Artificial Intelligence and Its Influence on Digital Transformation, Development, and Productivity in Saudi Arabian Organizations: A Critical Evaluation

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Abstract

This study investigated the advantages and disadvantages of using artificial intelligence in the field of human resources. Data was collected through interviews, involving several organizations. The sample size comprised 540 employees with various roles. The results revealed that over 56.16% of the participants had prior experience working with AI services. Regarding skill development in the age of AI, 40% emphasized the importance of programming skills, analytical abilities, and data-driven decision-making. These aspects received the highest percentage among the answers. Additionally, 55.44% indicated the importance of intensive skills development courses over the past three years. Moreover, 56.5% of the participants stressed the importance of preserving human values and morals, identifying skills that may not necessarily need improvement. The study recommended that organizations keep level of continuous technological developments in the field of artificial intelligence and provided training for employees in artificial intelligence techniques to enhance human resource management practices.

***Keywords**: Digital Transformation, Productivity, Artificial Intelligence, Human Resources.*

Introduction

Recently, the world is witnessing a great development in the field of information and communication technology. Various methods supported by multimedia technology have emerged, relying on technical innovations to achieve excellence in performance. This phenomenon is called "the era of the fourth industrial revolution". Since the dawn of time, humans have been driven by innate instincts for self-development and skill enhancement in order to navigate life's challenges and fluctuations. The pivotal role of humans as the most valuable asset for business organizations cannot be understated; they serve as the driving force behind progress and success. A successful business organization hinges on a competent and effective human resource capable of realizing set goals, representing the crux for organizational continuity and performance. However, amidst the current global momentum towards rapid advancements, organizations' requirements have evolved to necessitate development that aligns with continuous updates and revolutions worldwide, especially to thrive in the era of the fourth industrial revolution embodied by artificial intelligence (Demetris, et al., 2021).

The concept of artificial intelligence traces its origins back to the early 1950s when a scientist named John McCarthy, as part of a workshop during the Dartmouth University conference, introduced the idea of smart machines based on emerging mathematical information theories and recent neuroscientific findings (MacKenzie, 2023). Since then, artificial intelligence has been integrated into various applications, including strategic decision-making. It stands as a cutting-edge field in computer science due to its capacity to mimic human cog-

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nitive processes such as thinking, learning, and comprehension. In line with this, the Kingdom of Saudi Arabia established the Saudi Authority for Data and Artificial Intelligence (Sdaya) in 2019, aiming to harness this modern science to benefit humanity. Since then, artificial intelligence has been integrated into various applications, including strategic decision-making. It stands as a cutting-edge field in computer science due to its capacity to mimic human cognitive processes such as thinking, learning, and comprehension. In line with this, the Kingdom of Saudi Arabia established the Saudi Authority for Data and Artificial Intelligence (Sdaya) in 2019, aiming to harness this modern science to benefit humanity (Demetris, et al., 2021).

Of course, the realm of human resources management will not be an exception in utilizing the science of artificial intelligence. However, the question arises: what is the scenario in light of the advent of technological revolutions and the presence of artificial intelligence capable of supplanting human resources, potentially rendering it obsolete? Additionally, how do human resources react in the face of this heightened competition and the challenges it confronts while striving to keep pace with these monumental advancements?? Nevertheless, amid these questions, organizations have observed numerous benefits stemming from the incorporation of artificial intelligence. Its utilization has proved advantageous in various human resources aspects, such as enhancing the employee recruitment process and facilitating personal interviews. One notable field is referred to as "intelligent employee management," which empowers employees to obtain answers to their inquiries or avail services through artificial intelligence (Manlio, et al., 2021).

Both developed and developing countries alike prioritize the integration of artificial intelligence across various sectors, including administration and industry. Notably, Arab nations have taken significant strides in this direction, exemplified by the establishment of the Ministry of Artificial Intelligence by the United Arab Emirates in 2017. Furthermore, in 2019, Abu Dhabi unveiled its commitment to innovation with the launch of the Mohammed bin Zayed University for postgraduate studies, with a specialized focus on research in the realm of artificial intelligence. The Kingdom of Saudi Arabia also established the Saudi Authority for Data and Artificial Intelligence (SADAIA) in 2019 AD in order to achieve the objectives of 2030 Vision 2030 to reach advanced positions in the e-government index (Al-Dawood, 2021 AD).).

At the organizational level, it is evident that the majority of businesses in developing countries are actively seeking to embrace innovative strategies for enhancing their performance. This drive for advancement is in alignment with the ongoing technological development, particularly the rapid evolution of technical capabilities. This evolution has significantly expedited and improved work processes compared to the past. Amidst these developments, there is a notable trend towards adopting strategies that incorporate artificial intelligence applications into human resource management. This marks a departure from conventional management practices, introducing an entirely new and distinctive approach. The key driver behind this shift is the array of new capabilities that artificial intelligence brings to the table. These capabilities are harnessed across a wide spectrum of activities, including talent attraction, employee selection, appointment procedures, performance evaluation, and compensation management (Wang, 2021).

Literature Review

A study was conducted by the researchers Malik, et al. (2022) addressed the use of artificial intelligence in the field of human resource management and its impact on employee experiences and the cost efficiency of human resource management. The study aims to analyze the use of artificial intelligence in human resource management practices in a multinational technology consulting company in India. Human resource management contributes to improving cost efficiency and providing individual experiences for employees. In addition, the use of robots and artificial intelligence applications in various human resource management tasks contributes to enhancing employee commitment and satisfaction and reducing resignation rates. The study also discussed its impact on research and practice in the field of artificial intelligence. And human resources management (Malik, Budhwar, Patel, Srikanth. 2022).

Vrontis, et al. (2022) investigated the impact of artificial intelligence (AI), robots, and advanced technologies on human resource management (HRM). The study highlighted the transformation brought about by those technologies in HRM practices, particularly in e-recruitment and e-training. It delved into the introduction of new actors like social robots in HRM practices and emphasized the complex nature of the research. The focus extended to smart automation techniques at both the company and employee levels, assessing short and long-term positive outcomes as well as challenges. The shift from traditional HRM to technology driven HRM was explored. The study employed refined search algorithms to ensure the relevance of retrieved studies. Findings revealed that companies were adopting e-recruitment systems to enhance speed, cost-effectiveness, and perception. While technology brought advantages, its consequences were context-dependent, influenced by industry size and job nature. The need to blend human capabilities and robotic technologies in HRM was emphasized, suggesting technology as a decision-making support rather than a replacement for HR specialists.

Pan et al. (2022) conducted a study with the aim of providing empirical evidence regarding the validity of the TOE model and its expansion by merging it with the transaction cost theory. The study also sought to achieve multiple theoretical developments related to high-tech tools in human resource management. In the discussed organizational context, the study found that technical efficiency had a positive effect on increasing the use of artificial intelligence. The research discovered that various contextual elements of technology, organization, and environment influenced the adoption of AI in employee recruitment. Transaction costs were identified as partially modifying these relationships. Additionally, the study developed and tested an empirical model to understand the precedents and boundary conditions for the utilization of artificial intelligence in employee recruitment. Results from China indicated that different elements in the contexts of technology, organization, and environment had direct effects on the use of artificial intelligence. The study emphasized the significance of government support and related technological resources in the adoption of artificial intelligence.

In a recent study by Budhwar et al. (2022), the impact of technology on human resource management was explored. Artificial intelligence (AI) tools showed numerous benefits, streamlining tasks like planning, recruitment, and selection beyond human capabilities. AI attracted high-performing employees, improved training outcomes, satisfaction, commitment, and engagement. It boosted productivity, decision-making, and cost reduction. While positive, AI raised concerns about job security. Addressing this, targeted training was suggested. Scholars recommended enhancing skills such as emotions, innovation, relationships, and interpersonal abilities, as AI cannot replicate human emotional authenticity. Overall, the study underscored AI's vital role in enhancing human resource management functions.

The importance of artificial intelligence in human resource management

The role of artificial intelligence is expanding across various work sectors, exerting significant influence on human resource management. With the progress of AI technology, it's now feasible to replicate human cognitive functions like learning, problem-solving, analysis, evaluation, and decision-making. This automation extends to many tasks of human resource officers, including intelligent resume screening and the use of interactive chat tools for employee queries (urces, 2019). Such technologies streamline HR officers' responsibilities, freeing up time from manual tasks. This surplus time can be allocated to more constructive endeavors like motivating staff and enhancing their cultural and creative awareness (Khalifa, 2019).

Artificial intelligence surpasses humans in multitasking, enhancing work quality, and engaging with employees. Nevertheless, crafting an AI system is complex, demanding vast data, time, and funds. To harness AI's potential, neutral data is essential to diminish bias in hiring and prevent employee discrimination on diverse matters. Security is paramount when handling candidates' and employees' personal information directly in intelligent systems (Al-Azzam, 2021).

Also, the field of human resources depends to a large extent on the human element, and this is the reason for the importance of using natural language processing, which is the main focus of artificial intelligence applications, which help smart devices to interpret, understand and process human language. Its importance revolves around allowing the processing of large amounts of text and audio data, and this is done through a set of algorithms that are concerned with several procedures such as content classification, modeling, sentiment analysis, machine translation, summarization, text-to-speech and speech-to-text conversion, and with the availability of artificial intelligence technology used in developing the human resources approach. However, institutions that are able to design and build a predictive approach are still limited in access to human resources data and difficult to use (Lumi, 2020).

Uses of artificial intelligence in human resources

Artificial intelligence offers intelligent systems that aid employees by handling repetitive and laborious manual tasks like data analysis and risk management. This efficiency saves considerable time and enhances the organization's ability to produce precise and swift results (Azadeh, et al., 2018).

An application of artificial intelligence in human resources is the smart personal interview. This involves automatic talent competency search on recruitment platforms, extracting essential applicant data like education and experience, followed by an interview. Artificial intelligence collects and organizes skills, experience, and certifications into a unified, accurate intelligent analysis. This approach eliminates bias and subjective opinions during candidate evaluation, ensuring fairness and equal opportunities for all applicants, resulting in the selection of the most qualified individuals for the job (Albwardi, 2021).

Artificial intelligence is important in the field of human resource management, and there are many uses, including the following:

- **First: Using artificial intelligence to recruit talent:** Among the applications of artificial intelligence in human resources, talent recruitment is the most widespread, as virtual assistants can rely on multiple data sources, which reduces the time and effort spent by the workforce in routine tasks as they match their profiles with job requirements and communicate with potential people to schedule interviews. In addition to developing a set of interview questions (Bakkah, 2023).

- **Second: the application of artificial intelligence in the polarization process:** Today, artificial intelligence programs have helped human resources professionals search for and attract talents, as smart programs search and review profiles on recruitment sites and platforms, which helps in the process of attracting talents as it is very useful in improving the organization's influence and achieving its goals (Hajjo, Fouad Mustafa 2022).

- **Third, the use of artificial intelligence to monitor working hours:** The application of artificial intelligence solves the phenomenon of staff lagging during the organization's working hours, as the surveillance cameras in the organization's building are linked to the artificial intelligence program for face print and automatic recording of attendance and vacation time. (Hajjo, Mustafa, 2022)

- **Fourth: Evaluating performance using artificial intelligence analytics:** Today, artificial intelligence programs perform a self-analysis of employee performance and point out their strengths and weaknesses, based on data that HR professionals enter into personnel files (Hajjo, Mustafa, 2022).

- **Fifth: Using artificial intelligence in vacation management:** It can analyze future job needs and adjust schedules; accordingly, reduce staff shortage risks, monitor compliance with sick leave policies, allow employees to submit leave requests and view their leave history and leave balances (Bakkah, 2023).

- **Sixth: the use of artificial intelligence in the recruitment process:** Today, most countries and organizations rely on artificial intelligence programs for employment, where employment appli-

cations are submitted electronically, and the program automatically filters and resumes submitted employment applications, automatically excludes those who are not qualified, and sends a message to those who are qualified to enter the second stage of applying for jobs (Hajjo, Mustafa, 2022).

Advantages and facilities provided by artificial intelligence applications in human resource management

In light of the global movements towards technical developments, the world's ongoing progress at the present time, and the rapid development process that presents various challenges, effective modern technical methods have been integrated with human resource activities. It's undeniable that the positive outcomes of these modern methods have resulted in their heightened adoption by the Human Resources Department. This integration is evident in many activities, particularly in recruitment. This is especially significant in the context of the recruitment and selection process, which stands as one of the foundational pillars of the Human Resources Department (Cook, 1998) (Sims, 2002) (Ployhart, 2006) (Anderson, 2007). Therefore, human resource managers have become aware of the importance of integrating artificial intelligence techniques with the activities and tasks of human resource management, which in turn helps facilitate research and obtaining the human resource Competent who adds value to the organization as a whole (Van Esch, 2019)

Artificial intelligence technologies provide many benefits and facilities in each of the practices of attracting and selecting human resources and bring about positive transformations in them, and among those benefits are the following: shortening time and reducing costs (Oracle, 2018); the speed of completion and raising the efficiency; reducing errors (Meister, 2019); neutralizing human bias and discrimination (Strohmeier, 2015); enriching learning and organizational development (Tambe, 2019).

Despite the knowledge that is still limited about the ability of artificial intelligence and technologies to accomplish the activities and tasks of human resources management, the developments we are witnessing confirm the extent of the advantages and facilities that human resources management gains from these technologies resulting from artificial intelligence. Among these advantages and facilities: its facilitation of many management functions Human resources, as a planning function, which, as we know, is identifying the right person for the right job is one of the most important challenges faced by the Human Resources Planning Department, through which the future needs of employees are identified, and with the help of these techniques these gaps can be bridged early to ensure that employee satisfaction and productivity continuity are enhanced in a better and effective manner (Karatop, 2015). It was also noted that the recruitment and selection process supported by artificial intelligence plays an important role in the process of attracting the most skilled and efficient employees, as these technologies can quickly access all advanced data and compare them and nominate the most suitable employee for the job with the highest efficiency in a period that exceeds the ability of humans to implement this process. Artificial intelligence and its technologies also facilitated the interview process by converting it from face-to-face interviews to interviews through internet networks through which the candidate can be seen in video and audio, saving a lot of hardship for both the candidate and the interviewer (Torres, 2017).

As for development and training, artificial intelligence also supports the development and training of employees more effectively by following up on skills shortages and working to address those gaps by identifying training needs and providing training courses to fill these needs, which thus lead to the development of pre-identified workers' skills. Moreover, the training programs available on the internet offer many benefits and facilities that reduce costs for the organization. Modern technologies also facilitate the process of nominating the appropriate employee from within the organization. Artificial intelligence assists human resource supervisors in evaluating the effectiveness of training programs and making the appropriate decision regarding these programs and the extent of employee efficiency and effectiveness, which also includes

mental, intellectual and emotional skills, abilities and level of experience, in order to continue developing training programs that are appropriate for employees (Karatop, 2015; Van Esch, 2019).

In the process of performance management, artificial intelligence techniques provide many benefits and facilities for both employees and the organization. It works to assist managers in evaluating the performance of employees and also helps to provide suggestions; thus, they lead to modifying the wrong paths and making the required improvements and thus corrective actions are taken for the employees. These technologies also in turn work on evaluating the employees and then identifying the employees who still need more improvements and the extent of the desired improvements (Azadeh, 2018).

The most prominent challenges of artificial intelligence facing human resources management

The field of human resources is one of the areas that has clearly embraced the use of artificial intelligence, ranging from the management process to employee performance evaluation and planning, among other aspects. A study conducted on the future of businesses revealed that 60% of global companies will adopt artificial intelligence applications and machine learning tools to enhance their operations and improve employee performance and satisfaction (Khalil, 2023). However, this embrace of technological advancement, called artificial intelligence, is not without its risks and challenges, some of which will have significant impacts.

1- Increased unemployment and the dismissal of employees who do not achieve the goals set for them by the administration or perform tasks that artificial intelligence can replace or are considered weak. Consequently, the demand for low-skilled labor is projected to decrease from 33% of total global incomes in 2018 to 20% in 2030. Some studies also anticipate that the majority of wages will be allocated to jobs requiring high technical skills, potentially deepening income inequality levels. As stated by Agnihotri (2021), the proliferation of artificial intelligence technologies could exacerbate disparities in income distribution. Employees must therefore be equipped with high and relevant technical skills to secure employment in modern job roles, while also taking measures to absorb occupational shocks caused by workplace automation.

2- The existence of data sources and modeling techniques is so complex that even the experts who model the tests are unable to understand how the technology arrives at its decisions or responds to conditions not seen by the algorithms.

3- The dominance of large companies and the threat of the disappearance of many jobs and job opportunities, constituting a challenge in the spread of unemployment, especially in countries that are not ready for the transformation process (Boha, 2022).

4- The challenge of facing the process of economic and social restructuring and bearing the consequences of that change on cultural and social values or on the level of behavior of states and non-state actors, as it leads to a comprehensive restructuring of economic data towards the transformation of knowledge production sectors and high-value-added technologies (Boha, 2022).

5- A number of governments face the dilemma of shifting the balance of power between the industrial sectors and governmental and non-governmental agencies on the one hand, and developing and developed countries on the other (Boha, 2022).

6- The possibility of employing the advantages of artificial intelligence applications to carry out illegal or immoral acts, an example of which is cyber warfare and the violation of privacy (Boha, 2022).

7- The need for new approaches, systems, and legislation to deal with artificial intelligence. An example of this is the emergence of advanced technologies that have led to an increase in legal implications, resulting in the development of new laws in matters related to employment termination or layoffs

and responsibilities towards workers, such as injuries caused by robots and the protection of personal information (Zumot, 2019).

There is a poll from SAP Success Factors, conducted with 1,378 workers in 14 countries, to measure their perceptions of how smart technologies such as artificial intelligence and machine learning affect them in the workplace. The survey revealed that 44% of workers feel anxious, while 26% feel upset and 25% feel fear. Concerns related to the application of artificial intelligence in the field of employment have led to the adoption of a law in the US state of New York requiring companies to review employment programs supported by artificial intelligence in search of any bias, with fines imposed on companies that violate this law (Khalil, 2023). One million jobs in America may be lost due to modern technologies by the year2026, and that 47% of jobs are threatened to turn into computer-based jobs (Aaron, 2016). Among the risks of artificial intelligence applications (SDAIA,2022):

- Reliability: It must be ensured that AI is safe to use and free from intended or unintended biases, and this greatly depends on transparency and issue.

- Responsibility: Workers on artificial intelligence must ensure that it is free from errors or violations of the law and determine legal responsibility in that, and this requires following up on changes to legislative and regulatory requirements.

- Security: Preventing unauthorized or malicious manipulation of artificial intelligence, especially with the increasing use of open source code.

The future of human resources management in the light of artificial intelligence

Artificial intelligence was introduced to the market in 1955 AD, and since then it has been used in many fields by simulating the human method, whether in thinking or in learning and understanding, as well as experiments and effective decision-making for organizations. Therefore, artificial intelligence is one of the most important discoveries in the world of modern technology (Jaiswal, et al., 2022), as his role is witnessing a significant increase in various aspects of work, including his great influence on the human resource management side (Duggal, 2021). It outperforms human capabilities in terms of performing multiple duties and developing the quality of recruitment and interaction with employees (Hajjo, 2022).

In the future, it is expected that artificial intelligence will play a decisive role in transforming the human resources sector and relying on it in many matters, such as hiring qualified employees with high accuracy and relieving employees who do not achieve the desired goals. In addition, artificial intelligence will be able to carry out more complex tasks, such as answering what employees have. From inquiries related to human resources affairs such as job evaluations, wage policies, management and development of programs that contribute to improving employee performance, and many others (Khalil, 2023). Therefore, we can say that artificial intelligence is a strong partner for human resource management now and in the future, as statistics indicate that there are more than 800 million employees around the world who will lose their jobs to be replaced by robots until the current year 2023, and it is also expected that by 2025 many changes will occur, such as the establishment of 97 million jobs by artificial intelligence and the removal of 85 million global jobs also by artificial intelligence. Furthermore,16% of American jobs will be replaced by digital technologies such as artificial intelligence, machine learning, and automation robots. By 2030, 50% of global employees will need to reskill, and it is expected that the approximately 36 million Americans who work in jobs that rely on automation and peripheral technology will be able to accomplish about 70% of their tasks with robots (Hajjo, 2022).

This means that technological development and the use of artificial intelligence will greatly affect the nature of work and contribute to improving productivity and efficiency in various jobs. Also, year after year,

there are many jobs in which the presence of AI skills has become a basic requirement and occupies a large part of their workflow.

The provided literature depicts an insight into the growing role of artificial intelligence in the field of human resource management. A plethora of studies investigated the various aspects of AI in the field of HRM taking into account the cost effectiveness, recruitment, training and assessment. Such studies highlighted the benefits of AI such as stream, decision making, cost reduction. On the other hand, many other studies addressed the challenges and the legislation required in the field of HRM to regulate the employment of AI.

Taking this into consideration, although the wealth of literature available tackle the construct of AI, there is a clear gap concerning highlighting the requirements and challenges faced by the Saudi Organizations in the employment and best utilization. More critically, the bulk of literature available addresses the western context; however, in the Saudi context there is a death in literature available. Consequently, the present study sought to fill in such a gap via depicting the exploitation of AI in the Saudi Arabian context. Possessing a number of unique aspects, the present research is conducted in the Saudi Arabian context addressing the challenges and opportunities linked to the employment of AI in the field of HRM. Furthermore, the future of HRM is discussed in light of the adoption of the AI; a comprehensive assessment is utilized in the present research.

Problem of the Study

In light of the increasing importance of artificial intelligence and the development of its applications in various fields, as well as its impact on the performance of administrative work in human resources, it has become imperative for research to reveal the role and advantages of artificial intelligence applications in this field. This study aims to uncover these aspects and other related matters. As a central question, can artificial intelligence applications bring about advantages in the field of human resources? What are the challenges and opportunities associated with this advanced technology to enhance the performance of human resource management? This research aims to unveil the advantages of utilizing artificial intelligence applications in the field of human resources and to identify the challenges they encounter.

In addition, within human resource management, artificial intelligence applications can enhance recruitment, training, performance evaluation, and workforce planning. However, what are the contemporary technologies necessary for adopting artificial intelligence applications? Moreover, what challenges do companies and institutions encounter in terms of human resource management in this context?

As indicated by previous research and studies, artificial intelligence applications represent an innovative technology that seeks to analyze data and derive informed decisions resembling human cognitive processes. However, what benefits can be anticipated from these analyses and decisions in enhancing the performance of human resources management? Conversely, studies have also highlighted that artificial intelligence applications encounter challenges associated with aligning with technological advancements and surmounting technical and organizational barriers. Is it possible to surmount these challenges? Can this technology indeed prove effective and viable in human resource management?

Therefore, this study presents the advantages of employing artificial intelligence applications in human resource management while also unveiling the ensuing challenges and opportunities for the future.

The research problem was encapsulated in the following questions:

What are the pros, and the downsides of using artificial intelligence applications in human resources?

Consequently, the following sub-questions are raised.

1- What are the factors that led to the adoption of artificial intelligence in human resource management?

2- What are the uses of artificial intelligence in human resource management?

3- How does artificial intelligence work to revolutionize human resource management?

4- What are the main challenges that the artificial intelligence face in the field of HR?

5- Is artificial intelligence in human resource management necessary in 2023?

Objectives of the Study

The present research aimed at:

1- Recognizing the importance of artificial intelligence in the field of human resources.

2- Learn about the uses of artificial intelligence in performing human resource tasks.

3- Delineating the advantages and facilities provided by the application of artificial intelligence in managing the activities and tasks of human resources.

4- Identify the challenges and threats of artificial intelligence that affect the "management or performance" of human resources.

5- Depicting the future of human resources in line with the developments in artificial intelligence.

Significance of the Study

- **Theoretically:** The significance of this study emanates from enhancing the scholarly and theoretical comprehension regarding the applications of artificial intelligence in the realm of human resources. This is achieved by dissecting scientific sources and prior research dedicated to this purpose.

- **Practically:** The significance of the study is apparent in its potential to exert a positive influence on practical reality, institutions, and companies. It will empower institutions to ascertain how to leverage the most cutting-edge technology and artificial intelligence applications in human resource management optimally. Furthermore, it will foster enhancements in recruitment and selection procedures and the augmentation of employee skills. This, in turn, is poised to culminate in heightened productivity, bolstered overall organizational efficiency, and the attainment of greater organizational triumphs. Additionally, it will facilitate the identification of challenges and hurdles that may confront artificial intelligence applications in human resources, thereby aiding in the formulation of strategies to surmount these challenges and achieve the envisaged objectives.

The reason for the interest of human resources departments in artificial intelligence applications is that by 2024, 80 percent of international organizations will use human resource managers supported by experience in the field of artificial intelligence, to apply their knowledge in the work of recruitment, evaluation, talent acquisition, and reduce the time spent on hiring new employees, and 60 percent of global companies will adopt artificial intelligence tools in hiring qualified employees, and dismissing those who do not achieve the goals set for them in addition to performing more complex tasks, such as responding to employee inquiries related to human resources affairs such as job evaluations, and the mechanisms applied to increase employee wages, management and selection of programs that contribute to the development of employee performance.

The field of artificial intelligence is large, promising, multilateral, and diverse in technologies. However, there is agreement that we are facing a major revolution in this field, and this is indicated by senior professionals, insiders, and workers in companies, academic and government agencies. Artificial intelligence is not without criticism and the fear of some of what may result from revolutionary developments that may cause major structural imbalances in several areas, and there is no doubt that there are parties that will benefit and others that will be negatively affected. Therefore, companies must be able to achieve a balance between technology and human participation to achieve the greatest benefits (Khalil, 2023 AD).

Field study and data collection

Methodology of the Study

The research methodology utilized in the present study is quantitative in nature as a survey is used to collect the target data from the study participants. A structured questionnaire with Likert-scale was adopted to collect the data.

Sample of the Study

The population of the study comprises the individuals working in the human resources filed in the Kingdom of Saudi Arbia. The research sample consisted of 24.45% of the total population. The participants were university staff members, mangers, employees in the administrative sector.

Instruments of the Study

The present research made use of a questionnaire as a quantitative instrument for collecting the study data. The questionnaire was formulated in the form of a five-point Likert scale. The data gathered by the questionnaire included demographic characteristics such as age, experience, and qualifications. The questionnaire aimed to assess the degree of agreement concerning the employment of AI in the field of HRM.

Data Analysis

For analyzing the data obtained from the statistical analysis, several statistical techniques were used as shown in table (1). The statistical techniques included the percentages, frequencies, means and standard deviation.

Table (1): Descriptive analysis of the personal characteristics of the respondents.

Age	
Statement	**percentage**
Less than 25 years old	20%
25-30 years old	35%
More than 30 years	45%
Experience	
Statement	percentage
Less than 5 years	17%
5-10 years	39%
More than 10 years	44%
Qualification	
Statement	percentage
Less than high school	13.1%
High School	25,8%
Bachelor's	42,9%
Postgraduate	18.2%

Results of the Study

Table (2): Respondents' responses about the applications of artificial intelligence in human resource management.

The question	I agree	I totally agree	neutral	I do not agree	Strongly Disagree
Is AI a concern for some resource professionals about the potential impact on their jobs?	57%	13.5%	19.7%	8.8%	1%
Does artificial intelligence help in managing human resources such as forecasting and preparing for future requirements and allocating resources effectively?	61.7%	14.1%	18.5%	4.8%	0.8%
Does artificial intelligence contribute to organizing manual procedures and saving time and effort for employees?	62.4%	25.3%	7.7%	3.8%	0.8%
Can artificial intelligence analyze future recruitment needs?	27.9%	8%	34.3%	26.5%	3.2%
The application of artificial intelligence in human resource management leads to predicting the performance of employees in the future and will help managers make decisions to develop and train employees?	52.4%	10.9%	22.4%	11.5%	2.8%
One of the benefits of artificial intelligence is to reduce human errors and risks in general?	58.9%	15.3%	17.5%	6.3%	2%
One of the most important challenges of artificial intelligence in human resources is the limitation of human communication?	53.5%	17.3%	17.5%	9.9%	1.8%
Is there an integrative compatibility between man and machine in organizational thought?	43.1%	9.5%	29.8%	14.5%	3%
AI, as a data-driven system, helps expand human capabilities by enabling faster and better decision-making and problem-solving?	62.4%	14.5%	17.1%	4.6%	1.4%
One of the disadvantages of artificial intelligence is that it needs continuous maintenance and may take time?	45.4%	26.1%	19.3%	8.2%	1%

Discussion Results

It is clear from Table (1) that 45% of the research sample are over 30 years old, and 44% have more than 10 years of experience. Furthermore, 42.9% are degree holders (BSc). This indicates the diversity of levels of experience and academic qualifications of the research subjects, as most of them are adults.

It is clear from Table (2) that the responses of respondents about the applications of artificial intelligence in human resource management. It is clear from the above results that:

- 57% are concerned about the potential impact of artificial intelligence on their healththeir jobs.
- 61% believe that artificial intelligence helps in managing human resources in the field of forecasting and preparing for future requirements and allocating resources in an effective manner.
- 62% believe that artificial intelligence contributes to organizing manual procedures and saving time and effort of the employees.
- 34% were neutral about the possibility of AI analyzing the future needs.
- 52% agree that artificial intelligence can predict employee performancethe future.
- Also, 58% of the sample agree with the ability of artificial intelligence to reduce human errors and risks in general.
- Also, 53% of the sample agree that artificial intelligence can limit human communication.
- 43% agree that there is a complementary compatibility between man and machine in organizational thought.
- 62% agree that artificial intelligence will help expand human capabilities by enabling them to make decisions and solve problems.
- 45% agree that one of the main drawbacks of artificial intelligence is its need for maintenance persistently.

From this, we can conclude that individuals in the research sample perceive positive effects from the use of artificial intelligence in the field of human resources. This contributes to the improvement of various aspects of human resource management, including hiring and candidate selection, analyzing employee performance, skill development, and enhancing the overall employee experience.

Artificial intelligence programs also hold a significant role within the realm of human resources, aiding HR professionals in the search and talent acquisition procedures. These programs meticulously analyze individual profiles on recruitment sites and various platforms, streamlining and expediting the process of identifying talented and fitting candidates for the organization. Consequently, this contributes to elevating the organization's stature and accomplishing its objectives through the acquisition of requisite competencies and skills for enhancing and advancing its performance.

The role of smart technology in the realm of human resources entails a range of drawbacks that necessitate careful consideration and handling. Amid these drawbacks, employees harbor concerns about the potential repercussions of artificial intelligence on their positions, fearing that the adoption of AI applications could result in diminished reliance on human labor within organizations and consequently lead to job losses.

Recommendations

In light of the previous attained results, the present research recommended the following:
- It is necessary to address the challenges facing the application of AI in resource management humanity.

- The effectiveness and efficiency of human resource functions must be enhanced through the use of artificial intelligence applications.

- Enhancing the culture of employees of the need to adopt and support advanced technology, specifically artificial intelligence, by spreading the culture of electronic work and clarifying the advantages and benefits of applying it to employees and organizations alike.

- The need to introduce artificial intelligence applications in the areas of human resource management, the most important of which are selection, appointment and performance evaluation employees.

- The need to train employees on artificial intelligence applications and its uses in the areas of resource management Humanity.

Delimitations of the Study

The use of self-reported data through a questionnaire introduces potential bias, with respondents possibly providing socially desirable or inaccurate responses. Additionally, the study has a limited scope of variables, focusing primarily on attitudes without delving into practical implications or organizational outcomes of AI in HRM. It also operates within the specific context of Saudi Arabian organizations, limiting generalizability, and lacks qualitative data.

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