressed disagreement with the statement.

These findings suggest that AI technologies have the potential to significantly improve recruitment efficiency within the ministry by reducing manual workload and enabling faster decision making. One respondent (H) explained that AI-supported recruitment platforms can help HR departments to analyze large volumes of applications within a short period of time. Similarly, respondent X noted that automated recruitment systems can assist in identifying the most qualified candidates based on predetermined criteria.

The findings therefore indicate that Artificial Intelligence has the potential to improve recruitment processes and increase the efficiency of HR operations.

**Table 4.5: AI reduces bias in employee selection**

| **Response** | **Frequency** | **Percentage** |
|---|---|---|
| Strongly Agree | 13 | 37% |
| Agree | 11 | 31% |
| Neutral | 6 | 17% |
| Disagree | 3 | 9% |
| Strongly Disagree | 2 | 6% |
| **Total** | **35** | **100%** |

The results presented in Table 4.5 show that most respondents believe that Artificial Intelligence can reduce bias in employee selection. About 37% strongly agreed while 31% agreed that AI

systems can support objective evaluation of candidates by focusing on skills and qualifications rather than personal characteristics.

Respondent Y explained that automated recruitment tools can evaluate applicants using standardized criteria, which helps minimize human bias during the selection process. Respondent Z further indicated that AI-based recruitment systems can contribute to fairness and transparency in hiring decisions.

These findings suggest that AI technologies have the potential to promote merit-based recruitment and improve transparency within HR practices at the ministry.

**Table 4.6: AI supports data-driven decision making in HR**

| **Response** | **Frequency** | **Percentage** |
|---|---|---|
| Strongly Agree | 15 | 43% |
| Agree | 10 | 29% |
| Neutral | 5 | 14% |
| Disagree | 3 | 9% |
| Strongly Disagree | 2 | 5% |
| **Total** | **35** | **100%** |

The findings in Table 4.6 reveal that a significant proportion of respondents acknowledged that Artificial Intelligence supports data-driven decision making in human resource management. A total of 43% strongly agreed while 29% agreed with the statement.

According to respondent C.B., AI systems can analyze employee data such as performance records, attendance, and productivity levels, enabling HR managers to make more informed decisions. Respondent N also observed that data analytics tools can help HR departments identify trends and patterns that may not easily be detected through manual analysis.

These findings demonstrate that Artificial Intelligence has the potential to enhance strategic decision making within HR departments by providing reliable and data-driven insights.

**Table 4.7: AI improves monitoring of employee performance**

| Response | Frequency | Percentage |
|---|---|---|
| Strongly Agree | 12 | 34% |
| Agree | 13 | 37% |
| Neutral | 6 | 17% |
| Disagree | 3 | 9% |
| Strongly Disagree | 1 | 3% |
| **Total** | **35** | **100%** |

The results in Table 4.7 indicate that the majority of respondents agreed that Artificial Intelligence can improve employee performance monitoring. Approximately 34% strongly agreed while 37% agreed that AI-enabled performance management systems can help organizations track employee productivity and evaluate work outcomes more effectively.

Respondent M explained that automated performance tracking systems can provide continuous feedback to employees and managers, thereby improving accountability and productivity. These findings suggest that AI technologies may enhance organizational performance management systems.

**Table 4.8: AI helps identify employee training needs**

| Response | Frequency | Percentage |
|---|---|---|
| Strongly Agree | 11 | 31% |
| Agree | 14 | 40% |
| Neutral | 5 | 14% |
| Disagree | 3 | 9% |
| Strongly Disagree | 2 | 6% |
| **Total** | **35** | **100%** |

The results in Table 4.8 indicate that most respondents agreed that Artificial Intelligence can assist in identifying employee training needs. About 40% of respondents agreed while 31% strongly agreed that AI systems can analyze employee performance data to determine skill gaps.

Respondent H noted that AI-based learning management systems can recommend training programs tailored to employees' individual development needs. This suggests that AI technologies may contribute to improving staff capacity development and professional growth within the ministry.

**Table 4.9: AI improves communication between HR and employees**

| **Response** | **Frequency** | **Percentage** |
|---|---|---|
| Strongly Agree | 10 | 29% |
| Agree | 15 | 43% |
| Neutral | 5 | 14% |
| Disagree | 3 | 9% |
| Strongly Disagree | 2 | 5% |
| **Total** | **35** | **100%** |

The findings in Table 4.9 indicate that the majority of respondents agreed that Artificial Intelligence can improve communication between HR departments and employees. A total of 43% agreed while 29% strongly agreed that AI-based communication tools such as chatbots and automated HR platforms can enhance employee interaction.

Respondent X explained that AI-powered chatbots can provide quick responses to employee inquiries regarding leave, payroll, and HR policies. These findings indicate that AI technologies can facilitate faster communication and improve service delivery within HR departments.

### Challenges of Integrating Artificial Intelligence in Human Resource Management

This section presents the findings on the challenges associated with integrating Artificial Intelligence in Human Resource Management. Respondents were asked to indicate their level of agreement with several statements relating to possible barriers to AI adoption within the Ministry. The responses were measured using a five-point Likert scale ranging from strongly agree to strongly disagree.

**Table 4.10: High financial costs hinder the adoption of AI technologies**

| Response | Frequency | Percentage |
|---|---|---|
| Strongly Agree | 13 | 37% |
| Agree | 12 | 34% |
| Neutral | 4 | 11% |
| Disagree | 4 | 11% |
| Strongly Disagree | 2 | 7% |
| **Total** | **35** | **100%** |

The findings in Table 4.10 indicate that the majority of respondents believe that high financial costs are a major challenge in adopting Artificial Intelligence technologies in Human Resource Management. About 37% of respondents strongly agreed while 34% agreed with the statement.

These results suggest that the implementation of AI systems may require significant financial investment in infrastructure, software, and technical expertise. One respondent noted that government institutions may face budget limitations when attempting to adopt advanced technological systems. Therefore, financial constraints may slow down the integration of AI technologies within the ministry.

**Table 4.11: Lack of technical expertise limits AI implementation**

| Response | Frequency | Percentage |
|---|---|---|
| Strongly Agree | 14 | 40% |
| Agree | 11 | 31% |
| Neutral | 4 | 11% |
| Disagree | 4 | 11% |

| | | |
|---|---|---|
| Strongly Disagree | 2 | 7% |
| **Total** | **35** | **100%** |

The results in Table 4.11 reveal that a large proportion of respondents believe that lack of technical expertise limits the implementation of Artificial Intelligence in HR functions. About 40% strongly agreed while 31% agreed with the statement.

Respondents explained that many employees may lack the necessary digital skills required to operate AI systems effectively. As a result, organizations may need to invest in specialized training or recruit experts in artificial intelligence technologies. These findings suggest that capacity building is essential for successful AI integration.

**Table 4.12: Employees fear that AI may replace their jobs**

| **Response** | **Frequency** | **Percentage** |
|---|---|---|
| Strongly Agree | 12 | 34% |
| Agree | 13 | 37% |
| Neutral | 5 | 14% |
| Disagree | 3 | 9% |
| Strongly Disagree | 2 | 6% |
| **Total** | **35** | **100%** |

The results presented in Table 4.12 show that many respondents believe that employees fear that Artificial Intelligence may replace their jobs. Approximately 37% agreed while 34% strongly agreed with the statement.

These findings suggest that fear of job displacement may influence employees' attitudes towards the adoption of AI technologies. Some respondents explained that employees may perceive AI systems as a threat to job security, particularly in tasks that involve automation. This fear may therefore create resistance to technological change within organizations.

**Table 4.13: AI systems may create data privacy concerns**

| Response | Frequency | Percentage |
|---|---|---|
| Strongly Agree | 11 | 31% |
| Agree | 14 | 40% |
| Neutral | 5 | 14% |
| Disagree | 3 | 9% |
| Strongly Disagree | 2 | 6% |
| **Total** | **35** | **100%** |

The results in Table 4.13 indicate that many respondents agreed that AI systems may raise concerns related to data privacy and security. About 40% agreed while 31% strongly agreed with the statement.

This suggests that the use of AI technologies in HRM may involve the collection and analysis of large amounts of employee data. Without proper safeguards, such systems may expose sensitive employee information to potential misuse or unauthorized access. Therefore, organizations must ensure that strong data protection measures are implemented when adopting AI systems.

**Table 4.14: Existing ICT infrastructure may not support AI technologies**

| Response | Frequency | Percentage |
|---|---|---|
| Strongly Agree | 13 | 37% |
| Agree | 12 | 34% |
| Neutral | 4 | 11% |
| Disagree | 4 | 11% |
| Strongly Disagree | 2 | 7% |
| **Total** | **35** | **100%** |

The findings in Table 4.14 show that many respondents believe that existing ICT infrastructure may not adequately support Artificial Intelligence technologies. Approximately 37% strongly agreed while 34% agreed with the statement.

Respondents indicated that outdated systems and limited digital infrastructure may hinder the effective implementation of advanced AI technologies within the ministry. Therefore, upgrading technological infrastructure may be necessary before implementing AI-based HR systems.

**Table 4.15: AI systems may be too complex for employees to use**

| **Response** | **Frequency** | **Percentage** |
|---|---|---|
| Strongly Agree | 10 | 29% |
| Agree | 15 | 43% |
| Neutral | 5 | 14% |
| Disagree | 3 | 9% |
| Strongly Disagree | 2 | 5% |
| **Total** | **35** | **100%** |

The results in Table 4.15 show that the majority of respondents agreed that Artificial Intelligence systems may be too complex for employees to use. About 43% agreed while 29% strongly agreed with the statement.

These findings suggest that complexity of AI systems may discourage employees from adopting the technology. Respondents indicated that without proper training and user-friendly systems, employees may experience difficulties in using AI tools effectively.

## Strategies for Successful Integration of Artificial Intelligence in Human Resource Management

This section presents the findings on the strategies that can support the successful integration of Artificial Intelligence in Human Resource Management at the Ministry of Finance, Planning and Economic Development. Respondents were asked to indicate their level of agreement with different strategies that may facilitate effective adoption of AI technologies within the ministry.

**Table 4.16: Staff should receive training on Artificial Intelligence technologies**

| Response | Frequency | Percentage |
|---|---|---|
| Strongly Agree | 16 | 46% |
| Agree | 12 | 34% |
| Neutral | 4 | 11% |
| Disagree | 2 | 6% |
| Strongly Disagree | 1 | 3% |
| **Total** | **35** | **100%** |

The results in Table 4.16 indicate that the majority of respondents strongly agreed that staff training is necessary for the successful integration of Artificial Intelligence technologies. About 46% strongly agreed while 34% agreed with the statement.

These findings suggest that employees need to develop adequate knowledge and skills to effectively operate AI systems. Respondents emphasized that training programs would help employees understand how AI tools function and how they can support HR activities.

**Table 4.17: Artificial Intelligence should be introduced gradually through pilot programs**

| Response | Frequency | Percentage |
|---|---|---|
| Strongly Agree | 13 | 37% |
| Agree | 14 | 40% |
| Neutral | 4 | 11% |
| Disagree | 3 | 9% |
| Strongly Disagree | 1 | 3% |
| **Total** | **35** | **100%** |

The findings in Table 4.17 reveal that most respondents agreed that AI technologies should be introduced gradually through pilot programs. About 40% agreed while 37% strongly agreed with the statement.

Respondents explained that pilot projects would allow organizations to test AI systems on a small scale before implementing them fully. This approach may help identify potential challenges and make necessary improvements.

**Table 4.18: The ministry should establish clear policies guiding the use of AI**

| **Response** | **Frequency** | **Percentage** |
|---|---|---|
| Strongly Agree | 15 | 43% |
| Agree | 13 | 37% |
| Neutral | 4 | 11% |
| Disagree | 2 | 6% |
| Strongly Disagree | 1 | 3% |
| **Total** | **35** | **100%** |

The findings in Table 4.18 show that most respondents strongly agreed that clear policies are necessary to guide the use of Artificial Intelligence technologies in HR operations.

These policies would help regulate how employee data is collected, processed, and used within AI systems. Respondents indicated that policy guidelines would also promote accountability and responsible use of technology.

**Table 4.19: ICT infrastructure should be upgraded to support AI technologies**

| **Response** | **Frequency** | **Percentage** |
|---|---|---|
| Strongly Agree | 14 | 40% |
| Agree | 13 | 37% |
| Neutral | 4 | 11% |

| | | |
|---|---|---|
| Disagree | 3 | 9% |
| Strongly Disagree | 1 | 3% |
| **Total** | **35** | **100%** |

The results in Table 4.19 indicate that many respondents agreed that improving ICT infrastructure is an important strategy for successful AI integration.

Respondents explained that reliable internet connectivity, modern computer systems, and secure digital platforms are essential for the operation of AI technologies.

**Table 4.20: Employees should be sensitized about the benefits of AI technologies**

| **Response** | **Frequency** | **Percentage** |
|---|---|---|
| Strongly Agree | 13 | 37% |
| Agree | 15 | 43% |
| Neutral | 4 | 11% |
| Disagree | 2 | 6% |
| Strongly Disagree | 1 | 3% |
| **Total** | **35** | **100%** |

The findings in Table 4.20 reveal that most respondents agreed that employees should be sensitized about the benefits of Artificial Intelligence technologies.

Respondents indicated that awareness campaigns would help reduce resistance to technological change and improve employees' understanding of the role of AI in enhancing HR functions.

## 4.6 Summary of Findings

This section summarizes the major findings of the study based on the three research objectives.

1. The study found that Artificial Intelligence presents several opportunities for improving HR operations within the ministry. Most respondents agreed that AI can improve recruitment efficiency, reduce bias during employee selection, support data-driven decision

making, improve employee performance monitoring, and help identify staff training needs. In addition, AI technologies were found to enhance communication between HR departments and employees through automated platforms.

2. The study revealed several challenges that may hinder the successful integration of AI technologies in HR management. These include high financial costs associated with implementing AI systems, lack of technical expertise among employees, fear of job loss due to automation, concerns regarding data privacy and security, inadequate ICT infrastructure, and complexity of AI systems.
3. The findings indicated several strategies that may facilitate effective adoption of Artificial Intelligence in HR operations. These include providing training programs for staff, introducing AI systems gradually through pilot projects, establishing clear policies to guide AI use, upgrading ICT infrastructure, and sensitizing employees about the benefits of AI technologies.

# CHAPTER FIVE

# CONCLUSIONS AND RECOMMENDATIONS

## Introduction

This chapter presents the conclusions and recommendations of the study on the opportunities and challenges of integrating Artificial Intelligence (AI) in Human Resource Management (HRM) at the Ministry of Finance, Planning and Economic Development. The conclusions are drawn directly from the findings presented in Chapter Four and are organized according to the study objectives. The chapter also provides practical recommendations for the Ministry and suggestions for further research.

## Conclusions

1. The study concluded that Artificial Intelligence presents significant potential for transforming HRM functions at the Ministry. The findings established that AI can enhance recruitment efficiency, improve performance monitoring, strengthen data-driven decision-making, increase administrative accuracy, and support employee engagement. Respondents demonstrated a strong perception of AI's usefulness in modernizing HR operations.
2. The study concludes that despite strong perceived benefits, several structural and organizational barriers may hinder effective AI integration. The most significant challenges identified include high implementation costs, limited technical expertise, resistance to change, data privacy concerns, inadequate ICT infrastructure, and absence of clear AI-specific policies.
3. The study concludes that successful AI integration is achievable if implemented through structured and ethical strategies. Respondents emphasized the importance of capacity building, phased implementation, and development of governance frameworks, infrastructure upgrading, change management, stakeholder involvement, and continuous monitoring.

## Recommendations

Based on the findings and conclusions, the study makes the following recommendations:

1. The Ministry of Finance, Planning, and Economic Development should focus on structured training programs in AI literacy, digital skills, and data analytics for HR staff. Ongoing professional development efforts will boost employee skills, increase confidence in using AI systems, and lessen resistance to change.
2. The Ministry should introduce AI gradually, beginning with pilot projects in specific HR functions such as recruitment or payroll management. A phased approach will allow testing, evaluation, and adjustment before full-scale implementation, thereby minimizing risk and resource wastage.
3. The Ministry should develop clear institutional policies guiding AI usage in HRM. These policies should address data protection, algorithmic transparency, accountability, cybersecurity, and employee privacy. Establishing governance frameworks will enhance trust and compliance with national regulatory standards.
4. Prior to AI implementation, the Ministry should invest in upgrading its technological infrastructure, including secure servers, data storage systems, and cybersecurity measures. Infrastructure modernization is essential for system compatibility and operational stability.
5. Management should conduct sensitization workshops and awareness campaigns to communicate the purpose and benefits of AI integration. Clear communication will reduce fear of job displacement and foster a culture of innovation and adaptability.
6. HR personnel and IT staff should be actively involved in the selection, design, and evaluation of AI systems. Stakeholder participation will promote ownership, improve system usability, and enhance long-term sustainability.
7. After implementation, the Ministry should establish monitoring and evaluation mechanisms to assess system performance, ethical compliance, and employee satisfaction. Regular review will allow timely adjustments and ensure that AI systems align with institutional objectives.

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# Appendix

APPENDIX

QUESTIONNAIRE

Topic: Exploring the Opportunities and Challenges of Integrating Artificial Intelligence in Human Resource Management: A Case Study of the Ministry of Finance, Planning and Economic Development

Please tick (✓) the option that best represents your opinion.

SA = Strongly Agree A = Agree N = Neutral D = Disagree SD = Strongly Disagree

SECTION A: DEMOGRAPHIC INFORMATION

1. Gender ☐ Male ☑ Female

2. Age Group ☐ 20–25 ☐ 26–35 ☑ 36–45 ☐ 46 and above

3. Education Level ☐ Diploma ☐ Bachelor's Degree ☑ Master's Degree ☐ Other

4. Department ☑ Human Resource ☐ Finance ☐ ICT ☐ Administration ☐ Other

5. Years of Service ☐ Less than 2 years ☐ 2–5 years ☐ 6–10 years ☑ Above 10 years

SECTION B: PERCEIVED OPPORTUNITIES OF AI IN HRM (Objective One)

| Statement | SA | A | N | D | SD |
|---|---|---|---|---|---|
| AI can improve efficiency in recruitment processes | ☑ | ☐ | ☐ | ☐ | ☐ |
| AI can reduce bias during employee selection | ☐ | ☑ | ☐ | ☐ | ☐ |
| AI can support data-driven decision making in HR | ☐ | ☐ | ☐ | ☑ | ☐ |
| AI can improve monitoring of employee performance | ☐ | ☑ | ☐ | ☐ | ☐ |
| AI can help | ☐ | ☐ | ☐ | ☐ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| identify employee training needs | | | ✓ | | |
| AI can improve communication between HR and employees | ☐ | ☑ | ☐ | ☐ | ☐ |

SECTION C: CHALLENGES OF AI INTEGRATION IN HRM (Objective Two)

| Statement | SA | A | N | D | SD |
|---|---|---|---|---|---|
| High financial costs hinder AI adoption | ☑ | ☐ | ☐ | ☐ | ☐ |
| Lack of technical expertise limits AI implementation | ☐ | ☑ | ☐ | ☐ | ☐ |
| Employees fear that AI may replace their jobs | ☑ | ☐ | ☐ | ☐ | ☐ |
| AI systems may create data privacy concerns | ☐ | ☑ | ☐ | ☐ | ☐ |
| Existing ICT infrastructure may not support AI technologies | ☑ | ☐ | ☐ | ☐ | ☐ |
| AI systems may be too complex for employees to use | ☑ | ☐ | ☐ | ☐ | ☐ |

SECTION D: STRATEGIES FOR SUCCESSFUL AI INTEGRATION (Objective Three)

| Statement | SA | A | N | D | SD |
|---|---|---|---|---|---|
| Staff should receive training on AI technologies | ☑ | ☐ | ☐ | ☐ | ☐ |
| AI should be | ☐ | ☑ | ☐ | ☐ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| introduced gradually through pilot programs | | | | | |
| The Ministry should establish clear policies guiding AI use | ☑ | ☐ | ☐ | ☐ | ☐ |
| ICT infrastructure should be upgraded before AI implementation | ☑ | ☐ | ☐ | ☐ | ☐ |
| Management should sensitize employees about AI benefits | ☑ | ☐ | ☐ | ☐ | ☐ |
| Employees should participate in AI system design | ☑ | ☐ | ☐ | ☐ | ☐ |
| AI systems should be continuously monitored and evaluated | ☐ | ☑ | ☐ | ☐ | ☐ |

Thank you so much for your participation