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Artificial Intelligence in the Management of Human Resources and Psychology

İnsan Kaynakları ve Psikoloji Yönetiminde Yapay Zeka

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Abstract:

With the steady advancement of technology comes intense rivalry. To stay in business, organizations are beginning to rely on technological advancements in many areas, including human resource management. Hiring staff with strong business acumen is more crucial than ever, especially in this age of big data. The candidate pool is expanding so quickly that conventional procedures are no longer adequate. Businesses should assist their human resources departments at the organizational level as a result of digital transformation. This research will examine how AI-based technology is used in the Human Resources division. It has been found in this study on the usage of artificial intelligence applications in the sector of human resources that artificial intelligence is typically used in the field of recruiting. However, it was discovered throughout the investigation that human resources are also used in several other disciplines, including orientation and education. The research focused on highlighting this gap since it was seen that artificial intelligence implementations were not yet applied in other human resource fields and that there was a gap. The study's objectives are to examine the expectations of human resources professionals and to identify gaps in artificial intelligence use in several spheres of human resource management. The results of this study have implications for future research on artificial intelligence applications and psychology in human resources.

Keywords: *Human Resources Psychology Management and Artificial Intelligence*.

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Öz:

Teknolojinin sürekli gelişmesi ile birlikte yoğun rekabet ortaya çıkmaktadır. Bu nedenle, kuruluşlar, işletme içi insan kaynakları yönetimi dahil birçok alanda varlıklarını sürdürebilmek için teknolojik gelişmelere gün geçtikçe daha fazla güvenmektedirler. İş dünyasında, özellikle işletmeler için güçlü iş anlayışına sahip personel bulmak daha önce hiç olmadığı kadar kritik hale gelmiştir çünkü aday havuzu çok hızlı bir şekilde genişlemekte ve bunun sonucunda geleneksel prosedürler artık yetersiz hale gelmiştir. Bundan dolayı, işletmeler dijital dönüşümün bir sonucu olarak insan kaynakları departmanlarına organizasyon düzeyinde destek sağlamalıdır. Bu araştırma, İnsan kaynakları bölümünde yapay zekâ tabanlı teknolojinin nasıl kullanıldığını incelemektedir. Araştırma sonucuna göre, yapay zekâ uygulamalarının genellikle işe alım süreçlerinde kullanıldığını göstermektedir. Ancak, araştırma sırasında, insan kaynaklarının yönlendirme ve eğitim gibi farklı alanlarda da kullanıldığı ortaya çıkmıştır. Bu araştırma sonucunda, yapay zekâ uygulamalarının henüz diğer insan kaynakları alanlarında yaygın olarak kullanılmadığı ortaya çıkmıştır. Bu çalışmanın amacı, insan kaynaklarının beklentilerini analiz etmek ve yapay zekanın farklı insan kaynakları yönetimi alanlarındaki kullanımına dair mevcut boşlukları tespit etmektir. Bu araştırma insan kaynakları ve psikoloji yönetimi bölümünde yapay zeka uygulamaları üzerinde gelecekte yapılacak araştırmalar için önemli bilgiler taşıdığı ortaya çıkmıştır.

Anahtar Kelimeler: İnsan Kaynakları, Psikoloji Yönetimi ve Yapay Zeka.

Introduction

Artificial intelligence (AI) is a major turning point, mimicking human and animal-like thinking in digital systems (Livet & Varenne, 2020). Businesses using big data now rely on computer-based technologies to compete globally, benefiting from faster responses, time savings, and increased productivity (O'Leary, 2013). AI, often called the "new electricity" for its crucial role in the corporate sector and industrial revolution, has propelled businesses to embrace ever-advancing technologies.

Kaya, C., & Ceylan, B. (2014) stated that the skills of the staff have altered as a result of technological improvements. Casanovas-Massana, A., et al (2015) indicated that to foster creativity and learning within a company, managers are revamping HR policies including training procedures, performance assessment, compensation, and personnel. It necessitates that HR professionals embrace technology, adapt, and upskill while also taking into account their own psychological health and ethical considerations. A staff that is more engaged and empowered as well as more effective HR procedures might result from successfully navigating these changes. Inkson (2008) suggested that psychology acts as a missing link between HRM strategy and organizational performance as it shapes employee perceptions, attributions, and attitudes. These psychological factors are essential in mediating the relationship between HRM and performance outcomes. Recently, there has been increased interest in examining HRM systems through the lens of the psychological contract, which helps in understanding how employees perceive and react to HRM systems (Höglund, 2012). Digital transformation has begun to be applied in human resources recently, however, it isn't entirely technology-focused. Coşkun, F., & Gülleroglu, H. D. (2021) reported that as human resources take on a strategic role in businesses, the significance of improving information systems for managing human resources and using new technology has grown. According to Upadhyay, A. K., & Khandelwal, K. (2018) for both businesses and applicants, the application of artificial intelligence in hiring and staff selection will result in higher efficiency and quality.

The role of human resources is increasingly important in corporate operations, with digital transformation being key to enhancing HR processes. Businesses seeking a competitive edge invest in HR technology, reduce administrative work by 20%, and cut costs and time (Abdeldayem & Aldulaimi, 2020; Machado & Davim, 2016). While AI is often applied to recruitment, such as through machine learning algorithms, its potential extends beyond hiring to other HR functions, significantly easing workload (Palos-Sánchez et al., 2022). The field of AI in HRM is growing steadily, with promising future applications.

The Purpose of the Study

The purpose is to ascertain the expectations Ghanaian human resources professionals, have for the digital transformation of the industry and to address any gaps in the various disciplines they work in. The study examined the skills and knowledge of human resources specialists employed by businesses doing business in various parts of Ghana. The fact that the participants in the interviews with human resources specialists were from various industries was taken into consideration. Implementations of artificial intelligence in human resources that were the subject of the research were contrasted with those in other nations. Businesses employ digitalization extensively, just as it is used in every aspect of our lives. The study aimed to identify the expectations in the human resources areas where the application has not yet fulfilled requirements as well as it sought to understand the implementation and impact of digital transformation—which provides time-saving and user convenience. By identifying these expectations, it aims to address the gaps in artificial intelligence deployments in human resources management and psychology.

Research Questions

What do human resource management experts anticipate from artificial intelligence?

What effect does artificial intelligence have?

Is it possible to manage human resources without using artificial intelligence?

What are some advantages of artificial intelligence in the management of human resources and psychology?

Method

Research Process and Ethics

The grounded theory method, developed by Strauss and Glaser, involves collecting information to formulate a theory (Howard-Payne, 2016). This approach combines Glaser's positivist methodology with Strauss's interpretive perspective, which uses qualitative interviews to analyze specific events (Pearlson et al., 2019). The development of theories is influenced by quantitative and qualitative viewpoints (Glaser & Holton, 2005; Charmaz, 2006). While Glaser asserts that theory is embedded in the data, Strauss emphasizes the need for researchers to interpret and actively engage in the study (Jones & Alony, 2011). The method aims to analyze, code, and classify data through systematic comparisons, striving for theoretical saturation based on inductive reasoning (Strauss & Corbin, 1998). Ethics approval was obtained from the Scientific Research Ethics Committee of Near East University, Nicosia, North Cyprus (NEU/ES/2023/1033) on 26.07.2023.

Study Group

The universe of this study is based on 11 individuals with knowledge and expertise on this topic. The participants were interviewed over the phone, through Zoom, or in person in the following 6 cities: Accra, Nkawkaw, Abirem, Koforidua, Swedru, and Oda. The group comprised 5 women and 6 men, 4 managers, 3 directors, 2 consultants, and 2 experts, aged between 27 and 58. Due to participant consent issues, interviews could not be videotaped, though notes were taken. Face-to-face interviews were conducted, when possible, while others utilized phone or Zoom due to health protocols and distance. Semi-structured questions guided the interviews, focusing on participants' experiences and knowledge. The study leveraged the international experiences of some respondents, particularly three individuals. Virtual meetings were employed for those unable to meet in person, demonstrating their effectiveness in facilitating communication (Bampton & Cowton, 2002).

Data Collection

Finding the best places to acquire rich data is the first step in the data-gathering process. Collecting robust evidence is the key to creating a grounded hypothesis that holds up. Rich, well-detailed data provide crucial details for a thorough investigation (Charmaz, 2006). Grounded theory data collecting may be done using various methods, including taking notes, conducting interviews, and recording. Other crucial considerations in data gathering include where, how, and when to gather information on the chosen phenomena and how to interpret it. (Thomberg, R. & Charmaz, K., 2014). The process of data gathering and analysis, when carefully and methodically explored, enables the researcher to understand all the viewpoints pertinent to the area or topic under study (Corbin, J. M., & Strauss, A., 1990). Moore, E., & Llompart, J., (2017) said that when data is gathered by video or audio recording it can be easily transcribed and analyzed.

This research focused on the Human Resources Management Association, including its seven regional chapters in Ghana, as well as corporate and individual HR members. Data was gathered through in-person, telephone, and online interviews, with participant anonymity ensured using pseudonyms. Primary data came from interviews with 11 HR experts across six industrial cities, while secondary data was sourced from professional books, research blogs, HR websites, and published papers.

Data Analysis

This research employed grounded theory, a qualitative approach where data collection and analysis occur simultaneously. The study aimed to understand how businesses leverage evolving technology in human resource procedures, using a large participant sample to enhance data reliability, as not all HR modules have integrated artificial intelligence. The interview technique was deemed appropriate for data gathering (Carson et al., 2001). Data from semi-structured interviews were organized thematically and analyzed using content analysis, with responses categorized based on study questions. Thematic analysis, as described by Braun and Clarke (2012), emphasizes organizing knowledge into patterns of specific behaviors, enabling the researcher to group related responses under coherent themes guided by the research questions.

Findings

The interviews conducted for this study resulted in five categories and 17 codes, with synonymous expressions consolidated under a single code. Eleven participants contributed to the identification of 28 codes, highlighting the data's richness and consistency. Below are the five categories, associated codes, and their repetition values.

Table 1. The views of participants related to the impact of AI in HR and psychology

Theme: Operative HR Stimulations	*Category*	*Percentage (%)*
Code		
Positive comments from candidates **Decreased interview duration** **Increased output from recruiters**	Reasonable	21.4
Theme: Managerial Stimulations		
Code		
To process payroll **Reducing administrative, financial, and budgetary load** **Make recommendation mechanisms, please.** **To create a satisfaction survey**	Prospects	28.5
Theme: Human Resources Efficacy		
Code		

Employee choice **Employee education** **Worker Orientation**	Areas Where AI is Used	10.7
Theme: Negative Opinions		
Code		
There could be a weakness without any human feelings	Prejudices	21.4
Theme: Negative Approaches /Thoughts		
Code		
It's too soon for our nation. **A lack of adequate infrastructure** **No staff available** **Technology limitations**	Difficulties	17.8

The table illustrates the key themes based on Artificial intelligence in Human Resources and psychology under 5 categories; Operative HR Stimulations, Managerial Stimulations, Human Resources Efficacy, Negative Opinions, and Negative Approaches. The data is calibrated in percentage.

Overall, it is clearly seen from the table that Operative HR Stimulations (21.4%) focus on positive feedback, like improved candidate feedback, decreased interview durations, and rose recruiter efficiency. The highest feedback was seen on the Managerial Stimulations theme with 28.5%. It concentrated on the potential of AI to streamline payroll, decrease administrative, financial, and budgetary load, raise the decision-making process, and develop satisfaction surveys. Another notable theme was Human Resources Efficacy (10.7%) which shows how AI is presently used in areas such as employee choice, education, and orientation.

On the other hand, there are Negative Opinions (21.4%) related to AI's lack of human emotion and potential weaknesses. In addition to this, Negative Approaches (17.8%) deal with challenges like technology and infrastructure limitations, and lack of staff and these could slow down AI adoption in HR and psychology. What stands out is that these five major themes explain their significance focusing on how AI impacts HR and psychology.

Discussions

Artificial intelligence (AI) has become indispensable in human resources (HR) and psychology administration. It is recognized that such AI tools like chatbots and automated video interview systems can identify the most qualified person and conduct initial rounds of interviews through reviewing CVs efficiently. This decreases the time that HR professionals spend on mundane tasks and lets them concentrate on making strategic decisions. Patel et al. (2020) stated AI's influence on talent acquisition and retention. Additionally, these AI devices' personalized career development plans improve both staff engagement and satisfaction. Thus, this personalized approach not only aids in the retention of staff but also a more motivated and productive workforce. It observed that AI shows significant potential in the field of performance management. Raghav et al. (2021) reported the potential of AI to enable continuous monitoring of staff performance and provide real-time feedback.

The performance management system is more responsive and dynamic as a result of this continuous assessment than traditional annual reviews. The capacity to provide immediate feedback and support is instrumental in enhancing the performance of employees and facilitating the attainment of their professional objectives. In addition to these, Jetha, et al. (2023) reported the role of AI's devices can apply in workplace psychology, especially in mental health monitoring. They reported that AI's capacity to analyze the work behavior of staff and the communication patterns detect indicators of tension or mental health issues. Moreover, AI can offer recommendations or connect staff with essential support resources.

Furthermore, according to Lee (2018), bias reduction is one of the benefits of AI. If the algorithms of AI are designed properly metrics evaluation could be done rather than human evaluation and this will affect the equitable hiring practices. On the other hand, Thompson (2021) indicated that data privacy is a critical issue. If AI in HR manages sensitive staff data, substantial privacy and also security risks will occur. To prevent this, organizations should adhere to the General Data Protection Regulation (GDPR). Thompson (2021) has identified data privacy as a critical issue. The management of sensitive employee data by AI in HR presents substantial privacy and security risks. To secure the personal information of employees, organizations must implement robust data protection measures and adhere to regulations such as the General Data Protection Regulation (GDPR). Taylor, et al. (2020) stated that if the organizations can not protect the data, the reputational repercussions will appear. In particular, he reported his worries in the fields of psychology and human resources. While using a virtual assistant or both to conduct the first interview eliminates some of the anxiety for applicants, it also ensures that the HR professional conducting the interview has the proper number of individuals with the needed qualifications.

Centralization and payroll are notable expectations among HR specialists, with a strong emphasis on the need for all HR management modules to be centralized and powered by artificial intelligence. While a small percentage of HR professionals oppose this trend, satisfaction with AI implementations in recruitment and selection processes is common among both applicants and HR specialists. However, businesses often face challenges in their performance management systems, which impede

effective progress (Adler, 2014). A robust performance management system is essential for organizational advancement, as ineffective systems hinder the achievement of business objectives (Adler, 2014). Providing effective feedback is crucial for employee development, enabling individuals to understand their strengths and areas for improvement. According to Adler (2014), psychological factors influence how employees perceive feedback, allowing them to interpret their performance and adjust accordingly. This understanding is vital for fostering positive contributions to organizational goals. Supporting this view, Armstrong and Baron (2005) argue that effective performance management should be continuous and adaptable, while Cappelli and Tavis (2016) advocate for a development-oriented approach to facilitate ongoing employee growth.

In addition to these to regulate the application of AI in these sectors, Taylor boosts regular frameworks and the establishment of ethical standards. Furthermore, staff should be informed about the use of AI systems. Huang et. al, (2019) support the opinion that the hybrid approach integrates AI with human expertise even if AI can manage data analysis and routine duties, it cannot formulate complex decisions that necessitate emotional intelligence.

Conclusion

This study has examined the use of AI in the management of human resources and psychology. The Human Resources Association, which has branches in seven districts of Ghana, provided participants for the study, which was conducted using the interview method. Experts in human resources from a range of sectors and domains were extensively questioned over the phone, online, and in person. The study approach used the grounded research design and the qualitative technique. Thus, professional interviews were carried out using semi-structured questions. Human resources professionals from a variety of sectors were consulted on the use of AI implementations in the HR department, with an emphasis on their expectations. After conducting national and international literature reviews on the topic, I discovered that while artificial intelligence applications have been used for a long time in other sectors, their use in the human resources sector is relatively new. Compared to Ghana, America, a few European countries, and Russia were the first to use artificial intelligence implementations in the human resources sector.

TamunoMiegbam, A., & Bariledum, K. (2022) stated that the United States of America, Russia, and China, being among the world's most influential nations, have initiated AI policies that compete with each other and with other countries. Ghana has begun the process of developing a National AI Policy to prescribe the ethical deployment and regulation of AI technologies. The policy is designed to promote economic growth, social development, and innovation, all while assuring inclusivity and addressing potential ethical concerns. Universities and research institutions in Ghana are progressively emphasizing AI research and development. The objective of initiatives such as the establishment of AI research institutes and collaboration with international partners is to develop local capacity and expertise in AI technology. Ghana's approach is consistent with global trends in responsible AI governance, as it prioritizes inclusivity, ethical considerations, and sustainable development. They set themselves apart by using virtual assistants, especially in recruitment. Russia utilizes the VERA system as a virtual assistant, whereas numerous countries in Europe and North America use the MYA system. Virtual recruitment assistants are being replaced in Ghana by chatbots and digital tools. That being said, one of the expectations is the application for AI-powered recruitment assistance. Artificial intelligence implementations have been discovered to be utilized in various human resources operations, such as orientation and training, even though recruiting is where they are most often used. Professionals anticipate certain things from human resource-related duties, such as payroll, centralization, recommendation systems, and satisfaction surveys. To conclude, it has been notable that artificial intelligence applications enhance the efficiency of human resources and psychology management when it is used effectively.

Declarations

Ethics Approval and Consent to Participate
This study was conducted in compliance with the principles of the Helsinki Declaration. Ethical approval was granted by the Near East University Ethics Committee. The application number is NEU/ES/2023/1033 on 26.07.2023.

Consent for Publication
Not applicable

Availability of Data and Materials
Not applicable.

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The author declares that no competing interests in this manuscript.

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All authors have read and approved the final version of the article.

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