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Artificial Intelligence and Its Impact on HRM Functions of Pakistani Textile Industry: A Qualitative Study

Kashif Lodhi
Department of Management, Economics and Quantitative Methods
Università degli Studi di Bergamo via dei Caniana 2, 24127 Bergamo (BG), Italy
k.lodhi@studenti.unibg.it
Dr. Atif khan
Assistant professor, Faculty of Education, University of Barcelona, Barcelona, Spain
atifkhan@ub.edu
Gianfranco Rusconi
Emeritus Professor of the University of Bergamo (Italy), Department of Management Visiting Professor of Etica d'impresa Department of Law
gianfranco.rusconi@unibg.it
Sohail Ahmad (Corresponding Author)
M.Phil. English Linguistics. SSE English School Education Department (SED), Govt. of Punjab, Pakistan
ahmad.sohail664@gmail.com
https://orcid.org/0000-0001-8710-3237

ABSTRACT
The purpose of this quantitative research is to explore role of artificial intelligence (AI) in Human Resource Management functions in Pakistani Textile Industry that plays a significant role to for the country's economic development. The research addresses the central question: This research question tries to know the changes that may occur in the HRM functions in the context of the Pakistani Textile Industry due to the integration of artificial intelligence. Using both qualitative and quantitative instruments, the study measures the current state of AI integration, reviews the impact of AI on particular dimensions of HRM, and identifies witnessed advantages and drawbacks. The research is underpinned by two theoretical models namely Resource-Based View (RBV) and Technology Acceptance Model (TAM). In the realisation of these objectives, the study establishes a positive relationship between the use of AI and enhanced HRM results in areas such as recruitment, training and evaluation. But of course, issues like the problems caused by the algorithms and the workers' loss of jobs due to AI app development appear. Implications for HRM textiles industry, suggested for future research and; ethical AI practice are the last points of the study.

Keywords: Artificial Intelligence (AI), Human Resource Management, Pakistani Textile Industry, Economic, Development.

Introduction

Sophisticated technological development such as artificial intelligence (AI) has become one of the powerful agents of change across different sectors to transform organizational business processes and assets management (Smith & Johnson, 2019; Ahmad et al., 2024). Since the 90s, Pakistan's Textile Industry has developed considerably to become one of the dominant industries of the country. In this ever-changing situation, the HRM activities have a significant

strategic position for organizational work force management, employees' acquisition and training.

Therefore, the application of Artificial Intelligence in the Human Resource Management Adam, (2020) presents as a good way to improve on the working productivity, return on decisions made as well as the organization's performance within the Pakistan textile industry)Fatima et al., 2024). Because AI is increasingly used in different domains of HRM, namely, recruitment, training, and employee performance assessment, it is crucial to evaluate the AI-driven changes in the human capital of the industry. The research also seeks to examine the detailed nature of the interference of AI to HRM function in the context of the Pakistan textile sector.

Research Question and Objective:

The central research question guiding this study is: This research question will be the main driving force for obtaining a clear understanding of the role of Artificial Intelligence in the management of the Human Resource Management functions of the Pakistani Textile Industry. To address this question, the study seeks to achieve the following objectives:

1. In order to formulate the first research question, whereby it aims at evaluating the current status of the utilization of AI in functions of human resource management in the Pakistani Textile Industry, a quantitative research approach would be applicable.
2. In the next step, the study aims at identifying which part of the human resource management functions or sub-functions, including staff recruitment, training, and performance evaluation, extensively uses AI technologies.
3. In order to assess various benefits and difficulties linked with the application of AI in different functions of HRM in the context of the Pakistani Textile Industry.

Literature Review:

AI and its Applications in HRM:

AI has seeped its way into the various sectors with great changes impacting the human resource management in organizations. There is a significant possibility that the adoption of the AI in operations of HRM can transform conventional practices and procedures. A number of researchers have looked at the various use of AI in the context of HRM specifically in the area of recruitment and selection, talent management, engagement and decision-making.

Such technology assistants as NLP, machine learning, or predictive analytics have already been used for the selection process in order to reduce time and efforts on resume screening and candidate selection according to specified criteria (Van Den Heuvel & Bondarouk, 2017). Moreover it has been argued that the use of AI in workplace performance promotes more positive employee involvement through the delivery of individualized training as well as feedback (Rasmussen & Ulrich, 2015).

Adoption of AI in the Textile Industry Globally:

Research showing utilization of AI across the world in the textile sector raises an understanding that there exists a trend in the implementation of advanced technologies to improve the efficiency and competitiveness of textile industries. When it comes to textile production AI is employed to streamline some procedurals, monitor fabric quality and manage supply chains (Wang, Wan, & Zhang, 2020). By implementing techniques like; predictive maintenance and demand forecasting, the downtime can be reduced and the general productivity in textile manufacturing advanced through the use of Artificial Intelligence (Wu et al., 2019; Khan et al., 2024).

AI is not used solely in production lines in the global textile industries but in the HRM activities where AI is applied for talent acquisition, workforce management, and skills management (Li,

Zhang, & Zhang, 2021). Awareness of such global trends can aid in placing the distinctive issues and benefits relevant to the adoption of AI in HRM by the Pakistani Textile Industry.

Impact of AI on HRM Functions:

Studies focused on the role of AI on the activities of the HRM point to both the benefits and drawbacks. On the positive side, AI increases the amount of information available for making decisions about employee performance, talent, and their further professional growth (Kapoor & Solomon, 2020). However, there is an issue with the AI algorithms that people raise their concerns as they think AI can perpetuate prejudice in the workforce (Dastin, 2020; Niaz et al., 2024).

In addition, works look at the need to manage change by responding to the employees' concerns and resistance when implementing the uses of AI in HRM (Sambharya, 2019). The flow of activities of the HRM functions to achieve organizational goals means that it is imperative to understand social culture and organization to capture the advantages of AI and minimize the risks.

Theoretical Framework:

Introduction to Theoretical Framework:

The assessment of effects of artificial intelligence (AI) on Human Resource Management (HRM) in the textile industry requires theoretical framework that will help in the research methodology and data analysis. This section presents two theoretical backgrounds – Resource-Based View (RBV) and Technology Acceptance Model (TAM) – that form the conceptual foundation for investigating the relationship between AI integration, human resources, and organisational effects.

Resource-Based View (RBV):

The Resource-Based View argues that organisational competitive capabilities constitute a source of sustained competitive advantage when they are valuable, rare, costly to imitate and non-substitutable (Barney 1991). Actually, in the case of AI implementation in the field of HRM, the RBV framework considers technological capabilities of AI systems, such as AI analysis, machine learning, etc as key strategic assets that help to improve organization's human capital management systems. Some organisations that adopt AI for HRM practices may have competitive advantage in talent sourcing, management of employees, and talent development (Barney, 1991; Wright et al., 2001).

Technology Acceptance Model (TAM):

The Technology Acceptance Model is pioneered by Fred D. Davis (1989) and it concentrates on the acceptance and use of technology within an organisational setting. According to TAM, perceived ease of use and perceived usefulness of a certain technology are the two main factors that define the level of an individual's intention to use that technology. Applicable to AI in HRM, TAM explains employees' perceived intentions to use and the extent to which they are receptive to AI-based HR practices (Venkatesh & Davis, 2000). It is important to identify employees' perceptions and their readiness to accept AI in the workplace to help with implementation and successful adoption by the organisation's HRM functions.

Application in Research Design and Analysis:

Variables and measures associated with the RBV framework are applied to the choice of the unique resources and capabilities that are provided by AI in the enhancement of the textile industry's HRM. For example, the research design may cover the evaluation of the technological environment of the organization, the application of AI in the talent management processes in the organization, and the training of the employees in the application of AI

technologies. The application of RBV for analysis would mean analyzing how these resources specific to AI improve the outcomes in HRM and organisational performance.

On the other hand, TAM directs the research design by insisting that the perceptions of employees about AI in HRM should be studied. Self-completion questionnaires and face-to-face interviews may be developed as tools to establish the extent to which employees consider specific AI applications in HRM functions as easy to use and useful, respectively. The analysis phase would be in the form of evaluating the effects that these perceptions would have on the intention towards the adoption of AI-driven HR practices with a view of getting a broader perspective of barriers or enablers to the successful implementation of the practices.

Thus, the study will utilize the integration of these two theoretical frameworks, in order to construct a broad figured out of the strategic significance of AI usage in HRM in textile industry of Pakistan.

Methodology:

Research Design:

The approach adopted for this research involved both qualitative and quantitative research to gain a rich understanding of the effects of AI on HRM in the context of the PTI. Therefore, the study adopted the concurrent triangulation design of data collection whereby both quantitative and qualitative data were collected and analyzed separately to enrich the findings of the research question.

Sample Population:

The target population of this study includes different organizations in the Pakistani Textile Sector. In this case, the research targeted organizations of different sizes, production capacities and levels of AI adoption and this was done by using a stratified random sampling technique. The study participants comprised of human resource professionals, managers, and other employees that are affected or impact AI solutions in HRM activities.

Data Collection Methods:

Quantitative Data Collection:

Quantitative data was collected through a structured survey questionnaire that allowed the use of a Likert scale.

The questionnaire contained questions regarding the current state of AI adoption in HRM, particular applications, perceived advantages and disadvantages, and organisational performance.

It was conducted through online platforms to target a large population of both HR professionals and employees and then make responses anonymous.

Qualitative Data Collection:

Semi structured interviews were conducted with the human resource managers and the organizational leaders.

Semi structured questions were used in order to understand the diverse views existing out there about impacts of AI, how organisations are approaching this technology and the difficulties faced during the implementation.

The qualitative results offered richness and information that helped to explain the quantitative results.

Statistical Tools for Analysis:

Quantitative Data Analysis:

To describe the results obtained from the survey, frequency measures such as mean, median, and standard deviation were computed.

A frequency distribution was used to test inferential statistics in order to analyse relationships between variables using regression analysis.

Quantitative data analysis was done using Statistical software that is; SPSS- Statistical Package for the Social Sciences.

Qualitative Data Analysis:

For the purpose of the study, thematic analysis was used to analyse the data and look for patterns and themes in the qualitative data collected.

Coding and categorization were done in order to generate themes from the sets of interviews.

It was easier to solve the research question when both qualitative and quantitative results were used in the analysis phase.

Quantitative Data Collection and Processing:

Quantitative data was collected through distributing the survey to the participants where they filled the Likert scale items. Afterward, the data that was collected was keyed in the SPSS program which enabled systematic analysis of the data. In light of this, various statistical procedures helped in analyzing the quantitative data and facilitated the identification of the phenomenon of AI adoption the specified outcome variables of the HRM within the Pakistan Textile Industry.

Limitations:

Sampling Bias: External validity of the study by may be an issue because the participating organizations are self-selecting and maybe different from the organizations that did not participate in the study (Babbie, 2016).

Self-Reporting Bias: The use of surveys makes it even worse since one is only limited to responding to questions on a survey instrument, and therefore social response bias becomes an issue (Bryman, 2016).

Cross-Sectional Design: The cross sectional nature of the research meant that it was not possible to determine the cause effect relationship of the use of AI in HRM over time (Maxwell, 2013).

Technological Readiness: The technological factor is still relatively new in organizations around the world with diverse and different levels of readiness, which may have affected the level of AI adoption and therefore affected the study outcome.

Interpretation of Results:

The findings of this study are consistent with theoretical framework and empirical research on the consequences of AI on the efficiency of HRM activities and talent management (Brown & White, 2020; Kapoor & Solomon, 2020). From the survey and interviews the findings indicated that organizations within the Pakistani Textile Industry have adopted the application of AI in HRM practices more significantly in areas of recruitment, training and development and performance appraisal. This aligns with the application of AI for the textile industry for the global trends where organizations use predictive analysis and machine learning for workforce management (Li et al., 2021; Wu et al., 2019).

Implications of AI Adoption on HRM in the Pakistani Textile Industry:

The implications of this study for the Pakistani Textile Industry and more specifically for HRM are as follows: First, it has become clear that the use of AI helps to optimise the recruitment process, shorten the timeframe for the identification of the candidates to be hired and, therefore, time-to-hire. Secondly, training modules, enabled by artificial intelligence, have helped integrate training targeted at individual learner needs and skills, as well as ongoing learning. However, there are difficulties in making an algorithm impartial (Dastin, 2020) and in handling perceptions of employees when implementing AI (Sambharya, 2019).

Employing and sustaining excellence of the HRM functions in organisations that have overcome these issues give a competitive edge. The integration of AI adoption within the HRM objectives helps in decision making process, supports workforce flexibility and organization's performance (Kapoor & Solomon, 2020; Rasmussen & Ulrich, 2015).

Unexpected Findings and Potential Reasons:

An interesting discovery was that there are disparities by size when it comes to the usage of AI across organizations. Small business was found to be even more progressive in the use of AI in HRM than the large businesses. This may be explained by the orientation on innovation of the leadership, the flexibility of the organizational culture, or the areas of specialization that are conducive to technological experimentation (Van Den Heuvel & Bondarouk, 2017).

Furthermore, the survey showed that the participants have a significant issue with the security of their positions and an unequal approach of AI models. Such an attitude may be caused by a lack of clear narratives on the ethical standards regulating AI usage or the absence of clear rules concerning AI application to HRM tasks (Dastin, 2020).

Conclusion:

Therefore, this study holds significance for understanding the effects of AI adoption in HRM functions in the Pakistan Textile Industry. Finally, the study demonstrated that the incorporation of AI improves the results of HRM depending on the strategic positioning and the clear communication of the goals.

Findings from the survey and interview also show signs of enhanced talent acquisition, customised training and development programmes, and enhanced performance evaluation as a result of AI in the organisations' HRM. But problems like algorithmic bias and employees' doubts regarding their future, prove that AI applications should be implemented with great consideration of the potential pros and cons.

Suggestions for Future Research and Improvements in AI Adoption:

Future research in this subject area should explore more of the ethical implications of integrating AI in HRM within the textile industry. It shall also be critical for designing fairness in HRM, to comprehend the factors resulting in possible biases in AI algorithms and addressing such bias (Smith & Johnson, 2019).

Furthermore, studies on AI's long-term consequences for workforce welfare, job satisfaction, and organisational culture would have offered a fuller picture of the organisational effects of introducing AI. Additionally, assessing leadership contribution to LM&C culture in small businesses may reveal several factors that determine AI implementation in HRM.

Therefore, based on the foregoing discussions, the practice of technology and its further development should be based on the principles of compliance with ethical norms, the concept of the welfare of employees, and the effectiveness of the organization.

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