

Recent Trends of Developing Human Resource Management under Artificial Intelligence framework

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Abstract: The current paper aims to investigate the global latest movement of developing human resource management systems in parallel with the rapid transferring into the adoption of artificial intelligence in all aspects of life i.e., healthcare, education systems, business processes, logistic chain processes...etc. Since Arabian region presents around (10.2%) of the world in two continents and its papulation around (5%) of total global population which leads it to compete towards change and develop as others, so, this paper could be a good guide to perform a review of the scientific articles in Arabian libraries that related to the same terms of artificial intelligence and human resource management for the last two decades to understand the current and the coming steps that should follow artificial intelligence recently has its impact of the field of human resource management with gently growth towards positive future horizon that represented by human resource analytics. The objective of this article is to scan academic works systematically and trying to submit a comprehensive vision of the future of artificial intelligence usages in human resource management in Arabian Region.

Keyword: recent trends, human resource management, artificial intelligence, Arabian region, human resource analytics, positive future horizon.

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Introduction

Nevertheless, the new version of 4th Industrial Revolution considered as a huge umbrella that AI radiates from (Sanchez et.al., 2022); increased development of data, information and latest communicating technologies directs AI to become relevant to many aspects of life especially those that related to education, economy, healthcare... etc. (Bolander 2019; Aloqaily & Rawash, 2022; Budhwar et al., 2023). AI implementation achieved many positive influences i.e., in healthcare and education (Hariri, 2021; Li et. al., 2023), while on others such as HRM, still the scenario is ambiguous (Vrontis et. al., 2022).

HRM is one of critical issues that influenced by the 4th Industrial Revolution due to its essential role in all kind of organizations and in certain cases it could be a value to measure the level of achieving competitive advantages (Olan et al., 2022; Ibrahim, 2022; Li et. al., 2023; Budhwar et al., 2023). Despite the importance of adopting AI in HRM, but there is a deep gap that hinders the persist of using AI applications in HRM especially for those applications that measure the relationship between using technologies and HR performance (Frey & Osborne; 2017; Manne & Sneha, 2021).

From many decades, a swift movement took place especially for the usages of AI and its applications which are invading many kinds of businesses around the world but this scene does not exist widely in Arabian region yet; which creates a deep gap between what developed countries have achieved while and on the contrary, developing countries are still in the same loop (Budhwar et al., 2023). This fact has been recognized through reviewing literature works; the reality of Arabian region libraries need more efforts and experiences to be documented and archived to understand the importance, usages, applications ... etc. of AI in all aspects of life then implement it (Bettayeb & Balbaa, 2023), except some shy studies, works, and experiences in UAE, KSA which was limited to healthcare industry and/ or educational ones (Hariri, 2021; Li. et. al., 2023).

AI Apps. serve a valuable competitive advantage to economy in general regardless the size of business; moreover, businesses who adopting AI Apps. noticed well the fact of pouring money on developing HRM to create their analytical infrastructure that serves them to choose employees, select staff engagement due to a systematic analysis in addition to follow the updates of developing and training programs; that is why some businesses do not compete and left the market (Li & Chen, 2021; Chowdhury et. al., 2023; Budhwar et al., 2023).

The current paper will be transfer from explaining the problem, importance and objectives and it proposed a conceptual model depending on certain hypothesis with analyzing certain earlier studies through literature review to find a bridge that serves

the purpose of this study. Then, illustrating the results and discussing the future horizon of HRM under the artificial intelligence framework.

1. Research Methodology

I. Problem

although, AI developed very rapidly around the world; but still the relationship between AI and HRM in Arabian region can be characterized as none- logical system due to its complicated processes that reduce the level of trust; the lack of technical infrastructure for HRM; in addition to the lack of legislation of adopting AI in business environment. Accordingly, the question to understand the current problem is “how can we describe the importance of adopting AI in HRM & what are the challenges that Arabian Region face to adopt AI”?

II. Objectives

many objectives were been realized here:

- Scanning & analyzing the main global perspectives toward adopting AI in HRM.
- Focusing on the main gaps of Arabian region libraries to cover these two novel idioms.
- Discussing the abilities of Arabian region to adopt AI in certain aspects of working i.e., employee, training, and analyzing performance.
- Suggesting future plan to adopt AI in HRM to achieve competitive advantage that aligned with sustainability.
- Framing a proposal model to explain the integration between AI elements and HRM aspects.

III. Importance

the paper shows many aspects of importance:

- Reducing the gap between the integration of AI with HRM especially in Arabian region.
- Submitting an analytical vision to improve decision- maker to address certain affective policies toward adopting AI in HRM.
- Establishing a practical infrastructure to compare the global experiences with the Arabian ones especially in employment, training, and performance assessment.
- Submitting an academic data for researchers to discover the economic and organizational effects to adopt AI in HRM practices.
- Supporting the digital transformation in Arabian region that aligned with forth industrial revolution and sustainable development strategies.

IV. Proposed Conceptual Model

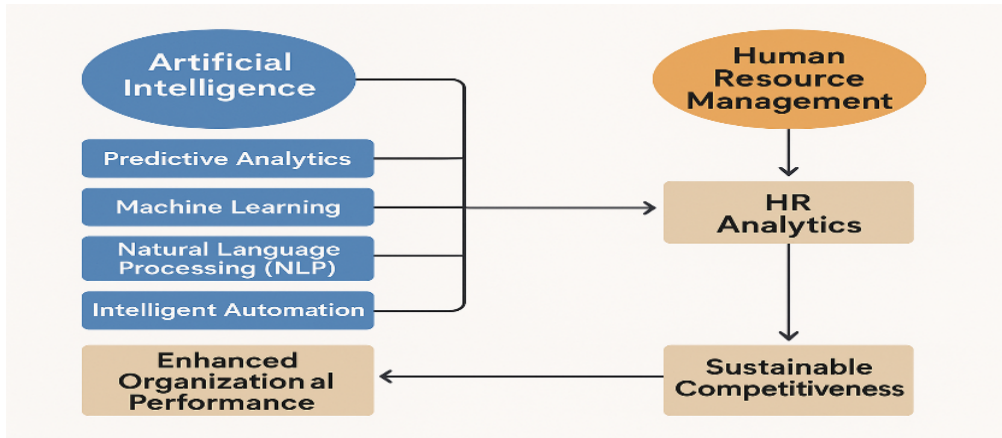


Figure 1: Hypothetical Model of the Research
 Source: Sanchez et. al., 2022 & Budhwar et. al., 2023

V. Research Hypothesis

Through the title and depending on the main question “how can we describe the importance of adopting AI in HRM & what are the challenges that Arabian Region face to adopt AI?”, the hypothesis will be designed as “Recent trends in adopting artificial intelligence technologies contribute to the development of human resource management by enhancing human analytics, improving performance efficiency, and supporting decision-making processes”.

VI. Methodology

The current paper tries hardly to explore and investigate the suitable methodology to follow especially when realized the lack of Arabian libraries to enrich this topic. Bibliometric analysis is used here due to its feature as an open- source tool to form a comprehensive understanding outline of the earlier scientific literature; this tool was developed by Aria & Cuccurullo in (2017) and then cited by (Sanchez et. al., 2022).

Firstly, started with determining the database to be used to gather information; the database follows the researches that published in ResearchGate, Trendsresearch.org, while another database is from ELSEVIER that cited as Scopus (Budhwar et al., 2023). Then, conducting the keyword on both “Artificial

intelligence AI & Human Resource HR” for two last decades (2003-2023) in the research filed (Title, Abstract; Keyword).

Despite selecting around (73/ article) in total, but only (56/ article) that published mostly in International Journals of Human Resources Management and in Academic journal of UAE & KSA Journals, are obtained here because the current paper tries to narrow the horizon of searching on AI & HRM rather than digital recruitment; and the process is starting with selecting the article then downloaded it and secondly analyzing it carefully, finally summarizing their results that serve the purpose of current paper (Budhwar et al., 2023).

2. Literature Review

I. Human Resource Management and Artificial Intelligence

In this context, and in order to understand the phenomenon of digital transformation in general where AI is a subset of it; let’s define both digital transformation and AI logically due to many referred studies; digital transformation is “a process aimed at improving an entity by triggering major changes to its attributes through combinations of information, processing, communication, and networking technologies” (Li et. al., 2023); means that all activities and requirements are directed toward promoting and developing the usages of technology to serve different aspects of life in parrel with the current dynamic movement (Budhwar et. al., 2023).

While AI represents many definitions according to the era of each writer, i.e., McCarthy in 1956 defined AI as “the science and engineering of creating intelligence machine, especially intelligent computer programs”; and after a period of time, another idea was defined by Minsky in 1968 “the science that deals with the development of machines capable of performing functions that a human can perform and that require human intelligence” while the coming definitions show another horizon of AI future Apps especially when Paesano in 2021 defined AI as “systems that exhibit intelligent behavior by analyzing their environment and performing actions, with a certain degree of autonomy, to achieve specific objectives”; this definition seems to be accurate maturity in interpretation of AI Apps due to its autonomy; it is a combination of rich accumulated data which aligned with HRA systems that transferred gently through digital transformation era (Sanchez et. al., 2022; Budhwar et al., 2023). So, despite many studies and definitions were written for many decades, but currently no unique universally definition is accepted yet (Chowdhury et. al., 2023).

The interesting matter here is; human resource who considered as a human capital and / or intangible source due to its mentality and no alternatives; human capital cannot be imitated and in certain situation it represents the competitive advantage to its organization (Kearney & Meynhardt, 2016); which means that adopting AI in

HRM seriously requires efforts to involve with other aspects of society, aligning AI usages with HRM systems in agile and accurate design to ensure effectiveness as well as efficiency of organizations where AI enrich the ability of understanding and controlling the continued flowing of data and enhancing the economic strategies (Michailidis, 2018; Varma et. al., 2022; Budhwar et al., 2023).

Studies refer that many different areas of make up HRM through AI usages can be classified to different parties starting from; researching talents and qualified recruitment, continued career training and development, outcome performing analysis, enhancing the systems of compensation due to the staff turnover (Abdeldayem & Aldulaimi 2020; Nawaz 2020; Qamar et. al., 2021; Yahia, et al. 2021; Budhwar et al., 2023). In this context, Qamar and his partners in 2021 showed that organizations have already implemented AI usages in HRM through adopting virous techniques i.e., expert systems, fuzzy logic, artificial neural networks ANN, data mining, genetic algorithm in addition to machine learning which considered as an efficient gadget for decision-making process (Hamilton & Davison, 2022).

II. HRM Future Horizon:

AI would raise certain disquiet for the future of HRM and it could create a kind of power resistance towards understanding and accepting the novel technologies of AI Apps, but in fact AI considered as novel gadget to direct the applications of HRM into HRA that offering novel competencies, innovated experiences, valuable decision- making; and updates systems of education especially for those related majors as in banking & financing industries, logistic processes and so on (Shet et. al., 2021; Budhwar et al., 2023).

Globally, studies refer that there is around (70%) growth of businesses in the use of AI for five years ago and the amount of investment in AI Apps was soaring to (85.3\$ Billion / 2021) while it will reach more than (204\$ Billion/ 2025); meanwhile, despite AI could render around (75 million/ job) but it will generate around (133 million/ job) opportunity as well, as cited by (Agarwal, 2022; Bettayeb & Balbaa, 2023; Budhwar et. al., 2023).

The results raised a question to start the discussion: Does the Arabian region not yet commonly ready to adopt AI on HRM? however, the results show many gaps but many benefits are raised as well for the future of AI on HRM especially in healthcare industry and educational program systems (Hariri, 2021; Bettayeb & Balbaa, 2023; Li et. al., 2023; Budhwar et al., 2023). Novel trends of digital innovations and novel technologies would support businesses to achieve their desired financial results in parrel with increasing productivity through talent trained HR. The implantation of AI in HRM will reduce the required time spending for achieving duties that increased the personal time where employees would exploit it into more training programs to promote their skills and abilities (Schivone et. al.,

2022). another benefit is that exchanging the experiences of HR becomes easier through adopting AI usages especially in decision – making for critical situation as in healthcare industry (Li et. al., 2023).

Despite of these benefits, but the costs of establishing and developing technologies is huge, without the alignment of both public and private sectors' efforts, the adoption of AI becomes difficult (Budhwar et al., 2023). Although the mapping road of having AI on HRM in Arabian region is not ready yet; but not impossible, since both sectors believe in the importance of this revolutionary (Kumar et. al., 2022), they both have to follow the rapid expansion of global market as well as technologies through developing training programs, financing the scientific searching and enhancing the infrastructure towards achieving these goals, aligning the efforts among scientific universities to work on developing the educational programs by adopting AI and supporting lecturers on following the novel usages of AI in their teaching (Hariri, 2021) to serve their societies and ensure the sustainability among the vast development of technologies (Budhwar et al., 2023).

3. Conclusions:

The investigating shows that many earlier Arabian works were adopted on HR more than AI with specific aspects of knowledge i.e., business management, banking systems, healthcare & nursing, educational programs; while AI & HRM were absence in others if compared with global works as cited by (Sanchez et. al., 2022; Budhwar et al., 2023); which means that still there is a gap in understanding the importance of adapting AI in HRM.

Another gap is, the language of writing these articles, where most of them were written in Arabic which leads to limit their publishing (Maghsoudi et al., 2023). The third gap is the database where to publish; although the selected database here are known and considered as open-source database with valuable citation in most cases but still they are not Scopus which means that Arabian researchers have to spend more efforts to publish with Scopus to direct and share their ideas, thoughts and projects widely.

And the fourth gap that reached here is, most of literature are used the theoretical way of preparing their articles rather than practical ones and/ or case study due to the lack of financial support and / or the lack of database sources that universities or scientific institutes are affiliated with: in addition to the lack of supporting researchers with free access to statistical soft programs to enhance their results logically (Maghsoudi et al., 2023).

While the fifth gap is related to the lack of updating laws with regards to AI and HRM in Arabian region especially those laws related to ethics of using technologies, the current scene is still ambiguous which means that most of

businesses are still suffer from the future of adopting the recent trends of AI in HRM and meanwhile limited their abilities to develop as well (Budhwar et al., 2023). On the contrary, databases show high level of interest in AI & HRM for the last two years rather than before especially after COVID-19 and the serious need for digital or remote employees, which indicates that researchers try to be more innovated and creative in their publishing works and the topic becomes more accurate to discuss it loudly especially for these articles that related to business development and technological usages that focuses on HR as a spiritual capital of any organization (Budhwar et al., 2023).

4.Proposal

Last but not least, still the future horizon of AI on HRM needs more research to be clear firstly before accepted, then working on implementing it in many aspects of life, especially if societies realize that AI is a positive tool towards creating many numbers of job descriptions more than depending on traditional way of work.

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الاتجاهات الحديثة لتطوير إدارة الموارد البشرية في إطار الذكاء الاصطناعي

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المستخلص: تهدف هذه الورقة البحثية الى استقصاء أحدث توجه عالمي لتطوير أنظمة إدارة الموارد البشرية، بالتوازي مع التحول السريع نحو تبني الذكاء الاصطناعي في جميع مناحي الحياة: الرعاية الصحية، أنظمة التعليم، العمليات التجارية وعمليات سلسلة التوريد... الخ. ونظراً لأن المنطقة العربية تمثل حوالي (10.2%) من مساحة العالم في قارتين، ويشكل سكانها حوالي (5%) من اجمالي سكان العالم، مما يدفعها للمنافسة نحو التغيير والتطوير كغيرها، لذلك يمكن ان تكون هذه الورقة دليلاً جيداً لإجراء مراجعة للمقالات العلمية في المكتبات العربية ذات الصلة بنفس مصطلحات الذكاء الاصطناعي وإدارة الموارد البشرية على مدى العقدين الماضيين، لفهم الخطوات الحالية والقادمة التي ينبغي ان تتبع تأثير الذكاء الاصطناعي في مجال إدارة الموارد البشرية مع نموه نحو افق مستقبلي إيجابي تمثله تحليلات الموارد البشرية. الهدف من هذه المقالة هو مسح الاعمال الاكاديمية بشكل منهجي ومحاولة تقديم رؤية شاملة لمستقبل استخدامات الذكاء الاصطناعي في إدارة الموارد البشرية في المنطقة العربية.

الكلمات المفتاحية: الاتجاهات الحديثة، إدارة الموارد البشرية، الذكاء الاصطناعي، المنطقة العربية، تحليلات الموارد البشرية، آفاق مستقبلية إيجابية.

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