CONCEPTUAL FRAMEWORK FOR VIRTUAL TEAMS WITH REFERENCE TO ARTIFICIAL INTELLIGENCE AND EMPLOYEE ENGAGEMENT

[1]Parul Saxena, [2]Dr. B.S. Rathore

[1]Ph.D. Scholar, Mody University, Lakshamangarh 332311, Distt: Sikar (Rajasthan), India

[2]Professor, Mody University, Lakshamangarh 332311, Distt: Sikar (Rajasthan), India

Email: [1]parul.saxena9684@gmail.com, [2]bsrathore.sob@modyuniversity.ac.in

Contact: [1]9410000245, [2]9413043349

Abstract:

Covid-19 has brought a lot of changes in the organization structure from the working style to Employee Engagement. IT based technology has overtaken the market and is playing a crucial role in engagement of virtual teams. This research aims to see whether the use of AI-based technology, tools, and software can help management detect intangible things such as employee engagement level and provide clues as to what factors influence it and how management can improve it with special reference to virtual teams.

This paper does systematic literature review which has twofold purpose: to identify the role of artificial intelligence in employee engagement in general and on virtual team in particular, and also the role of employee engagement in virtual teams and other purpose is to propose a theoretical model that can be useful for future research.

This research is a qualitative approach. Research connected with the subject available till November 2021 has been reviewed using electronic databases such as ABI/INFORM Complete, EBSCO, Emerald Insight, ProQuest, SAGE Journals, Science Direct (Elsevier), Scopus, Springer Link, Taylor and Francis Online, Wiley Online Library.

This research has shown that the use of AI based software can ingnificantly help management, not only to find out the status of each employee's level of involvement but also to anticipate their attitudes and behaviors through predictive indicators. Thus, the company can proactively retain key employees. This research provides new and practical insights and opportunities for company owners and leaders to utilize technology to detect something that is naturally quite difficult because it requires specific knowledge and experience.

Keywords: artificial intelligence, employee engagement, virtual tools, COVID-19 pandemic, organization, employee performance

I. INTRODUCTION

Employee engagement is a broad concept that encompasses practically all aspects of human resource management (Albrecht et al., 2015; Presbitero, 2017). The word "employee engagement" has yet to be given a universally agreed definition (Jain, 2016). "Employees' willingness and capacity to help their organization succeed, usually through committing discretionary effort on a sustained basis," according to Perrin's Global Workforce Study (2003). Many factors influence engagement (Watson et al., 2018), including both emotional (Conway et al., 2016) and intellectual elements (Anitha, 2014) related to the job and the whole work experience (Lemon, 2019). Companies are investing in employee engagement because it has a major impact on crucial business results (Shahid, 2019).

The scope of teams has expanded beyond traditional collocated forms to geographically dispersed and worldwide types of teams operating online and connected by technology, generally referred to as Global Virtual Teams (GVTs), as a result of technological advancements and global mobility (Jimenez et al., 2017; Shaik & Makhecha, 2019). Organizations with higher levels of employee engagement have been observed to have higher financial performance and staff productivity (Jha & Kumar, 2016; Turner, 2019). However, it is concerning to see that GVTs have lower levels of engagement (Shaik & Makhecha, 2019).

Artificial intelligence (AI) is becoming increasingly popular for HR management (Chang, 2020). Advanced AI-enabled computer systems can sense, reason, and respond in the most complicated and evolving settings (Hughes et al., 2019). To keep track of their employees (Tambe et al., 2019), several platform firms use AI management solutions (He, E. (2018). AI solutions can assist firms to enhance their digital employee experience by achieving better employee engagement (Zel & Kongar, 2020). Scarcity in the literature warrants a theoretical review of virtual teams that have distinct problems and demand more management considerations than co-located teams when companies are continuing to adopt the approach of establishing such a working set-up of employees (Shaik & Makhecha, 2019). Due to rising digitization and remote work, the workforce has changed dramatically in recent years (Ahlers, 2016). Moreover, the COVID-19 epidemic has accelerated the spread of virtual collaboration (Waizenegger et al., 2020). As a result, employees' expectations are evolving (Selimović et al., 2021), and they're searching for simple, well-designed apps that will help them do their tasks better and feel more engaged at work (Lowry, 2016). In this connection, this paper aims to review to identify the factors of artificial intelligence influencing employee engagement in general and on the virtual team in particular and to propose a theoretical model that can be useful for future research.

II.   LITERATURE REVIEW

In general, there is a perception among human resource managers, that artificial intelligence systems will soon replace them, as it largely simplifies their job by automating repeated tasks and providing valuable insights without any biases. HR departments across various organizations are always challenged with overwhelming tasks particularly related to their employees. As a result, they have realized the need for data-driven technologies like Artificial intelligence as it enables them to comprehensively analyze and understand their workforce and predict challenges and trends in advance (Maduravoyal, 2018). Among the various HR functions, employee engagement has gained the most popularity in recent times as it serves as an indicator of performance contributions of employees and includes elements like their traits, behavior and attitudes (Chang, 2020). It has been observed that engagement has a significant impact on business performance including aspects like "customer satisfaction, productivity, profit, employee turnover and accidents." However, although most organizations have realized the importance of employee engagement, its implementation has been a major challenge (Mukerjee, 2014).

Employee engagement is one of the most important factors that influence the performance of organizations and according to research, those companies with employees who are highly engaged are more productive as compared to others with less employee engagement. It is a multidimensional construct that categorizes the different aspects of employee attitudes and behaviors toward the organization (Zeidan & Itani, 2020). Rana (2015) highlighted the relationships between "high involvement work practices (HIWPs)" and employee engagement. The study revealed the four main attributes of the HIWPS namely "power, information, reward and knowledge" that help in better employee engagement and are associated with the productivity of employees as well as firm performance. However, the need for a set of practices like the HIWPs can be introduced in today's virtual work environment with the help of Artificial intelligence.

Artificial intelligence is very important for employee engagement as it helps to manage the employees of an organization. This usually happens by motivating the employees and keeping a

track of their actions. However, the trust problems, risk that are perceived and fairness have a crucial role in recognizing whether the system will be successful at management of employee in the long run. Moreover, the systems run on AI should be easy to use and must be seen as important by companies if they want to motivate the employees to use it (Khan, 2013). Artificial Intelligence can be very important in making the system of recruitment more optimized, it reduces the burden of repeating a task like screening an applicant, decreasing the cost of hiring, and enhancing its quality of it. Artificial intelligence will be able to add more enhancements to the process of hiring, removing the biases caused by humans and improving the perception of a job seeker regarding an organization. So, it is no doubt that for selection and recruitment AI will be used a lot (Huang & Rust, 2018). The role of artificial intelligence is very important for different functions in the department of human resources where the robot aspect of a company can handle hiring, recruitment, analyzing, and collection of data, reducing the workload, and increasing efficiency (Yawalkar, 2019).

Artificial intelligence helps in enhancing the experience of employees in organizations. However, implementing artificial intelligence successfully based on the tools that heavily rely on similarity with the culture of the organization, the right tool for designing artificial intelligence and activities of the effectiveness of management of data. A better streamlined, modern, and personalized experience for employees, faster time for responding to the basic problems and questions, understanding better insights about the behaviors of employees and engagement through the tools of artificial intelligence, solutions that are personalized for employees with time to respond that would be faster, putting aside the time and enhancing the productivity of teams of HR (Zel & Kongar, 2020). There are various benefits of artificial intelligence as it will make decisions based on evidence, hence reducing the cost, it will be more affordable, increase creativity, enhance thinking critically, reduce the time used and have a positive influence on the activities of human resources and increasing the efficiency of functioning of human resource (Meskó et al., 2018).

In a study, the characteristics of the team flow were developed based on available data regarding machine learning algorithms (Peifer et al., 2021). The study was able to suggest that the team flow has made up of different attributes that are shared with an individual flow like the balance between perceived demand and skill, absorption and enjoyment, and the attributes that are very different to the team flow like getting feedback and communication, commitment towards a goal that is common, preparing equally and trust. A study was conducted by Pandya, (2019) to understand thirty-six competencies that were specific to the virtual HR personnel were collected. These competencies differed from agreements for confidentiality, agreement drafts, management of time-zones, application for HR mobile application, quick learning, faster response, quick outcomes, relationship with the vendor, close working environment, attachment to the culture, automation in human resources, the experience of an employee, being able to speak multi-languages, management of a virtual team, quick communications, better relationships, branding of a person, searchable, innovator, creative, having acumen for business, the attitude of an enterprise, knowledge for the update of the latest technology, consulting and technical issues, selection of technology, technical etiquettes, and advancement of technology. Teams who have improved their processes can be more effective and it shows stronger performance in the team. Focusing on the reviews of after-action, evaluating previous performances, and enhancing strategies for improving the future process of the team and consequent performances (Mathieu et al., 2017). The utilization of artificial intelligence to provide diagnostics to the team and improvements show a significant shift in the organizational approach that is currently used to facilitate and make teamwork more effective (Webber et al., 2019). A study was conducted where both the secondary data as well as the primary data were collected to evaluate the influence of human resource analytics on employee engagement, employee confidence in the appraisal of performance, and experience of the employee. The analysis of the data was able to show a positive association between the impact of human resource analytics on employee confidence on performance appraisal and the experience of an employee (Gaur, 2020). Through the extensive review of the literature, a study was able to find that artificial intelligence

helps and enhance and improve the human resource functions in an organization and it is helpful in the engagement of the employees and motivating them, which further helps and transformation of the behavior of the employees and develop their trust for a particular organization that for the impacts smooth efficiency an organization. Artificial intelligence helps the organization find employees to keep a track of the business while the pandemic is going on and cope with the unexpected situation (Agarwal et al., 2021).

The functions of human resources like training, recruitment, selection, management, and retention of talent give an intersection of artificial intelligence and human resource management to be positive now and rise in the future workforce of human resources (Maduravoyal, 2018). A study was able to find that there is a widely shared belief that for any organization, the competitive advantage of human resources is a very important aspect; it is an important asset that has a very short supply (Dhanalakshmi & Gurunathan, 2014). When a strategy for talent management is established more effectively than it improves the engagement of an employee which in turn helps the organization to increase its level of performance. When the engagement from an employee is very high, the chances of the employee saying good things about the organization are very high, hence being able to influence the variables like quality of service, the satisfaction of the customer, sales, profits, production, etc.

Various big companies have started adopting AI technology as it enables them to make decisions more efficiently. Although in the realm of HR, AI has its own challenges and complexities when applied to human objects, it is significantly associated with showing results about employee engagement. Therefore, organizations provide AI-based applications to help the management get insight into the mental state of employees in real-time and find whether happy employees are more committed and productive (Sari et al., 2020). Globally organizations have invested about USD 40 billion in AI technology in 2016. While a majority of this investment was directed towards research and development, approximately 10 percent was directed towards the implementation of AI technologies for the enhancement of operations and boosting employee engagement (Maity, 2019). AI has been considered to be such a technology that can turn things around with regard to employee engagement. With the help of solutions powered by AI, organizations can engage employees both remotely and on-site, effectively, offer round-the-clock assistance and support, provide them with better information, monitor the performance of the organization in real-time, make the learning and development process more seamless, streamline conflict resolution and increase their efficiency. The scope of employee engagement has been boosted in organizations through the aspect of advanced sentiment analysis of AI. The technology is making it easier to gather insights into the behavior of employees through in-depth analysis of "email conversations and biometric data." Moreover, through AI it is becoming easier for companies to promote a sense of belonging, recognize their negative traits and create an environment that's more engaging (Burnett & Lisk, 2019).

Most organizations across the globe are increasingly changing their procedures and practices as a result of the outbreak of the COVID-19 pandemic and have shifted their entire workforce to telecommuting and remote work on a temporary basis. Consequently, the process of employee engagement has become difficult. However, the most important factor of employee engagement is possessing the correct virtual tools in place so as to facilitate the process of remote working and make it easier for employees so that they feel as much a part of the business culture as before. The extent of employee engagement can have a significant impact and therefore companies should be equipped with virtual tools to make remote staff work together to get the most out of them (Chaudhary et al., 2021). Artificial intelligence helps in creating an immersive work culture and allows organizations to drive a larger change towards developing an improved work culture by integrating behavioral science with information collected through AI. Moreover, with the help of AI models, organizations can meet the current and future needs of the remote workforce by leveraging virtual tools like 3D VLE (3-dimentional virtual learning environment) to engage employees and achieve organizational goals even in such unprecedented times (Migliore et al., 2019). Therefore,

the rise in AI will transform the manner in which organizations will manage employee engagement in the long term. Algorithms and predictive analysis will improve the understanding of human behavior and drive better decisions for improved engagement metrics (Wang et al., 2021).

III.   ROLES OF EMPLOYEE ENGAGEMENT IN ARTIFICIAL INTELLIGENCE

| Title of the Paper	Authors	Methodology	Findings
Artificial Intelligence for a Better Employee Engagement	Sari, R. E., Min, S., Purwoko, H., Furinto, A., & Tamara, D. (2020)	Interview with the management and selected employees	The usage of AI-based software could greatly assist management in not only determining the status of each employee's degree of engagement but also in predicting their attitudes and behaviors using predictive indications. As a result, the organization will be able to retain critical individuals in a proactive manner.
Strategizing Employee Engagement with Artificial Intelligence	Khandelwal, K. (2021)	Review of recent articles and papers on the application of artificial intelligence for managing employee engagement	With the use of descriptive and causal research designs, research in the field of AI application for employee engagement has to be further explored. AI developers and clients should be aware that AI applications in employee engagement are an important consideration. For higher employee engagement, developers must create AI apps that are conducive so that higher productivity is achieved.
Integration of Artificial Intelligence in Human Resource	George, G., & Thomas, M. R. (2019)	qualitative research with literature review	Employee engagement in AI is an advantage since it allows for tailored learning and development, real-time enquiries regarding health and other employee incentives, and virtual support in comprehending business regulations, among other things. Al also assists with the implementation of a continuous, unbiased, and fact-based feedback system. HR may design and define quantifiable targets for each employee with the aid of AI tools that enables better appraisal of employees.

IV. ROLES OF ARTIFICIAL INTELLIGENCE IN VIRTUAL TEAMS

Title of the Paper	Authors	Methodology	Findings
Rethinking the Role of Technology in Virtual Teams in Light of COVID-19	Frost, M., & Duan, S. X. (2020)	Research based on the review of literature studies	Technology may have an impact on a team's dynamics, as well as all of the team's people and process activities, as well as the team's potential to innovate more successfully. There might be a correlation between the formation of effective virtual teams and the qualities that these teams possess, and these qualities could aid business innovation. Businesses can use the recommended potential framework to deal with the changing needs of their environment after COVID-19.
Smart Collaboration in Global Virtual Teams: The Influence of Culture on Technology Acceptance and Communication Effectiveness	Fleischmann, C., Cardon, P., & Aritz, J. (2020)	An empirical investigation based on survey with employees	The findings revealed that team members from individualistic, future-oriented cultures had higher expectations for performance and enjoyment while utilizing technology, especially in global virtual teams. Expectations and experiences with smart communication technology (SCT) based on artificial intelligence that monitors and analyses communication behavior are influenced by uncertainty avoidance, future orientation, and collectivism. Employee efficiency is dependent on efficient technology utilization.
The Symphony of Team Flow in Virtual Teams. Using Artificial Intelligence for Its Recognition and Promotion	Peifer, C., Pollak, A., Flak, O., Pyszka, A., Nisar, M.A., Irshad, M.T., Grzegorzek, M., Kordyaka, B. & Kożusznik, B., 2021	Based on a literature review, a model is proposed	Individual flow traits such as absorption, perceived demand-skill balance, and enjoyment are maintained across team flow, as are team flow features aspects such as communication and feedback, shared goal commitment, equal involvement, and trust. Physiological and behavioral indicators might be valuable for AI-based machine learning input data for understanding the team flow of virtual teams, based on these features and previous research on flow and collective communication.

V.   ROLES OF EMPLOYEE ENGAGEMENT IN VIRTUAL TEAMS

Title of the Paper	Authors	Methodology	Findings
Drivers of Employee Engagement in Global Virtual Teams	Shaik, F. F., & Makhecha, U. P. (2019)	Phenomenology through interviews, at Cyient Ltd. extensively using global virtual teams	The findings show that the obstacles of employee engagement in the setting of a collocated team, as described in past scholarly literature, are notably different from the challenges faced by the participants in this study. The entire existence of global virtual teams (GVTs) is predicated on the presence of digital media that connects team members across geographical boundaries. The use of proper technology is critical for the successful operation of GVTs, as it reduces the risk of misunderstanding and misinterpretation among team members, allowing team members to be cognitively and emotionally motivated to perform and increase efficiency.
Factors affecting virtual employee engagement in India during Covid-19	Chaudhary, V., Mohanty, S., Malik, P., Mary, A. A. S., Maroor, J. P., & Nomani, M. Z. M. (2022)	Online questionnaire for data collection with work from home employees	Organizations should promote the improvement of virtual tools such as internet speed and personal computer settings, according to the findings. Second, employees' salaries should not be reduced. Finally, top-level executives should maintain regular touch with staff, expand virtual training, and urge employees to get regular mental health screenings. This will result in increased staff retention and productivity.
Employee Engagement Strategy for Employees Working in Virtual Environment in the IT Industry	Yadav, S., Dubey, A., Chawla, P., & Jha, S. (2020)	Document analysis and Delphi Technique with interviews	If work-life balance is maintained at the individual and corporate levels, suitable support is provided to workers, and employee engagement is effectively carried out, the majority of employees would be satisfied. This will result in improved employee performance, better employee-related decisions, and information for their better performance assessment.

VI.   PICTORIAL REPRESENTATION AND FRAMEWORK
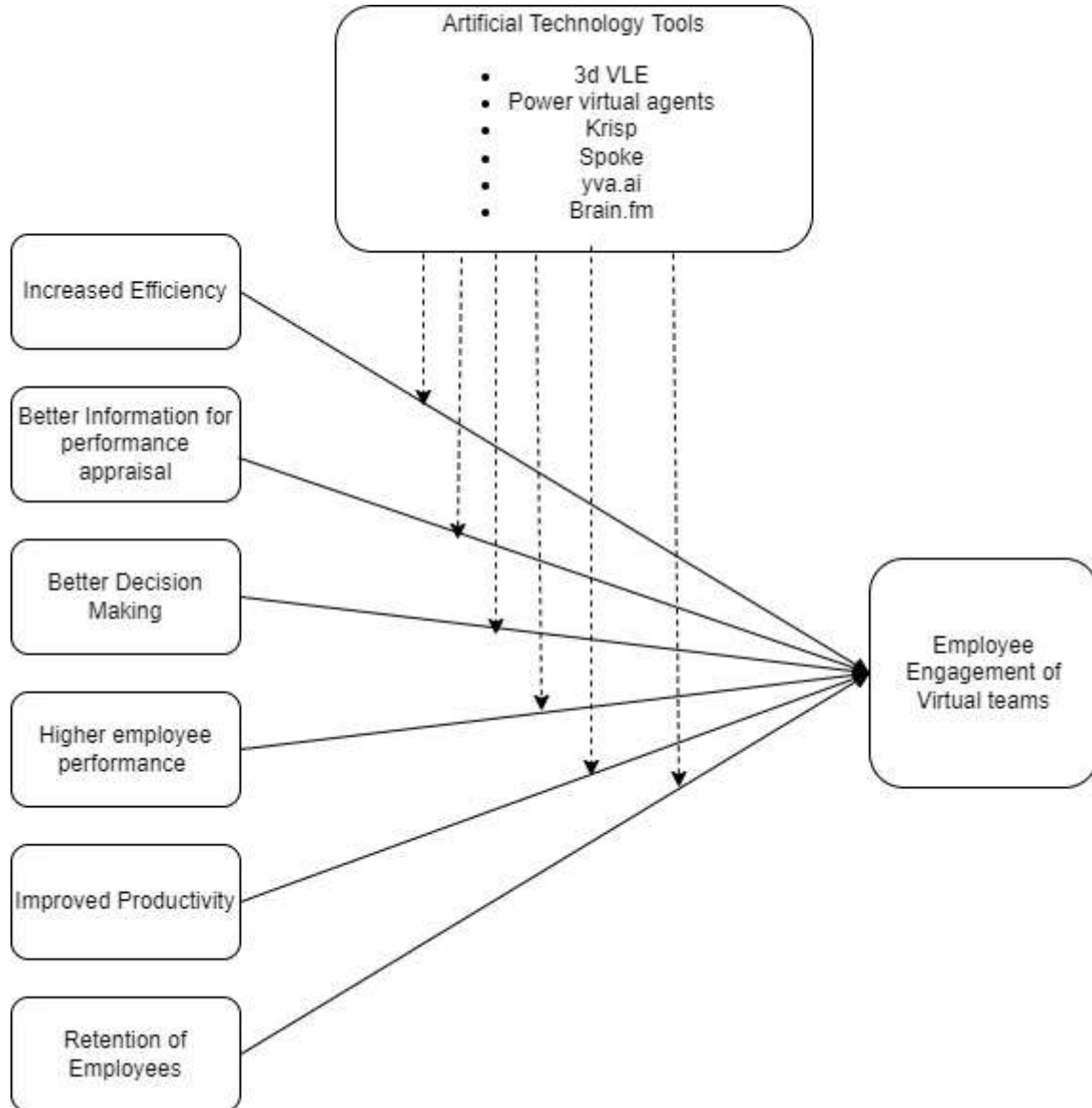
Based on the above framework, following prepositions are proposed

P1: *Increased efficiency is achieved through AI tools implemented for employee engagement of virtual teams in an organization:* **3D-VLE** *is a software system representing dimensionality for simulating physical movement and interaction with objects and other members designed to support teaching and learning activity.*

P2: *Better information for performance appraisal is achieved through AI tools implemented for employee engagement of virtual teams in an organization:* **Brain.fm** *is powered by artificial intelligence (AI) that composes music for the goal, tracks what works, and adjusts accordingly. The musical compositions are geared toward helping "the listener achieve certain neurological brain states" such as productivity, restfulness, or relaxation.*

P3: *Better decision making is achieved through AI tools implemented for employee engagement of virtual teams in an organization:* **Spoke** *is an innovative ticketing system and knowledge base that gets smarter with every interaction. With a strong focus on design and user experience, spoke gives employees access to the knowledge and services that help them get their job done.*

P4:   *Higher employee performance is recorded through AI tools implemented for employee*

engagement of virtual teams in an organization: **Krisp** *is AI-powered noise cancelling software for your microphone. Krisp's purpose is to suppress background noise during calls.*

P5: *Improved Productivity is achieved through AI tools implemented for employee engagement of virtual teams in an organization:* **Power Virtual Agents** *lets you create powerful chatbots that can answer questions posed by your customers, other employees, or visitors to your website or service.*

P6: *Retention of employees is achieved through AI tools implemented for employee engagement of virtual teams in an organization:* **Yva.ai** *is an AI-driven real-time employee experience SaaS platform, which was developed for employees, HR professionals and managers. Yva helps organizations by improving employee wellbeing, employee retention, building employee listening culture and driving work performance.*

VII.   METHODOLOGY

The methodology adopted for this concept paper comprises a rigorous web search and evaluation of previous literature studies on the subject of applicability of Artificial Intelligence in organizations for Employee Engagement within Virtual teams. The web search encompasses articles, research papers, empirical studies, and case studies. References are based on online databases such as Web of Science, Scopus, Science Direct, and Google Scholar. The advanced search is limited to Artificial intelligence, Technology adoption, employee engagement, and managing virtual teams. References are only taken from articles from the best accessible journals. Thus, the limitations of this paper could be due to limited articles reviewed from databases. Also, the applicability of Artificial Intelligence in organizations for Employee Engagement references are not restricted to virtual teams only but also takes into consideration the expectation of employees working within organizations The articles finalized for the development of the conceptual framework are limited to 24 selected from the year 2013 until now, 2022.

VIII. CONCLUSION

The current paper has been able to successfully develop a theoretical framework highlighting the research area. Other than that, the current study has been able to provide different perceptions on the use of artificial intelligence for employee engagement in a virtual team, like keeping track of the efficiency of the employees, making better decisions on the basis of analysis, providing better training and development through relevant tools and techniques. Delineating the idea of artificial intelligence for employee engagement in virtual teams may lead to the development of new technology. The current study was able to recognize the factors of artificial intelligence that are required for better employee engagement in a virtual setting by reviewing previous studies done on similar topics. In the study the framework that has been developed is self-constructed. This study and the framework developed will act as a strong base for further empirical research on this study subject and research area. Moreover, it is recommended to do a detailed study including other aspects of employee work enhancements and to provide new frameworks for use of technology to increase efficiency in an organizational setting.

REFERENCES

1. Agarwal, M., Yadav, A., & Sharma, S. K. ROLE OF ARTIFICIAL INTELLIGENCE ON JOB ENGAGEMENT AND EMPLOYEE BEHAVIOR IN AN ORGANIZATION. *DR. DY PATIL B-SCHOOL, PUNE, INDIA*, 792.
2. Ahlers, E. (2016). Flexible and remote work in the context of digitization and occupational health. *International Journal of Labour Research*, *8*(1-2), 85-99.
3. Albrecht, S. L., Bakker, A. B., Gruman, J. A., Macey, W. H., & Saks, A. M. (2015). Employee engagement, human resource management practices and competitive advantage: An integrated approach. *Journal of Organizational Effectiveness: People and Performance*.
4. Anitha, J. (2014). Determinants of employee engagement and their impact on employee

performance. *International journal of productivity and performance management*.

5. Burnett, J. R., & Lisk, T. C. (2019). The future of employee engagement: Real-time monitoring and digital tools for engaging a workforce. *International Studies of Management & Organization*, *49*(1), 108-119.

6. Chang, K. (2020). Artificial intelligence in personnel management: the development of APM model. *The Bottom Line*.

7. Chaudhary, V., Mohanty, S., Malik, P., Mary, A. A. S., Maroor, J. P., & Nomani, M. Z. M. (2021). Factors affecting virtual employee engagement in India during Covid-19. *Materials Today: Proceedings*.

8. Conway, E., Fu, N., Monks, K., Alfes, K., & Bailey, C. (2016). Demands or resources? The relationship between HR practices, employee engagement, and emotional exhaustion within a hybrid model of employment relations. *Human Resource Management*, *55*(5), 901-917.

9. Dhanalakshmi, R. V., & Gurunathan, K. B. (2014). A study on talent management as a strategy to influence employee engagement and its effect on the organizational outcome. *International Journal of Business and Administration Research Review*, *2*(4), 183-186.

10. Frost, M., & Duan, S. X. (2020). Rethinking the role of technology in virtual teams in light of COVID-19. *arXiv preprint arXiv:2011.07303*.

11. Gaur, B. (2020, July). HR4. 0: An Analytics Framework to redefine Employee Engagement in the Fourth Industrial Revolution. In *2020 11th International Conference on Computing, Communication and Networking Technologies (ICCCNT)* (pp. 1-6). IEEE.

12. He, E. (2018). Can artificial intelligence make work more human?. *Strategic HR Review*.

13. Huang, M.-H., & Rust, R. T. (2018). Artificial intelligence in service. Journal of Service Research, 21(2), 155–172.

14. Hughes, C., Robert, L., Frady, K., & Arroyos, A. (2019). Artificial intelligence, employee engagement, fairness, and job outcomes. In Managing technology and middle-and low-skilled employees. Emerald Publishing Limited.

15. Jain, M. (2016). EMPLOYEE ENGAGEMENT: The Key to Improving Performance. *Journal of Maharaja Agrasen College of Higher Education*, *3*(1), 1-15.

16. Jha, B., & Kumar, A. (2016). Employee engagement: A strategic tool to enhance performance. *DAWN: Journal for Contemporary Research in Management*, *3*(2), 21-29.

17. Jimenez, A., Boehe, D. M., Taras, V., & Caprar, D. V. (2017). Working across boundaries: Current and future perspectives on global virtual teams. *Journal of International Management*, *23*(4), 341-349.

18. Khan, N. (2013). Employee engagement drivers for organizational success. *Global Journal of Management and Business Studies*, *3*(6), 675-680

19. Lemon, L. L. (2019). The employee experience: How employees make meaning of employee engagement. *Journal of Public Relations Research*, *31*(5-6), 176-199.

20. Lowry, G. (2016, June). Employee engagement: Communicating clear expectations. In *Seminars in Orthodontics* (Vol. 22, No. 2, pp. 103-106). Elsevier.

21. Maduravoyal, C. (2018). Artificial intelligence in human resource management. International Journal of Pure and Applied Mathematics, 119(17), 1891-189.

22. Maity, S. (2019). Identifying opportunities for artificial intelligence in the evolution of training and development practices. *Journal of Management Development*.

23. Migliore, L., Bottomley, K., & Arena, B. (2019). Employee engagement in 3D virtual learning environments: A digitized HRD Framework Model for leadership and learning. In *Advances in the Technology of Managing People: Contemporary Issues in Business*. Emerald Publishing Limited.

24. Mukerjee, K. (2014). Fostering employee engagement in organisations: a conceptual framework. *International Journal of Management Practice*, *7*(2), 160-176.

25. Pandya, B. (2019). A competency framework for virtual HR professionals in an artificial intelligence age. In *Proceedings of the International Conference on Applied Research in Management, Business and Economics* (pp. 27-48).

26. Peifer, C., Pollak, A., Flak, O., Pyszka, A., Nisar, M. A., Irshad, M. T., ... & Kożusznik, B. (2021). The Symphony of Team Flow in Virtual Teams. Using Artificial Intelligence for Its Recognition and Promotion. *Frontiers in Psychology*, 3538.

27. Presbitero, A. (2017). How do changes in human resource management practices influence employee engagement? A longitudinal study in a hotel chain in the Philippines. *Journal of Human Resources in Hospitality & Tourism*, *16*(1), 56-70.

28. Rana, S. (2015). High-involvement work practices and employee engagement. *Human Resource Development International*, *18*(3), 308-316.

29. Sari, R. E., Min, S., Purwoko, H., Furinto, A., & Tamara, D. (2020). Artificial Intelligence for a Better Employee Engagement. *INTERNATIONAL RESEARCH*

30. Selimović, J., Pilav-Velić, A., & Krndžija, L. (2021). Digital workplace transformation in the financial service sector: Investigating the relationship between employees' expectations and intentions. *Technology in Society*, *66*, 101640.

31. Shahid, A. (2019). The employee engagement framework: high impact drivers and outcomes. *Journal of Management Research*, *11*(2), 45.

32. Shaik, F. F., & Makhecha, U. P. (2019). Drivers of employee engagement in global virtual teams. *Australasian Journal of Information Systems*, *23*.

33. Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial intelligence in human resources management: Challenges and a path forward. *California Management Review*, *61*(4), 15-42.

34. Turner, P. (2019). *Employee engagement in contemporary organizations: Maintaining high productivity and sustained competitiveness*. Springer Nature.

35. Waizenegger, L., McKenna, B., Cai, W., & Bendz, T. (2020). An affordance perspective of team collaboration and enforced working from home during COVID-19. *European Journal of Information Systems*, *29*(4), 429-442.

36. Wang, W., Chen, L., Xiong, M., & Wang, Y. (2021). Accelerating AI Adoption with Responsible AI Signals and Employee Engagement Mechanisms in Health Care. *Information Systems Frontiers*, 1-18.

37. Watson, M., Kuofie, M., & Dool, R. (2018). Relationship between spiritually intelligent leadership and employee engagement. *Journal of Marketing and Management*, *9*(2), 1-24.

38. Webber, S. S., Detjen, J., MacLean, T. L., & Thomas, D. (2019). Team challenges: Is artificial intelligence the solution?. *Business Horizons*, *62*(6), 741-750.

39. Zeidan, S., & Itani, N. (2020). Cultivating employee engagement in organizations: development of a conceptual framework. *Central European Management Journal*, *28*(1), 99-118.

40. Zel, S., & Kongar, E. (2020, September). Transforming digital employee experience with artificial intelligence. In *2020 IEEE/ITU International Conference on Artificial Intelligence for Good (AI4G)* (pp. 176-179). IEEE.