ARTIFICIAL INTELLIGENCE ADOPTION IN HR ECOSYSTEMS

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

EXECUTIVE FELLOW PROGRAMME IN MANAGEMENT

INDIAN INSTITUTE OF MANAGEMENT

INDORE

BY

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Date: August 21, 2023

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List of Abbreviations

Abbreviation	Definition
AI	Artificial Intelligence
ATS	Applicant Tracking System
CEO	Chief Executive Officer
CHRO	Chief Human Resources Officer
DL	Deep Learning
HR	Human Resources
HRM	Human Resources Management
HRBP	Human Resources Business Partner
L&D	Learning and Development
ML	Machine Learning
RQ	Research Question
SME	Subject Matter Expert
TCE	Transaction Cost Economics
UTAUT	Unified Theory of Acceptance & Use of Technology
WGD	Work Group Discussion

Abstract

Artificial Intelligence (AI) has disrupted modern workplaces, like never before and has induced digital work lifestyles. The rapid advancements in digital technologies are generating significant interest among HR leaders, to embrace AI in Human Resource Management (HRM). Researchers as well as practitioners, are keen to investigate the adoption of AI in HRM and the resultant human-machine collaboration (Raisch & Krakowski, 2020). These areas are still under researched and a massive research gap exists as regards digital transformation of HRM, driven by AI. In this context, the research addresses two major questions. The first research question (RQ1) refers to human resources management (HRM) specific factors that enable/inhibit the adoption of AI in HR ecosystems in organizations. The second research question (RQ2) deals with the HRM related benefits and challenges in organizations, as a result of AI adoption in HR ecosystems. The research adopts a qualitative case research design (Eisenhardt & Graebner, 2007) with an abductive reasoning approach (Dubois & Gadde, 2002; Krogh, 2018) and studies 3 leading Indian brands (digital as well as brick & mortar business models). These companies have been at different stages of AI adoption, ranging from early stage of AI maturity to green field operations, in context of AI adoption in HR ecosystems. The research collects data through interviews (HR as well as digital subject matter experts) and through various workgroups, set up by these companies (each workgroup representing a key HR area). RQ1 studies, key enablers like digital leadership, digital culture, optimism among digital natives, shared enthusiasm, digital innovation, harmonious human-machine collaboration, and new generation digital skills, that enhance HRM performance. At the same time unstructured data, inability to drive an enterprise-wide change, not having a timely pulse check of employees' emotions, inability to collaborate with digital subject matter experts, and lack of trust between HR leaders & employees, could severely impede HR performance in an organization. RQ2 relates to the benefits of AI adoption like higher productivity

due to automation, recruitment efficiency, superior employee experiences, higher value creation, high quality data driven decisions by HR leaders, transparency in HR operations & decisions, attracting a superior talent, and digital work styles that simplify work. RQ2 also investigates the challenges related to AI adoption, that include technology induced anxiety among employees, fear of losing jobs due to deskilling, experiencing loss of control, and lack of human touch. Business and HR leaders must thoroughly address these concerns, through self- regulation and addressing employee privacy concerns, by embracing well-rounded AI-Ethics guidelines. The research investigates an important gap that exists between actual adoption of AI in HR domain and the rhetoric among practitioners (Tambe et al., 2019). The research contributes to the theory as it provides a model for AI adoption in HR ecosystems and proposes additions to the Unified Theory of Acceptance and Use of Technology framework (Venkatesh, et al., 2016). The research contributes to the industry HR practices as well as digital policy formulation at a macro level, by helping industry leaders as well as policy makers, to reimagine workplaces and make them future ready, in the wake of massive digital disruptions.

Keywords: artificial intelligence, digital transformation, digital leadership, change management, automation, augmentation, productivity, ai ethics

Chapter 6: Research Limitations and Future Directions

The research has focused on three companies in India. These companies were selected through a well-rounded selection criterion as explained earlier, in the Chapter-3 (Research Methodology). Three Indian companies at different stages of AI adoption (refer Figure-3), were selected for the research. This research thus was not set up in a global context. The three companies selected for the research, have been mid-sized, with employee strength ranging between 1000 to around 6000. The HR employee strength varied from around 10 to 80. Thus, none of the three companies are large sized or have a multi-national footprint. Though the findings of this research are not likely to be impacted by these factors, there can be cultural differences in the case of organizations, having multi-national footprints. The adoption of AI, in many geographies could offer different challenges. Likewise, a larger scale (employee strength) could bring its own complexities, like imparting digital skills to a vast manpower, data integrity, cyber security, and integration of various country systems and digital platforms etc.

Over emphasis on digital technologies, particularly AI, has a risk of creating an imbalance, leading to negative organizational and societal outcomes. There is a growing mis-conception among practitioners that AI can replace humans and as a result, several jobs can be automated. This has also created a fear among employees that their jobs are at risk. Budhwar et al. (2022) while referring to recent literature advocate that on one ~~one~~ hand AI in HRM leads to positive outcomes but on the other hand, there can be potential negative consequences for an organization as well as its employees. Several academicians and practitioners stress on the harmonious collaboration between humans and AI as the only viable solution to thwart the risk of de-skilling. Rampersad (2020) cautions HR leaders in the context of robotic process automation that transition especially in context of acquiring new digital skills, must be handled

well. In a failure to do so, there is a huge risk that massive deskilling could happen as robots replace humans. Raisch & Krakowski (2020) also stress on augmentation of human and machine abilities. The research has focused on this augmented intelligence aspect, in context of human resource management function only in an extended HR ecosystem.

Cortellazzo et al. (2019), urge that the role of culture in selection and implementation of digital technologies, needs to be researched. It is a circular issue; digital strategy creates a culture and culture influences digital strategy. Cortellazzo et al., also mention that digital transformation is not about technology alone; it is the transformation brought in by both people and technology. The impact of Business and HR strategies on digital transformation needs to be further researched.

This research has not dealt with several enablers and their interplay; digital culture, transformation & change management, digital innovation, HR analytics, and digital leadership. These enablers (lack of an organizational focus can make them as barriers) can be researched more deeply at individual levels. There is also a good potential to research employee emotions, empathy, compassion, and emotional intelligence further in context of AI adoption. There has been an extensive review of contemporary literature and book review research by Raisch & Krakowski (2020) on augmentation-automation, human-machine collaboration, and deskilling of jobs. However, there seems to be a huge research gap in studying AI adoption including hope and fear surrounding its use. This research has focused on addressing various issues related to AI adoption including debunking myths surrounding AI use as well as issue of AI ethics. These areas are still at an early stage of a deep and intensive research. The current research has discussed various issues in relation to AI adoption in HRM, however each of these issues require

a thorough and deep investigation, in context of HRM, other functional verticals, as well as overall societal implications.

The current research also did not separately, investigate the role of Digital Innovation and Value Creation (in context of Industry 4.0 and emergence of intelligent technologies like AI) and the potential to leverage these for higher productivity and growth. There is an enormous potential to research in these areas in context of HRM as well as other functional areas. This research however does include digital innovation as one of the potential factors for enabling AI adoption and investigated the contribution of digital innovation in context of AI adoption in HR ecosystems. Eijnatten & Putnik (2004) point to a concept of dynamically networked enterprises. This research has dealt with extended enterprise eco systems by investigating digital and other partners of HR. However, the researched limited its scope to dynamic networking of partners who solely deal with the HRM function.

The recent emergence of generative AI as a technology for higher value creation in HR ecosystems is an interesting area of research. “Generative AI has been severely unexplored” (Dwivedi et al., 2023, p.5). The authors further state that due to emergence of generative AI technologies “jobs will be drastically different” (p.4). Generative AI in HR ecosystems will be an exciting area of research.

Conclusion

AI as a field offers many interesting use cases for human resources professionals. Adoption of AI in human resource management system can significantly enhance performance of a HR ecosystem, that would positively influence, the overall organizational outcomes. The research while addressing the two research questions, investigated various factors (enablers and barriers) which help/impede adoption of AI in the HRM function. The research did extend its scope (boundary conditions), to include HR partners, as these entities work closely with HR managers, especially in Recruitment and L&D space. AI adoption in HR ecosystems, is a mixed bag – there are several benefits which enhance HRM performance. At the same time, there can be negative consequences of AI adoption in HR ecosystems, which need to be clearly identified and addressed. The AI adoption in HRM space is quite complex unlike other functions. HRM deals with sensitive issues related to humans, which can lead to significant organizational and societal concerns. In addition, the HR domain does not generate a massive data that AI algorithms could crunch, with ease and provide predictions and prescriptions to HR leaders. The research related to AI adoption in the HRM function is still at a nascent stage and many aspects related to adoption in the function are still under researched. This research aims to plug this massive research gap and contribute to reimagining workplaces, where humans and machines augment capabilities in a harmonious way and create superior experiences as well as higher value, in HR ecosystems.

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Appendix

The appendix contains coding examples as well as various tables which were discussed in Chapter 3 (Research Methodology) and Chapter-4 (Research Findings). The following tables have been referred to, in the two chapters and a hyperlink has been provided at various places in these chapters for ease of navigation.

Coding example: RQ1 (Enabler)

a) Text from Interview

> *"A digital engineer would expect why do I have to go and submit and sign and submit or take signatures from different people and I would work just go on my first we said we will do it on our PC. We will submit on a PC and you can and first we need to get them expect okay, you will take a digital invoice or a PDF for can be uploaded later they came in. Why do I have to even go on a PC? Why not on a mobile itself? I will just go on a mobile and I will submit my timesheet for example. Why do I have to submit on? Can I do it while I am driving back from taking a cab from office to home, and I will just submit".*

b) Code: Level-1: Digital Lifestyle

c) Code: Level-2: Digital Lifestyle

d) Category: Digital Lifestyle

e) Theme: Culture

Coding example: RQ1 (Barrier)

a) Text from Interview

"One of the challenges is, of course, going to be the sanctity of our data"

b) Code: Level-1: Data sanctity is a key challenge

c) Code: Level-2: Data Quality

d) Category: Data Quality

e) Theme: Data

Coding example: RQ2 (Benefits)

a) Text from Interview

"*What are the job roles where certain things can be automated and those existing people can actually be sort of elevated or moved to more strategic aspects"*

b) Code: Level-1: Automation helps freeing people for strategic tasks

c) Code: Level-2: Strategizing

d) Category: Strategizing

e) Theme: Automation

Coding example: RQ2 (Challenges)

a) Text from Interview

"*So, when you think manual you think more control, when you think more automated you think less control"*

b) Code: Level-1: Automation will make people lose control

c) Code: Level-2: Automation takes away control from people

d) Category: Loss of Control

e) Theme: Automation

Table 1

Interview Questions

Question to Interviewee	Rationale (Logic) behind the question
Q1. What do you understand from the term AI adoption in HR ecosystem?	To get a view about understanding of HR managers about AI operationalization
Q2. What has motivated you to adopt AI or taking early steps for adoption, in your HR ecosystem?	To understand the key motivators behind AI adoption or having taken concrete step to start adoption
Q3. What have you learnt as a result of AI adoption in your HR ecosystem?	To understand the key learnings of HR managers during adoption journey
Q4. What challenges did you face as a result of AI adoption in your HR ecosystem?	To understand the key barriers to AI adoption in HR ecosystems
Q5. What is your view on adoption of AI in HR ecosystem of your organization?	To get a high-level view in terms of the level of AI usage in HR ecosystem
Q6. Do you think use of AI is at same level in the HR ecosystem in your organization or it has increased/decreased?	To understand the trend regarding AI adoption in the organization

Q7. If it has increased, what has caused acceleration in AI adoption, in your HR ecosystem?	To understand the factors which are accelerating adoption of AI in the organization.
Q8. In case adoption of AI has decreased compared to last year or it is quite slow, what is causing adoption to be slow or decreasing?	To understand the factors which are retarding adoption of AI in the organization.
Q9. How do you describe sharing of job/tasks in a job among employees and AI in your HR ecosystem?	To understand the automation and augmentation dynamics in the HR ecosystem of the organization
Q10. Has AI completely replaced the jobs/tasks performed earlier by employees in the HR ecosystem of your organization?	To understand whether AI is replacing jobs/tasks performed by employees or there is augmentation.
Q11. In your view, which are the new areas or use cases in your HR ecosystem, where AI can be adopted?	To understand the areas within HRM where AI adoption can take place.
Q12. What are the key enablers in your view regarding AI adoption in the HR ecosystem of your organization?	To understand the factors which are accelerating AI adoption in the HR ecosystem of the organization.

Q13. What are the major barriers in your view regarding AI adoption in HR ecosystem of your organization?	To understand the factors which are perceived to be impeding adoption of AI in the HR ecosystem of the organization.
Q14. In your view what role does Digital Leadership play in adoption of AI in HR ecosystem of your organization?	To understand the transformational agenda HR leadership pursues in AI adoption
Q15. In your view what role does Culture play in your organization play in adoption of AI in HR ecosystem of your organization?	To understand the role of organizational culture in AI adoption in the HR ecosystem of the organization
Q16. In your view what role does Digital Innovation play, in adoption of AI in HR ecosystem of your organization?	To understand the role of digital innovation in AI adoption in the HR ecosystem of the organization
Q17. What is the AI adoption level of your partners (external organization)?	To understand scale of adoption in an extended organization: HR related partners
Q18. What key benefits your organization is getting due to adoption of AI by HR ecosystem of your organization?	To understand the benefits for an organization as a result of AI adoption in HR ecosystem

Q19. What are the key negative consequences related to AI adoption in HR ecosystem of your organization?	To understand the losses regarding adoption of AI in the HR ecosystem of organization
20. What is the level of collaboration among HR managers & HR employees with Digital SMEs (from or outside of the organization)?	To understand how well the HR teams are working with AI technology SMEs (internal or external)
Q21. Are you optimistic or fear adoption of AI in your HR ecosystem of your organization?	To understand whether there is optimism or pessimism regarding AI adoption in HR ecosystem of an organization.
Q22. Do you think your organization should have ethical guidelines regarding AI adoption in HR ecosystem of your organization?	To understand ethical use of AI in the HR ecosystem of the organization

Table 2

Control Factors

CONTROL FACTOR	HUGHES	ZOMATO	24MANTRA
Digital Native (Digital Immigrant)	6 (4)	13 (0)	3 (1)
Involvement in AI design & Development of HR solutions (No involvement)	8 (2)	3 (10)	0 (4)
Digital SME (from HR department)	6 (4)	0 (13)	0 (4)
New-age business model (traditional model)	10 (0)	13 (0)	0 (4)

Table 3A

Number of Interview Questions Asked for Each Interviewee of Hughes Systique

S. No.	Interviewee code	Company	Company code	Interview questions
1	DN-AY-HR-NA-UP1	Hughes Systique	1	5
2	DI-AY-DE-NA-PK1	Hughes Systique	1	5
3	DN-AY-DE-NA-KL1	Hughes Systique	1	5
4	DN-AY-DE-NA-VN1	Hughes Systique	1	7
5	DN-AN-DE-NA-RO1	Hughes Systique	1	9
6	DN-AN-DE-NA-DD1	Hughes Systique	1	8
7	DN-AY-HR-NA-RG1	Hughes Systique	1	8
8	DI-AY-DE-NA-TS1	Hughes Systique	1	5
9	DI-AY-HR-NA-RS1	Hughes Systique	1	7
10	DI-AY-HR-NA-SM1	Hughes Systique	1	6

Table 3B

Number of Interview Questions Asked for Each Interviewee of Zomato

S. No.	Interviewee code	Company	Company code	Interview questions
1	DN-AY-HR-NA-AS2	Zomato	2	6
2	DN-AN-HR-NA-SH2	Zomato	2	6
3	DN-AN-HR-NA-NS2	Zomato	2	7
4	DN-AY-HR-NA-SP2	Zomato	2	6
5	DN-AN-HR-NA-RM2	Zomato	2	7
6	DN-AN-HR-NA-GS2	Zomato	2	6
7	DN-AN-HR-NA-YW2	Zomato	2	8
8	DN-AN-HR-NA-NE2	Zomato	2	8
9	DN-AN-HR-NA-NI2	Zomato	2	8
10	DN-AN-HR-NA-SH2	Zomato	2	6
11	DN-AN-HR-NA-EC2	Zomato	2	8
12	DN-AY-HR-NA-NK2	Zomato	2	10
13	DN-AN-HR-NA-NM2	Zomato	2	5

Table 3C

Number of Interview Questions Asked for each interviewee of 24Mantra (Sresta)

S. No.	Interviewee code	Company	Company code	Interview questions
1	DI-AN-HR-TN-KA3	24Mantra	3	6
2	DN-AN-HR-TN-SS3	24Mantra	3	7
3	DN-AN-HR-TN-DW3	24Mantra	3	7
4	DN-AN-HR-TN-FK3	24Mantra	3	8

Table 3D

Number of Interview Questions Asked in Total

Question to Interviewee	Number of times asked
Q1. What do you understand from the term AI adoption in HR ecosystem?	10
Q2. What has motivated you to adopt AI or taking early steps for adoption, in your HR ecosystem?	9
Q3. What have you learnt as a result of AI adoption in your HR ecosystem?	6
Q4. What challenges did you face as a result of AI adoption in your HR ecosystem?	5
Q5. What is your view on adoption of AI in HR ecosystem of your organization?	9
Q6. Do you think use of AI is at same level in the HR ecosystem in your organization or it has increased/decreased?	5
Q7. If it has increased, what has caused acceleration in AI adoption, in your HR ecosystem?	5
Q8. In case adoption of AI has decreased compared to last year or it is quite slow, what is causing adoption to be slow or decreasing?	Overlap with Q6

Q9. How do you describe sharing of job/tasks in a job among employees and AI in your HR ecosystem?	5
Q10. Has AI completely replaced the jobs/tasks performed earlier by employees in the HR ecosystem of your organization?	5
Q11. In your view, which are the new areas or use cases in your HR ecosystem, where AI can be adopted?	13
Q12. What are the key enablers in your view regarding AI adoption in the HR ecosystem of your organization?	11
Q13. What are the major barriers in your view regarding AI adoption in HR ecosystem of your organization?	13
Q14. In your view what role does Digital Leadership play in adoption of AI in HR ecosystem of your organization?	8
Q15. In your view what role does Culture play in your organization play in adoption of AI in HR ecosystem of your organization?	17

Q16. In your view what role does Digital Innovation play in in adoption of AI in HR ecosystem of your organization?	12
Q17. What is the AI adoption level of your partners (external organization)?	7
Q18. What key benefits your organization is getting due to adoption of AI by HR ecosystem of your organization?	8
Q19. What are the key negative consequences related to AI adoption in HR ecosystem of your organization?	6
20. What is the level of collaboration among HR managers & HR employees with Digital SMEs (from or outside of the organization)?	7
Q21. Are you optimistic or fear adoption of AI in your HR ecosystem of your organization?	13
Q22. Do you think your organization should have ethical guidelines regarding AI adoption in HR ecosystem of your organization?	10

Note: Total number of questions asked to 27 interviewees = 184

Table 4A

Work Group Discussions: Hughes (3 Work Groups)-each WGD had a duration of 30-45 minutes

S. No.	Hughes Systique			Issues Discussed
	Date	**Workgroup**	**Attendees**	
1	Feb-23	L&D	SM, UP, AS	AI based adaptive learning at Hughes
2	Mar-02	L&D	SM, UP, RT, PK, AS	AI based recommendation engine in Learning Management System
3	Mar-24	Employee Sentiment	SM, UP, AS	Understanding of existing 3rd party solution deployed at Hughes for employee sentiment analysis
4	Apr-13	Human Resource Planning	SM, VN, DA, KL, AS	AI driven system: HRP linked with BOAS (business operations & analytics system)
5	Apr-25	Human Resource Planning	VN, KL, DA, AS	BOAS linkage with skill requirements and training needs
6	May-19	L&D	SM, UP, AS	Future road map of adaptive learning management system – key requirements
7	June-21	L&D	SM, MJ, RT, NM, UP, AS	Brainstorming for a full-blown AI based adaptive learning system integrated with performance management (employee learning portfolio)

Table 4B

Work Group Discussion: Zomato (2 Work Groups)-each WGD had a duration of 30 minutes

S. No.	Zomato			Issues Discussed
	Date	**Workgroup**	**Attendees**	
1	Apr-14	Recruitment	ASH, AS	Talent acquisition (non-AI based) at Zomato
2	Apr-21	Recruitment	ASH, AS	Non tech roles hiring system at Zomato
3	May-05	Recruitment	ASH, AS	Preparing system requirement specs for the non-Tech roles – for developing Machine Learning solution
4	May-19	Recruitment	ASH, AS	Continuation of previous meeting agenda of May, 05
5	June-15	Recruitment	ASH, AS	Machine learning model parameters for AI based recruitment system
6	July-07	Performance Management	ASH, SP, AS	Current manual process overview and challenges
7	July-22	Performance Management	ASH, SP, AS	Dash boards and underlying processes driving data for dash boards
8	Aug-03	Performance Management	ASH, SP, AS	History in dash boards, previous manager feedback, Internal job posting history, rating history
9	Aug-24	Performance Management	ASH, SP, AS	Machine learning enabled dash boards (broad discussion on tech perspective)

Table 4C

Work Group Discussions: 24Mantra (1 Work Group)- each WGD had a duration of 30 minutes

S. No.	24Mantra			Issues Discussed
	Date	**Workgroup**	**Attendees**	
1	Feb-22	Recruitment	KA, AS	Recruitment landscape overview at 24Mantra
2	Apr-29	Recruitment	KA, AS	Key recruitment challenges at 24Mantra
3	May-06	Recruitment	SS, AS	Preparing broad scope of tech driven Recruitment
4	May-19	Recruitment	SS, AS	Continuation of previous meeting regarding recruitment system at 24Mantra
5	July-16	Recruitment	KA, AS	Summarizing Recruitment pain points and challenges

Notes:

a) All these meetings were held via Zoom and calendar invites were sent before the meetings. These meetings were not recorded electronically. However, the researcher did make detailed notes about each of these 21 workgroups discussions

b) AS: Researcher (Antarpreet Singh)

This research collected data from 6 work groups set up by the three companies (Hughes Systique:3, Zomato:2, and 24Mantra:1). A total of 21work group discussions (WGDs) were held during the research study.