

May the bots be with you! Delivering HR cost-effectiveness and individualised employee experiences in an MNE

Article

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Abstract

Using an in-depth qualitative case study design, focusing on a significant global technology consulting multinational enterprise's (MNEs) subsidiary in India, this research analyses interview, documentary and observational data for insights on the proliferation of artificial intelligence (AI) in human resource management (HRM). By developing HRM-focused, AI-enabled applications, the MNE improved HR cost-effectiveness and offered a hyper-personalised and individualised employee experiences. Employing the theoretical lenses of individualisation of HRM practices, AI-mediated social exchange, job signalling and person-organisation fit theories, this research explains employees' experience of HRM practices and its impact on their attitudes and behaviours. Ten interviews were conducted with global technology leaders, champions of innovation, senior HR leaders and employees, including those engaged in the design and implementation of HR-focused AI applications. Findings suggest the use of AI-enabled bots, virtual, digital and personal assistants for carrying out a range of HRM tasks, such as routine, analytical, interactional and communicative tasks involving employees. A diverse set of HRM-focussed AI applications operant at this MNE contributed to its HR cost-effectiveness and enhanced the overall employee experience, thereby resulting in improved levels of employee commitment, satisfaction and reduced employee turnover behaviour. Implications for research and practice are also discussed.

Keywords: HRM practices, artificial intelligence, hyper-personalisation, individualisation, employee experience, MNEs, India.

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Artificial intelligence (AI) and new technologies are disrupting the way work, worker and the workplace are conceptualised (Malik, Budhwar & Srikanth, 2020; Reinhard, Jesper & Stefan, 2016). This research focuses on the nature and extent of AI usage in HRM and its impact on work, worker and the workplace. In simple terms, AI, “in business refers to the development of intelligent machines or computerised systems that can learn, react and perform activities like humans for a range of tasks” (Malik, Srikanth & Budhwar, 2020: p3). The proliferation of AI-based solutions in business processes, reducing employee costs, enhancing customer engagement, job satisfaction, and employee experience is increasingly gaining prominence (Bughin et al., 2017; Rao & Verweij, 2017; Faliagka et al., 2014; Guenole & Feinzig, 2018).

This interest has led to a proliferation of scholarship on AI in HRM in the recent call for papers in premier HRM journals (Budhwar & Malik, 2019 a, b). This increasing uptake of AI-focused HRM scholarship has pervaded the sub-functional domains of HRM, such as using AI in talent acquisition (Upadhyay & Khandelwal, 2018), video interviews (McColl & Michelotti, 2019), human-and-robot psychological contracts (Bankins & Formosa, 2019), training and development (Maity, 2019), team composition and performance evaluation (Andrejczuk, 2018), talent predictions (Jantan et al., 2010) and coaching (Stavrou et al., 2007).

Despite the above interest and claims regarding the extent to which AI adoption in HRM will impact work, worker and the workplace, scholars have noted limitations, such as ‘complexity of the HR phenomena, small data, ethical and legal constraints, and employee reactions to AI management’ (Tambe, Cappelli & Yakubovich, 2019: p.21). This concern is often attributed to the small data size, a limited number of data points and lack of diversity in data, which leads to issues of biases and ethical issues. Nevertheless, a promising stream of research at the interface of AI-HRM has begun exploring how AI can enable higher levels of employee engagement (Hughes et al., 2019) and return significant savings in HRM costs through interactive AI applications. This line of thinking is evident as employees are experiencing HRM practices through a range of HR-focussed AI applications.

Despite the intuitive logic and appeal, there is limited understanding of how employees experience HRM practices through an AI-mediated exchange using AI applications, such as intelligent Bots, humanoids or indeed some other AI-enabled HRM applications. It is also not clear whether such an exchange is cost-effective and improves employee and HR business outcomes. It is, therefore, essential to undertake further research in this currently neglected area of scholarship. Given the emerging nature of scholarship, this study contributes by engaging in an in-depth, qualitative case analysis of a large global technology consulting MNE. This MNE is engaged in the design and delivery of AI applications and technology solutions. Therefore, we analyse how an AI-mediated exchange between humans and machines affects employee experience of HR practices and impacts HR and employee outcomes. In doing so, this study contributes to the current trilogy of human-to-human experience of HRM practices: i.e., the design of intended HRM policy choices, enactment of these HR policy choices by managers and employees’ experience of these policies (Nishii & Wright, 2008) to include an AI-mediated social exchange of employees’ experience of HRM practices.

Through this research, we analyse how employees experience intended and enacted practices first-hand, through an AI-mediated technology platform and its potential impact on employees' behaviours and attitudes. Extant research suggests there is limited understanding of how this occurs in the context of HRM and AI and how individualisation of work practices is enabled through an AI-mediated exchange (Taskin & Devos, 2005). Limited studies have focused on idiosyncratic deals between managers and employees to gain employee differentiation, motivation, commitment and performance through individualised HRM practices (Anand, Vidyarthi, Liden, & Rousseau, 2010; Hornung, Glaser, & Rousseau, 2008; Rosen, Slater, Chang & Johnson, 2013). To the best of our knowledge, no prior study has investigated the impact of individualised HRM practices using an AI-mediated social exchange.

Therefore, by focusing on the dyadic and interactive communications between the employees and the HR-focused AI-applications (e.g. through bots, virtual, digital or personal assistants), this research posits that firms may deliver a better employee experience and such research can further improve our understanding of the relationship between the espoused, enacted and technology-mediated experience of HRM practices by employees. The communicative and interactional nature of HRM-focused AI-applications that employees experience, we argue, is well-placed to deliver personalised, hyper-personalised and individualised HRM practices, which, until now were offered as aggregated HRM practices to select talents or talented groups of employees.

In line with calls for adopting a multidisciplinary approach for studying AI and its impact on HRM, to unbundle how social relations and human-technology interface occurs (Fountain, McCarthy & Saleh, 2019; Tecuci, 2012), this research draws insights from multiple theoretical lenses, such as individualisation of HRM practices (De Leede, Looise & Van Riemsdijk, 2004; Glassner & Keune, 2012), social exchange theory and its newly coined variant, AI-mediated social exchange theory (Blau, 1964; Ma & Brown, 2020), signalling theory (Casper & Harris, 2008) to explain individual differences (Motowildo, Borman & Schmit, 1997; Underwood, 1975) and the need to achieve a strong person-organisation fit (Kristof, 1996; Verquer, Beehr & Wagner, 2003). Such an approach will help understand if and how it leads to HR cost-effectiveness and better attitudinal and behavioural outcomes for employees. This paper argues that through AI-bots and applications, employees receive signals in the form of an organisation's intent to offer personalised, hyper-personalised and individualised HRM experiences. An employee's subjective experience and behaviour is a function of their interactions with the work environment (Fiske & Taylor, 1991). The higher the congruence between an individual's values and goals and their work environment, a stronger person-organisation fit is likely (Kristof, 1996). A high level of person-organisation fit has been associated with higher levels of job satisfaction and commitment and low levels of intention to quit. Thus, in line with the fundamental tenets of social exchange theory (Blau, 1964), or its emerging variant, AI-mediated exchange theory (Ma & Brown, 2020), employees are more likely to reciprocate their positive experience of interacting with AI-enabled HRM applications with an increased level of job satisfaction, commitment and reduced turnover intentions (Bal et al., 2013). Specifically, this paper seeks to answer the following two research questions:

1. *What is the nature and extent of influence of AI-enabled HRM applications on HRM cost-effectiveness?*
2. *How does employees' experience of AI-mediated HRM practices influence employee attitudes and behaviours?*

By addressing these questions, this study contributes by being the first to explore employee experiences of AI-mediated HRM practices. Second, it explores whether the move from employee experiences of a policy-oriented and adherence-focused generalised HRM practices to an AI-mediated experience of personalised, hyper-personalised and individualised HRM practices leads to improvements in employee experience and HR effectiveness. Finally, this research contributes by developing a conceptual framework for understanding the relationship between employees' subjective experiences of AI-mediated experience of HRM practices on HR effectiveness and employee's attitudinal and behavioural outcomes.

Given the exploratory nature of research and a relatively underdeveloped state of theory concerning the impact of AI-mediated experiences of HRM practices on HR cost-effectiveness and individual outcomes, an in-depth qualitative case study is considered as an appropriate research strategy. To overcome the limitations highlighted by Tambe et al. (2019), we purposively selected an extensive global technology consulting MNE, which has a significant subsidiary presence in India. Further, most cutting-edge design and development of AI applications is undertaken by sizeable global technology MNEs. Therefore, our choice of an MNE that specialises in developing solutions for numerous industries using disruptive technologies, such as AI, blockchain and augmented and virtual reality is relevant here. The sheer size and diversity of operations of this MNE designed, developed and the number of AI applications it has implemented, not just for its clients globally, but also for its internal HRM function and HR employees, globally and locally has helped overcome some of the limitations highlighted by Tambe et al. (2019). Further, this MNE also presents a fertile ground for contemporaneously studying the adoption of AI applications at the workplace.

The rest of the paper is organised as follows. First, it begins by reviewing the relevant literature at the interface of AI and HRM, followed by the analysis of literature on individualisation of HRM practices, relevant theories and its impact on the employee experience in terms of their attitudes and behaviours. Next, details of the research methodology, case insights and analysis of employees' experience of HRM practices through AI-enabled applications that were designed, developed and implemented by this large MNE are presented. A discussion of the findings follows, and we conclude with limitations and implications for research and practice.

Literature Review

From Generalisation to Individualisation of HRM practices

Employee's experience of work and HRM varies across sectors and occupations. For example, in the services sector, contextual factors such as work design, age and gender affect employee experience and business outcomes. For instance, high-performance work systems in age care settings had a positive influence on employee experience (Harley, Allen & Sargent, 2007). Whereas, it had a negative impact in specific low-skill service contexts (Berg & Frost, 2005), including those involving aesthetic labour in the hospitality service roles (Warhurst & Nickson, 2007) and lean working environments in the healthcare services (Danford, Howcroft, Richardson, Smith & Taylor, 2013). In a related stream of research, employee experience can be significantly enhanced by focusing on personalisation and individualisation of employees' experience of HRM practices.

The HRM function and HR leaders and managers have started focusing on offering personalised and individualised HR practices to individual employees. Such practices are a departure from existing strands of literature on strategic HRM and talent management (Becker & Huselid, 2006; Collings & Mellahi, 2009; Huselid & Becker, 2011; Narayanan et

al., 2019; Zhou, Zhang, & Liu, 2012), which focus on offering a differentiated set of HRM practices targeting select groups of employees (Delery & Doty, 1996; Tsui, Pearce, Porter & Hite, 1995), or offering a differentiated HR architecture (Becker, Huselid & Beatty, 2009; Lepak & Snell, 1999) to accommodate the differences in values and uniqueness of human capital employed. Individualised HRM, is a form of a personalised or hyper-personalised HRM approach that is defined as “an HR system where managers have the opportunity and actually use the opportunity to individually negotiate agreements about work arrangements with individual employees...approach individualised HRM as HR programmes that are implemented as HR practices in an organisation” (Bal & Dorenbosch, 2015, p.43). Such HR practices are designed to not only retain and attract talent but also to use individualisation of HRM practices to offer a positive employee experience. An earlier version of individualised HRM approaches focused on idiosyncratic deals and employment contracts offered by managers to individual employees (Hornung, Rousseau & Glaser, 2009). The inconsistency in employee experience levels can be explained, in part, due to the numerous contextual factors at play, such as age, gender, strategy, leader-member exchange quality and design and effectiveness of the HRM practices (Bal et al., 2013; De Leede et al., 2007; Kooij et al., 2013; Morf *et al.*, 2019). This calls for further research on a range of contextual factors affecting employees’ experience of HRM practices. One such emerging contextual factor is the role of disruptive technologies, such as AI, and its impact on the design and implementation of personalised and individualised employee experiences of HRM practices.

Social Exchange, Person-organisation Fit and Employee Experience

The social exchange theory suggests that a social exchange between people typically leads to economic and social outcomes between two or more parties (Blau, 1964), through the underlying norms of reciprocity. As evidenced in earlier studies on individualised HRM practices, employees tend to exhibit better performance, attitudinal and behavioural outcomes in return for receiving individualised and personalised HRM considerations. This line of thinking overlaps with the ideas espoused in the person-organisation (P-O) fit theory (Kristof, 1996; Verquer, Beehr & Wagner, 2003). The P-O fit theory suggests that employees’ social behaviour at work is a function of employees’ interactional psychological experiences based on the congruence or compatibility of their values and goals and an organisation’s socio-technical and relational work environment (Morley, 2007). As a sub-set of the P-O fit, person-job fit, person-vocation fit, and person-person and person-group fits are distinct building blocks of employees’ alignment and overall fit with the organisation (Morley, 2007). In Kristof’s (1996) review, she referred P-O fit as achieving compatibility with the organisation and its environment such that there is a sense of mutuality between the individual and work organisation. Employees’ P-O fit can act as an antecedent to their perceived social exchange (Kim, Aryee, Loi & Kim, 2013). Most organisations aim to influence attitudes and direct employee behaviours, whereas employees tend to employ their values and goals in guiding their choices for participating in an activity or shaping their attitude towards an object (Kim et al., 2013). Several studies have found that P-O fit has a positive impact on job satisfaction, commitment and employees’ decreased intention to quit (Kristof-Bowen et al., 2005).

Further, as Argyris (1964) suggested, organisations should try and restructure their work and practices, so employees develop a sense of perceived control over their decision-making, thereby reducing incongruence or enhancing the person-organisation fit. A fundamental logic of social exchange is mutuality and reciprocity, therefore, as recipients of individualised and personalised experiences of HRM practices and increased values and goals congruence of working in a particular type of organisation, employees are likely to exhibit higher levels of job satisfaction, commitment at work and are less likely to engage in quit behaviour. Despite

support for the benefits of individualisation of HRM practices, through personalised contracts and idiosyncratic deals, the effects on employee outcomes are equivocal (Bal et al., 2012; Hornung et al., 2008). To this end, this research focuses on a recent extension of the social exchange theory, which attempts to explore an AI-mediated interactional exchange, using both generalised and direct exchanges, such that AI applications serve as mediators of the social exchange between humans and machines (e.g., AI applications and Bots). Most AI applications are autonomous, and like humans, can exercise their agency and affect the environment in which they operate (Ma & Brown, 2020). Such an exchange is likely to create a different type of P-O fit wherein the AI applications are part of the socio-technical system.

Individualisation, AI-mediated exchanges and Employee Experience

Recent developments and advances in the adoption and implementation of AI-enabled HRM applications has led to increases in employee's experience of HRM practices through an AI-mediated exchange, especially in large MNEs. The proliferation of these practices is high within the services industry. For example, in call centres and customer experience management services, many Bots and interactive intelligent virtual assistants have been deployed alongside employees in client-facing roles for boosting productivity, enhancing customer and employee experience by allowing the Bots to focus on routine and rule-based tasks (Gustavsson, 2005; Imrie & Bednar, 2013). Within the HRM function, numerous AI Bots and virtual agents interact with employees or prospective candidates for evaluating and shortlisting candidate profiles. These AI-mediated exchanges offer transparency, objectivity and enhance current and prospective employee's experience of, for example, the recruitment and selection processes (HR Recruiting, 2016). The trend of personalisation is also gaining prominence in other HR sub-domains through a range of AI-enabled HR applications, such as in training and development (Whiteside, 2019), coaching (Barney, 2018), performance management (BasuMallick, 2019) and a range of routine administrative HR query handling tasks (Haak, 2019).

Individualisation, AI and HR Cost-effectiveness

The direct and indirect economic benefits of AI adoption in organisations is well documented (Faliagka et al., 2014; Fan et al., 2012). For example, IBM alone saved US\$ 107 million in HR costs through the design and implementation of several AI applications across its network of subsidiaries around the globe (Guenole & Feinzig, 2018). There are many more examples of both Indian and global MNEs such as Hitachi (Takamoto & Owada, 2018), Convergys, Infosys, Wipro, Amazon and Microsoft who have actively designed and implemented a range of AI applications within the sub-domain of HRM and deployed the same across their subsidiary operations. Using deep and cognitive learning algorithms and diversity of data from a range of the subsidiary operations, significant cost savings and improved employee outcomes are among the key benefits that have been realised by large MNEs.

Based on the above analysis of the theoretical streams of literature, we argue that employees' experience of hyper-personalisation and individualisation of HRM practices through HRM focused AI applications creates an AI-mediated social exchange between individuals and the AI applications. If such experiences are positive, the AI-mediated exchange may invoke reciprocity by humans in the form of increased satisfaction at work, more significant commitment towards the organisation and a reduced intention to quit behaviour. Through these attitudinal and behavioural outcomes and overall savings in costs of transactions, the overall HR effectiveness will increase.

Research Methodology

Keeping in mind the relatively novel phenomenon of AI adoption in the field of HRM, an in-depth qualitative case study design of an unusually representative and revelatory case was considered appropriate (Eisenhardt, 1989; Yin, 2003). A single-case, in-depth case study allows for a rich exploration of the real-life phenomenon under investigation, especially if the case design involves data collection from multiple sources and levels (Siggelkow, 2007). Such a design is appropriate if the nature of the phenomenon to be investigated is relatively new and focuses on particular groups of employees (Yin, 2003). In this research, interviews, observational and secondary data from multiple hierarchical levels in the case organisation were collected and analysed. Further, for understanding the impact HRM-focused AI applications on employee and HR level outcomes, this in-depth case design is appropriate. Selecting a revelatory and critical case is therefore essential. In this research, we selected the case study of a large IT MNE specialising in the design and development of AI-enabled applications for all functional areas of a business, serving a range of clients globally. Such a case is rich in insights, not just about the development of AI applications, but also its use and users' experiences of these AI applications. Getting access to data from an innovative AI and IT applications MNC subsidiary operating in India, one that actively engages in the co-development of AI applications with clients globally, is unique and revelatory. As such, conducting in-depth interviews and the analysis of other data makes this an exemplary case. Such an approach is also suggested for undertaking theory-building efforts and identifying theoretical contributions (Corley, & Gioia, 2011; Malik, Pereira & Tarba, 2017; Thomas, Cuervo-Cazurra, & Brannen, 2011; Whetten, 1989).

Research Context and Case Organisation

This research was undertaken in a massive global IT MNE's subsidiary operation in India's IT industry. The Indian IT and business process management industry has revenues exceeding US\$ 190 billion and is estimated to clock revenues of US\$ 350 billion by 2025. It continues to attract steady foreign direct investment, employs more than 1 million people and serves a formidable list of Fortune 500 global firms (IBEF, 2020). India is a country of extreme diversity in terms of income, education and technology adoption profiles. Even though there are high illiteracy rates in several parts of the country, several schools are utilising emerging technologies, such as AI, robots and humanoids in schools (Ullas, 2019). Indeed the uptake of advanced AI and robotics technologies are not confined to education and technology firms, it is gradually finding its place in social venues such as restaurants, though such novelty is fast wearing out (Raman, 2018).

Doing business in a diverse, fast-growth, and a culturally complex Indian business environment presents a fertile ground for researchers to contemporaneously analyse the contextual influences at play in terms of technological change and industry growth (Budhwar, Varma & Kumar, 2019). Specifically, in the last three decades or so, India has consolidated its position as a centre for global innovation hubs and is ranked 57th on INSEAD's Global Innovation Index, has the most extensive and growing talent pool of technically qualified digital talent pool and is pegged to be the fourth largest applications economy (Malik, Sharma, Pereira & Temouri, 2021; NASSCOM, 2020). As an emerging market economy, Indian business and firms and institutions are transitioning to manage the changes and growth imperatives (Malik & Pereira, 2016; Pereira & Malik, 2015). Industry and skill development

taskforces established by the businesses associations such as NASSCOM and the Government of India's Digital India initiatives in business and education has ensured a steady supply of technically qualified graduates. However, only time will tell whether the responses can keep up with the rate and scale of skill obsolescence and technological change.

Data were purposively collected from the MNE's subsidiary operation in India. This case organisation is at the cutting-edge of designing and developing AI applications, not just in the HRM domain, but also in services, marketing, finance, customer support and several other functional fields. The MNE's enormous size, a vast global geographical base of subsidiaries and its application and deployment of several AI-enabled HRM applications across multi-country locations makes this case unusually revelatory and suited for an emerging international scenario in the field.

Furthermore, leading innovations in offering AI-applications such as chatbots, smart bots, intelligent assistants, digital and personal assistants for its clients as well as its internal employees places this MNE in a unique position to access data and insights, which otherwise may not have been possible in an end-user or a client organisation. This case is exceptionally unique and revelatory because more than 75% of its employees are individual contributors to the design and development of AI applications for the business and their customers around the globe. So, as active users and designers of AI applications for HRM and other functional areas, this case site offers an opportunity to explore rich contextual data that would have otherwise not been possible. The choice of this case is relevant for international HRM (IHRM) research as it allows us to contemporaneously study the impact of its parent company HRM policies and how these are diffused to global subsidiaries using HRM-focused AI-mediated exchanges between employees and the Bots. From an IHRM perspective, this case also provides evidence of how it incorporates cultural and ideological business diversity in the design and implementation of HRM-focused AI applications seamlessly, through collaborative cross-border, inter-functional co-development teams for building AI applications. Finally, given the size and scale of operations of this MNE, the limitations of small databases and a lack of diversity in input data for developing HRM Bots and applications as highlighted by Tambe et al. (2019) is less of an issue.

Data Collection

The primary source of data collection was qualitative interviews of senior technology, functional and business leaders, heads of AI project teams who are intimately involved in the design and implementation of AI-enabled HRM applications, as well as employees who are users and developers of these applications. A total of 10 in-depth interviews, lasting approximately a total of 10 hours with employees and managers were conducted in 2019, at various locations of the MNE's subsidiary operations in India. Organisational documents, such as white papers, organisational value and leadership competency framework and case studies of various client testimonials for use and development of AI applications were analysed. Additionally, other publicly available data such as data from the case organisation's website, its HR policies on its intranet and actual visual and audio observation of two HRM-focused AI-applications in use at the MNE were analysed to understand what the end-users see and how they experience the end-user interface. In order to ensure the confidentiality of the case organisation and its proprietary Bots and humanoids, this paper uses pseudonyms. In addition to analysing organisational documents and observing the functionality of two HR-

focused AI applications or Bots, the interviews were transcribed using an AI-bot and then edited for accuracy. Approximately 81,000 words of interview data were analysed.

Data Analysis

Based on the analysis of transcripts, first-order coding was undertaken for identifying key concepts and themes. Following the identification and verification of the first-order concepts, a theoretically informed manual coding, employing abductive logic was followed (Gioia et al., 2012; Van Maanen et al., 2007). The data analysis was iteratively conducted by going back and forth between the first-order concepts and second-order themes for theoretical understanding. Based on our analysis of the data, we developed a conceptual framework for understanding how employees' experience of AI-mediated exchange of HRM practices leads to better individual and HR outcomes. Following Yin's (2003) replication logic, only themes that had three or more observations in the data have been included in the analysis. Our analysis found that the MNE's framework of espoused HRM practices and employees value congruence with the same sets the tone for a person-organisation fit. However, the employees' perceptions of HRM practices is enabled through an AI-mediated exchange, which offers employees highly personalised and individualised experience. In this study's context, a favourable P-O fit can lead to a positive AI-mediated exchange, given such an exchange allows for personalisation, hyper-personalisation and individualisation of employees' experience of HRM practices. This AI-mediated social exchange connects the employees P-O fit to their attitudinal and behavioural outcomes. Through better, attitudinal and behavioural outcomes of job satisfaction, organisational commitment, and a reduced intention to quit supported the cost-effectiveness of the HR function. Finally, we also found that the presence of an organisational culture of innovative practices further impacts the relationship between an AI-mediated social exchange and employee and HR outcomes. We specify these relationships in our guiding conceptual framework (see Figure 1). A distinctive contribution of our conceptual framework lies in identifying an AI-mediated exchange as a critical mechanism for explaining the relationship between employees' P-O fit and their attitudinal and behavioural outcomes as well as HR cost-effectiveness. Further, we argue that a culture of innovative work practices moderates this relationship.

Analysis and Key Findings

<<Insert Figure 1 about here>>

Person-Organisation Fit with HRM practices

There was sufficient evidence of an individual's value and goal congruence with the MNE's espoused HRM practices. Several employees highlighted the fit and alignment they had with the organisational values of innovation and their goals, leading to a good fit.

It's all about my experience. My experience of a working environment, non-monetary is okay, [it is] something not extrinsic, which is intrinsic, how we perceive it. [R5]

So, I've never felt like I said that's why I'm happy all here. I've had a very good experience over. [R4]

...but I think [this MNE] is pretty innovative and I think is one of the first companies to come up with a facility for innovation...a state-of-the-art facility like cutting edge and the experience itself is mind-blowing. [R6]

However, this was further mediated by the AI-mediated social exchange of employees' perceived experience of personalised and individualised HRM practices through AI-enabled HRM-focused applications. An example of such interactive and communicative chat experience is illustrated below by observing and recording a human-machine (PBOT) social exchange:

Employee: When is the next long weekend in Bengaluru?

PBOT: Let's go over this. Planning a vacation, are we? It is a great thing. The next long weekend begins around Varalakshmi [a festival] for the upcoming holiday, from 9th August in Bangalore, till Monday 12th. Would you like to plan it?

Employee: Yes, Okay. I can do this.

PBOT: All right.

Employee: So PBOT, what is my leave balance

PBOT: I see you are currently having 33.17 days of leave and is escalating, I've received your fortnightly vacation plan. You have crossed your 30-day [leave] ceiling. Perhaps, you should consider taking a vacation that you always wanted. When? [R1]

AI-mediated Social Exchanges: Better Employee Experience and HR cost-effectiveness

The MNE has developed several HRM-focused AI applications, such as one-directional and bi-directional chatbots, interactive, smart, virtual or digital assistants and even digital personal assistants, for helping employees experience HRM practices through these AI-mediated social exchanges. From an HR cost-effectiveness perspective, the focus is to free up HR resource time from mundane, routine, high-transaction processing and rule-based information transactions for complex advisory and problem-solving activities. There is a clear focus to move away from adherence and policy-focused, generic HRM practices to one that can be personalised and individualised to each employee. Through AI, this is possible by integrating existing information from across roles and employee-specific data that is then available for machines to learn from and propose solutions and undertake problem-solving.

Through the use of HRM-focussed AI applications, the MNE has moved away from an adherence-based HRM, which typically focused on the generalisation of HRM practices for the broader set of employees to offer more personalised and hyper-personalised HRM practices through to individualised HRM practices. An example of generalised HRM practice of on-boarding and placing people is where an engineer trainee, typically starts at the introductory level 1 of their employment. However, the Bot or the virtual candidate experience chatbot, through its deep and cognitive learning algorithms, and interactive and communicative approaches can recommend a more personalised HRM experience of the practice in terms of the right staffing level, salary fitment, training and other HRM processes, based on various parameters and attributes that an employee or a trainee may have inputted into the system. From personalisation to hyper-personalisation, it would require going a step

further by recommending one or more pathways for further skills training and projects that an employee may be more fitting to, keeping in mind the employee's current profile and interest registered, in an expressed area of future career growth. It depends on employees whether or not they individualise these pathways by exercising their choices. These actions and activities happen in all sub-domains of HRM and through the deployment of various virtual, digital and personal assistants and chatbots, which have varying levels of capabilities.

Given that more than 85% of the population employed at this MNE are Generation Y and Z employees, these employees are required to work on a range of information and communication technologies for developing IT applications for their clients and parent firm locations globally. Given the tech-savvy nature of their work, their uptake of and interactions with AI-enabled applications is significant and, as our data analysis suggests, it leads to a range of positive outcomes, such as improved employee experience through an AI-mediated social exchange. However, some of the more complex human-machine experiences are supported in the back-end, using a human (HR practitioner). The volume of traffic that is handled by a personalised bot or assistant ([PBOT], a pseudonym for a bot) has undoubtedly resulted in significant cost savings through a reduced HR headcount:

...close to 100,000 employees are on the platform running it and PBOT has dealt with 11,000 questions with 81 per cent accuracy and 500 people are on ...at any given time you have..... we have received about 19,400 queries per month from 2100 unique users... if I have a team of 15 people they could see here are the 15 people, and this is Ashish's vacation plans, and then we go back to your Microsoft Project and see what the deliverables are that ...could get impacted if you are going on a vacation. [The Bot will prompt] by the way, have you spoken to your supervisor? [R1]

The various AI applications in the form of PBOTs, digital assistants and other conversational and analytical and predictive bots are developed at this Indian subsidiary as well as at different locations, including the MNE's global headquarters. These bots service each of the sub-functional areas of HRM and have received positive employee experiences, which helps in retaining the talent for extended periods. The following section discusses each of the HRM functional areas, for which this research was able to access, collect and analyse data. A generic term 'Bot' is used here to maintain the confidentiality of the AI applications used in this case organisation.

Recruitment and Selection Bot

Given the global presence of this MNE and significant annual exposure to recruiting more than 10,000 candidates annually, the presence of a digital recruitment and selection bot was not only necessary for HR cost-effectiveness, but it also served as the first point of contact for internal job postings and job applicants or potential new employees coming into the MNEs recruitment ecosystem. For existing employees, this Bot helps them find existing opportunities within the MNE at different locations that fit in with the employee's performance and career conversations, and other personal skills and competency attributes, thereby delivering a hyper-personalised employee experience.

You have a chatbot that's encouraging you to look at other opportunities; it prompts the user to engage...the moment you are applying, I have a chatbot that comes up and sees ...if there's a spot. [It would prompt] that these are ten roles for which your CV is best suited for... If you are based in Hyderabad, you want this role that you are asking for; it is available... are you okay to relocate here? Then look at these things [other roles], are you only keen on this role, or would look at or explore other opportunities with [the MNE]... You may be aspiring to get into a project leader role at a certain career level, with ...the number of years of experience, competency and proficiency...you ought to be posturing to your CV, it may actually put you in a different career level now if you are posturing for a role that is above or below your career aspirations. If it is below, then it will prompt and ask whether should I engage with you in this conversation? Ask you why? Because, then you are going to be an ambassador of this interactional experience with the Bot...when you talk and see that this is good ...I actually got to know why I fit into that or chose not to take this route. ...So, the expectation is that six months later if I have another opportunity, I will come back for that same role that I was interested in. [R2]

For the external candidates or new potential employees, the Bot helps the candidates navigate through the system and process more than 50% of the recruitment and selection process as well as proposes each candidate based on their attributes, knowledge skills and experience the kinds of competencies and learnings they need to brush up if they are indeed the preferred candidate.

...a seven-step process. Three and a half steps are virtual, ...even more than 50 to 70 per cent of your entire process is virtual. You just come down for an assessment, and you come down for integration and onboarding. Graduates reach to the pool, have smart interviews, [using] video interview platforms. It could also be that a gamified interview process with questions happens, especially, in the BPO [business process outsourcing] area... where you are focusing on a few areas in terms of learning agility, innovation, creativity, ...this smart interviewer actually becomes much more of a consistent evaluator. We use biometrics - its goal is not for elimination; so, it gives you additional insights. You still rely upon to validate that and then do ...a test assessment in the online baskets. [R1]

There are multiple rationales for the use of Bots in the recruitment and selection process. Quite apart from the high-volume and transaction processing activity that it is used for parsing through tens of thousands of CVs, it serves additional purposes for improved HR effectiveness.

Let's put it this way. It's a transparent process which is visible across. ...What happens in that recruiting process is you don't want too much of human interference during the process. This [Bot] increases the objectivity, makes it transparent and tells the candidate, in our case, that we are high volume recruiting numbers. So, you need to have transparency in what is happening in the process. And it has to have traceability. Knowing [that it is] a human-intervened process, there is always a control point, and therefore, it becomes a process-heavy. When you reimagine, the difference between automation and

digitisation, it is how you would imagine the existing process when you reimagine the existing processes. [R1]

Coaching Assessment and Performance Management Bot

There is a constant interactive discussion and recommendations exchange between the Bot and the employees on aspects, such as critical competencies, skills gaps and career progression concerning dealing with issues of person-organisation and person-occupation fit.

I'm going to evaluate you for the right fit. The recruiter Bot changes from being a recruiter who was interviewing you for skills, to be a Talent coach who will get into a career conversation for you. What is the right kind of fitment for you? Where does the data fit your aspiration, and how do you go about it? [R10]

The conversation can also extend to advisory aspects of performance, and the Bot makes recommendations for making employee's performance planning and analysis easier.

...this is where [the Bot] picks up information and can always come back and say you haven't completed your ethics compliance courses... quarters have lapsed, by the way, this needs to be completed immediately, as it can impact your performance ...So it's prompting this. It's reminding things, ...so we don't want it to be just to be data assisted. ...As an advisor, what you want to do to move to the next level. And then as advisory services, it can also say we want to reach a point where, if it is acceptable for to you to sign-off. [R1]

Training and Development Bot and New Age Skills

Conversation on training and development issues focuses on identifying current and future competency gaps and employee's career aspirations. The Bot can recommend different sets of learning pathways for different roles and the likelihood of future opportunities that are coming up in certain areas, including ones where an employee has low visibility.

They engaged through this Chatbot, I understand a lot more about questions and queries and everything the way what my role is going to be, what is the joining date, what is the kind of opportunity. It can also push information here...the latest [updates] about the MNE in media ...and engaging with them on an online platform to keep them prepared in terms of day to go to a bridging program or a course. In terms of training, so that when they come in, they become relevant on day one [of joining]. That is what we are doing with this. [R2]

There are some generic skills and competencies needed by all HR practitioners working with AI and other disruptive technologies. A general flair for new technology and the ability to embrace it, along with an understanding of how analytics and data science operates. Using the new skills, HR practitioners can offer insights and coach staff and leaders on where and how one needs to reinvent and reimagine themselves or re-coach their team members to deliver on better employee and team member experiences in their use of the new AI applications.

[The] HR skill set of the future is focused on three things: digital savviness, data fluency and coaching. ...So how do you imbibe the principles of coaching? And

how do you engage with the candidate to provide them with a clear candidate experience that is superlative. [R1]

Talent Supply Chain Bot

For managing this MNE's hundreds of thousands of talent supply chain, an integrated set of Bots and digital assistants were created to keep track of the movements of stocks of talent and its flows locally and globally and tracking their performance and utilisation rates. For an organisation of this size and scale, the business imperative is to maximise talent utilisation rates and keeping it in the 90% range; however, this is not always possible as some of the client deployments are of a shorter-term and this invariably leads to 'bench time' of about 8-9% for the total talent supply chain. The pace and agility required to deploy and redeploy talent across projects and geographies are critical for delivering the HR function's cost-effectiveness.

So, there are almost two levels of talent management. One is the influx of employees, but then you either recognise or [make] conscious identification.... what is happening in real-time, [gathering] information around various aspects of it. So, what are these metrics at the top, keeping talent lean. Generally, [manage] your attrition. So, you have to continuously keep tracking that. ...in what all different categories, by skill, by career, by business groups, by diversity, employee age, time etc ... visualisations are done by geography, by demographics, etc. So, like a snapshot, it is almost instantly available. At any given point in time, you have this information. We look at in terms of what's the talent heat map, so on year on year, how many people are moving down that? [R9]

Individualised Employee Experiences

The adoption of AI applications for different HRM practices has had a positive impact in shaping employee experiences and positively influencing their satisfaction and commitment at work, as well as minimising their intention to quit behaviours. As a technology consulting MNE, the case organisation has recorded a lower than average industry employee turnover rates. Overall, the employees have reported positive experiences with the human-computer interaction. The AI-mediated social exchange has been satisfying to the large millennial population employed by this case organisation. Specifically, various Bots serve diverse sets of queries for the employees as well as the clients that visit this technology consulting firm co-creating innovative AI-based solutions.

And it [the AI applications] actually helps in refining the product experience or finding the innovation experience that you bring to the table. Each day it's a learning for us as well. [R4]

Increased levels of human-machine interactions helped strengthen employee experience and their person-organisation fit. The MNE employs hundreds of thousands of employees, as such employees do tend to feel lost, and therefore, value individualised consideration and experience through AI-mediated social exchanges, which may not be possible in the human-human exchanges. The extent of information processed by various interactive Bots about individual employees' attributes allows hyper-personalisation and individualisation opportunities, which is satisfying for employees.

Because then you [are] going to be an ambassador of this interactional experience for the firm with the Bot...when you talk and see that this is good ...I actually got to know why I fit into that [R10]

Depending on the nature and extent of human-machine interactions, the employee experiences also varied. For example, employees who are frequent users, testers and co-designers of the AI-applications, felt significant improvements in their interactional experiences with the Bots.

...so these all these experiences that PBOT, [and other bots and personal assistants], etc., ...in our design itself we have embedded [feedback] That actually instantaneously puts into our backlog of where our focus should be now...[R6]

The constant improvements in the AI-applications' capabilities have helped employees enhance their problem-solving and interactional experience better.

If you feel there is a new problem, let us know that this is what is the basis, so you get plenty to crystallise and figure out what matters to employees because at the end of the day the antidote is to how can we make employee experience better. ...Are we getting enough input for that? Let's look up to the new technology. [R5]

Organisational Culture of Innovative Practices

Sufficient evidence exists for a culture of innovation at this large MNE. As part of employees' work targets and activities, there was an explicit requirement for most roles to deliver technological innovations using a range of disruptive technologies, while others aspired to achieve innovations or claim patents against their names. This culture of innovation was supported by a robust set of intrinsic and extrinsic rewards. Given the organisation's size, gaining visibility by individuals to meet their inherent needs to stand out in this MNE becomes a significant driver for undertaking innovative projects, delivering proofs of concepts and seeking sponsors and resources to carry out these projects. The innovation ecosystem supports multiple forms of activities, such as ranging from individual AI technology teams to co-development and co-creation with the clients.

One is the disruption to create leadership in an area. So, there's pretty clear [mandate for] value co-creation.....Co-innovation with the client, it's a powerful story. ...So, hear me out, a lot of the lay of the land and how it looks like. So, it's good for business. Yes, [its] good for people. There are these two categories... [We've] got some 40,000 ideas [last year] and get it down to maybe 6 or 7. And it's funny that you also get US\$ 2,000 for those who develop a prototype. So, that's part of the formal extrinsic reward. [R3]

The culture of innovation and the innovation landscape in India has transformed significantly:

Look ...look. The world has changed. Initially, most of the offshore centres were more of a cost centre, right? We had to deliver... versus now, where we deliver, but we also sell, end-to-end. And to be fair, that's where most of the offshore centres are today. It's no longer offshore; it's more than nearshore right. So, the way India was 25, 30 years back ...the IT industry itself ...things have changed.

Now with the Global Innovation Centres coming in, right, each of our clients has their captive centres [here in India]. ...Right from being a back-end, where you take the requirements, to you deliver. You are now spending more time with your clients. [R3]

With the changing landscape, the focus at this subsidiary is to empower and enable the clients to co-create in their science and technology labs, look at the ecosystem of other products and services that this MNE has created, and then the clients can see how some of these ideas may be relevant to their workplaces:

So, it's about, co-working, right? Humans and machines neither are a threat to anybody. How do you co-exist? Leverage each other... That's where things are progressing, and you would know a lot about how the AI is happening, AI is good for good data and bad for bad data. We keep discussing it, but the reality is people want things to change the world needs to be more open. Need to be more pragmatic, ...more social, ...more networked, in terms of looking ahead into the future. [R7]

The possibilities for innovation at the Indian subsidiary's innovation hub have provided clients and employees with new ideas and a more profound commitment to developing AI-enabled products and services:

Let me quote a use case ... When we bring in our high-stake clientele in our organisation to walk through, what we show them is how a humanoid can do the job of a front office. I'm breaking it down by the use case, which will be easier for you to understand. He walks into the organisation, and there is a humanoid... that welcomes him. In the past, that would be a humanoid, which was only talking one-directional. Well, [now] we have a humanoid which talks bi-directional ...talk to you because they must understand what you're saying...it reciprocates you. ...Clearing your badging process, hands you over [the badge], and then there is a persona which is walking the client through without a human touch within this organisation. I'm just giving you a simple use case of that. So, think about the word when you as Ashish is coming in as a client. ...You have a humanoid walking with you, and after that point forgets the human eye, there is a persona which is walking you through the facility. That's a reality. It's something that's happening right now. We did this for many of our clients. [R3]

Employees working here have widely expressed excitement (rather than fear) of the opportunities they perceive and the innovations they can develop with their teams and clients at this organisation. Therefore, affiliation motivation and an appreciation of internal AI-based functional applications, including, those for the HRM domain are often looked at as opportunities for teams. People self-nominate and request membership and affiliation for various development teams for working on such AI-applications for the MNE's business needs. It would be interesting to contrast these experiences with a user firm's employee experience of AI-mediated exchange of HRM practices or from a subsidiary or division of the MNE where such high-end innovative work is not undertaken.

Additional Theme: AI and Ethical Issues

The adoption of AI and algorithmic management at the workplace is not free from ethical, moral and legal issues (Duggan et al., 2020). While there was no data that would suggest legal and moral breaches, the informants at the case organisation acknowledged the importance of ethical considerations in the design and implementation of AI applications for HRM focussed applications. They highlighted the importance of an organisational learning approach for successful AI adoption. The case organisation does not claim absolute knowledge or capabilities for an AI application to deliver a flawless system. However, it strives to evolve its developmental efforts and remains open to deal with any ethical issues to the best of its knowledge and capabilities. In order to improve the AI applications, the development teams check these issues as and when they manifest in the implementation stages of various AI applications that are rolled out. The open-mindedness to developing AI applications that are unbiased and socially responsible, the teams were multidisciplinary and continuously sought input from a diverse set of stakeholders

So, we are saying we don't know everything. Once we think we have something in place. I'll put it across in our systems. We involve in our ecosystem partners, and we also use our audit partners to come and check from time-to-time, and you know, keep us honest about those things. [R3]

The developers and leaders acknowledged the quality and nature of input that goes into the training of the AI applications as fundamental in making these applications more responsible and unbiased in their decision-making. By providing diverse scenarios from a diverse set of people, the biases can be minimised.

Look, we all need to understand humans and machines, right? The more you train them, the better they get But after it is pointed to us, the input that is being fed right nowthose sci-fi movies, which are ...really different but I'm sure at some point in time we will be there. But today, we need to understand one thing, which is simply that irrespective of the systems and the language you have used, there is input, which yields an output. [R7]

Discussion

The above analysis and findings confirm that firstly, there is a significant proliferation of AI-enabled applications in the form of Bots, digital, virtual and personal assistants for all the sub-domains of HRM practices including attracting and selecting employees (Upadhyay & Khandelwal, 2018), training and development (Maity, 2019), resource allocation and management (Andrejczuk, 2018; Stavrou et al., 2007) as well as for managing talent (Jantan et al., 2010). Our study's distinctive contribution lies in developing a conceptual framework for understanding the relationship between how a P-O fit connects to employee and HR outcomes through an AI-mediated social exchange. To the best of our knowledge, this is the first study that explicates how employees reciprocate their experience of receiving hyper-personalised and individualised HRM practices with improved attitudinal and behavioural responses as well as the HRM function benefits from increased HR cost-effectiveness. An enhanced experience strengthens their person-organisation fit and engagement with HR practices. In line with the AI-mediated social exchange theory (Ma & Brown, 2020), our

interview data finds support for the underlying logic that when employees experience a favourable AI-mediated exchange, they will feel obliged to reciprocate with positive attitudinal and behavioural outcomes. Our interview data further highlights the mechanism of AI-mediated exchange that leads to high levels of job satisfaction, commitment and their weak intention to quit behaviours. Further, the inter-relationships between the themes, especially the moderating role of the organisational culture of innovative practices were also noted as another contextual factor in explaining employee and HR outcomes.

In answering the first research question, there is evidence of HR cost-effectiveness in terms of savings on HR headcount, business value-add, and HR agility realised through AI-mediated social exchanges using HRM-focused bots (Barro & Davenport, 2019; Faliagka et al., 2014; Kiron & Schrage, 2019; Guenole & Feinzig, 2018). The savings are realised in terms of full-time equivalent HR resources and will continue to increase as the AI applications undertake high-volumes of transactional processing HR activities and gradually undertake more complex HR tasks. Additionally, these AI-enabled applications allow the organisation to generate additional insights about its people capabilities and competencies and deploy resources with greater ease and agility to tap into client opportunities as it arises.

The study's second research question focused on the impact of AI-mediated social exchange on employee experience of HR practices. In line with the emerging trends on the personalised, hyper-personalised and individualised experience of HR practices (Haak, 2019; Hughes et al., 2019; Karra, 2019), employees at this MNE too, experienced hyper-personalisation and individualisation of HRM practices through a range of AI-enabled bots, digital, personal and virtual assistants. However, our research identifies the theoretical mechanisms through which this occurs. This form of personalisation and individualisation departs from the existing studies on idiosyncratic deals (Anand et al., 2010; Bal et al., 2013; De Leede et al., 2004; Glassner & Keune, 2012; Hornung et al., 2008; Rosen et al., 2013) on several counts. First, in the traditional forms of social exchange and idiosyncratic deals, personalisation and individualisation of HR practices occur through interactions and negotiations between human-to-human (i.e. between line managers and employees), and it often involved employees in dealing with managers' idiosyncratic approaches and personal preferences. Second, this study departs from the traditional idiosyncratic deals, in that the AI-mediated exchange allows with ease, dealing with issues of perceived fairness as the interactions between human-machine as there are no emotions or subjectivity involved in the exchange creating a higher degree of objectivity in the interactions. Under the new approach to hyper-personalisation and individualisation, the interaction and negotiation occur between the humans and machine-enabled AI application(s) for a range of HR practices. By considering an individual's differences in terms of the congruence in their values, attributes, interests and competencies (Motowildo et al., 1997; Underwood, 1975) with the organisation's environment and practices, a better person-organisation fit is possible (Verquer et al., 2003).

Further, as values drive attitudes and behaviours, the link between P-O fit and attitudes and behaviours is mediated by the interactive nature of human-bot interactions or through the use of AI-mediated applications. It remains to be seen whether this is also due to a perceived lack of power-laden employee experiences between technology and employees, as most employees reported these interactions as positive. Nevertheless, in line with signalling theory, the signals received through the bots (Casper & Harris, 2008). The AI-mediated social

exchange (Ma & Brown, 2020), offers a much-nuanced understanding of how employees reciprocate their positive experiences in the form of increased commitment, satisfaction and lower than the industry average, of their intentions to quit behaviours, which then translates into cost savings and help deliver enhanced HR cost-effectiveness (Bal et al., 2013).

Conclusion

Overall, this study demonstrated how the adoption of HRM-focused AI applications in the case organisation had yielded positive outcomes for both the HR function as well as employees, through an AI-mediated social exchange, which offered highly personalised and individualised employee experiences of HR practices. A fundamental limitation of this study is the nature of the case organisation itself, as it does not offer any rival or opposing views. This is so because this MNE is an early adopter and implementor of AI-based HRM and business applications. Further, it is essential to highlight that the core business of this MNE is designing and implementing AI applications for both its internal consumption, as well as for serving its global client base. Therefore, it is not surprising to find high levels of positive experiences.

Implications for Research

In terms of implications for future research, the adoption success may yield different results for a client organisation that is only a user and not a producer of such AI applications. Future research should consider evaluating the employee experiences of AI applications that they have purchased from the external marketplace with or without customisations. It would be useful to explore any differences by undertaking comparative research between these two groups, i.e. the developing firms and user firms. Future research should also analyse how AI users that are ‘non-designers’ of the applications would experience AI-mediated social exchanges. It would be interesting to analyse the differences between a user who has transitioned from a human-human exchange to an AI mediated social exchanges experiences the interactions with various AI applications.

Additionally, further research is needed at several levels and in various sub-functional domains of HRM research in domestic and international firms. First, at an individual level, research on the extent of trust, nature of emotions and reactions of employees as they interact with Bots and humanoids will determine the extent of cooperation and leveraging this technology. Second, also at an individual level, scholars can also investigate employees’ attitudes towards AI adoption and intention to use their perceptions of trust towards Bots and humanoids as these technologies employ and utilise personal and private data of employees for routine and non-routine decision-making and problem-solving tasks. Third, a related area of future research that this study was not able to thoroughly examine was of legal and ethical issues and biases that may be present in the design and implementation stages of such applications. Although the case organisation indicated the presence of diversity in the development teams, wherein teams from global and local groups of employees participated in the development of AI applications, the differences in the experiences of employees across different global locations of the MNE may persist and presents a future area of inquiry for both AI adoption by HRM in domestic and international firms. Research that explores how the applications deal with biases and local and global differences is

timely. Finally, at a functional level, for leveraging the technology, it may require the creation of awareness among employees to engage and share their tacit and explicit knowledge more extensively with AI-mediated technology platforms to create larger databases. Such an approach would require reimagining how to motivate, re-skill and create an ecosystem where employees continue to engage with AI-mediated knowledge sharing platforms.

Implications for Practice

There are several implications for practice. First, acquiring the necessary technical and multidisciplinary skills through internal and external training in the design and implementation of HRM-focused AI applications. Adequate training is also critical for the end-users to understand how best to leverage and use the AI-applications for assisting in routine and non-routine tasks. Second, there is a need to put in place higher levels of transparency, consent and information sharing for all employees, so they understand how personal data and information will be used in algorithmic decision-making. Third, developing an appreciation for change to support employees and managers deal with potential issues of resistance to AI-induced change. Fourth, purposively design diverse teams from different geographical and functional areas to minimise data biases that are inherent in a given ecosystem. Fifth, managers and leaders need to evaluate and have an open mind to continuously improve and address potential ethical, moral and legal issues that may creep into an application. Finally, the need to develop a robust business case, one that not only focuses on economic aspects but also incorporates the broader social and relational aspects for multiple users, keeping in mind societal sensitivities may help influence the success of such technology adoptions. To this end, applications that focus on a holistic concept of sustainability using multiple parameters of evaluating a technology are more likely to deliver in the longer term. Employees need to be educated and supported on how they can leverage the technology to improve their skills and competencies in newer areas to help them recreate their career posturing.

Policy Level Implications

Speculating the impact of AI adoption on HRM on the Indian cultural context, we opine that it will bring several challenges, such as skills development, job displacement, unemployment as well as potentially lead to some digital exclusion and a widening digital divide between those who have access to emerging technologies and the Internet and those who do not. Additionally, the businesses, customers and employees will stand to benefit from an enhanced, personalised and augmented experiences that AI applications have to offer. Some preliminary estimate a strong correlation between AI adoption and total factor productivity growth (TFPG), wherein a one-unit increase in AI intensity can lead to a TFPG of 0.05%, or an estimated contribution of 2.5% to India's GDP (Kathuraia, Kedia & Kapilavai, 2020). The impact of AI in HR on work culture is likely to be favourable for those firms that are engaged in the production of IT and knowledge-intensive work, relative to traditional and public sector undertakings. The favourable attitudes towards these new technologies and applications have the potential to affect people with visual and other forms of disabilities. The Indian culture and people management philosophy is oriented more towards collectivism, empathy,

harmony and coexistence with all living and non-living objects for achieving holistic well-being. Hopefully, these aspects of people management philosophy are reflected in the interactions humans have with Bots and humanoids.

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References

- Anand, S., Vidyarthi, P.R., Liden, R.C., & Rousseau, D.M. (2010). Good citizens in poor-quality relationships: idiosyncratic deals as a substitute for relationship quality. *Academy of Management Journal*, 53, 970-988.
- Andrejczuk, E. (2018). *Artificial intelligence methods to support people management in organisations*. Unpublished doctoral thesis retrieved from <http://www.iiia.csic.es/~jar/thesisEwaFinal.pdf> on 01 January 2020.
- Argyris, C. (1964). *Integrating the individual and the organisation*. New York: John Wiley & Sons, Inc.
- Bankins, S., & Formosa, P. (2019). When AI meets PC: Exploring the implications of workplace social robots and a human-robot psychological contract. *European Journal of Work and Organizational Psychology*. <https://doi.org/10.1080/1359432X.2019.1620328>
- Barro, S., & Davenport, T. H. (2019). People and machines: Partners in innovation. *MIT Sloan Management Review*, 60(4), 22-28.
- Bal, P.M., Kooij, DTAM & De Jong, S.B. (2013). How do developmental and accommodative HRM enhance employee engagement and commitment? The role of psychological contract and SOC-strategies'. *Journal of Management Studies*, 50(4), 545-572.
- Bal, P. M., & Dorenbosch, L. (2015). Age - related differences in the relations between individualised HRM and organisational performance: a large - scale employer survey. *Human Resource Management Journal*, 25, 41-61.
- Barney, M (2018). *Artificially intelligent coaching has arrived*. Retrieved from <https://trainingindustry.com/magazine/may-jun-2018/artificially-intelligent-coaching-has-arrived/> on 23rd February 2020.
- BasuMallick, C. (2019). *How AI-driven performance feedback can make you a better manager*. Retrieved from <https://www.hrtechnologist.com/articles/performance-management-hcm/ai-driven-performance-feedback/> on 23rd February 2020.
- Berg, P., & Frost, A. (2005). Dignity at work for low wage, low skill service workers. *Relations Industrielles/Industrial Relations*, 60(4): 657-82.
- Becker, B. E., Huselid, M. A., & Beatty, R. W. (2009). *The differentiated workforce: Transforming talent into strategic impact*. Boston: Harvard Business Press.
- Blau, P.M. (1964). *Exchange and Power in Social Life*, New York: Wiley
- Budhwar, P., Varma, A, & Kumar, R. (Eds., 2019). *Indian Business: Understanding a Rapidly Emerging Economy*. London: Routledge, ISBN 978-1315268422
- Bughin, J., Hazan, E., Ramaswamy, S., Chui, M., Allas, T., Dahlström, P., Henke, N., & Trench, M. (2017, June). *Artificial Intelligence: the Next Digital Frontier?* McKinsey Global Institute. McKinsey & Company.

- Carter, B., Danford, A., Howcroft, D., Richardson, H., Smith, A., & Taylor, P. (2013). Stressed out of my box': employee experience of lean working and occupational ill-health in clerical work in the UK public sector. *Work, Employment and Society*, 27(5), 747-767.
- Casper, W.J. and Harris, C.M. (2008). Work-life benefits and organisational attachment: self-interest utility and signalling theory models. *Journal of Vocational Behavior*, 72(1), 95–109.
- Collings, D. G., & Mellahi, K. (2009). Strategic talent management: A review and research agenda. *Human Resource Management Review*, 19(4), 304-313.
- Corley, K.G., and Gioia, D.A. (2011). Building Theory about Theory Building: What Constitutes a Theoretical Contribution? *Academy of Management Review*, 36(1): 12-32.
- Daugherty, P. R., & Wilson, H. J. (2018). *Human + machine: reimagining work in the age of AI*. Boston, MA: Harvard Business Press.
- De Leede, J., Huiskamp, R., Oeij, P., Nauta, A., Goudswaard, A., & Kwakkelstein, T. (2007). Negotiating individual employment relations, evidence from four Dutch organisations. *Revue Interventions Économique*, 35, 1-16.
- De Leede J., Looise, J.C. & Van Riemsdijk, M. (2004). Collectivism versus individualism in Dutch employment relations. *Human Resource Management Journal*, 14, 25-39.
- Delery, J. E., & Doty, D. H. (1996). Modes of theorising in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, 39, 802-835.
- Duggan, J., Sherman, U., Carbery, R., & McDonnell, A. (2020). Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM. *Human Resource Management Journal*, 30(1), 114-132.
- Faliagka, E., Iliadis, L., Karydis, I., Rigou, M., Sioutas, S., Tsakalidis, A., & Tzimas, G. (2014). Online consistent ranking on e-recruitment: seeking the truth behind a well-formed CV. *Artificial Intelligence Review*, 42(3), 515-528.
- Fan, C. Y., Fan, P. S., Chan, T. Y., & Chang, S. H. (2012). Using hybrid data mining and machine learning clustering analysis to predict the turnover rate for technology professionals. *Expert Systems with Applications*, 39(10), 8844-8851.
- Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed). New York, NY: McGraw-Hill Inc.
- Fontaine, T., McCarthy, B., & Saleh, T. (2019). Building the AI-powered organisation. *Harvard Business Review*, 63-73.
- Glassner, V., & Keune, M. (2012). The crisis and social policy: The role of collective agreements. *International Labour Review*, 151, 351-375.
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16(1), 15-31.
- Guenole, N., & Feinzig, S. (2018) The Business Case for AI in HR: With Insights and Tips on Getting Started. *IBM Smarter Workforce Institute*, IBM.
- Gustavsson, E. (2005). Virtual servants: stereotyping female front-office employees on the Internet. *Gender, Work & Organisation*, 12(5), 400-419.
- Harley, B., Allen, B. C., & Sargent, L. D. (2007). High-performance work systems and employee experience of work in the service sector: The case of aged care. *British Journal of Industrial Relations*, 45(3), 607-633.
- Haak, T. (2019). *Personalisation in HR: some ideas*. Retrieved from <https://hrtrendinstitute.com/2019/04/29/personalisation-in-hr/> on 23rd February 2020.
- HR Recruiting (2016). *Why Personalization Matters During the Recruitment Process*. Retrieved from <https://thrivetrn.com/personalization-matters-recruitment-process/> on 23rd February 2020
- Hornung, S., Rousseau, D.M., & Glaser, J. (2008). Creating flexible work arrangements through idiosyncratic deals. *Journal of Applied Psychology*, 93, 655-664.

- Hornung, S., Rousseau, D.M., & Glaser, J. (2009). Why supervisors make idiosyncratic deals: antecedents and outcomes of I-deals from a managerial perspective. *Journal of Managerial Psychology*, 24, 739-764.
- Huang, M. H., & Rust, R. T. (2018). Artificial intelligence in service. *Journal of Service Research*, 21(2), 155-172.
- Hughes, C., Robert, L., Frady, K., Arroyos, A., Hughes, C., Robert, L., ... & Arroyos, A. (2019). Managing People and Technology in the Workplace', In Hughes et al. (Eds.) *Managing Technology and Middle-and Low-skilled Employees*, Emerald Publishing Limited, pp. 61-68. <https://doi.org/10.1108/978-1-78973-077-720191005>
- IBEF (2020). *IT & BPM Industry in India*. Accessed from <https://www.ibef.org/industry/indian-iT-and-iTeS-industry-analysis-presentation> on 15th September 2020.
- Imrie, P., & Bednar, P. (2013). *Virtual personal assistant*. In *ItAIS 2013*. AIS Electronic Library (AISeL).
- Jantan, H., Hamdan, A., & Othman, Z. (2010). Human talent prediction in HRM using C 4.5 classification algorithms. *International Journal on Computer Science and Engineering*, 2(8), 2526-2534.
- Kathuraia, R., Kedia, M., & Kapilavai, S. (2020). *Implications of AI on the Indian Economy*. New Delhi: Indian Council for Research on International Economic Relations.
- Karra, S. (2019, March 4). The Hyper-Personalization of HR Services. *Forbes*. Retrieved from <https://www.forbes.com/sites/forbeshumanresourcescouncil/2019/03/04/the-hyper-personalization-of-hr-services/#b9990ad4b411>
- Kim, T. Y., Aryee, S., Loi, R., & Kim, S. P. (2013). Person–organisation fit and employee outcomes: test of a social exchange model. *The International Journal of Human Resource Management*, 24(19), 3719-3737.
- Kiron, D., & Schrage, M. (2019). Strategy for and with AI. *MIT Sloan Management Review*, 60(4), 30-35.
- Kristof, A. L. (1996). Person–organisation fit: An integrative review of its conceptualisations, measurements, and implications. *Personnel Psychology*, 49, 1-49.
- Kristof-Brown, A.L., Zimmerman, R.D., & Johnson, E.C. (2005). Consequences of individuals' fit at work: a meta-analysis of person-job, person-organisation, person-group, and person-supervisor fit, *Personnel Psychology*, 58, 281-342.
- Ma, X., & Brown, T. (2020) *AI-Mediated Exchange Theory*. Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (Workshop), USA: Association for Computing Machinery
- Malik, A., & Pereira, V. (Eds.) (2016). *Indian culture and work organisations in transition*. UK: Routledge.
- Malik, A., Srikanth, N.R., & Budhwar, P. (May 2020). Digitisation, AI and HRM. In Jonathan Crashaw, Pawan Budhwar & Ann Davis (Eds.) *Strategic Human Resource Management*. UK: Sage Publications, 88-110.
- Malik, A., Budhwar, P. & Srikanth, N.R. (2020). Gig Economy, 4IR and Artificial Intelligence: Rethinking Strategic HRM. In Payal Kumar, Anirudha Agarwal & Pawan Budhwar (Eds.) *Human & Technological Resource Management (HTRM): New Insights into Revolution 4.0*. UK: Emerald Publications.
- Malik, A., Pereira, V., & Tarba, S. (2019). The role of HRM practices in product development: Contextual ambidexterity in a US MNC's subsidiary in India. *International Journal of Human Resource Management*, 30(4), 536-564.
- Malik, A., Sharma, P., Pereira, V., & Temouri, Y. (2021, *forthcoming*). From regional innovation systems to global innovation hubs: Evidence of a Quadruple Helix from an emerging economy, *Journal of Business Research*.

- Maity, S. (2019). Identifying opportunities for artificial intelligence in the evolution of training and development practices. *Journal of Management Development* 38(8), 651-663.
- McColl, R., & Michelotti, M. (2019). Sorry, could you repeat the question? Exploring video-interview recruitment practice in HRM. *Human Resource Management Journal*, 29(4), 637-656.
- Morf, M., Bakker, A. B., & Feierabend, A. (2019). Bankers closing idiosyncratic deals: Implications for organisational cynicism. *Human Resource Management Journal*, 29(4), 585-599
- Morley, M. J. (2007). Person-organisation fit. *Journal of Managerial Psychology*, 22(2), 109-117.
- Motowildo, S. J., Borman, W. C., & Schmit, M. J. (1997). A theory of individual differences in task and contextual performance. *Human Performance*, 10, 71-83.
- NASSCOM (2020). *Facts and Figures*. Accessed from <https://nasscom.in/knowledge-centre/facts-figures> on 15th September 2020.
- Narayanan, A., Rajithakumar, S., & Menon, M. (2019). Talent management and employee retention: An integrative research framework. *Human Resource Development Review*, 18(2), 228-247
- Nishii, L. H., & Wright, P. (2008). Variability at multiple levels of analysis: Implications for strategic human resource management. In D. B. Smith (Ed.), *The people make the place* (225-248), Mahwah, NJ: Lawrence Erlbaum Associates.
- Pereira, V., & Malik, A. (2015). Making sense and identifying aspects of Indian culture (s) in organisations: Demystifying through empirical evidence. *Culture and Organization*, 21(5), 355-365.
- Raman, S.G. (20th August 2018). *Are robots taking over the world? A restaurant in Chennai serves an answer* Accessed from <https://scroll.in/magazine/886874/are-robots-taking-over-the-world-a-restaurant-in-chennai-serves-an-answer> on September 15, 2020.
- Reinhard, G., Jesper, V., & Stefan, S. (2016). *Industry 4.0: Building the digital enterprise*. 2016 *Global Industry 4.0 Survey*. <https://doi.org/10.1080/01969722.2015.1007734>
- Ransbotham, S., Kiron, D., Gerbert, P., & Reeves, M. (2017). Reshaping business with artificial intelligence: Closing the gap between ambition and action. *MIT Sloan Management Review*, 59(1). 1-17.
- Siggelkow, N. (2007). Persuasion with case studies. *Academy of management journal*, 50(1), 20-24.
- Stavrou, E. T., Charalambous, C., & Spiliotis, S. (2007). Human resource management and performance: A neural network analysis. *European Journal of Operational Research*, 181(1), 453-467.
- Strohmeier, S., & Piazza, F. (2015). Artificial intelligence techniques in human resource management—a conceptual exploration. In *Intelligent Techniques in Engineering Management* (pp. 149-172). Springer, Cham.
- Takamoto, M., & Owada, J. (2018). HR-tech that boosts productivity and makes people shine: New value creation in HR achieved through data analysis. *Hitachi Review*, 67(6), 652-653.
- Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial intelligence in human resources management: challenges and a path forward. *California Management Review*, 61, 5-42.
- Tarafdar, M., Beath, C. M., & Ross, J. W. (2019). Using AI to Enhance Business Operations. *MIT Sloan Management Review*.
- Tecuci, G. (2012). Artificial Intelligence. *Wires computational statistics*, 4(2), 168-180
- Thomas, D. C., Cuervo-Cazurra, A., and Brannen, M. Y. (2011). Explaining theoretical relationships in international business research: It's about the arrows linking the boxes. *Journal of International Business Studies*, 42, 1073-1078.
- Ullas, S.S. (2019). *At this Bengaluru school, robots teach, and teachers mentor*. Accessed on 14th September from <https://timesofindia.indiatimes.com/city/bengaluru/at-this-bengaluru-school-robots-teach-and-teachers-mentor/articleshow/70867664.cms>

- Upadhyay A. K., & Khandelwal., K (2018). Applying artificial intelligence: implications for recruitment, *Strategic HR Review*, 17(5), 255-258
- Underwood, B. J. (1975). Individual differences as a crucible in theory construction. *American Psychologist*, 30,128-134.
- Van Maanen, J., Sørensen, J. B., & Mitchell, T. R. (2007). The interplay between theory and method. *Academy of Management Review*, 32(4), 1145-1154
- Verquer, M. L., Beehr, T. A., & Wagner, S. H. (2003). A meta-analysis of relations between person–organisation fit and work attitudes. *Journal of Vocational Behavior*, 63, 473-489.
- Warhurst, C., & Nickson, D. (2007). Employee experience of aesthetic labour in retail and hospitality. *Work, employment and society*, 21(1), 103-120.
- Whetten, D.A. (1989). What constitutes a theoretical contribution? *Academy of Management Review*, 14(4): 490-495.
- Whiteside, E. (2019) *How AI and machine learning enhance personalised learning in the workplace*. Retrieved from <https://elearningindustry.com/ai-machine-enhance-personalized-learning-workplace> on 23rd February 2020.
- Yin, R. (2003). *Case study research: Design and methods*. (3rd ed.). Sage: Thousand Oaks, CA.

Table 1: Demographic Details of Interviewees

| Level in the Organisation | Interviewee Code | Gender | Work Experience in years Total Career Experience (Experience at the Case Organisation) |
|---------------------------|------------------|--------|---|
| Senior HR Leader | R1 | Male | 30 (7) |
| Middle HR Manager | R2 | Male | 15 (5) |
| Senior Innovation Leader | R3 | Male | 28(18) |
| Frontline Team Lead | R4 | Female | 8 (4) |
| Employee | R5 | Female | 5 (2) |
| Employee | R6 | Male | 4 (1) |
| Senior Leader | R7 | Male | 25+(10) |
| Senior Leader | R8 | Male | 30+ (5) |
| Subject Matter Expert | R9 | Male | 25 (10) |
| Associate Team Lead | R10 | Male | 10 (8) |

Figure 1: Conceptual Framework

