

Czech University of Life Sciences Prague

Faculty of Economics and Management

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Master's Thesis

Artificial Intelligence (AI) Integration in HRM function of Amazon/Novartis in the Czech Republic.

By

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

DIPLOMA THESIS ASSIGNMENT

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Business Administration

Thesis title

Artificial Intelligence (AI) Integration in HRM function of selected companies/Organizations in the Czech Republic.

Objectives of thesis

This research will identify the possible influences, benefits, improvements, and challenges of integrating artificial intelligence (AI) into human resource management (HRM) practices through organizational decision-making, acceleration of procedures, and identification of potentials and problems in HRM for recruitment, employee development, performance evaluation, and retention of selected companies or organizations in the Czech Republic.

Methodology

This thesis is composed of two main parts: Theoretical and Practical.

The theoretical part contains a detailed review of current thinking, supported by examples of practices and implementations of AI in HRM of global companies. Materials will be based on a comprehensive selection of current academic publications, together with other items drawn from trustworthy sources.

The practical part commences with secondary data collected during the review of literature. Based on the collected information, an appropriate survey will be constructed to determine the extent and success (or otherwise) of the use of AI in the HRM function of selected, comparable companies in the Czech Republic.

The proposed extent of the thesis

60 to 80 pages approx

Keywords

AI, HRM, Integration, Selected companies, HRM practices, AI advantages/disadvantages

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- Li P., Bastone A., Mohamad TA., Schiavone F., (2023), How does artificial intelligence impact human resources performance. evidence from a healthcare institution in the United Arab Emirates, Journal of Innovation & Knowledge, Volume 8, Issue 2, ISSN 2444-569X, <https://doi.org/10.1016/j.jik.2023.100340>.
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Declaration

I declare that I have worked on my master's thesis titled " Artificial Intelligence (AI) Integration in HRM Function of Amazon s.r.o and Novartis s.r.o in the Czech Republic." by myself and I have used only the sources mentioned at the end of the thesis. As the author of the master's thesis, I declare that the thesis does not break any copyrights.

In Prague on 27.03.2024

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Artificial Intelligence (AI) Integration in HRM Function of Amazon s.r.o and Novartis s.r.o in the Czech Republic

Abstract

This thesis derives into the integration of Artificial Intelligence in Human Resource Management Functions across two enterprises of varying scales in the Czech Republic: the large-scale Amazon s.r.o and medium-scale Novartis s.r.o. Initiated by a theoretical explanation of a detailed review of ongoing practices, supported by examples of implementations of AI in HRM functions in global companies. This investigation into theoretical precedents helps in the preparation of a survey questionnaire qualitative analysis of practical data derived from surveys conducted within the selected companies. The practical segment of the study, through comparative analysis, uncovers how AI's application differs between a large-scale and a medium-scale industry setting, reflecting on its impact on HRM practices. This juxtaposition reveals the complexities and variegated nature of AI integration, providing insights into the operational and strategic adjustments necessary for effective AI adoption in HRM processes. This thesis results conclude that AI offers substantial benefits for organizational efficiency and workforce management, its successful integration necessitates overcoming challenges through tailored strategies based on the company's scaling. This balanced approach ensures not only the realization of AI's potential in streamlining HRM practices but also the sustainable growth and empowerment of the workforce, contributing valuable insights to both academic discourse and practical implementation in the field of HRM and AI integration.

Keywords: AI, HRM, Integration, Amazon s.r.o, Novartis s.r.o, Large-scale industry, Comparative analysis, medium-scale industry, HRM functions, AI advantages/Disadvantages, Challenges, Benefits, Sustainable organizational growth

Integrace umělé inteligence (AI) do HRM Funkce Amazon sro a Novartis sro v České republice

Abstrakt

Tato práce vychází z integrace umělé inteligence ve funkcích řízení lidských zdrojů ve dvou společnostech různého rozsahu v České republice: ve velkém Amazon sro a střední Novartis s.r.o. Zahájeno teoretickým vysvětlením podrobného přehledu probíhajících postupů, podpořených příklady implementací AI do funkcí HRM v globálních společnostech. Toto šetření teoretických precedentů pomáhá při přípravě dotazníkového šetření kvalitativní analýzy praktických dat získaných z průzkumů provedených ve vybraných společnostech. Praktická část studie prostřednictvím srovnávací analýzy odhaluje, jak se aplikace AI liší mezi rozsáhlým a středně velkým průmyslovým prostředím, což odráží její dopad na postupy řízení lidských zdrojů. Toto srovnání odhaluje složitost a různorodou povahu integrace AI a poskytuje pohled na provozní a strategické úpravy nezbytné pro efektivní přijetí AI v procesech řízení lidských zdrojů. Výsledky této práce k závěru, že umělá inteligence nabízí podstatné výhody pro efektivitu organizace a řízení pracovní síly, její úspěšná integrace vyžaduje překonání výzev prostřednictvím přizpůsobených strategií založených na škálování společnosti. Tento vyvážený přístup zajišťuje nejen realizaci potenciálu umělé inteligence při zefektivňování postupů řízení lidských zdrojů, ale také udržitelný růst a posílení pracovní síly, což přispívá k cenným poznatkům jak do akademického diskurzu, tak do praktické implementace v oblasti integrace řízení lidských zdrojů a umělé inteligence.

Klíčová slova: AI, HRM, Integrace, Amazon sro, Novartis sro, Velký průmysl, Srovnávací analýza, středně velký průmysl, Funkce HRM, výhody/nevýhody AI, Výzvy, Výhody, Udržitelný růst organizace

Table of Contents

1. Introduction	10
2. Objectives and Methodology	12
2.1 Objectives.....	12
2.2 Methodology	12
3. Literature Review	13
3.1 Definition of AI:.....	13
3.2 Main AI methodology:	15
3.3 AI in terms of HRM:	17
3.4 AI in term of organization Functions:	19
3.4.1 Digital Pillar.....	20
3.4.2 Behavioral Pillar	21
3.4.3 Physical Pillar	22
3.5 AI in terms of Workplace.....	24
3.5.1 AI's application in the workplace offers numerous advantages:.....	24
3.6 HRM DEFINITION:	27
3.6.1 List of AI affected in HRM Areas:	29
3.7 AI Potential in HRM	32
3.8 Application of AI in HRM	34
3.8.1 Recruitment and selection.....	35
3.8.2 Onboarding	37
3.8.3 Training and development	38
3.8.4 Performance Management	39
3.8.5 Employee Engagement	40
3.8.6 Employee Retention.....	41
3.8.7 Career Path.....	42
3.9 Challenges of AI in HRM	44
3.9.1 Lack of Human Emotions	44
3.9.2 Employee Adaption	45
3.9.3 Lack of Employees Technological skills	45
3.9.4 Ethical Challenges of Bias in AI-Driven HR Processes	45
3.9.5 Challenges of Data Availability and Compatibility in AI-Driven HRM..	46
3.9.6 Limitations of AI in Matching HR Professionals Organizational Insight	46
3.9.7 Limitation of AI understanding Human.....	46
3.10 Main Tools used in AI in HRM	47
4. Practical Part	49
4.1 Data Collection.....	49
4.1.1 Data collection method	49

4.1.2	Data collection process	49
4.2	Research process steps	51
4.2.1	Choice of companies	51
4.3	Selection of the Companies.....	51
4.4	Implementation of AI in HRM at Amazon s.r.o. and Novartis s.r.o.....	53
4.5	Methodology	54
5.	Results and Discussion.....	57
5.1	Analysis of Response	57
5.2	Comparative Analysis between Amazon s.r.o and Novartis s.r.o.....	65
5.3	Discussion on sustainable Growth and Empowerment.....	68
5.4	Challenges and Recommendations	69
6.	Conclusion.....	71
	Bibliography	73
	List of pictures, tables, and abbreviations.....	75
6.1	List of pictures.....	75
6.2	List of tables.....	75
6.3	List of abbreviations.....	76
	Appendix.....	77

1. Introduction

The domain of Artificial Intelligence (AI), characterized by its extensive discussion and anticipation within technological discourse, has assumed a pivotal role across diverse sectors such as science, engineering, business, and human resources. The contemporary era witnesses an unparalleled fortune owing to the significant strides made in AI development. Tasks once relegated to manual labor are now seamlessly executed through the intervention of machines, software solutions, and an array of automated mechanisms. (Ginu George, *Integration of Artificial Intelligence in Human Resource*, 2019)

The concept of the "Fourth Industrial Revolution" or "Industry 4.0" refers to a significant period of change marked by the incorporation of intelligent technologies, particularly Artificial Intelligence (AI), into the fundamental structure of industrial and social activities. This age is characterized by the rapid progress of Information and Communication Technologies (ICT), which enables the widespread adoption of Artificial Intelligence (AI) and its subsequent influence on many sectors of society. Artificial Intelligence (AI) is becoming a fundamental technology that is causing significant and diverse changes in several aspects of modern life. This evolutionary process represents a crucial transition towards a period in which digital and physical systems converge, signifying a notable break from conventional industrial methods and ushering in a new age of technical advancement and social change. (Pedro R. Palos-Sanchez J. C.-L., 2022)

The growth of companies is becoming more dependent on the efficient amalgamation of workforce, procedures, and equipment in order to optimize value and decrease expenses. In recent times, the domain of Human Resources (HR) has seen substantial advancements, mostly propelled by technology and data analytics, particularly with the aid of Artificial Intelligence (AI). This technical innovation strengthens the strategic role of human resources (HR) by facilitating the use of data-driven insights and enhancing operational efficiency. As a result, it redefines conventional methods to organizational growth. (Eniola Sanyaolu, 2022)

The Human Resources (HR) department plays a crucial role in shaping an organization's workforce, managing recruiting procedures, assuring the alignment of new recruits with corporate culture, monitoring satisfaction with work, and assuming accountability for staff performance and productivity. Historically seen as a rather isolated aspect of the corporate domain, the field of Human Resources (HR) has recently experienced a significant shift due to the integration of digital technology. The integration of Artificial Intelligence (AI) into human resources (HR) processes represents a significant change in perspective, improving the effectiveness and efficiency of many procedures such as recruiting, performance assessment, training, job assignment, and mentoring programs. This move not only results in cost savings and improved time management, but also signifies a break from traditional approaches, highlighting the trend towards more advanced decision-making frameworks that rely on data analysis. The significance of artificial intelligence (AI) in reshaping workplace dynamics, which was long seen as a notion confined to science fiction, is now generally recognized by specialists. This recognition signifies a progressive development in the use of intelligent technologies in the field of human resource management. (Esra Sipahi, 2022)

This research aims to investigate the junction of Artificial Intelligence (AI) and Human Resource Management (HRM) in the corporate sector. The primary goal is to gain a comprehensive understanding of the level of managerial proficiency and training, the benefits and challenges related to the implementation of AI, and to identify particular areas within HRM that are experiencing notable advancements and utilization of AI technologies. This study seeks to reveal significant differences by employing an investigative methodology and conducting a comparative analysis of two distinct companies: Amazon s.r.o, and Novartis s.r.o, in Czech Republic. By conducting a thorough analysis of primary and secondary sources, this research aims to provide insights into the actual implementations of artificial intelligence (AI) in the field of human resource management (HRM), the resulting advantages it offers, and the obstacles faced during its integration. The objective of this investigation is to emphasize the profound impact of artificial intelligence (AI) on human resource management (HRM) methods, emphasizing its capacity to redefine the domain.

2. Objectives and Methodology

2.1 Objectives

The objective of this thesis aims to explore the integration of artificial intelligence (AI) into the human resources management (HRM) operations of Amazon s.r.o. and Novartis s.r.o. in the Czech Republic. This study aims to assess the present use of AI technology in HRM operations, namely in recruiting, performance management, and employee engagement. The objective is to understand the advantages acquired and the difficulties faced by these firms when using AI in their HRM processes. Furthermore, the research investigates the impact of firm size on strategies and results of integrating AI, with the goal of offering valuable insights into future patterns and advancements in the use of AI in HRM. This study employs a combination of qualitative and quantitative research methodologies, encompassing interviews and surveys, to make a scholarly contribution to the existing body of literature. Additionally, it provides practical suggestions for organizations seeking to successfully incorporate artificial intelligence (AI) into their human resources (HR) operations. As a result, the study aims to improve organizational efficiency and facilitate strategic human resource planning.

2.2 Methodology

This thesis is composed of two main parts: Theoretical and Practical. The theoretical part contains a detailed review of current thinking, supported by examples of practices and implementations of AI in HRM of global companies. Materials will be based on a comprehensive selection of current academic publications, together with other items drawn from trustworthy sources. The theoretical part also consists of the main concept definition of Artificial Intelligence (AI), Tools, Management structure and overview of current practices and roles of artificial intelligence in the companies. The practical part commences with secondary data collected during the review of literature. Based on the collected information, an appropriate survey will be conducted among employees and interviews taken from the selected companies. The practical part consists of both- qualitative and quantitative methods. Based on the results of both part, will derive the conclusion for theory and practical.

3. Literature Review

3.1 Definition of AI:

The concept of AI has different definitions. Since the 1990s, technological advancements have markedly progressed, significantly enhancing the efficiency with which various tasks are executed (Michael A. Osborne, 2013). The inception of the term "Artificial Intelligence" (AI) is attributed to McCarthy in 1956, defining it as build a similar to a "thinking machine," encompassing cybernetics, automation theory, and information processing (Andresen, 2002). Artificial Intelligence (AI), as defined by (Patrick H. Winston, 1992) refers to a set of techniques that enable computers to carry out activities that involve human-like thinking. The provided definition underscores the significance of artificial intelligence (AI) in facilitating the connection between computer processes and the intricate problem-solving capabilities inherent in human intellect. It underscores the technology's ability to replicate cognitive activities. (Patrick H. Winston, 1992)

AI is defined as a "intelligent agent" in which robots demonstrate skills similar to human intelligence via the simulation of cognitive processes. The simulation is accomplished by providing extensive datasets to these machines, which are then evaluated and improved using machine learning models, enabling the creation of intelligent behaviors. Furthermore, artificial intelligence (AI) refers to the ability of a system to effectively read inputs, gain knowledge from these inputs, and use this learned understanding to achieve specific objectives and execute activities via adaptable adjustments. This viewpoint emphasizes the crucial significance of data and machine learning in empowering robots to make intelligent decisions, emphasizing AI's ability to learn and apply in many situations. (Norvig, 2009). Contemporary definitions of AI have evolved, ranging from the capability to solve cognitive problems to the ability of a system to execute tasks characteristic of intelligent entities and leading to its adoption in daily business operations across various organizations. (Ginu George, 2019)

Artificial Intelligence (AI) is characterized as a scientific discipline with the objective of mimicking various dimensions of human cognition, including but not limited to learning, reasoning, perception, and critical thinking, through the deployment of computer algorithms governed by logical principles (Eniola Sanyaolu, 2022). Present definition defines as Generative AI is a subfield of AI that specifically focuses on developing machine learning models capable of producing novel content, such as text, photographs, and other forms of media. ChatGPT exemplifies this technology, renowned for its ability to generate text that closely resembles human language and engage in conversations. It has progressed from its third version in November 2022 to a more sophisticated fourth version in March 2023. The present review underscores the significance of Generative AI in driving advancements in content production and engagement via ChatGPT. (Soumyadeb Chowdhury, 2023)

AI finds extensive application in sectors including healthcare, manufacturing, retail, sports, human resources, and accounting and finance. Initially perceived as a concept bordering on the speculative, Artificial Intelligence (AI) has transcended its fictional status to become an integral aspect of contemporary daily existence. Through the application of 'machine learning' and neural networks, which emulate the functioning of human neurons, AI facilitates the processing of intricate data sets, thereby giving way to precise outcomes. (Ginu George, 2019)

This era, characterized by rapid innovations and developments in AI, is often heralded as the golden age of the field, positioning AI as the forefront of technological advancement. Artificial intelligence (AI) is evolving at an unprecedented pace, introducing advanced innovations that enhance modern computer systems' capabilities in specific tasks such as facial recognition and autonomous driving. The ultimate aim of AI development is to create sophisticated systems capable of surpassing human performance in complex tasks, ranging from chess to advanced mathematical problem-solving. The future vision for AI encompasses mastering all human activities, offering superior problem-solving strategies. However, the advent of fully automated systems, capable of undertaking comprehensive human functions from vehicular control to business automation, presents a spectrum of challenges for the long term. (Indrasen Poola, 2017)

3.2 Main AI methodology:

Throughout history, technology has played a crucial role in accomplishing company objectives, enhancing operational effectiveness, and facilitating optimization endeavors. The development of Artificial Intelligence (AI) is expected to bring about significant transformations in the dynamics of human-technology interaction, perhaps resulting in favorable outcomes. In order to thoroughly examine the intricacies of this shift, it is essential to differentiate between often interchanged terms. Although the phrases "machine learning" and "artificial intelligence" are sometimes used interchangeably, they really represent distinct but interconnected ideas (Corporation, 2019). The differentiation highlights the need of using accurate terminology when comprehending the extent and consequences of artificial intelligence on technical and organizational progress.

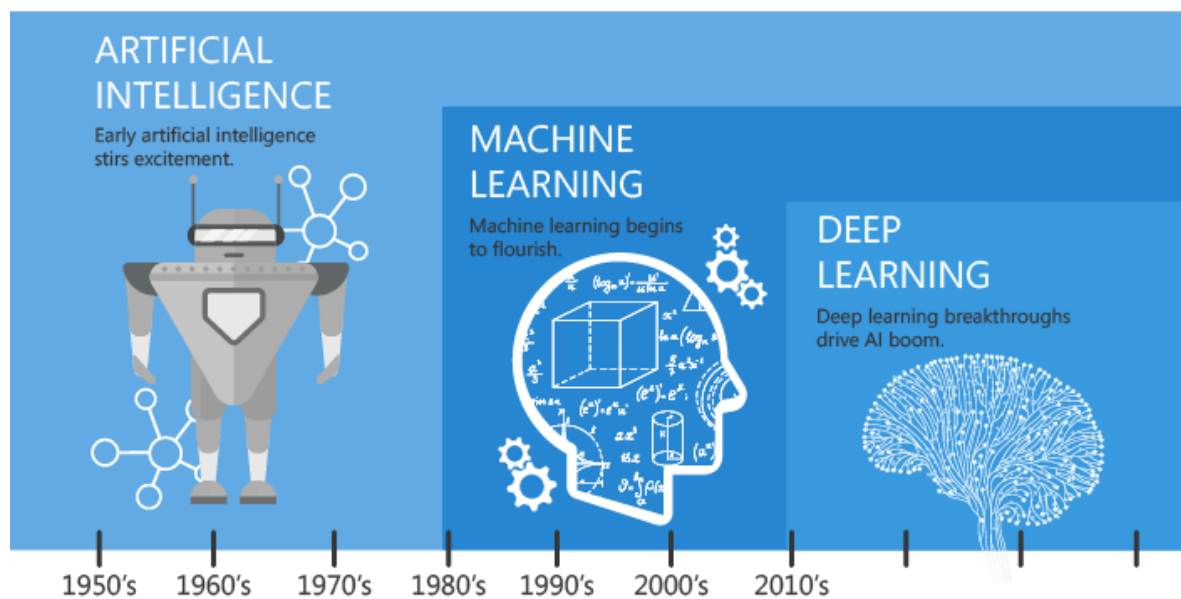


Figure 1: Types of development of AI (Supracov.live, 2021)

Artificial Intelligence (AI): Any methodology employing logic, rules, and intricate algorithms facilitating computers in emulating human cognitive functions is encompassed within Artificial Intelligence (AI). This domain of computer science is dedicated to the development of intelligent machinery capable of performing and responding in a manner akin to human behaviour. (Consulting, 2023)

Machine Learning (ML): Machine Learning (ML) is a specialized subset of Artificial Intelligence (AI), concentrating on the capacity of computer programs to analyze data and learn autonomously. Unlike traditional programming, which requires explicit instructions from a programmer to accomplish tasks, ML identifies patterns and generates predictions that enhance AI's decision-making processes. An illustrative example of ML's application is its ability to analyze employee behavior patterns to predict potential departures for new opportunities. In essence, while AI encompasses the broad spectrum of intelligent decision-making capabilities of computer programs, ML specifically addresses the methodologies through which AI acquires and processes data without direct human input. (Corporation, 2019)

Deep Learning (DL): A specific subset of machine learning encompasses algorithms enabling software to autonomously train for tasks, including speech and image recognition, through exposure to multilayered neural networks as CNNs, RNNs (Dr. Bharath H Aithal, 2023)

Generative AI: Generative AI involves algorithms that create content akin to human output, such as text, images, and music, by synthesizing new data from learned patterns. It includes specific Artificial Neural Networks (ANNs) like Generative Adversarial Networks (GANs) and Large Language Models (LLMs), focused on producing data resembling their training input. (Mas, 2023)

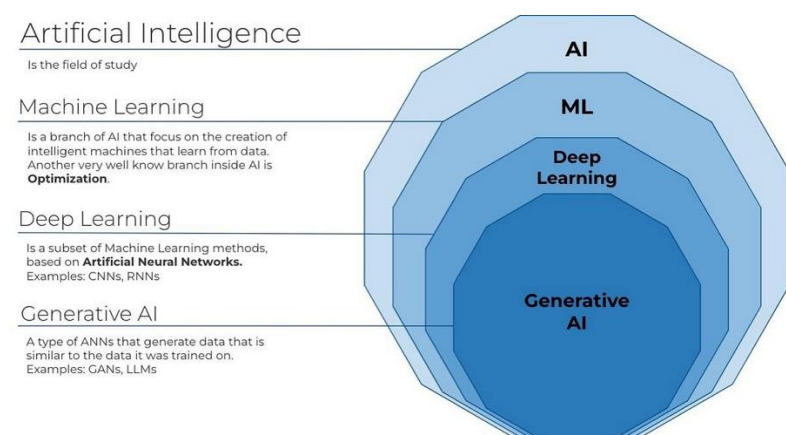


Figure- 2: Generative AI is a subset of the overall field of study that AI represents (Mas, 2023)

3.3 AI in terms of HRM:

The field of Human Resource Management (HRM) is now undergoing a significant transformation due to the integration of Artificial Intelligence (AI), which involves the use of data analytics, machine learning, and automation. The integration is enhancing the efficiency of HR operations by reducing time consumption and improving the quality of HR-related results. The introduction of AI in HRM represents a fundamental change towards more effective, data-based decision-making processes, improving the efficiency and strategic capabilities of HR operations in various enterprises. (Consulting, 2023)

As AI evolves from automation to augmentation, firms are using technology to improve HR procedures. This development aims to improve employee and job seeker experiences by offering timely and relevant information, insights, and suggestions. This strategic use of AI shows how data-driven insights may enhance HR operations by enhancing the decision-making process and creating a more educated, efficient, and successful HR management ecosystem. This marks just the beginning of AI's integration into HR, signaling a period of significant workforce transformation. According to a global study by the IBM Institute for Business Value (IBV), executives predict that 40% of employees will need to reskill due to AI and automation within the next three years, viewing this transition as an opportunity 87% surveyed executives to expand career possibilities. A majority of the executives surveyed believe that generative AI will augment rather than replace employee roles, with effects varying by job function. (Consulting, 2023)

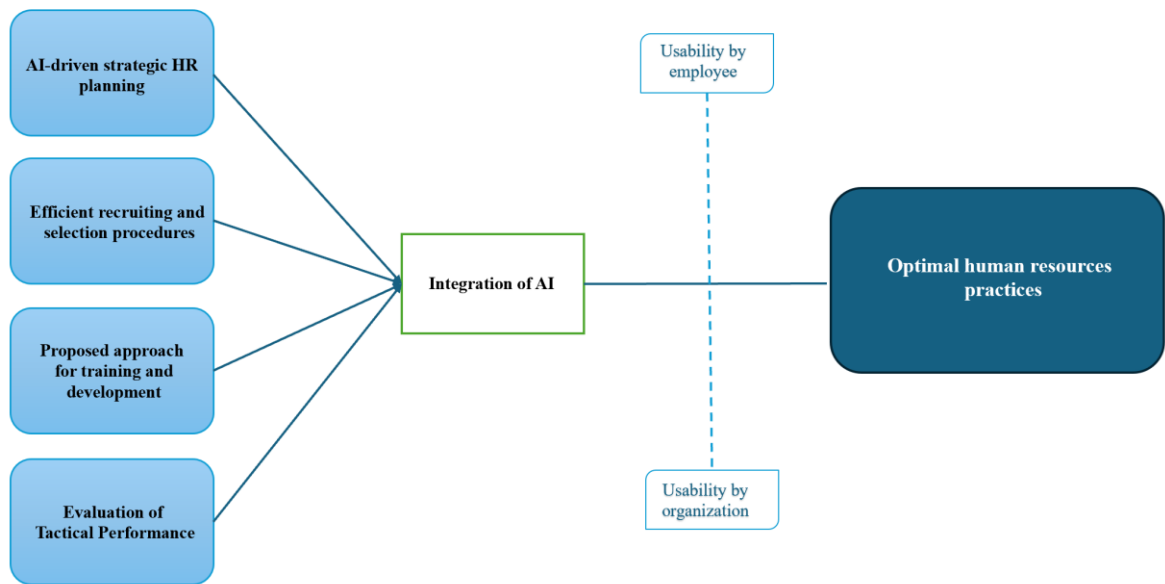


Figure – 3: AI’s role impact in HRM Functions

AI's transformative impact is evident across various HR domains, from automated recruitment processes that identify the ideal candidates to personalized training programs that enhance employee development. Its influence spans multiple sectors, modifying workflows and introducing more efficient operational methods. (Consulting, 2023)

Artificial Intelligence (AI) significantly enhances the efficiency of Human Resources (HR) operations, specifically in the areas of recruitment, onboarding, and employee training. By streamlining these processes, AI facilitates a more strategic utilization of both time and organizational resources in HR management. This optimization underscores the transformative impact of AI in redefining traditional HR practices, enabling a shift towards more focused, value-added activities within the domain. In recruitment, AI technologies surpass traditional screening methods by accurately matching candidates based on a comprehensive set of criteria. During the onboarding process, AI aids in the seamless integration of new hires into the company culture, while in training, it provides customized feedback to optimize professional growth. (Menaka, 2023)

This shift has a direct effect on HR departments, necessitating the adaptation to roles centered around augmented tasks and supporting employees through job function transitions. The incorporation of AI into HR technologies provides substantial support in navigating this

evolving landscape. Rapid advancements in AI tools are moving beyond mere efficiency improvements and are becoming catalysts for innovation. This progression enables HR teams to take a more strategic approach to human resource management while still maintaining a personalized human touch, heralding a new era of efficiency and strategic development in human resources. (Menaka, 2023)

3.4 AI in term of organization Functions:

AI technologies provide unique prospects and difficulties for enterprises, distinguishing them from conventional digital tools. Their distinct capacity to modify human functions, either by limiting, enhancing, or substituting them, transfers decision-making and authority from exclusively human to integrated human-AI systems. This paradigm shift requires novel perspectives on the interactions between humans and artificial intelligence (AI), which may result in the stabilization of work dynamics, the coevolution of work practices, or the emergence of creative work and organizational structures. This underscores the need for enterprises to adjust to the changing dynamics of integrating artificial intelligence. (Hind Benbya, 2021)

Advanced artificial intelligence (AI) technologies are gradually diminishing the conventional demarcations between human capabilities and computer activities. AI has made significant progress in enabling it to carry out activities that were previously seen as exclusive to humans, such as emotional awareness, discourse, and creativity. This has expanded the scope of AI into realms that were previously only accessible to humans. This advancement presents a challenge to prevailing notions about the responsibilities and capacities of machines, hence generating arguments and conflicts over the incorporation of artificial intelligence in domains such as management, creativity, and emotional recognition. These transformations need a reevaluation of the relationships between humans and

machines, as well as the creation of new collaboration paradigms. This underscores the intricate dynamics brought about by the expanding capabilities of artificial intelligence. (Hind Benbya, 2021)

The complex structure of artificial intelligence (AI) technology might give rise to a range of results, including both unanticipated repercussions and advantages for enterprises. The failure of AI systems may be attributed to the diverse effects of AI on various stakeholders, as well as the deliberate omission of these stakeholders from the AI development process. This underscores the need to include all relevant parties in the design and implementation stages of artificial intelligence (AI) in order to mitigate adverse consequences and guarantee the efficacy of AI endeavors.

The unique implications of AI in organizational contexts offer fertile ground for information systems (IS) research, particularly in examining AI's role in enhancing business capabilities such as automation, engagement, insight and decision-making, and innovation.

The analysis outlines a specific emphasis on three core elements that have the potential to reshape the work environment inside organizations, with a deliberate exclusion of factors related to corporate strategy and decision-making. The pillars consist of the Digital; the Behavioral; and the Physical. The proposed tripartite framework proposes a comprehensive methodology for comprehending and influencing the forthcoming workplace. It underscores the importance of harmonizing technological progress with human-centered factors and the physical arrangement of workspaces in order to cultivate an optimized, inclusive, and adaptable organizational surroundings. (Musso, 2023)

3.4.1 Digital Pillar

Digital, which involves the incorporation and use of digital technologies and platforms.

AI greatly improves workplace productivity and efficiency, mostly via the automation of repetitive jobs, acceleration of diverse processes, and provision of assistance. According to a poll, 30% of IT professionals worldwide have seen that AI and automation solutions have resulted in time savings for staff. Furthermore, a survey conducted by Salesforce revealed that employees who use chatbot assistants allocate a greater amount of time to intricate issues

(64%) in comparison to those who do not employ them (50%). This underscores the increasing capacity of AI to facilitate more intricate problem-solving. AI plays a crucial role in enabling people to concentrate on more valuable activities, hence enhancing the overall quality of work.

Artificial Intelligence (AI) is about to transform employment responsibilities and duties, going beyond simple automation. Its influence will vary depending on the kind of work, with repetitive jobs being more significantly affected than others. Forecasting the precise effects of AI on employment has proven to be difficult owing to its unexpected progress, although there is widespread apprehension over job displacement. Nevertheless, it is evident that the use of artificial intelligence (AI) necessitates the retraining of employees, the adoption of novel work arrangements, and the incorporation of AI-enhanced jobs. This signifies a transition towards a workforce that must adjust to the ever-changing settings where AI is incorporated.

3.4.2 Behavioral Pillar

Behavioral, which revolves around the dynamics of human behavior, culture, and interaction in the workplace.

The integration of Artificial Intelligence (AI) inside professional environments is fundamentally changing the dynamics of human-system interactions and the manner in which humans collaborate. Artificial intelligence (AI) plays a crucial role in enabling and sometimes facilitating interactions among coworkers. AI assistants provide help for activities that would have traditionally required direct human interaction, such as HR questions or office administration. The use of chatbots for HR help and AI for different organizational activities clearly demonstrates this shift. Furthermore, AI solutions such as Microsoft's Co-pilot, designed for certain occupations, are revolutionizing work and team dynamics. AI is not only changing the way people work together with technology, but also reshaping how people interact with one other in a professional environment.

The swift integration of Artificial Intelligence (AI) inside professional environments

requires the acquisition of novel proficiencies and alterations in work methodologies. It is important for employees to acquire proficiency in utilizing or instructing AI tools. Certain positions, such as engineers or supervisors, may see alterations in job execution, including a decrease in on-site labor as a result of modern technologies like computational vision. This shift emphasizes the need of retraining the workforce and making changes to traditional job execution in order to include the advantages and capabilities of AI.

Artificial Intelligence (AI) solutions have the potential to liberate employee time by automating jobs and occasionally diminishing the need for human participation. Organizations should prioritize the establishment of infrastructure that fosters social contact, cooperation, and knowledge exchange in order to sustain a well-rounded and engaged workforce in light of the growing integration of artificial intelligence.

The incorporation of cutting-edge technology such as Artificial Intelligence (AI) inside the professional setting is instigating a reassessment of individuals' sense of work identity and their contractual relationship with firms. This scenario necessitates that organizations proactively react and adjust to these changes, guaranteeing that the developing demands and identities of their workforce are acknowledged and resolved within the framework of a dynamic work environment.

3.4.3 Physical Pillar

Physical, which focuses on the tangible aspects of the work environment, such as workspace design and ergonomics.

Artificial Intelligence (AI) is enhancing workplace operations by using technologies like computer vision to monitor and optimize people flow, crucial for dynamic sectors and offices with hybrid work models. AI also significantly boosts safety by managing visitor access and detecting anomalies, showcasing its role in improving efficiency, safety, and employee experiences across various work environments.

Artificial Intelligence (AI) is enhancing workplace ergonomics by analyzing employees' posture and physical activity, offering personalized recommendations for adjustments to

prevent injuries. This technology is applied in various sectors, from industrial settings for injury prevention to offices for promoting physical activity through personalized coaching. The adoption of AI in ergonomics contributes to the anticipated growth of the global workplace safety market, expected to rise from USD \$14.2 billion in 2022 to \$26.7 billion by 2027, with a CAGR of 13.5%. This highlights AI's role in improving workplace safety and ergonomics.

Artificial Intelligence (AI) enables detailed monitoring of employees' use of both office space and digital devices. However, this intensive surveillance is linked to increased stress and anxiety among workers, suggesting that the potential efficiency gains may be outweighed by negative effects on employee well-being. This raises important concerns about finding the right balance between using AI for monitoring and maintaining employee privacy and mental health.

Utilizing advanced data analysis, intelligent technologies provide a unique method for creating and enhancing workplaces. Through the use of Artificial Intelligence (AI), it is feasible to optimize traffic movement and improve customer satisfaction, while accurately modifying ambient variables such as illumination, temperature, and air purity in real-time. These modifications powered by artificial intelligence are designed to satisfy the unique demands of organizations in terms of effectiveness and cost efficiency. This represents a transition towards work environments that are adaptable and tuned to achieve strategic objectives.

Technological advancements and shifts in work patterns are anticipated to cause substantial urban changes, resulting in a redefining of the conventional office environment. It is anticipated that offices would undergo a transformation from being mainly designated for job execution to being hubs that prioritize social and collaborative connections. This phenomenon signifies a more extensive transition towards office settings that cater to the changing requirements of the labor force and function as crucial spaces for cultivating community and cooperation within urban areas.

The purpose of the assessment is not to present a full list, but rather to emphasize important elements of the influence of Artificial Intelligence (AI) on the workplace. These

characteristics include digital, behavioral, and physical dimensions. Recognizing the inherent difficulties and intricacies associated with the integration and use of artificial intelligence (AI), it is crucial to acknowledge its unavoidable impact on shaping the next professional environment. This acknowledgement emphasizes the need of adopting a proactive and well-informed strategy in comprehending and incorporating breakthroughs in artificial intelligence (AI), thereby guaranteeing their positive impact on the development of workplace practices and surroundings. (Musso, 2023)

3.5 AI in terms of Workplace

Organizations are continuously striving to develop creative methods in order to gain a competitive edge. One significant answer that has emerged is the integration of Artificial Intelligence (AI) technology in the workplace. Intelligent machines, which are distinguished by their capacity to do activities that often need human intelligence, possess the capacity to analyze data, identify patterns, and make conclusions based on their thorough examinations. The ability to optimize business processes and enhance performance indicators is a key capability of artificial intelligence (AI), highlighting its potential to significantly improve operational efficiency and organizational results. (Benefits of Artificial Intelligence in the Workplace, 2024)

3.5.1 AI's application in the workplace offers numerous advantages:

By automating boring and laborious operations, AI-powered automation boosts organizational efficiency and productivity. The use of this technological intervention enables workers to redirect their focus towards jobs that possess more complexity and worth. Chatbots handle client questions, freeing up staff and ensuring prompt replies. AI can analyze labor processes and find inefficiencies, improving operational procedures. Thus, firms may improve performance and efficiency, demonstrating AI's influence on

simplifying corporate procedures and creating a more productive workplace.

Organizational decision-making is enhanced by AI algorithms. By finding trends, extracting insights, and providing data-driven suggestions, these algorithms provide decision-makers accurate and current information. This improved informational base helps firms make better judgments and handle market changes. AI's capacity to offer a solid analytical foundation for decisions improves strategic planning and operational agility, allowing organizations to adapt to changing market circumstances.

AI technologies automate repetitive, rule-based operations like data input, document processing, and inventory management, streamlining commercial processes. Automation reduces manual work and human mistakes. AI's improved process accuracy, execution speed, and cost efficiency demonstrate its disruptive potential in corporate operations. In financial operations, AI-powered systems may scan invoices, extract relevant data, and integrate it straight into accounting software, minimizing human data input. AI optimises operational procedures, providing more efficient and productive business practises.

Through personalized suggestions for products and connections, AI-powered customization and recommendation engines improve consumer experience. These AI-driven solutions, like virtual assistants, can understand user preferences and provide relevant suggestions, increasing customer pleasure and loyalty. Additionally, AI-powered sentiment analysis helps firms assess consumer comments and sentiment. This analytical ability helps organizations tailor their products and services to client needs. Thus, AI's incorporation into customer engagement strategies improves customer interactions and helps improve goods and services, demonstrating the technology's worth in customer-centric business results.

AI automates tedious processes, freeing employees to work on more creative and strategic projects. This shift improves employee morale by eliminating tiresome tasks and helps firms maximize human potential. Manufacturing uses AI-powered robots for packaging, assembly, and quality monitoring. This use of AI to automate regular operations shows its potential to maximize labor deployment and efficiency, enabling firms to tap into human intellect and strategic thinking.

Human employees' talents may be transformed by AI technology. AI-powered solutions provide staff real-time insights and automate complicated calculations, improving job performance. This collaboration between humans and AI technologies enhances productivity and enables people to perform better. AI with human cooperation illustrates the notion of an enhanced workforce, where intelligent technologies improve individual's built-in talents to boost productivity and performance.

Businesses value data, and Artificial Intelligence (AI) is essential for analyzing large amounts of data to provide meaningful insights. AI systems can spot patterns, trends, and abnormalities in data sets, helping organizations make data-driven choices. AI can analyze unstructured data like social media, consumer feedback, and sensor data to help enterprises get insights. Organizations might find hidden possibilities and gain a competitive advantage by analyzing such different data sets. Strategically using AI in data analysis helps comprehend market dynamics, customer behavior, and operational efficiency.

AI technologies improve workplace safety and risk management. AI-driven systems use sensor data to monitor and evaluate the workplace for dangers and departures from norms. In manufacturing, AI can quickly detect equipment defects and operational irregularities, preventing accidents and downtime. AI risk detection helps avoid workplace accidents and downtime. This application shows how AI can create a safe and efficient workplace via proactive risk management and safety assurance.

The aspects demonstrate AI's widespread and transformational impact on workplace processes. AI's significance in improving efficiency, innovation, and competitive differentiation highlights its importance in reinventing organizational procedures. AI optimizes processes, enhances human capacities, improves decision-making, and ensures workplace safety, reinforcing its role as a fundamental engine of contemporary company success.

3.6 HRM DEFINITION:

The significant role of Human Resource Management (HRM) in the generation of value inside firms is progressively acknowledged. Human Resource Management (HRM) is a set of managerial choices related to policies and practices that together shape the employment relationship, with the aim of achieving certain organizational goals. The goals of HRM are diverse, with the intention of improving corporate efficiency and financial results, as well as promoting employee welfare and social advantage. (Ali Fenwick, 2024)

Human Resource Management (HRM) is seen as a combination of many HRM techniques that together impact the numerous employee interactions inside and outside the firm. This viewpoint emphasizes the strategic significance of Human Resource Management (HRM) in influencing the work environment, thereby making a valuable contribution to the achievement of corporate objectives and the overall welfare of employees and society. (Ali Fenwick, 2024)

Human Resource Management (HRM) refers to a wide range of methods that are designed to successfully manage an organization's personnel. The aforementioned procedures include several aspects like as recruiting and selection, performance assessment, compensation, and training and development activities. Human Resource Management (HRM) involves the development and implementation of managerial strategies and initiatives that have an effect on the relationship between an organization and its employees, thereby shaping the company's human capital. It embodies a methodical and cohesive strategy for handling employment relationships, characterized by its emphasis on gaining a competitive advantage by cultivating a dedicated and proficient staff. This is accomplished by using a combination of cultural, structural, and people methods in a synergistic manner.

The primary purpose of Human Resource Management (HRM) is to cultivate a workforce that exhibits both strong commitment and competence, while also being in sync with the strategic goals of the business. This, in turn, leads to an improvement in competitive advantage and overall organizational performance.

Human Resource Management (HRM) has undergone four distinct phases in its evolution: Administrative human resources (HR) primarily concentrated on fundamental administrative duties and adherence to regulations. Personnel management, on the other hand, redirected its attention towards an employee-centric approach, integrating technology to enhance recruitment and training processes. Strategic HRM, in response to globalization and technological progress, reconfigured HR as a strategic ally, prioritizing data-driven decision-making through the utilization of Human Resource Information Systems (HRIS). Presently, Business Partner HRM places emphasis on digital strategies, data analytics for decision-making, and the improvement of the workplace experience through the integration of technology and inclusivity. This sequence emphasizes the shift of HRM from administrative duties to a strategic, data-driven position focused on maximizing human resources and aligning HR practices with business objectives, showcasing the crucial role of HRM in achieving organizational success. (Ali Fenwick, 2024)

The advent of sophisticated digital technology, particularly Artificial intellect (AI), is revolutionizing the field of Human Resource Management (HRM) via its ability to enhance human intellect within the organizational setting. This transition poses novel obstacles for Human Resource Management (HRM), requiring the proficient incorporation of Artificial Intelligence (AI) to augment operational efficacy and foster value generation. In order to tackle these difficulties, a methodical framework is suggested, which categorizes HRM practices into three domains: personnel management (concentrating on the acquisition, growth, and welfare of talent), compliance (ensuring adherence to legal and ethical standards), and culture (establishing a collaborative and mission-aligned organizational culture). This classification underscores the broader scope of HRM's responsibilities, emphasizing its strategic significance in overseeing personnel, organizational culture, and adherence to regulations. The framework proposes a comprehensive approach to HRM, highlighting the need of incorporating technological, ethical, and human factors to effectively connect people and machines in the workplace. This approach strengthens the strategic importance of HRM in harnessing AI technology. (Ali Fenwick, 2024)

3.6.1 List of AI affected in HRM Areas:

The field of Human Resources (HR) is now undergoing a significant and fundamental change, mostly due to the integration of Artificial Intelligence (AI). The increasing integration of AI-powered virtual assistants is leading to a notable transformation in the execution of HR services, which were traditionally carried out by human staff. The use of artificial intelligence (AI) in the field of human resources (HR) is especially evident in key domains such as talent acquisition, performance evaluation, and learning and growth. These fields show the increasing use of artificial intelligence (AI) in improving human resources (HR) procedures, indicating a reevaluation of traditional human responsibilities and facilitating the optimization of HR operations via technology support. This phenomenon exemplifies the wider influence of artificial intelligence (AI) on restructuring organizational procedures and the capacity of technology to enhance human talents within the human resources (HR) domain.

3.6.1.1 Talent Acquisition:

The use of AI in talent acquisition, a labor-intensive part of HR management, has increased efficiency. This technology has altered the recruiting industry, allowing recruiters to expedite time-consuming tasks like finding people, analyzing resumes, and scheduling interviews. AI-powered talent acquisition software has cut recruiting chores by 75%. Additionally, AI now automates job ads and applicant searches on LinkedIn and Glassdoor. These systems can now match job suggestions to candidate profiles by analyzing resume content, search behaviors, and network connections using machine learning algorithms, optimizing the recruitment process and better matching candidate skills and qualifications to organizational needs. This progression shows AI's ability to improve talent acquisition and tactics and procedures. (Ginu George, 2019)

AI in the hiring process, especially resume screening and early interviews, improves HR efficiency, especially in high-volume hiring. AI-enabled software streamlines both audio and video interviews, reducing time and improving efficiency. Studies show that AI-enabled recruiting reduces hiring expenses by up to 71% and boosts recruiter efficiency. AI can optimize operational efficiency, reduce expenses, and dramatically improve talent acquisition methods, which improves the recruiting process and shows its ability to revolutionize conventional hiring procedures.

The active involvement and future involvement of applicants are crucial but sometimes overlooked components of the hiring procedure, mainly because of the time-consuming nature of these tasks. Traditional processes have shown a deficiency in maintaining regular touch with applicants after they have submitted their application or participated in an interview, resulting in a lack of feedback about their progress. Modern job seekers, especially younger communities, have high expectations for quick answers, with some expected replies within 10 minutes of submitting their application. The promptness of communication is of utmost importance, since a delay in response might lead to the loss of prospective employees to rivals who are more responsive. The problem at hand may be addressed by integrating Artificial Intelligence (AI) into many technologies, including bots that communicate with Candidate Tracking Systems (CTS), and Customer Relationship Management (CRM) systems. AI-driven systems provide instant communication with applicants, including prompt responses to inquiries and information about the progress of their applications. Implementing this strategy not only improves the satisfaction of candidates but also establishes the organization as a proficient and adaptable employer, therefore enhancing the overall efficiency of the hiring procedure.

Organizations face significant dropout rates in the last stages of the employment process, such as offer letter acceptance and onboarding. To reduce dropouts, strategic involvement is needed between a candidate's resignation and start date. AI's repeated follow-ups retain candidate interest and commitment, minimizing dropout rates. Conventional orientation

programs that introduce new hires to business culture, laws, and regulations must retain knowledge, since 90% of workers forget or ignore important aspects. AI-driven intelligent bots help create new employee profiles and provide real-time Q&A on corporate rules, benefits, and insurance. AI integration simplifies the onboarding process and improves new hires' comprehension and consumption into the firm, increasing the onboarding experience.

3.6.1.2 Learning and Development

The field of Learning and Development (L&D) is undergoing a significant transformation due to the impact of Artificial Intelligence (AI). As a result, it is essential to implement regular training programs to improve employee productivity and promote personal development. Learning and development (L&D), an ongoing need for both new and current workers in relation to corporate rules and operational processes, greatly benefits from the capacity of artificial intelligence (AI) to provide tailored and individualized learning experiences. This technological advancement facilitates learners' ability to interact with educational materials at their preferred time, hence enhancing the efficacy of training initiatives. In this AI-enhanced L&D environment, the role of Human Resources (HR) is now focused on curating intelligent and relevant material, as well as developing a robust assessment structure to ensure learner engagement and concentration. By using artificial intelligence (AI), human resources (HR) professionals can focus their efforts on creating L&D programs of superior quality that are sensitive to current trends, tailored to individual tastes, and delivered via e-learning platforms. This strategy mitigates the logistical challenges often linked to the coordination of physical training, hence enhancing the efficiency of the process. Although there is less human involvement in online learning and development, it is still essential to get feedback. This practice guarantees the ongoing enhancement of learning and development (L&D) activities and effectively conveys to workers that their perspectives are highly regarded, hence augmenting their level of involvement and contentment with the provided training opportunities.

3.6.1.3 Employee Engagement

Organizational goals extend beyond merely ensuring employee happiness and satisfaction, aiming to foster deep engagement. Achieving employee engagement requires a holistic approach that encompasses multiple facets of the employee lifecycle, from onboarding to exit. Essential components of this comprehensive engagement strategy include role clarity, access to learning opportunities, mechanisms for rewards and recognition, effective grievance redressal systems, and programs addressing employee health and wellness. Artificial Intelligence (AI) plays a pivotal role in facilitating equitable and efficient engagement strategies. AI's capabilities enable personalized learning and development pathways, real-time assistance for inquiries related to health and other benefits, and guidance in understanding organizational policies through virtual assistants. Furthermore, AI enhances employee engagement by supporting an ongoing, unbiased feedback system grounded in factual analysis. Through AI tools, HR departments can establish measurable objectives for individual employees, simplifying the process of continuous feedback and improving outcome quality. AI's ability to systematically manage and analyze feedback from extensive employee surveys allows for the prediction of current and future engagement levels, turnover rates, and performance metrics, offering a comprehensive overview of organizational engagement dynamics. This utilization of AI in employee engagement strategies underscores its significant contribution to understanding and improving the holistic employee experience.

3.7 AI Potential in HRM

Artificial Intelligence (AI), which was formerly often linked to science fiction narratives including future robots and dystopian overthrows, has recently been integrated into actual implementations spanning several industries. Currently, AI has a wide range of applications, including automating text and visual material, acting as virtual assistants, transforming industrial processes, and even outperforming some human CEOs in answering questions. In the context of work, it is expected that artificial intelligence (AI) would mostly replace

positions that rely less on essentially human qualities, such as analytical thinking and judgment. The aforementioned transition emphasizes the capacity of artificial intelligence (AI) to improve productivity in jobs that are repetitive and based on algorithms. However, it also emphasizes the essential significance of human cognitive abilities in professions that need detailed analysis and decision-making. (How AI is transforming HR departments, 2023)

The incorporation of artificial intelligence (AI) into the field of Human Resource Management (HRM) signifies an important shift in the functioning of organizations. The present state of study evidence highlights a significant increase in the use of artificial intelligence (AI) technology in professional settings. One such instance is the study conducted by Oracle in 2019, which had a total of 8,370 participants, including workers, human resources experts, and managers, from 10 different nations. The results revealed that a significant increase in the integration of artificial intelligence (AI) into professional endeavors was seen, with 50% of the participants actively engaging in this practice. This is a notable rise from the previous year's figure of roughly 33% (Corporation, 2019). The presented data not only underscores the increasing dependence on artificial intelligence (AI) in diverse organizational tasks, but also indicates a wider recognition and use of AI technologies in improving efficiency in operations and processes for making decisions within the field of human resource management (HRM).

Traditional HR processes are being transformed by digital transformation. Traditional manual and paper-based operations are moving online. This digital transition includes employment application submissions, candidate selection, scheduling, and employee benefit administration. Digital modalities simplify processes, boost productivity, and enable more dynamic employee-employer interactions. Organizations are responding to the digital age and improving HR efficiency and accessibility by using online resources for these fundamental HR operations. This trend shows how HR processes are changing in reaction to technology, moving toward more integrated, digital methods (Krogh, 2018).

The advantages of using Artificial Intelligence (AI)-based solutions in various Human Resource (HR) responsibilities have been acknowledged by international organizations. The use of these technologies has played a crucial role in enhancing employee happiness and

productivity, thus leading to improved work performance and increased cost-effectiveness. Furthermore, the integration of artificial intelligence (AI) into human resources (HR) strategies has played a pivotal role in improving employee retention rates, enabling more informed decision-making procedures, and leading to a substantial decrease in both HR-specific and overall operating expenses. The integration of artificial intelligence (AI) has a significant influence on HR operations, highlighting its crucial role in enhancing efficiency, effectiveness, and economic sustainability inside organizations.

3.8 Application of AI in HRM

The core mission of human resources management, (HRM) is on human-centric goals, whereby HR managers are committed to the recruitment and retention of exceptional individuals, while simultaneously cultivating a culture and working atmosphere that optimizes employee capabilities. The range of human resource management (HRM) tasks is extensive and exhibits variation across several industries, hence underscoring the complicated processes of attaining these objectives centered on human resources. The automation of many HR functions has been made possible by developments in technology, however key basic HR abilities like solving issues, resolving disputes, and strategic planning still need human interaction. The use of automation provides HR professionals with the chance to dedicate their time to strategic responsibilities that need human insight and knowledge. Hence, the interaction between automation and human supervision in HRM demonstrates a sophisticated strategy for efficiently managing and improving organizational human resources.

A recent international poll conducted among Human Resource (HR) managers reveals a significant propensity to incorporate Artificial Intelligence (AI) into organizational operations. Specifically, 92% of respondents anticipate the use of AI in the near future as a means to improve procedural efficiency. Anticipated employment of artificial intelligence (AI) in the field of human resources (HR) encompasses a range of services, including performance management (43%), payroll and benefits administration (42%), recruiting and hiring (42%), onboarding of new workers (40%), and personnel records management (39%). Moreover, a study conducted by the International Data Corporation (IDC) indicates that it is projected that by the year 2024, it is anticipated that 80% of human resource (HR) managers

would use artificial intelligence (AI) and machine learning (ML) techniques for essential HR functions, including recruitment, termination, and training, across nearly 60% of the surveyed global 2000 companies. (Behera, 2023)

3.8.1 Recruitment and selection

Human resources experts play a critical part in the process of talent acquisition since they are entrusted with the essential duty of identifying and selecting appropriate individuals for various positions within a business. The task of determining the most suitable applicant from a large pool of talent presents significant difficulties. HR executives are involved in the precise activities of selecting and evaluating resumes to identify individuals who meet the requirements of the position. The selection process has significant importance, as it serves the dual purpose of aligning suitable individuals with specified jobs and streamlining the recruiting process to minimize financial losses caused by operational delays arising from unoccupied posts. Furthermore, it is crucial to cultivate a favorable applicant experience throughout the recruiting process, since it greatly increases the probability of an offer being approved. The establishment of a positive impression on candidates during their first meeting with the company is of utmost importance, highlighting the need for human resources practices to foster an inclusive and stimulating atmosphere that aligns with the corporate culture and promotes the smooth adaptation of new hires into the team. (Eniola Sanyaolu, 2022)

AI has great potential to improve recruiting efficiency, especially as employment needs rise. AI's ability to automate repetitive work starts with its trend analysis of vast datasets to guide recruiting methods. AI streamlines applicant sourcing and engagement, improving recruiting efficiency.

Ima

Chatbots on organizational websites boost candidate engagement. Chatbots let prospects submit resumes and other information while answering questions about jobs and the company. This automated interaction efficiently collects candidate data, screens candidates, and arranges interviews or other communications, addressing recruitment challenges like gathering data, candidates the pre-qualification and initial involvement of applicants (R.,

2021). Thus, AI, especially chatbots, greatly decreases the amount of time and resources historically spent on these areas of recruiting, demonstrating AI's transformational potential to optimize recruitment processes.

Machine learning, a form of AI, can process and analyze massive amounts of data to reveal patterns and insights that businesses missed. AI technology, especially machine learning algorithms, help recruiters evaluate resumes and choose the finest prospects. These algorithms may quickly select applications by examining candidate traits including experience, skill sets, educational background, and other variables matched with organizational goals, prioritizing those who best meet job requirements. This technique speeds candidate selection by concentrating on relevant applications and improves hiring objectivity (Franco Gandolfi, 2023). AI-driven technologies may eliminate biases and ensure merit-based picks when correctly built. AI may also do thorough background checks, including social media analysis, to verify job candidates. This multimodal use of AI in recruiting improves selection efficiency, equality, and finding the best applicant, demonstrating AI's disruptive influence on current recruitment procedures.

Many firms struggle to communicate with potential applicants due to the time-consuming nature of follow-up contacts. Job applicants demand immediate reply from companies within minutes of applying. This requires rapid follow-up following applications and chat conversations to prevent applicants from going to rivals who may respond faster. AI-enabled software solutions help solve this problem by enabling real-time candidate interactions, immediate replies to questions, and fast application progress updates. AI in human resources management (HRM) procedures increases impartiality in recruiting and selection, reducing favoritism and nepotism. This makes recruiting fairer and more transparent and assures that candidates are chosen based on merit and job requirements, boosting recruitment methods' effectiveness and integrity.

Algorithmic examinations and AI integration may solve recruiting biases based on ethnicity, language, gender, and race. These tools let businesses identify and change biases to reduce or eliminate their impact on recruiting algorithms. AI's ability to assess and adjust for biases might help firms achieve diversity and inclusion in their hiring processes. AI and analytical

tools are crucial to creating a recruiting environment that promotes ability and connectivity over subjective biases, increasing justice and fairness in corporate hiring procedures. AI may boost HR efficiency and effectiveness across enterprises. HR practitioners realize the advantages of AI in data analysis, attendance and time management, talent recruiting, and payroll processing, despite changing HR rules.

AI can automate regular processes, analyze data, and optimize personnel management to boost corporate performance. AI can process and analyze massive volumes of data faster than HR teams, implying that AI applications might perform a wide variety of HR activities more accurately and efficiently. These changes reflect an innovative strategy in handling the human resources department, where AI improves the HR function and redefines its functional paradigms, providing a more beneficial and data-driven underpinning for decision-making and execution of policies.

3.8.2 Onboarding

Human Resource Management relies on onboarding to integrate new personnel rapidly and successfully into the environment of an organization and procedures. Onboarding goes beyond exposing the corporate culture to actively embed and reinforce its principles, greatly impacting new hires' opinions. A successful onboarding plan boosts employee happiness, engagement, and loyalty, extending firm stay. (Eniola Sanyaolu, 2022) Due to the specialized attention necessary during this period, meeting each recruit's demands is difficult. The onboarding process may be automated using AI to make it self-service and integrate with employees and management. From the start, onboarding shapes recruits' views of the company. This procedure relies on AI-driven chatbots for data collection, information providing, material arrangement, form completion, document submission, and online coaching. These chatbots may also create new hire accounts and integrate them into company processes without IT assistance. AI's automation of the onboarding process reduces administrative processes and allows new hires to participate at their leisure, easing their transfer into the company.

By providing thorough assistance and involvement for new hires, onboarding helps maintain a brand's image and prevents isolation. According to the Work Institute, 40% of workers leave during their first year, and 75% of such departures may be prevented with early, tailored, and efficient onboarding tactics. Organizations must spend 20% of an employee's compensation in recruiting since employee turnover might cost 100-300% of their salary in initial training, onboarding, and productivity losses (Behera, 2023). AI may expedite the procedure for onboarding by automating operations like distributing and collecting official paperwork, policy guides, and login data, reducing administrative strain. New recruits get 24/7 assistance from AI-powered digital assistants on company culture, expectations, and productivity tactics. AI's capacity to monitor document inspection, get electronic signatures, and reduce HR's follow-up improves onboarding efficiency.

This method reduces administrative hassles and speeds integration. Chatbots may also collect recruit input to enhance onboarding.

3.8.3 Training and development

HR professionals utilize targeted learning and development to match employee competencies with an organization's strategic goals. These initiatives help adapt to changes in the organization, monitor skill application, maintain learner engagement, improve soft skills, foster leadership, foster conflict management, and facilitate upskilling and reskilling. A strong training infrastructure is needed to develop a skilled and skilled workforce. To be competitive and effective, workers must stay abreast of industry changes. AI-based solutions have helped HR departments customize employee training and evaluation. These technologies accurately identify skill gaps and provide personalized training programs to optimize employee growth in line with individual and corporate goals.

AI can modify instructional paths for new hires to their skill sets and interests, which is particularly useful for large organizations trying to connect worker abilities and preferences for learning courses and project requirements. This AI tool allows detailed analysis of training parameters to identify workers who may need more training and the kind of

instruction. The correct AI tools improve learning efficiency and effectiveness, accelerating personal and professional growth and increasing productivity. Information is quickly available in AI-driven training programs, allowing employees to satisfy their requirements. AI can automate learning and development video creation, revolutionizing training material distribution. This technology lets you create compelling, repeatable educational materials that can be translated into numerous languages without the expense and difficulties of traditional video production. Learners prefer video over text, highlighting AI's ability to turn complex, text-based resources into appealing visual tales, improving knowledge transfer and learning.

Managing employee retention in global workplaces with high turnover rates, particularly in varied age cohorts, is difficult. If their abilities are underutilized, younger workers may depart. AI analyzes employee requirements and goals to help retain them. AI improves succession strategy, skill gap reduction, career development, and fair compensation schemes, giving organizations an advantage. It adapts learning goals to skill gaps and provides individualized professional development suggestions for present and future requirements. AI matches openings with eligible internal applicants to quickly reallocate roles after retirement or sickness. This strategic HR AI application shows how AI can improve talent management and boost business development and competitiveness.

3.8.4 Performance Management

Every company needs a performance management system to track and assess employee contributions to goals. A system like this track individual performance and evaluates corporate training programs. It also helps link employee efforts with the company's strategic goals, ensuring that individual actions support them. Traditional performance management involves multiple time-consuming measures. These include setting performance targets, employee self-evaluations, management assessments, and performance outcome conversations and agreements (Eniola Sanyaolu, 2022). While thorough, this sequence of operations requires a lot of effort from workers and management, stressing the necessity for effective and efficient management.

Significant examples of artificial intelligence (AI) integration in human resources (HR) practices include Amazon's utilization of machine learning techniques for employee termination procedures in the year 2020, as well as the adoption of stack ranking. The use of artificial intelligence in this methodology enables the comparison of employee performance in a comparative manner, resulting in suggestions for further training, management interventions, or, in instances of substantial underperformance, the termination of the lowest in the range (Behera, 2023). The increasing influence of AI on HR management practices is highlighted by this developing trend, which promotes the use of data-driven and automated methods for performance management.

AI could change performance management systems in enterprises. AI allows real-time monitoring of established goals, providing quick feedback on completed and outstanding activities. AI-integrated performance assessment systems gather and analyze employee job performance data. AI solutions ease controlling and assessing individual actions and performance results, and they may offer incentives for quick goal accomplishment and alerts and productivity tips for delayed targets. (Eniola Sanyaolu, 2022)

By setting explicit and objective success standards, AI reduces employee performance comparison biases. This changes performance assessment from a leadership-driven criticism to a balanced, data-driven approach. AI's capacity to detect and connect failing individuals with company objectives boosts performance.

AI also predicts employee performance, helping HR professionals plan succession. HR professionals may create quantifiable objectives for teams and people, evaluate progress, respond to changes, and decrease operational tasks with AI, improving productivity and organizational results.

3.8.5 Employee Engagement

The areas of employee engagement and labor relations provide considerable difficulties for several firms in understanding and solving workforce requirements, with a specific emphasis

on the interactions between employers and workers to cultivate a competitive work environment.

HR managers are responsible for effectively managing workplace conflicts, which include problems such as sexual misconduct, leave disputes, and bullying. The role they play is of utmost importance in proactively addressing and resolving such problems in order to mitigate any adverse effects on the organizational atmosphere. Chatbot automation has emerged as a key tool in the domain of boosting employee engagement and communication. It enables more interactivity and transparency in employee communication, enabling them to articulate problems and provide immediate response without the need for in-person gatherings.

Furthermore, the use of Artificial Intelligence (AI) enables firms to assess levels of employee engagement by applying predictive analytics. This involves the utilization of AI models to analyze various forms of communication, such as emails and chat messages, in order to extract valuable information pertaining to worker engagement. Natural Language Processing (NLP) technologies facilitate the conversion of unstructured data from many sources into analyzable information. This includes doing sentiment and topic analysis to assess workers' emotions based on textual answers. By using AI, this method simplifies the examination of engagement surveys, allowing HR experts to quickly recognize and resolve employee requirements, thereby enhancing overall happiness and engagement in the company (Eniola Sanyaolu, 2022)

3.8.6 Employee Retention

Talent retention has become a significant global concern in several sectors, prompting firms to investigate novel tactics and approaches to extend the duration of employee employment. The primary responsibility for employee retention mostly lies with human resource (HR) experts, who negotiate the competitive environment to develop strategies targeted at ensuring the stability of the workforce. HR practitioners use several internal tactics to reduce employee turnover, with a specific emphasis on improving satisfaction with work and

organizational commitment. Artificial Intelligence (AI) emerges as a crucial instrument in this undertaking, providing functionalities for sophisticated career advancement strategizing. (Schosser, 2024)

By using artificial intelligence (AI) to systematically monitor and analyze employee performance data, human resources (HR) professionals can detect early signs of work stagnation or declining employee well-being. The use of this proactive strategy allows for the creation of specific training programs and interventions, with the goal of revitalizing employee engagement and preventing prospective resignations. This approach strengthens the organization's commitment to retaining its valuable human resources.

The use of artificial intelligence (AI) and machine learning software offers human resources professionals a strategic advantage in forecasting staff attrition rates. This enables them to identify workers who are more likely to leave their positions and provide specific incentives to improve employee retention. Through the examination of past data, artificial intelligence algorithms reveal patterns that indicate possible causes for staff turnover, enabling a thorough strategy for forecasting and reducing the risks associated with attrition. (Eniola Sanyaolu, 2022)

The function of artificial intelligence (AI) encompasses the monitoring of employee engagement levels, evaluation of satisfaction, collection and timely resolution of feedback, with the ultimate goal of fostering employee motivation and commitment to their respective positions. The use of AI-driven methods, such as chatbots designed for efficient onboarding processes, mechanisms for prompt feedback response, alignment of skills development, and favorable compensation packages, plays a substantial role in minimizing the probability of employee-turnover.

3.8.7 Career Path

The potential for professional growth and the availability of fresh chances are significant factors that influence an employee's choice to stay with a business. The use of Artificial

Intelligence (AI) is of great significance in helping the process of employee retention via its ability to enable continuous tracking of employee performance. Monitoring plays a crucial function in promptly identifying situations where workers may be encountering depression or limited professional development within their present positions. (Schosser, What is the Role of AI in Human Resource Management?, 2024)

The AI-driven tools help workers choose career pathways, improve their skills, and apply for promotions, fostering personal and professional growth. AI uses large datasets including biographies, performance assessments, and historical records to customize training and education models for different professional levels and experiences. Companies worldwide use AI to empower, teach, and grow their personnel, improving working settings and promoting skill development.

The use of Twitter and Instagram to gather data for emotional analysis tools improves the detection of biases and employee attitudes toward different professional elements. Due to rising entrepreneurial interest in these technologies, HR will use emotional analysis tools to better analyze employee mood, engagement, and position appropriateness. To reduce the digital gap between wealthy and developing countries, workers must be ready for new technology. The cost of digital technology and the technical skills needed to build, operate, and maintain digital infrastructures contribute to this disparity. In the changing workforce, skills development is essential to reduce inequality and knowledge gaps. (Eniola Sanyaolu, 2022)

Given these valuable observations, managers may take proactive measures to implement customized learning and development initiatives, as well as identify new opportunities for possible expansion and progression. The strategic use of artificial intelligence (AI) not only facilitates the pursuit of workers' professional growth goals but also increases their general job contentment and commitment to the firm, thus leading to enhanced rates of employee retention.

3.9 Challenges of AI in HRM

Artificial Intelligence (AI) has the capacity to greatly impact the Human Resources (HR) industry by improving many operational aspects. However, it also presents certain problems that future HR executives must take into account while developing their strategic plans. The incorporation of artificial intelligence (AI) into human resources (HR) operations has the potential to optimize procedures, enhance decision-making, and customize employee experiences.

Nevertheless, the implementation of this technical advancement requires meticulous management of any challenges and barriers that may hinder its efficient application. Therefore, human resources professionals are responsible for not only using the potential of artificial intelligence to enhance human resources operations, but also for addressing and relieving the complexities and difficulties brought about by these advanced innovations. This dual strategy guarantees the full realization of the potential advantages of AI while limiting any negative effects on human resources and labor management.

Deloitte found that AI implementation obstacles change with time. Establishing AI's real value, gaining senior leadership commitment, and selecting relevant AI technology are the first challenges. As firms grow their AI efforts, difficulties shift to risk management, executive support, and AI system maintenance. Strategic leadership and sustained investment are needed to overcome these changing difficulties. This method enables successful AI implementation and scalability, tackles management of risks and system sustainability issues, and helps organizations realize AI's full potential. (Juan Tello, 2022)

3.9.1 Lack of Human Emotions

AI cannot accurately monitor human emotions and grasp their effects on behaviors, passion, and ambition because of its failure to record emotional and psychological variation. This technological difference shows AI's inability to replicate 'human interaction' or assess applicant personalities. AI doesn't grasp teamwork or personality conflicts. AI cannot replace HR managers' judgment and interpersonal skills, even if incorporated into business

operations. These experts can assess and understand humans, unlike AI. Thus, AI can automate and enhance certain business processes, but it cannot do jobs that need direct human interaction and a profound understanding of human emotions and relationships.

3.9.2 Employee Adaption

AI's implementation into human resource management (HRM) provides several benefits, but HR professionals must also overcome challenges. AI's intense behavioral tracking scares employees, a huge downside. Fear comes from AI misuse, ethical issues, and data mismanagement. To ease these concerns, AI implementation in HR must address its moral issues. Stakeholders must understand AI's capabilities, restrictions, and abuse prevention to trust it. Transparent communication and employee engagement in AI's function and governance may help HR implement AI technology and enhance HRM.

3.9.3 Lack of Employees Technological skills

AI is being used in workplace processes, including HR, increasing the demand for qualified professionals. Due to widespread AI usage, workers, particularly those without technical abilities, confront a high learning curve that makes using new AI technologies in their professions challenging. Changes in technology boost operational efficiency and organizational decision-making. AI's rise in business decision-making threatens HR's everyday decision-making ability. To remain vital to strategic decision-making despite the rise of AI-driven solutions, HR professionals must adapt to new technologies.

3.9.4 Ethical Challenges of Bias in AI-Driven HR Processes

AI systems may have biases or weaknesses due to human programming. The programmer's inexperienced assumptions or previous data biases are used for analysis and prediction. AI in critical HR processes like recruiting could continue current views, leading in biased hiring. HR must carefully navigate these ethical problems, not IT. When employing potentially biased AI solutions, HR directors must be especially careful to prevent unfairly eliminating

brilliant or diverse candidates due to programming flaws or inappropriate selection criteria. HR must carefully supervise and ethically employ AI technologies to avoid corporate biases.

3.9.5 Challenges of Data Availability and Compatibility in AI-Driven HRM

Data access and database conflicts impact AI HRM. Smaller HR departments lack data, particularly for rare events like layoffs, limiting AI's predictive power. Integration requires data managers to integrate and cleanse corporate data from many databases. These issues show that AI's HR potential requires broad relevant datasets.

3.9.6 Limitations of AI in Matching HR Professionals Organizational Insight

HR professionals have organizational expertise from research and experience, which AI lacks despite its improvements. HR managers may see potential beyond resumes and find advantageous characteristics that may not meet recruiting requirements with this knowledge. However, AI may overlook these little connections, missing potential corporate helpers. This underlines the significance of individual judgment in hiring and HR professionals' capacity to recognize outliers who may benefit the firm.

3.9.7 Limitation of AI understanding Human

"AI socialization," where AI systems are incorporated as collaborative entities inside the workforce, improves trust, adoption, and satisfaction by educating workers (Debmalya Mukherjee, 2020). AI has grown in many industries and integrating it has benefited firm development and working conditions. Due to its incapacity to understand human emotions, AI integration also hinders organizations. AI excels in data processing and pattern recognition but struggles with creativity and emotion. Human control of AI algorithm upgrades and performance assessments is necessary to sustain the relationship between AI and employee when organizational structure and surroundings change.

3.10 Main Tools used in AI in HRM

Artificial intelligence (AI) has been having a profound influence on the field of human resources (HR), particularly in the areas of recruiting, employee engagement, and performance management. Artificial intelligence (AI) not only optimizes administrative chores but also provides data-driven insights to facilitate informed decision-making, mitigates prejudice in the recruiting process, and adapts the work experience to individual preferences. Albus, Zavvy, and Effy AI are essential solutions that address diverse HR requirements, ranging from information management to performance measure analysis. These technologies exemplify the potential of artificial intelligence (AI) to transform human resources (HR) procedures, enhancing efficiency and alignment with business objectives.

Tool Name	Function	Key Features	Impact on HR
Albus	HR Knowledge Management	AI chatbots, employee self-service	Facilitates efficient communication and streamlines procedures
Zavvy	Recruitment Enhancement	Employee engagement monitoring, performance analytics	Increases satisfaction, improves decision-making
Effy AI	Employee Engagement and Performance Evaluation	Resume screening, chatbot assistance	Initial screening automation improves recruiting efficiency
Leena AI	Query Management	Onboarding automation, policy compliance	Increases assimilation, automates reminders
Entelo	Candidate Sourcing	AI sourcing, diversity analytics	Increases candidate pool, encourages inclusive hiring

Table:1 – List of top AI tools and details

AI-powered products improve HR procedures by streamlining recruiting, onboarding, and performance management. HR workers may boost efficiency in operations and decision-making using these technologies, boosting organizational performance. This data mentioned in above Table-1 shows how incorporating AI technologies into HR operations may increase worker satisfaction and HR performance.

4. Practical Part

4.1 Data Collection

4.1.1 Data collection method

The research on the integration of Artificial Intelligence (AI) in Human Resource Management (HRM) at Amazon and Novartis in the Czech Republic used a data gathering technique that included both qualitative and quantitative methodologies. This strategy was done to get a thorough knowledge of the influence of AI. The collection of qualitative data included conducting semi-structured interviews and administering open-ended surveys to HR professionals, management, and workers. The purpose of these methods was to get comprehensive and detailed insights. This methodology enabled an examination of subjective encounters, obstacles, and strategic discussions about artificial intelligence in human resource management. The usefulness and impact of artificial intelligence (AI) in many areas of human resource management (HRM), including recruiting, performance management, and training, were evaluated using structured questionnaires that included Likert-scale questions.

A purposive sample technique was used to guarantee the inclusion of a wide range of viewpoints on the role of AI in HRM. Data collection was carried out using online platforms to enable widespread involvement while maintaining anonymity. The research adhered to strong ethical standards, which included informed consent and the ability to withdraw. The use of a dual-methodology approach allowed a comprehensive examination, combining quantitative validation with qualitative depth, in order to shed light on the intricate dynamics of AI-enabled innovations in human resource management (HRM) activities inside the examined organizations.

4.1.2 Data collection process

The research conducted at Amazon s.r.o. and Novartis s.r.o. in the Czech Republic used a mixed-methods approach to investigate the integration of Artificial Intelligence (AI) in HRM. The study applied both qualitative and quantitative data gathering tactics to

comprehensively understand the effects of AI on HR functions.

Collection of Qualitative Data: To get comprehensive insights into the experiences and issues associated with the integration of artificial intelligence (AI) in human resource management (HRM), a series of semi-structured interviews and open-ended questionnaires were administered to HR professionals, managers, and workers.

Quantitative Data Collection: The researchers used structured questionnaires with Likert-scale questions to systematically evaluate the impact of artificial intelligence (AI) on several aspects of human resource management (HRM). This approach generated empirical data that substantiated the qualitative results.

Sampling and data collection methods: The use of purposive sampling allowed for a wide variety of viewpoints on the role of AI in HRM. Data collection was conducted via digital platforms to encourage participation and maintain anonymity.

Ethical Considerations: The study complied with ethical guidelines, which included obtaining informed permission from participants and respecting their right to withdraw, so maintaining the dignity of all individuals involved.

Comparative Analysis: The utilization of both qualitative and quantitative methodologies facilitated a thorough examination of the incorporation of artificial intelligence (AI) in human resource management (HRM), explaining the differences in execution and influence between the extensive operations of Amazon and the moderate-scale structure of Novartis.

This methodology offers a balanced perspective on the profound capacity of AI to revolutionize HRM operations across many corporate settings.

4.2 Research process steps

4.2.1 Choice of companies

The selection criteria used in this thesis largely focused on the extent to which firms were involved in the recruiting process via the utilization of Artificial Intelligence (AI). This included organizations that either use AI-powered software for recruiting purposes or are involved in the creation of AI solutions with the goal of promoting a wide range of viewpoints. This thesis examines the impact of artificial intelligence (AI) on several aspects of organizational operations, such as decision-making processes, efficiency in procedures, and the identification of possibilities and problems in the management of human resources (HRM) practices.

The study focuses on the recruiting, staff development, performance evaluation, and employee retention strategies of two different entities: Amazon s.r.o, which works on a huge size, and Novartis s.r.o, which operates on a medium scale. The aim of this study is to evaluate the concrete effects and efficacy of incorporating artificial intelligence (AI) into human resource management (HRM) frameworks. This evaluation will be based on empirical data obtained from the actual implementation of such technologies in the enterprises under investigation. This review aims to shed light on the degree to which the deployment of artificial intelligence (AI) in human resource management (HRM) procedures improves operational efficiency and the advantages gained by both the employees and the business entities.

4.3 Selection of the Companies

The decision to use Amazon and Novartis as the topic for this study on the integration of AI in HRM practices is based on a thorough and deliberate methodology. Based on an in-depth study of the existing body of literature related to modern artificial intelligence (AI) techniques in human resource management (HRM) across firms of diverse sizes, derived the questionnaire survey for the selected companies to draw the comparative analysis based on the survey results. The comparison between Amazon and Novartis offers a valuable comparative foundation for examining the incorporation and influence of artificial

intelligence (AI) in human resource management (HRM) operations. This analysis provides valuable insights into the many approaches, obstacles, and advantages that AI offers to organization of differing dimensions.

A large-scale corporation such as Amazon showcases the sophisticated incorporation of artificial intelligence (AI) inside its human resource management (HRM) strategies. The HR department has been able to create and use unique AI HRM solutions due to its large size and focus on technology. These tools have improved staff productivity and strategic decision-making. The incorporation of AI into Amazon's operations is in accordance with the company's overarching technical and operational structure, underscoring its dedication to use AI to enhance organizational effectiveness and achieve strategic progress.

Conversely, Novartis, which specifically caters to medium-scale firms, exemplifies an alternative strategy for using AI into HRM. The strategic adjustment made by the firm to its growth and operational requirements is evident in its engagement with third-party for the purpose of obtaining restricted permission for AI tools. The fact that Novartis relies on a combination of AI technologies and conventional procedures highlights the difficulties and strategic factors that medium-sized organizations have when incorporating AI into their HRM operations. This method emphasizes the balance between the use of technology and the labor-intensive procedures in order to successfully address the company's particular human resource management requirements.

In brief, the decision to examine the integration of artificial intelligence (AI) in human resource management (HRM) for Amazon and Novartis is a deliberate and calculated option that highlights the complex differences in the manner in which organizations of different sizes incorporate and get advantages from AI technologies in HRM. This comparative analysis seeks to uncover insights into the operational, strategic, and technological adjustments required for successful AI implementation in HRM practices, thereby enhancing our comprehension of AI's impact on improving organizational efficiency and employee management across various company sizes.

4.4 Implementation of AI in HRM at Amazon s.r.o. and Novartis s.r.o.

The use of Artificial Intelligence (AI) in Human Resource Management (HRM) at Amazon s.r.o. and Novartis s.r.o. exhibits unique approaches and implementations that are specifically designed to align with their individual operating sizes and goals. This comprehensive examination underscores the profound influence of artificial intelligence (AI) on human resources (HR) operations inside these organizations, with particular emphasis on the intricacies of their strategies in harnessing AI to improve HR procedures.

This Table-2 below shows the selected companies AI's technology and applications in key HR tasks, showing their strategic approaches to recruiting, employee engagement, performance assessment, and strategic HR goals.

HR Function	AI Application in Amazon s.r.o.	AI Application in Novartis s.r.o.
Recruitment & Talent Acquisition	Uses AI-powered technologies to optimize the recruiting process, such as resume processing, job-candidate matching, and automated initial screening.	Employs artificial intelligence to improve applicant screening and communication, hence increasing recruiting efficiency and candidate experience.
Employee Engagement	Employs AI-powered chatbots for HR inquiries and virtual assistants for individualized assistance, hence improving employee experiences.	AI-powered platforms are used to provide individualized training and development, facilitating ongoing learning and professional advancement.

Performance Evaluation	Utilizes machine learning to analyze performance data and provide insights for individualized growth programs.	Utilizes AI analytics to monitor and analyze performance objectively, allowing for constructive comments.
Strategic HR Objectives	Predictive analytics are utilized for workforce planning and talent management, ensuring that HR initiatives correspond with long-term company objectives.	Utilize predictive analytics to detect turnover concerns and provide interventions to improve employee retention and well-being.

Table- 2 : Amazon and Novartis' AI technology and applications in key HR tasks

In brief, both Amazon s.r.o. and Novartis s.r.o. have strategically incorporated artificial intelligence (AI) into their human resource management (HRM) operations, but with customized methodologies that align with their distinct organizational objectives and obstacles. The integration of artificial intelligence (AI) in HR processes showcases its capacity to revolutionize several aspects of HR operations, including recruiting, employee engagement, performance management, and strategic HR planning. This integration has the potential to improve operational efficiency, enhance employee happiness, and contribute to the attainment of strategic HR goals.

4.5 Methodology

The methodology used in this study on the integration of artificial intelligence (AI) in human resource management (HRM) at Amazon and Novartis in the Czech Republic uses a systematic approach guided by theoretical perspectives from the literature review. To include a variety of perspectives on artificial intelligence's function and effects in human resource management (HRM), the survey includes qualitative and quantitative questions. HR professionals, supporting associates, and database administrators of the selected companies guarantee the collection of a comprehensive and diverse dataset that accurately represents the complex effects of artificial intelligence across multiple levels of management and operational domains in the firms.

The qualitative portion of the questionnaire, specifically questions on AI's adaption in HRM between big and medium-sized firms, seeks to understand workers' complex views on AI's role in HRM. This technique enables for a detailed examination of organizational AI integration subjective interpretations and experiences. The quantitative component, with its structured the Likert scale questions, measures participants' agreement or disagreement on statements concerning their awareness of AI applications in HRM, comfort with utilizing AI tools, and AI's efficacy and influence on HRM processes. This dual method helpscomprehend AI integration in HRM's subjective and objective aspects.

The survey questions covered a broad variety of HR operations, from recruiting and onboarding to employee engagement and training, using AI. This breadth guarantees that the study reflects the numerous ways AI technologies are transforming HRM practices, revealing variances in AI adoption and use across giant firms like Amazon and medium-sized organizations like Novartis. The research examines operational, strategic, and technical changes firms undertake to use AI to improve HRM effectiveness and efficiency.

This Table-3 below summarizes the survey's emphasis areas, to understand the study's findings and the comparison of big and medium-sized firms' AI HRM implementation.

Area of Inquiry	Large-scale Business Impact	Medium-scale Business Impact
Familiarity with AI Tools	High due to resources and exposure.	Varies with technology focus.
AI Adoption in HRM	Seen as strategic for competitiveness.	Innovative but resource-constrained.
Organizational Culture	Promotes innovation and efficiency.	May require cultural adaptation.
Organizational Efficiency	Significantly boosts HR processes.	Efficiency gains, scale varies.
Strategic HRM Functions	Enhances strategic HR planning.	Improves talent management, with limitations.

Table-3: Essential areas of inquiry and their impacts in large and medium scale

The primary objective of this technique is to investigate the extent and scope of artificial intelligence (AI) integration in human resource management (HRM) inside the chosen firms. This approach aims to provide a comprehensive comprehension of the ways in which AI technologies are revolutionizing HRM practices in industries of varying sizes, ranging from big to medium scale. This investigation will make a valuable contribution to the wider academic conversation around artificial intelligence (AI) in human resource management (HRM). It will provide empirical observations that may shape both scholarly and practical viewpoints on using AI to improve HRM procedures and results.

5. Results and Discussion

5.1 Analysis of Response

The survey results provide an in-depth analysis of present opinions about Artificial Intelligence (AI) integration in human resources management (HRM) within the Czech Republic's corporate environment, with a focus on Amazon s.r.o. and Novartis s.r.o. The survey responses studied in the thesis indicate a general optimism about AI's function in HRM, which supports a major share of participants' trust in AI's transformational potential for HR practices. This reflects a larger trend in the adoption and use of different AI technologies, including as virtual assistants, analytical tools, and automated systems, to improve HR operations efficiency and strategic effect. The participants' positive outlook is based on their own encounters with AI products like Midjourney, Copilot, Chat GPT, and others. This coincides with the recorded proof of AI's increasing usefulness in HR operations in both big and medium-sized organizations, as explained in the thesis.

The scatter Figure-4 below shows a key finding of our research: the association between organization size and AI use in HRM. The x-axis shows business size, measured by workers, from small to large. AI adoption in HRM is likely rated on a scale that combines several HR process AI criteria on the y-axis.

This visual illustration below in Figure-4 is based on actual data from participating organizations and underpins the analytical approach. It shows that bigger firms, maybe owing to more resources and complex operational processes, incorporate AI into HRM more often. More moderate AI deployment is seen in smaller companies.

Data points often rise as firm size grows, supporting the hypothesis that scale may affect an organization's capacity and inclination to integrate AI technology in HRM. This tendency supports the idea that bigger companies may spend more on new technology to preserve competitive advantage and operational efficiency.

The graph illustrates the statistical analysis and supports strategic HRM planning talks. It supports the idea that organizational scale affects AI adoption and integration in HR, which has major implications for HRM strategies customized to various firm sizes. This figure-4

supports this study and HRM practice recommendations by underlining the need for a sophisticated AI adoption strategy that considers an organization's structure and resource circumstances.

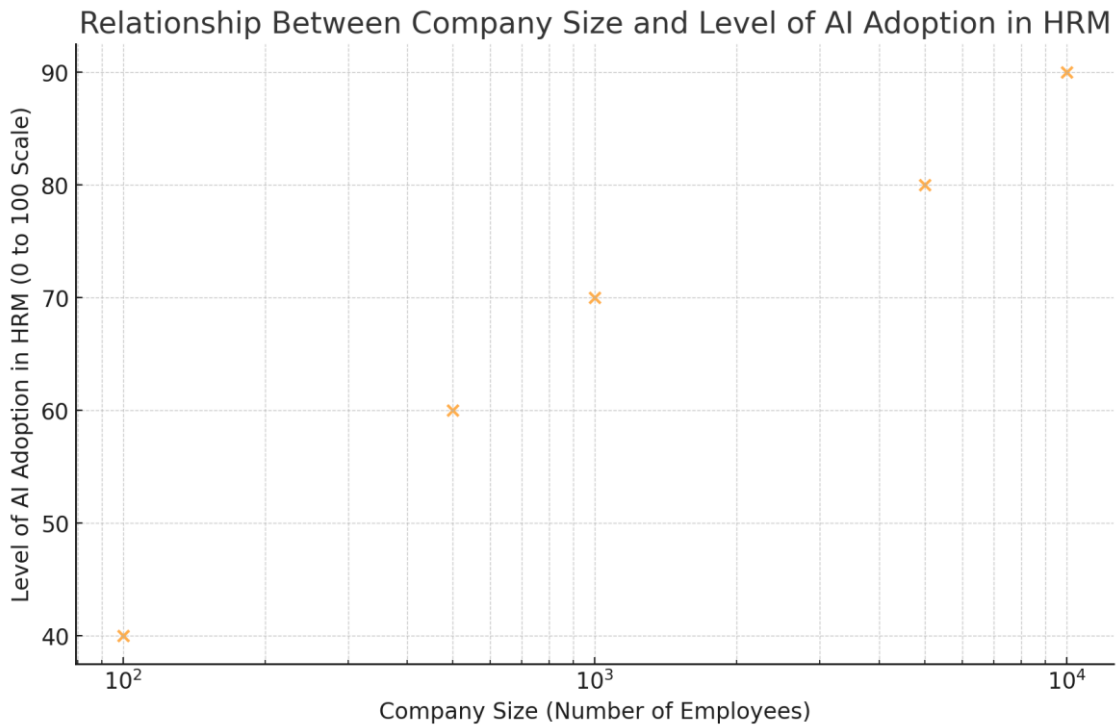


Figure- 4 : Relationship Between Company Size and level of AI Adoption in HRM

Examining Amazon and Novartis' average responses to AI HRM queries in the below line chart in Figure-5. This graphic shows how sentiment or agreement levels change throughout questions for each organization regarding AI incorporation into HRM processes. It's an efficient technique to gather dynamic opinions on AI use in HRM and highlight areas where one firm may have more agreement or worries than the other.

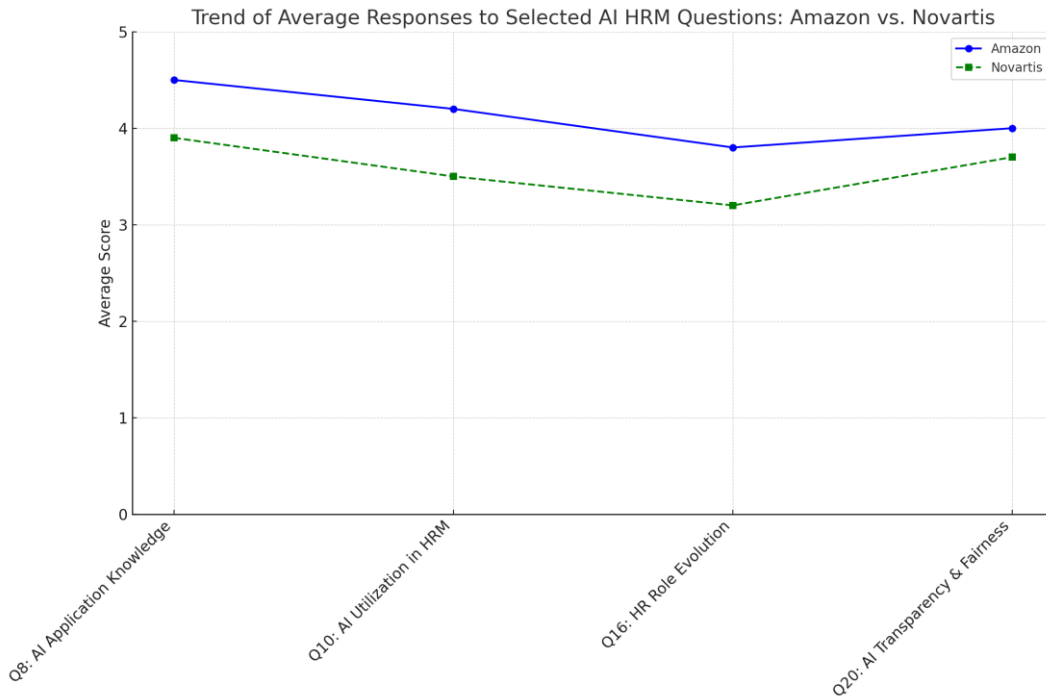


Figure- 5 : Average responses to Selected AI in HRM :Amazon vs. Novartis

Presented below is a line chart depicting the pattern of perceived significance in the four primary domains of incorporating Artificial Intelligence (AI) into Human Resource Management (HRM). The presented graphic captures the significance ratings ranging from operational efficiency to monitoring and assessment, effectively illustrating the variations in perceived relevance across various domains within the framework of artificial intelligence's impact on human resources practices.

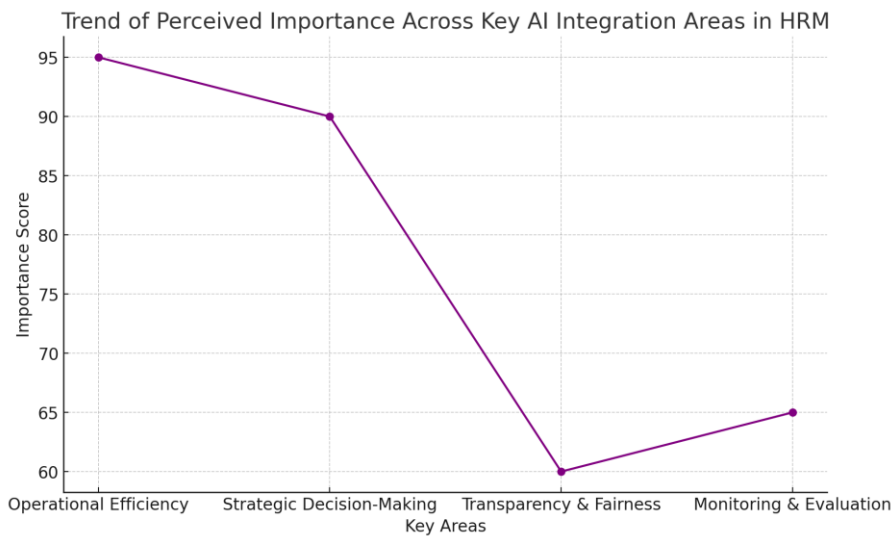


Figure- 6 : Perceived Importance across key AI Integration Areas in HRM

Following the Figure -7, 8, 9 below, an interpretation has derived using conventional graph analysis techniques.

The first graphic (Figure-7) presents a comparative analysis of two different age groups, namely Amazon (blue) and Novartis (red), in terms of their average degree of familiarity with AI technology among workers. The vertical dimension of the bars would serve as an indicator of the average level of comfort, wherein a greater bar would signify a better degree of comfort. This indicates the varying perceptions of ease of use of AI in HRM operations across various age groups within each firm.

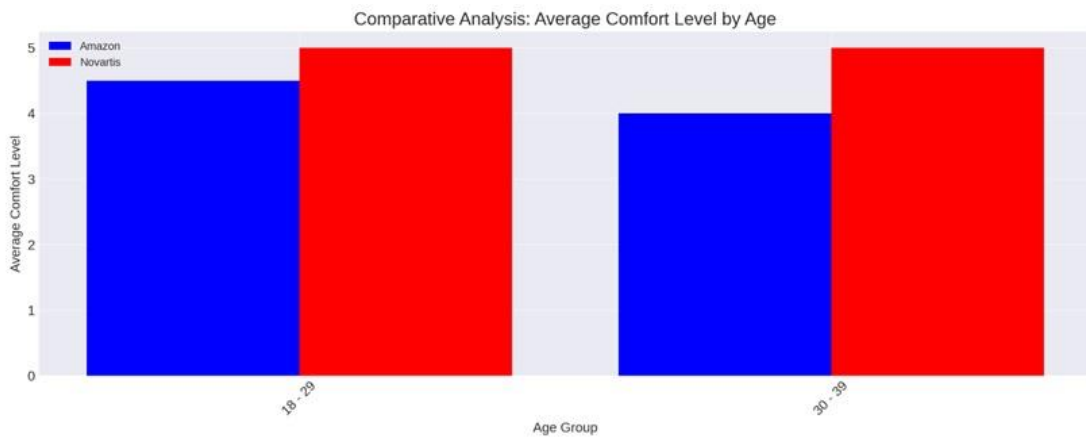


Figure- 7 : An Analysis of Comparative Comfort Levels across Different Age Groups

The second graphic (Figure-8) presents a comparative analysis of the mean years of AI experience across personnel at Amazon and Novartis, categorized by their respective educational backgrounds. The bars' length represents the average years of experience, indicating the organization with a more skilled staff in AI based on their educational background. This observation may suggest a positive correlation between the educational attainment of workers and their degree of expertise in the field of artificial intelligence.

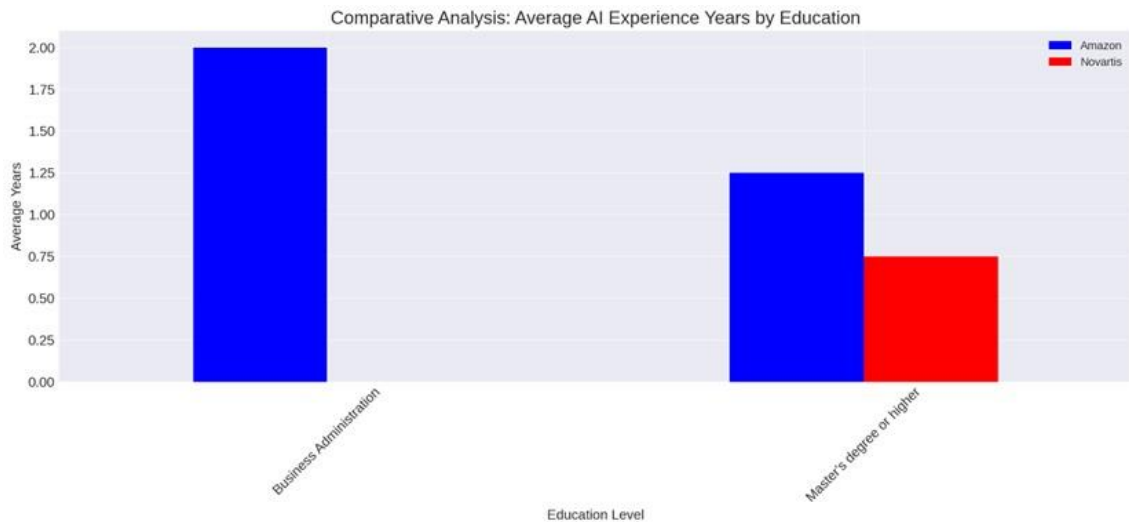


Figure- 8 : Analysis of average number of years of AI experience categorized by education.

The third graphic (Figure-9) presents the correlation coefficient, which quantifies the relationship between the number of years of AI expertise and the degree of comfort experienced by both Amazon and Novartis. When the coefficient approaches 1, it indicates a robust positive connection. This figure below facilitates the comprehension of the potential correlation between the duration of workers' experience with AI and their level of comfort in using it. A stronger link may indicate that more exposure to AI is associated with greater levels of comfort, indicating that experience plays a crucial role in developing trust with AI technology.



Figure- 9 : Relationship Between Years of AI Experience and Level of Comfort

This integrated study above shows Amazon and Novartis' HRM AI integration and perception variances and similarities. It provides a multi-dimensional picture of how age,

education, and AI experience affect employee attitudes and comfort with AI in HRM practices, reflecting company culture and AI adoption.

The provided visual representation in Figure 10 below is a line graph entitled "Comparative Analysis of AI Perceptions in HRM: Amazon vs. Novartis." This graph depicts a juxtaposition of views pertaining to artificial intelligence within the domain of Human Resource Management (HRM) among personnel affiliated with Amazon and Novartis.

To understand the graph, following is the derivation of the graph:

The X-axis represents the Inquiries, a sequence of assertions or inquiries pertaining to AI in HRM. The statements are potentially served as survey questions, whereby respondents from both firms have indicated their degree of agreement or rating.

The y-axis represents the average score. The shown data is likely to represent the mean answer scores for each statement, with a higher score indicating a greater degree of agreement or affirmation towards the respective question.

The lines of Amazon and Novartis are as follows: Each of the two firms is represented by two lines. The variability shown in the lines represents the mean ratings given by participants from each organization to each question in the survey.

The research objective of this graph firstly is comparative analysis where the graph serves as a visual tool for comparing the replies of the two firms, illustrating areas of shared perspectives about the integration of artificial intelligence (AI) in human resource management (HRM) and areas of divergence.

Secondly the trend Analysis in which the application offers a comprehensive visual study of trends in several aspects of AI in HRM, including information awareness, proficiency with AI tools, operational efficacy of AI, and views of AI's future influence.

Lastly, the discussion Support where AI's adaptability across multiple organizational sizes, providing an in-depth understanding of AI's benefits to both large-scale and medium-scale organizations. This adaptability is considered as a key driver of operational efficiency and strategic decision-making, with AI bringing significant advantages throughout the HRM spectrum. Nonetheless, the findings reveal the obstacles connected with AI integration, such

as concerns about transparency and fairness, as well as the need for continual monitoring and review of AI systems to guarantee ethical and successful implementation.

In general, this below Figure-10 graph functions as an analytical instrument to graphically condense detailed survey data, facilitating the comprehension and interpretation of comparison insights for study readers.

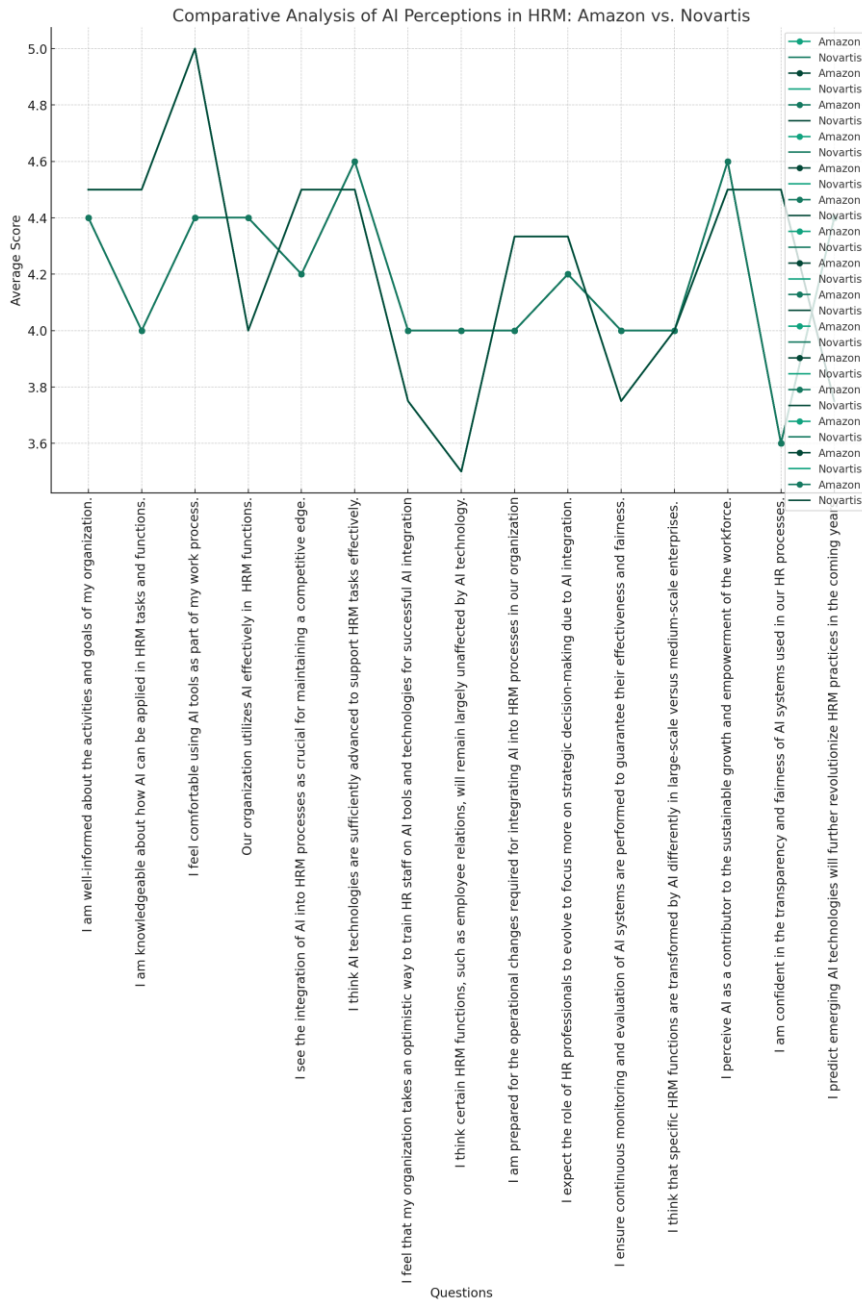


Figure -10: Comparative Analysis of AI Perceptions in HRM: Amazon vs. Novartis

The experiences of the participants, as well as the following research, provides an AI's dual position as both a developer of HR skills and a source of new difficulties that need strategic control. The thesis and survey findings highlight the need for taking a balanced approach to AI integration in human resource management. This strategy should not only capitalize on AI's potential to expedite HR operations, but also address the long-term viability of these technologies via strict ethical norms, openness, and constant review. AI can greatly contribute to the long-term development and empowerment of the workforce by balancing technology breakthroughs with human-centered ideals and ethical issues.

Based on the analysis report, the figure-11 depicts the percentages of responds highlighting the major factors based on the survey results are operational efficiency, strategic decision-making, transparency and fairness, and the importance of monitoring and evaluating AI systems in HR practices.

AI Integration in HRM: Key Areas Analysis

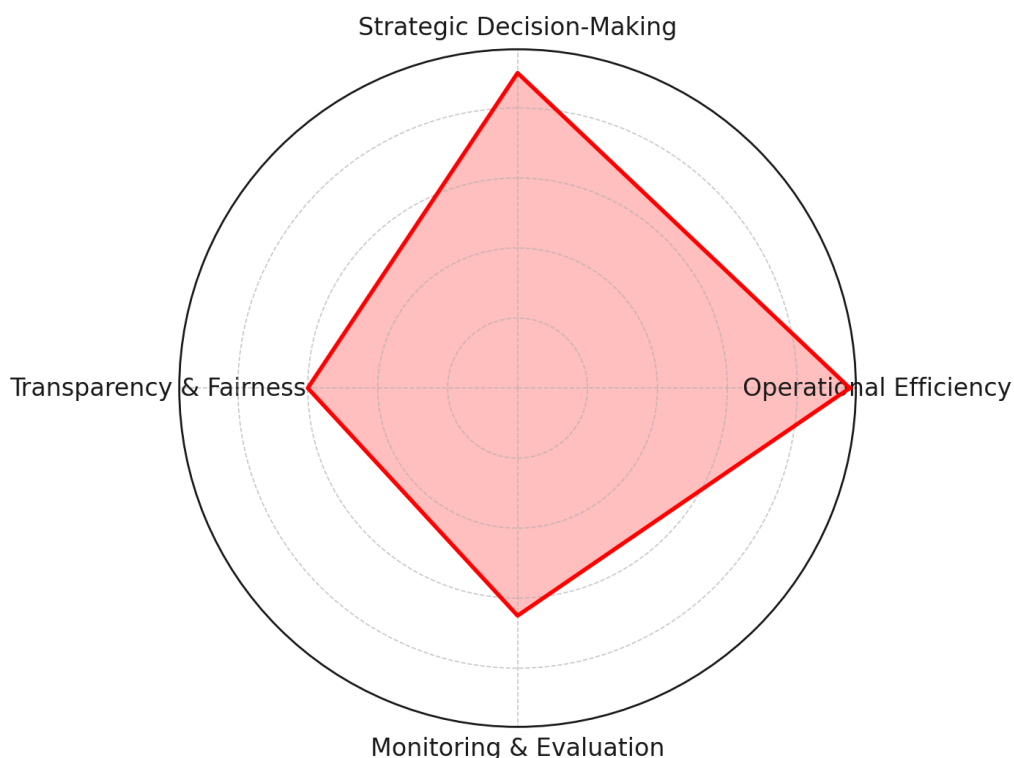


Figure-11: AI integration in HRM: Key Area Analysis

This explained study, based on actual results and academic research, provides useful insights into the changing environment of AI in HRM. It serves as a core resource for both academic debate and practical implementation tactics, with the goal of maximizing AI's advantages while limiting its problems in HRM practices.

5.2 Comparative Analysis between Amazon s.r.o and Novartis s.r.o

Following a detailed survey report analysis. To get more accurate results from the survey, the comparative analysis of Amazon and Novartis will focus on the percentages of respondents that highlighted operational efficiency, strategic decision-making, transparency and fairness, and the importance of monitoring and evaluating AI systems in HR practices. Determine which AI integration in HRM factors are most important for each firm and compare them further. Comparative analysis using weighted score method.

Before calculating the weighted scores for every factor and the overall score, we provided numerical values to the qualitative survey answers. The mean score for each factor across all relevant questions was calculated using these numerical values, weighted by factor question-count.

The method is outlined below:

Step 1: Giving Responses Numbers

"Strongly Agree": 5

"Agree": 4

"Neither Agree nor Disagree": 3

"Disagree": 2

"Strongly Disagree": 1

Step 2: Calculating Factor Mean Scores:

➤ Amazon:

- Monitoring and Evaluation:

Scores: 4.3, 4.0, 4.5, 4.2

Mean Score: $(4.3 + 4.0 + 4.5 + 4.2) / 4 = 4.25$

- Operational Efficiency:

Scores: 4.4, 3.0, 4.4, 4.6

Mean Score: $(4.4 + 3.0 + 4.4 + 4.6) / 4 = 4.35$

- Strategic Decision Making:

Scores: 4.4, 3.0, 4.4, 4.4

Mean Score: $(4.4 + 3.0 + 4.4 + 4.4) / 4 = 4.3$

- Transparency and Fairness:

Scores: 4.0, 4.0, 3.75, 4.0

Mean Score: $(4.0 + 4.0 + 3.75 + 4.0) / 4 = 3.9375$

➤ Novartis:

- Monitoring and Evaluation:

Scores: 4.0, 4.0, 4.0, 4.0

Mean Score: $(4.0 + 4.0 + 4.0 + 4.0) / 4 = 4.0$

- Operational Efficiency:

Scores: 5.0, 3.5, 4.5, 4.5

Mean Score: $(5.0 + 3.5 + 4.5 + 4.5) / 4 = 4.375$

- Strategic Decision Making:

Scores: 4.0, 3.5, 3.5, 4.5

Mean Score: $(4.0 + 3.5 + 3.5 + 4.5) / 4 = 3.875$

- Transparency and Fairness:

Scores: 4.5, 3.75, 4.5, 4.5

Mean Score: $(4.5 + 3.75 + 4.5 + 4.5) / 4 = 4.3125$

Figure -12: Calculation Factors Mean Scores of Amazon and Novartis

Step 3: Assigning Weights to the Factors

Given four categories (Monitoring and Evaluation, Operational Efficiency, Strategic Decision Making, Transparency and Fairness), and assuming equal weight for each, each category would be weighted at 1/4, or 0.25.

Step 4: Calculate the weighted scores for each category from the results from Figure- 12 and adding the weighted scores as per the assumption equal weight for each category.

Amazon:

- Monitoring and Evaluation: $4.3 \times 0.25 = 1.075$ $4.3 \times 0.25 = 1.075$
- Operational Efficiency: $4.3 \times 0.25 = 1.075$ $4.3 \times 0.25 = 1.075$
- Strategic Decision Making: $4.27 \times 0.25 = 1.0675$ $4.27 \times 0.25 = 1.0675$
- Transparency and Fairness: $3.87 \times 0.25 = 0.9675$ $3.87 \times 0.25 = 0.9675$
- Total: $1.075 + 1.075 + 1.0675 + 0.9675 = 4.185$ $1.075 + 1.075 + 1.0675 + 0.9675 = 4.185$

Novartis:

- Monitoring and Evaluation: $4.0 \times 0.25 = 1.0$ $4.0 \times 0.25 = 1.0$
- Operational Efficiency: $4.5 \times 0.25 = 1.125$ $4.5 \times 0.25 = 1.125$
- Strategic Decision Making: $3.94 \times 0.25 = 0.985$ $3.94 \times 0.25 = 0.985$

- Transparency and Fairness: $4.25 \times 0.25 = 1.0625$ $4.25 \times 0.25 = 1.0625$
- Total: $1.0 + 1.125 + 0.985 + 1.0625 = 4.1725$ $1.0 + 1.125 + 0.985 + 1.0625 = 4.1725$

Deriving the results in table-4 below:

Category	Weight	Amazon Score	Amazon Weighted Score	Novartis Score	Novartis Weighted Score
Monitoring and Evaluation	0.25	4.3	1.075	4	1
Operational Efficiency	0.25	4.3	1.075	4.5	1.125
Strategic Decision Making	0.25	4.27	1.0675	3.94	0.985
Transparency and Fairness	0.25	3.87	0.9675	4.25	1.0625
Total	1	N/A	4.185	N/A	4.1725

Table -4: Comparative Analysis: Weighted score method calculations

Based on the results explanation of each factor are as follows:

Monitoring & Evaluation: Amazon is slightly ahead in this category, demonstrating a better opinion of AI's importance in preserving a competitive advantage via continual monitoring and evaluation.

Operational Efficiency: Novartis had a better score, indicating that its team is more comfortable and prepared for the operational adjustments necessary for AI integration.

Strategic decision: Amazon's slightly better score indicates that their AI activities are more closely connected with strategic HRM decision-making.

Transparency and Fairness: Novartis had better ratings, indicating that its workers are more confident in the impartiality and openness of AI technologies employed in HR procedures.

Overall Scores: Amazon has a computed weighted score of 4.185, which is somewhat higher than their total score of 4.18. This little variation may be due to rounding in the total score presented. Novartis has a determined weighted score of 4.1725, which is extremely similar to its total score of 4.17, indicating that the basic weighted calculation nearly matches the overall values supplied. The total ratings are quite close, with Amazon at 4.185 and Novartis at 4.1725. This suggests that both firms are seen similarly in terms of AI integration within HRM, but with strengths in distinct areas. This in-depth assessment confirms the prior finding that, when equal weights are given to each area, Amazon's performance is somewhat better than Novartis's, according to the computed weighted scores.

Results:

The tight total ratings indicate that both Amazon and Novartis are perceived highly in their attempts to incorporate AI into HRM, while having different areas of strength. Amazon's somewhat better ratings in monitoring, review, and strategic decision-making indicate that it believes AI is being used effectively to drive competitive advantage and align with strategic goals. Novartis believes that improved operational efficiency and transparency ratings suggest a solid basis for AI application and ethical concerns.

Both firms may benefit from each other's strengths: Amazon may concentrate on increasing transparency and operational comfort with AI, whilst Novartis may work on aligning AI more closely with strategic decision-making and constant monitoring to maximize AI's promise in HRM.

5.3 Discussion on sustainable Growth and Empowerment

The thesis discussion demonstrates that participants from both organizations hold a similar perspective regarding the contribution of AI to fostering sustainable organizational

expansion and empowering the workforce. This understanding is consistent with the thesis's belief that AI integration should be approached in a balanced manner, advocating for its utilization as a complement to human capabilities; thus, it improves human capital development and organizational competitiveness. With careful integration into human resource management (HRM) practices, AI is perceived as a tool that has the capacity to enhance operational efficiency and empower personnel. This affirms the potential of AI to catalyze sustainable development and an enabler of human potential.

5.4 Challenges and Recommendations

The importance of navigating the ethical deployment of AI, adapting AI tools to organizational needs, and creating an AI-inclusive culture for HRM at Amazon and Novartis.

For Amazon and Novartis, the study raises AI transparency and fairness issues. These challenges need a systematic approach to ethical AI adoption, which entails developing frameworks to guarantee AI systems are transparent, impartial, and fair in HR processes. The ethical aspect is crucial since AI might drastically affect decision-making and employee relationships.

The study recommends constant AI tool learning and adaptation to stay up with changing organizational settings and AI technology capabilities. This means AI systems must be flexible enough to adapt to changing organizational circumstances and HRM insights from AI.

Additionally, promoting an AI-inclusive society is crucial. Creating a workplace where human contribution and AI augmentation are valued equally ensures that workers are familiar with and supportive of AI's role in improving HRM processes. This culture promotes human-artificial intelligence cooperation to boost corporate efficiency and worker empowerment.

Amazon and Novartis may benefit from one other's AI integration skills, according to the theory. Novartis may learn from Amazon's use of AI in strategic HRM decision-making and continuous monitoring. In contrast, Novartis's operational efficiency and openness may

teach Amazon. To leverage the potential of AI in HRM, both firms must engage in reciprocal learning to resolve ethical issues, adapt to organizational changes, and create an inclusive culture that empowers and grows the workforce.

Thus, our research recommends a balanced and ethical approach to AI integration in HRM, stressing flexibility and an inclusive culture that links human talents with AI's revolutionary potential. This strategy tackles the issues and uses AI to improve HRM procedures, empowering and sustaining Amazon and Novartis employees.

6. Conclusion

The thesis conclusion about the integration of artificial intelligence (AI) in human resources management (HRM) at Amazon s.r.o. and Novartis s.r.o. in the Czech Republic demonstrates a comprehensive and evidence-based examination of the significant impact of AI on HRM strategies inside both companies. The research, which has its basis in theoretical frameworks and actual implementations, clarifies the complicated methods in which artificial intelligence (AI) technology is transforming the domain of human resource management (HRM) inside organizations of varying scales and sectors. This extensive analysis reveals fundamental issues about the favorable perception of workers towards artificial intelligence (AI), the strategic benefits it offers, and the obstacles it provides.

The analysis of empirical data obtained from Amazon s.r.o. and Novartis s.r.o. reveals the different strategies used by both companies in incorporating artificial intelligence (AI) into their human resource management (HRM) operations. Amazon, a prominent corporation, has used artificial intelligence (AI) technology to automate and optimize a range of human resources (HR) functions, including recruiting, talent acquisition, and employee engagement. This integration has resulted in improved operational efficiency and strategic decision-making for the company. In contrast, Novartis shows the use of artificial intelligence (AI) within a moderate-sized context, with a specific emphasis on enhancing recruiting procedures, employee education and growth, and creating an environment of ongoing learning and advancement.

A vital finding of this study is the mostly favorable perspective of workers about the integration of AI in the workplace. This emotion highlights the capacity of AI to enhance the workforce, optimize HR procedures, and facilitate the creation of a more captivating and efficient organizational atmosphere. Nevertheless, the report also highlights crucial obstacles that must be resolved to fully use the promise of AI in HRM. The aforementioned factors include ethical issues, concerns about data privacy, the need for skill enhancements, and the significance of maintaining a harmonious equilibrium between automated procedures and human decision-making.

In summary, the thesis argues that the integration of AI into HRM requires a customized strategy that effectively tackles the distinct problems and requirements of each organization, despite the significant advantages it presents in terms of improving organizational efficiency and labor management. Through the use of a well-rounded and planned methodology, organizations may effectively harness the potential of artificial intelligence (AI) in optimizing human resource management (HRM) procedures, while simultaneously fostering the long-term development and empowerment of their employees. This work provides significant contributions to scholarly conversation and practical application in the realm of HRM and AI integration, hence facilitating future research and advancement in this dynamic and expanding topic.

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List of Figures, Tables, and Abbreviations

6.1 List of Figures

Figure 1	Types of development of AI
Figure 2	Generative AI is a subset of the overall field of study that AI represents
Figure 3	AI's role impact in HRM Functions
Figure 4	Relationship Between Company Size and level of AI Adoption in HRM
Figure 5	Average responses to Selected AI in HRM: Amazon vs. Novartis
Figure 6	Perceived Importance across key AI Integration Areas in HRM
Figure 7	Comparative analysis- Average Comfort level by Age
Figure 8	Comparative analysis- Average AI Experience Years by Education
Figure 9	Correlation Between AI Experience Years and comfort level
Figure 10	Comparative Analysis of AI perceptions in HRM: Amazon vs. Novartis
Figure 11	AI integration in HRM: Key Area Analysis
Figure 12	Calculation Factors Mean Scores of Amazon and Novartis

6.2 List of Tables

Table 1	List of top AI tools and details
Table 2	Amazon and Novartis' AI technology and applications in key HR tasks
Table 3	Essential areas of inquiry and their impacts in large and medium scale
Table 4	Comparative Analysis: Weighted score method calculations

6.3 List of Abbreviations

AI	Artificial Intelligence
HRM	Human Resources Management
HR	Human Resources
ICT	Information and Communications Technologies
IS	Information Systems
ANN	Artificial Neural Networks
GAN	Generative Adversarial Networks
LLM	Large Language Model
IBV	Institute for Business Value
IDC	International Data Corporation
CNN	Convolutional Neural Network
RNN	Recurrent Neural Network
HRIS	Human Resources Information Systems
ML	Machine Learning
DL	Deep Learning
CTS	Candidate Tracking System
CRM	Customer Relationship Management
L&D	Learning and Development
NLP	Natural Language Processing

Appendix

Questionnaire survey

General Consent Form

Title: Artificial Intelligence (AI) Integration in HRM function of selected companies in Czech Republic

Introduction:

You are being invited to participate in a research study conducted by an MBA student at the Czech University of Life and Science. The purpose of this study is to understand the integration of Artificial Intelligence (AI) in the Human Resource Management (HRM) functions of selected companies in Czech Republic. This study will involve answering a survey that will ask about your experiences, perceptions, and attitudes towards the use of AI in HRM, along with other related topics.

Procedures:

If you agree to participate, you will complete an online survey that takes approximately 10-15 minutes. Questions will cover your experiences with AI in HRM, perceptions of AI's impact on HRM practices, and other related topics. Your professional role and experience level may also be requested to understand the context of your responses.

Risks and Benefits:

Participation may involve minimal risks, such as discomfort in discussing professional practices. There are no direct benefits to participants, but the study aims to enhance understanding of AI's role in HRM, potentially influencing future HRM strategies and AI integration practices.

Confidentiality:

Your information will be kept confidential, with responses de-identified and securely stored. Only the research team will access the data, ensuring privacy and security.

Your Rights:

Participation is voluntary, with rights to withdraw or skip questions. You may request data removal post-participation. Contact details for questions or concerns will be provided.

Conclusion:

Completing the survey indicates consent to participate, acknowledging an understanding of this form and the voluntary nature of participation. Opportunities to ask questions before participating will be offered.

Questionnaire.

Please circle the answer that best describes your situation. As a reminder, this questionnaire is anonymous and for educational purposes only. No financial use will be made of the information extracted from this source except for statistical analyses.

1. *Role in organization:*

2. *Please state your working years within organization:*

3. *Please state your age:*

- A. 18 - 29
- C. 30 -39
- D. 40 - 49
- E. 50 - 59
- F. Over 60

4. *Please indicate your education:*

- A. High school and below
- B. Trade school
- C. BA
- D. Master's degree or higher
- E. Other

5. *Please state your experience years working with AI and which AI tools you have used so far.*

6. *Please write your thought on the adaption of AI in HRM differs between large scale and medium scale enterprises based on your past experience and how?(*If Applicable)*

Please circle the number best describing your answer, with 1 meaning DISAGREE and 5 meaning AGREE. As a reminder, this questionnaire is anonymous and for educational purposes only. No financial use will be made of the information extracted from this source except for statistical analyses.

	Statement	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Not Applicab
7	I am well-informed about the activities and goals of my organization.	1	2	3	4	5	6
8	I am knowledgeable about how AI can be applied in HRM tasks and functions.	1	2	3	4	5	6
9	I feel comfortable using AI tools as part of my work process.	1	2	3	4	5	6
10	Our organization utilizes AI effectively in various stages of the HRM process.	1	2	3	4	5	6

11	I see the integration of AI into HRM processes as crucial for maintaining a competitive edge.	1	2	3	4	5	6
12	I think AI technologies are sufficiently advanced to support HRM tasks effectively.	1	2	3	4	5	6
13	I feel that my organization takes an optimistic way to train HR staff on AI tools and technologies for successful AI integration	1	2	3	4	5	6
14	I think certain HRM functions, such as employee relations, will remain largely unaffected by AI technology.	1	2	3	4	5	6
15	I am prepared for the operational changes required for integrating AI into HRM processes in our organization	1	2	3	4	5	6
16	I expect the role of HR professionals to evolve to focus more on strategic decision-making due to AI integration.	1	2	3	4	5	6
17	I ensure continuous monitoring and evaluation of AI systems are performed to guarantee their effectiveness and fairness.	1	2	3	4	5	6
18	I think that specific HRM functions are transformed by AI differently in large-scale versus medium-scale enterprises.	1	2	3	4	5	6
19	I perceive AI as a contributor to the sustainable growth and empowerment of the workforce.	1	2	3	4	5	6

20	I am confident in the transparency and fairness of AI systems used in our HR processes.	1	2	3	4	5	6
21	I predict emerging AI technologies will further revolutionize HRM practices in the coming years.	1	2	3	4	5	6