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THE IMPORTANCE OF ARTIFICIAL INTELLIGENCE SYSTEMS AS A NEW DECISION MAKING AGENT IN HRM

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ABSTRACT

The aim of this paper is to examine the importance of artificial intelligence system as a new decision making agent in human resource management. The AI tools used in HRM decision making process in recruiting and selecting, developing and retaining. With artificial intelligence system in HRM, the organizations can enhance the efficiency in recruitment, selection and gain access to the larger recruitment pool. The artificial intelligence system in HRM, subjective criteria such as partiality and favoritism are less likely to play in recruitment and selection of employees. The artificial intelligence system in HRM also potentially positive impact on the development and productive utilization of employees. The competition between the enterprises has been intensified. If an organization wants to adapt social development, it is essential to strengthen the internal management system of the organization. The internal management system also needs to rely on the human resource management. The aim of this research is to study AI system is adopted in organization's human resource management.

Keywords: Artificial Intelligence, AI system, Decision Making, HRM

1. INTRODUCTION

The Artificial Intelligence system in HRM can include the automation of repetitive administrative tasks. AI not only saves HRM from completing time-consuming tasks also it improve the efficiency of the employees. Moreover, by automating administrative tasks, the HRM employees can focus on more valuable tasks as well as reduce the workforce. The Artificial intelligence is potentially transformative force that is likely to change the role of the management and the organizational practices. Jarrahi, (2018) Artificial intelligence is having revolutionary impacts on the organizational decision making process according to Thomas et al., (2016) it is redefining the management models. Artificial intelligence potential usefulness as a tool to improve the HRM strategy and the performance is being increasingly recognized not only in the developed countries, especially in emerging economies. According to Ghosh and Rajan, (2019) the private and public sector organizations in emerging economies are under pressures to develop the unique strategies in order to deal with the economic and political change, increased competition from the global market and some of the other factors.

The incorporation of Artificial intelligence in HRM could emerge as a key component of the organizational strategy. The rapid development of the knowledge economy has broken the barriers of information transmission and at the same time it brought new business ideas, methods and the change of thinking mode has made the people more and more aware of the importance of human resources. The human resources plays an important role in the development of production also it guarantees the implementation of the organization's business strategy. With the continuous progress, the human resource management are facing many problems, like the challenges of structural diversification and the competition diversification. The importance of organizational human resource has made the status of organizational management increasingly promoted.

The company need to use artificial intelligence system to design the human resource management and improve the quality of employees to make the organization develop toward a scientific and reasonable method. Organization uses artificial intelligence technology to mine the relevant data of the organizations, understand the situation of the company in a timely manner, and

adjust unreasonable rules. This study analyse the feasibility and practical significance of the AI system in human resource management.

2. REVIEW OF LITERATURE

Sonja K.Otting and Gunter W.Maier (2018), examined that the type of decision agent namely humanoid Robot would denote the strongest relationship between the procedural justice and the human behaviour. He conducted the research in two experiments with the results showing the importance of procedural justice for both the human and the decision agent system. But he failed in his research to prove the interaction affects both of these things.

Yochanan E.Bigman and Kurt Gray(2018), revealed that the people are not interested in autonomous machine making model moral decisions. In his studies he made it clear that the machines cannot think and feel on its own which is difficult to accept this concept. He studied by trying some of the other routes, but the aversion machine moral decision making cannot be totally removed.

According to Garima, Vikram, and Vinay (2020) the usefulness of employees, HR professionals, and organization. The AI is seen replacing the routine jobs in Human Resource Management with less intervention from the humans. The AI system will help the HRM to develop the skills of the human capital.

Jia, Guo, Li, and Chen (2018) ascertained that the artificial intelligence system will useful in HRM for recruitment, selection, training and other managerial activities. So most of the companies are adopted the AI systems in the decision making process of HRM.

3. ARTIFICIAL INTELLIGENCE

Technology is one of the most important influential factor in an organization. Since, the 19th century, based on AI technology the role of robot has been replacing the employees in the production department. The third revolution began in 1970s the personal computers and internet entered into the working life and the human labour also replaced by machines. At present the digital technologies such as machine language and artificial intelligence are entering into the day to day working at the workplace. It lead the transformation in business activities.

An “Artificial intelligence (AI) is defined as “an ideal intelligent” the machine that is flexible agent that identifies Search Data mining is a continuous process. In the process of data mining the company need to classify the objects according to the rules. The aim of Artificial Intelligence is to replicate the aspects of human intelligence like learning, perceiving, reasoning, critical thinking, etc,. The computer programs are guided for Artificial Intelligence. AI as an “intelligent agent” like the machines act intelligently as humans by mimicking the human intelligence and which is made possible by feeding the machines with lots of data. It is tested and trained through the machine learning models. Now a days most of the companies are using this AI in their HRM process for reduce the workload and reduce the manpower.

3.1. ROLE OF ATRIFICIAL INTELLIGENCE IN HRM

At present, the HR department heading towards digital revolution and it is using various method to simplify the various resources by using big data analysis, cloud computing and artificial intelligence. Amla & Malhotra, (2017) stated that most of the organization has been using the artificial intelligence (AI) or digital technologies in HRM like machines learning, chatbot and robot process automation in the human resource management (HRM) which is support in recruitment, screening, on boarding, interviewing, training, etc.

3.1.1. RECRUITMENT

Most of the companies are using artificial intelligence system in their recruitment process. The organizations such as Facebook, SAT, GE are using the digital technologies in the HR process such as screening, interview, identify the talented for the recruitment process, training and appraisal process in an organization. Through the AI recruitment process the manager can examine the application easily and the candidate can get quick response from the employer. The automated answering machine plays an essential role to solve the problems in the recruitment process of the organization.

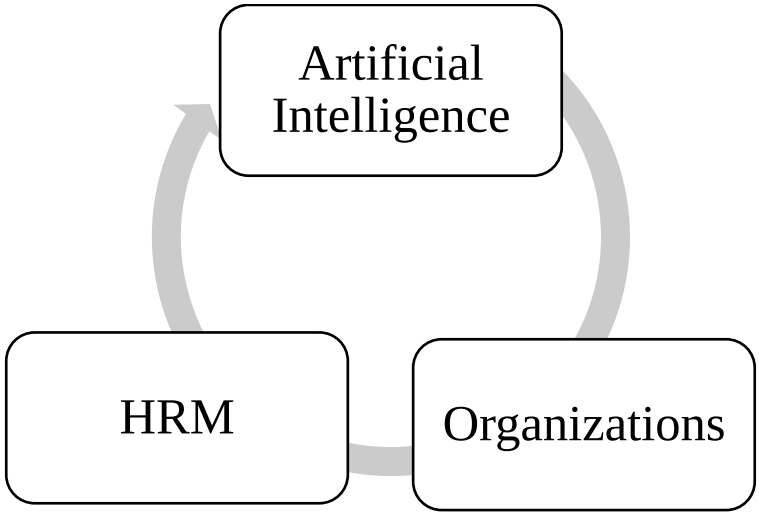
3.1.2. REDUCE THE ADMINISTRATIVE BURDEN

Due to heavy workload most of the HRM are struggling to complete their task on time. So the AI system can help the HR department to reduce the workload of the human capital as well as it will help them to concentrate other managerial activities. In an organization the HR department have to play multitasking roles where using the technologies and Artificial intelligence organizations tries to reduce the workload. The Artificial intelligence provides solutions to such problems also it helps to increase the efficiency of human resource in the organization.

3.1.3. INCREASE THE EFFICIENCY

Artificial Intelligence (AI) will helpful to reduce the redundancy of employees at their workplace. Various robotic task has been carried out in the workplace to increase the efficiency of the organization. Robotic task includes collecting data, copying data, filing reports, identifying the required data from the available data, collecting and processing the data for HR department and payroll systems etc. George and Thomas stated that the humans cannot be replaced by Artificial Intelligence. Moreover, Vivek and Yawalka ascertained that how the Artificial Intelligence assists with workload reduction and enriching the workplace efficacy.

4. CONCEPTUAL FRAME WORK



5. STATEMENT OF THE PROBLEM

The AI is benefit in the field of human resource management in future, the HR department need to aware of the potential problems. A main challenge of integrating artificial intelligence into HR functions is the mindset of employees. The universal nature of AI that enables to track the multiple aspects of employees' behaviour in a growing concern among the individuals. Thus, the concerns relating to misuse AI and unethical and misappropriate usage of shared data need to addressed properly. At present, firms need people that possess all the required skillsets. This reason is artificial intelligence is used in every departments' operations, including the human resources. Because of lack of technological skill the employees find it challenging to learn and integrate the new AI tools into their roles. So that this study will helpful to the companies to identify the importance of AI systems in human resource management decision making process.

6. OBJECTIVES

1. To analyze the concept of artificial intelligence.
2. To study the importance of artificial intelligence system HRM.

7. SCOPE OF THE STUDY

This research was undertaken by the researcher to assess the importance of artificial intelligence system in human resource management in decision making process. This study will be useful to the

organizations to understand the importance of AI in decision making and reduce the burden of employees and HRM.

8. LIMITATIONS OF THE STUDY

- ❖ This study is concentrated only on AI in HRM.
- ❖ This period of study is very short.

9. HYPOTHESIS

H1: There is a significant influence on educational qualification of the respondents and AI involvement in decision making.

H2: There is a significant relationship between age of the respondents and Artificial Intelligence factors.

10. METHODOLOGY

Primary and secondary data has been used for this research. The sample size of this study is 95. The Cronbach's Alpha test is used to measure the internal consistency for validating the questionnaires. Crosstab Analysis, Chi-square test, one-way ANOVA and post Hoc- Tukey HSD test were adopted to analyze Artificial Intelligence factors.

11. ANALYSIS AND RESULTS

a. Reliability statistics

Table: 1 :Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.897	5

The researcher used Cronbach's Alpha test to measure the internal consistency for validate the questionnaire. The Cronbach's Alpha Value is 0.897.

b. CROSS-TAB ANALYSIS

The educational qualification of the respondents and AI involvement in decision making and manager's desire to bypass AI solutions has been presented in the below crosstab table:

Table: 2 :Crosstab Analysis

Crosstab					
		Qualification			Total
		UG	PG	Other	
AI involvement in decision making and manager's desire to bypass AI solutions	1	12	30	9	51
	2	11	13	5	29
	3	3	1	1	5
	4	3	1	0	4
	5	2	3	1	6
Total		31	48	16	95

The above crosstab table indicates that most of the highly satisfied respondents are belongs to PG qualification group (3). The nature of association is tested in the following chi-square table.

c. CHI-SQUARE TESTS

Table: 3 :Chi-Square Tests

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.939[a]	8	.439
Likelihood Ratio	8.280	8	.407

Linear-by-Linear Association	2.153	1	.142
N of Valid Cases	95		

The Pearson Chi-square value of the above table is 7.939 at 5% level of significance. The P value is more than 0.01. Hence the null hypothesis is accepted. It is found that the variable AI involvement in decision making and manager's desire to bypass AI solutions is not depend on the educational qualification of the respondents.

d. ONE- WAY ANOVA

Table: 4 :ANOVA

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
AI involvement in decision making and manager's desire to bypass AI solutions	Between Groups	18.304	3	6.101	5.365	.002
	Within Groups	103.485	91	1.137		
	Total	121.789	94			
Companies have clear vision and clear understanding of AI in decision making process	Between Groups	2.204	3	.735	.526	.665
	Within Groups	127.017	91	1.396		
	Total	129.221	94			
The HRM use AI technologies to maintain the balance among job demand and professional development	Between Groups	16.089	3	5.363	6.110	.001
	Within Groups	79.869	91	.878		
	Total	95.958	94			
The company enhance the awareness of positive impact of AI on employees' performance	Between Groups	9.640	3	3.213	3.764	.013
	Within Groups	77.686	91	.854		
	Total	87.326	94			
Offering trainings program for their employees and assigning AI specialists	Between Groups	9.640	3	3.213	3.764	.013
	Within Groups	77.686	91	.854		
	Total	87.326	94			

The P value of the variables such as AI involvement in decision making and manager's desire to bypass AI solutions, The HRM use AI technologies to maintain the balance among job demand and professional development. The company enhance the awareness of positive impact of AI on employees' performance and Offering training program for their employees and assigning AI specialists are less than 0.05 at 5% level of significance. Thus, Null hypothesis of the above variables rejected at 5% level of significance. It is ascertained that there is a significant difference in AI involvement in decision making and manager's desire to bypass AI solutions, HRM use AI technologies to maintain the balance among job demand and professional development, the company enhance the awareness of positive impact of AI on employees' performance and Offering trainings program for their employees and assigning AI specialists and age of the respondents.

The P value of the variable companies have clear vision and clear understanding of AI in decision making process is more than 0.05 at 5% level of significance. Hence, null hypothesis is accepted at 5% level of significance. It is ascertained that there is no significant difference between Companies have clear vision and clear understanding of AI in decision making process and age of the respondents.

POST HOC –TUKEY HSD TEST

Table: 7 :Post Hoc –Tukey Hsd Test

Multiple Comparisons							
Tukey HSD							
Dependent Variable	Age	Age	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
AI involvement in decision making and manager's desire to bypass AI solutions	Less than 30 years	30 - 40 years	.595	.336	.295	-.29	1.48
		41 - 50 years	.790*	.275	.026	.07	1.51
		Above 50 years	1.241*	.324	.001	.39	2.09
	30 - 40 years	Less than 30 years	-.595	.336	.295	-1.48	.29
		41 - 50 years	.195	.323	.931	-.65	1.04
		Above 50 years	.646	.366	.298	-.31	1.60
	41 - 50 years	Less than 30 years	-.790*	.275	.026	-1.51	-.07
		30 - 40 years	-.195	.323	.931	-1.04	.65
		Above 50 years	.451	.311	.471	-.36	1.26
	Above 50 years	Less than 30 years	-1.241*	.324	.001	-2.09	-.39
		30 - 40 years	-.646	.366	.298	-1.60	.31
		41 - 50 years	-.451	.311	.471	-1.26	.36
Companies have clear vision and clear understanding of AI in decision making process	Less than 30 years	30 - 40 years	.245	.373	.912	-.73	1.22
		41 - 50 years	.341	.305	.678	-.46	1.14
		Above 50 years	.370	.359	.732	-.57	1.31
	30 - 40 years	Less than 30 years	-.245	.373	.912	-1.22	.73
		41 - 50 years	.096	.358	.993	-.84	1.03
		Above 50 years	.125	.406	.990	-.94	1.19
	41 - 50 years	Less than 30 years	-.341	.305	.678	-1.14	.46
		30 - 40 years	-.096	.358	.993	-1.03	.84
		Above 50 years	.029	.344	1.000	-.87	.93
	Above 50 years	Less than 30 years	-.370	.359	.732	-1.31	.57
		30 - 40 years	-.125	.406	.990	-1.19	.94
		41 - 50 years	-.029	.344	1.000	-.93	.87
The HRM use AI technologies to maintain the balance among job demand and professional development	Less than 30 years	30 - 40 years	.757	.296	.057	-.02	1.53
		41 - 50 years	.797*	.241	.007	.17	1.43
		Above 50 years	1.111*	.285	.001	.37	1.86
	30 - 40 years	Less than 30 years	-.757	.296	.057	-1.53	.02
		41 - 50 years	.040	.284	.999	-.70	.78
		Above 50 years	.354	.322	.690	-.49	1.20
	41 - 50 years	Less than 30 years	-.797*	.241	.007	-1.43	-.17
		30 - 40 years	-.040	.284	.999	-.78	.70
		Above 50 years	.314	.273	.660	-.40	1.03

	Above 50 years	Less than 30 years	-1.111*	.285	.001	-1.86	-.37
		30 - 40 years	-.354	.322	.690	-1.20	.49
		41 - 50 years	-.314	.273	.660	-1.03	.40
The company enhance the awareness of positive impact of AI on employees' performance	Less than 30 years	30 - 40 years	.743	.292	.059	-.02	1.51
		41 - 50 years	.526	.238	.129	-.10	1.15
		Above 50 years	.833*	.281	.020	.10	1.57
	30 - 40 years	Less than 30 years	-.743	.292	.059	-1.51	.02
		41 - 50 years	-.217	.280	.866	-.95	.52
		Above 50 years	.090	.317	.992	-.74	.92
	41 - 50 years	Less than 30 years	-.526	.238	.129	-1.15	.10
		30 - 40 years	.217	.280	.866	-.52	.95
		Above 50 years	.307	.269	.666	-.40	1.01
	Above 50 years	Less than 30 years	-.833*	.281	.020	-1.57	-.10
		30 - 40 years	-.090	.317	.992	-.92	.74
		41 - 50 years	-.307	.269	.666	-1.01	.40
Offering trainings program for their employees and assigning AI specialists	Less than 30 years	30 - 40 years	.743	.292	.059	-.02	1.51
		41 - 50 years	.526	.238	.129	-.10	1.15
		Above 50 years	.833*	.281	.020	.10	1.57
	30 - 40 years	Less than 30 years	-.743	.292	.059	-1.51	.02
		41 - 50 years	-.217	.280	.866	-.95	.52
		Above 50 years	.090	.317	.992	-.74	.92
	41 - 50 years	Less than 30 years	-.526	.238	.129	-1.15	.10
		30 - 40 years	.217	.280	.866	-.52	.95
		Above 50 years	.307	.269	.666	-.40	1.01
	Above 50 years	Less than 30 years	-.833*	.281	.020	-1.57	-.10
		30 - 40 years	-.090	.317	.992	-.92	.74
		41 - 50 years	-.307	.269	.666	-1.01	.40
*. The mean difference is significant at the 0.05 level.							

The Post Hoc- Tukey HSD test is used to test the significant difference between groups based mean difference. It was found that less than 30 years age group respondents have strongly agreed the variables such as AI involvement in decision making and manager's desire to bypass AI solutions, companies have clear vision and clear understanding of AI in decision making process, company enhance the awareness of positive impact of AI on employees' performance, offering trainings program for their employees and assigning AI specialists as compared with other age groups such as 30 – 40 years and 41 – 50 age group and above 50 age group respondents.

12. FINDINGS

- Due to heavy workload many of the HRM struggling to do the recruitment process. This study will help to reduce the burden on administrative staff in the organizations.
- This research will helps in talent acquisition of HRM and identify the right candidates for the right job.
- Artificial Intelligence helps to predict the rate of employee retention at the workplace.
- It will help to overcome the limitations of HRM in decision making process.
- The AI system in the HR department can help to maintain the workflow in various department.

- The Artificial intelligence will increase the employee engagement at the workplace and it minimize the bias in decision making.

13. CONCLUSION

In this competitive era there is wonderful growth for industrial sector. The continuous improvement in the management is one of the challenges in front of the organization. To enhance the quickness and routine work most of the organizations adopting modern technologies. Most of the experts and researcher recommending the organizations to make use of artificial intelligence tools and digital technologies in the HR process. Artificial Intelligence has been used by many organizations in the field of human resource management where Artificial Intelligence plays an integral role in recruitment, selection, analyzing the performance, collecting data related with employees, providing correct and accurate information to the management.

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