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Assessing the Impact of Technology on the Effectiveness of HR Practices in an Organization

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ABSTRACT: This research paper aims to assess the impact of technology on the effectiveness of HR practices in an organization. The study begins by exploring the evolution of technology in HR and identifying the various technologies used in HR practices. Through secondary data analysis, this paper assesses the impact of technology on HR practices in organizations. Reports from prominent consulting firms such as Deloitte, KPMG, E&Y, and PwC are used for analysis. The study concludes that technology has a significant impact on HR practices and identifies the critical HRM practices that are impacted by technology.

KEYWORDS: technology, HR practices, effectiveness, organization, evolution, identification, impact, secondary data analysis, consulting firms.

I. INTRODUCTION

The assets of a company, physical and intellectual, are crucial and interdependent. However, effective partnerships between humans and machines remain challenging. Organizations should explore innovative techniques to enhance human-machine cooperation and maximize workforce engagement, ethical practices, and financial potential. Technology has automated routine HR tasks, allowing professionals to focus on strategic areas. HR technology, including networks, robotics, and AI, has transformed HR practices, improving efficiency and employee satisfaction. Companies are rethinking traditional approaches due to technological advancements. HR technology streamlines recruitment, record-keeping, and payroll management, increasing efficiency and accuracy. It enhances employee engagement, performance analysis, data accessibility, and security. Critical HR technologies include HR analytics, social media, and HR information systems (HRIS). These technologies enable data-driven decision-making, effective communication, and efficient management of HR tasks. Technology integration has revolutionized HR practices, automating tasks, improving data analysis, and enhancing accessibility. This has resulted in increased effectiveness, efficiency, productivity, and employee satisfaction, providing a competitive advantage for organizations.

II. LITERATURE REVIEW

Saxena and Tiwari (2009) studied leading Indian IT companies and identified critical HRM practices such as Career Development, Culture Building, Compensation and Benefits, Employer-Employee Relations, Training and Development, and Recognition through Incentives. These practices have a significant impact on turnover, productivity, job satisfaction, employee loyalty, market share, and financial success. **Parry and Battista (2019)** examined the role of HR in navigating emerging technologies, including AI and robotics for automation, while addressing challenges in upskilling and worker well-being. **Jain (2014)** emphasized the close relationship between technology and HRM, highlighting the positive impact of technology on decision-making, maintenance, and recruitment processes in organizations.

Abdul, Wang, and Li (2020) found that recruitment technologies are widely used and have aided the hiring process, particularly in sourcing and screening candidates. The use of artificial intelligence is beginning to reshape recruitment. A **KPMG report on the future of HR in the technology sector** reveals that 45% of technology HR executives consider preparing for AI as their biggest challenge in the next five years. They prioritize training the workforce in new skills and facilitating the transition to AI. In contrast to other industries, HR leaders in the IT sector claim to be ahead in implementing AI, with 55% already doing so. Additionally, 74% of respondents recognize HR's key role in AI activities. **According to PwC, the evolving workforce due to automation and "thinking machines"** presents significant challenges for organizations, personnel, and HR amidst existing risks and disruptions. **McKinsey** predicts that HR will automate over 55% of end-to-end HR processes, enabling better business information, strategic alignment, and improved efficiency.



Banerji (2013) emphasized the importance of re-designing HR operations for efficient functioning and highlighted the challenge of technology adoption. **Yuvraj and Suganthiya (2021)** noted that technology has had a significant global impact on HR management, fostering growth and efficiency. **Purohit (2015)** highlighted the role of HR managers in leveraging technology for organizational success. **Kamal, Ashish Kumar (2013)** mentioned the incorporation of IT into HRM and the expectations for improved HR effectiveness.

III. OBJECTIVES

- Studying: evolution of technology in HR.
- Studying: HR Practices where technology is being used.
- To analyze the impact of technology on the effectiveness of HR practices of an organization.

3.1 RESEARCH METHODOLOGY

This report assesses the impact of technology on the effectiveness of HR practices in organizations. It utilizes a desk research design, analyzing secondary data from reports by consulting firms such as Deloitte, KPMG, E&Y, and PwC. Data is collected from online databases, library resources, and websites, and analyzed using qualitative content analysis. The study aims to contribute to existing literature on HR practices and provide insights into consulting industry strategies and trends. Limitations include reliance on secondary data, availability and quality of sources, and potential bias in the reports analyzed. Different environments, industries, and companies may have varying impacts of technology on HR practices.

IV. EVOLUTION OF TECHNOLOGY IN HR

Timeframe	Evolution of HRM&HR Technology
Prior 1940s	<ul style="list-style-type: none"> • Payroll and manual record-keeping.
1940s to 1950s	<ul style="list-style-type: none"> • Introduction of federal tax regulations. • Creation of skill inventories and job categories. • Big businesses invest in "personnel" technology.
1960s to 1970s	<ul style="list-style-type: none"> • Additional reporting requirements and employment laws. • Tracking turnover and administrative expenditures. • Streamlining HR data and software applications.
1980s to 1990s	<ul style="list-style-type: none"> • Globalization and system integration. • Analysis, planning, and HR Decision Support Systems.
1990s to 2010	<ul style="list-style-type: none"> • Employee empowerment and ownership of data. • HR ERP system development and self-service systems. • Outsourcing and rise of "best-of-breed" HR systems.
2010 to 2016	<ul style="list-style-type: none"> • Cost containment and cloud-based HR software. • Utilization of big data, analytics, and social media. • Mobile HRIS and compliance with government regulations.
2016 to 2020	<ul style="list-style-type: none"> • Appification, gamification, and social media in HR.
2020 to 2023	<ul style="list-style-type: none"> • COVID-19 impact: Shift to digital collaboration platforms.

(Note: The information provided is a summary of the evolution of HRM and HR technology.)



4.1. TECHNOLOGICAL TOOLS FOR HR PROFESSIONALS

The primary components of HR management include recruitment and selection, learning and development, compensation and benefits, employee engagement, performance management, decision-making, and HRIS (Human Resource Information System).

- **Recruitment and selection** involve identifying, evaluating, hiring, and selecting qualified candidates. Job analysis and sourcing are essential steps in the recruiting process, and various tools like job aggregators, testing and assessment platforms, AI and automation technologies, applicant tracking systems, recruitment CRM, and video interviewing tools are used to attract and evaluate candidates.
- **Learning and development** focus on improving employee performance through education and skill enhancement. Tools such as learning management systems (LMS), learning experience platforms (LXP), course authoring platforms, digital adoption platforms (DAP), micro-learning platforms, online course providers, and knowledge-sharing tools are utilized to facilitate employee training and development.
- **Compensation and benefits** refer to the salaries and additional rewards provided to employees. Salary benchmarking tools, compensation management software, benefits administration tools, equity management software, and benefits and rewards tools assist in determining competitive salaries and managing compensation packages and benefits.
- **Employee engagement** measures the level of involvement and enthusiasm employees have for their work. Various software tools like Zimyo, Kudos, CultureAmp, 15Five, Lattice, TINYpulse, and MS Teams are used to enhance employee engagement and facilitate communication and data exchange within organizations.
- **Performance management** involves setting work responsibilities, performance benchmarks, and growth strategies. Performance management software, such as Zimyo, Trakstar, Reviewsnap, and BambooHR, enable continuous communication and feedback between employees and managers, leading to improved performance.
- **Decision-making** in HR is aided by HR analytics tools that analyze employee data to identify trends and make informed decisions. Tools like iMocha, Hireology, Deel, Sisense, Visier, and Tableau assist in assessing skills, recruitment analytics, employee engagement analytics, business intelligence, and customized reporting for data-driven decision-making.
- **HRIS (Human Resource Information System)** is an essential component of HR that provides quick and transparent access to information for staff, managers, and external parties. Tools like monday.com, Deel, Sapling, Zenefits, UZIO, bob, Cezanne HR, Built for Teams, and IntelliHR offer customized HR processes, benefits management, payroll integration, employee engagement, onboarding, performance and people analytics, and support for global organizations.

(Please note that while the information is summarized, the specific tools mentioned are not exhaustive, and there may be other tools available in each category.)

4.2. IMPACT OF TECHNOLOGY ON THE EFFECTIVENESS OF HR PRACTICES

According to recent reports by **Accenture, Drishti, Deloitte, PwC, EY, and KPMG**, the use of artificial intelligence (AI) and technology in HR functions has shown significant benefits and transformations in various areas. Some key findings include:

- **Recruitment & Selection:** Companies like Hilton use predictive analytics to analyze video interviews, reducing biases and shortening the hiring process.
- **Performance of the Workforce & Productivity:** Humana uses AI to analyze consumer calls and provide real-time coaching to call center agents, resulting in increased customer satisfaction and employee engagement.
- **Engagement, Employee Growth, and Retention:** Honda monitors employee performance and sentiment using AI, leading to increased employee engagement.
- **Innovation:** Royal Dutch Shell uses machine learning to identify innovators and support potential company concepts, saving time and money.

The collaboration between **Drishti** and healthcare product companies has resulted in reduced cycle time, lower assembly error rates, and fewer days with STD work deviation through the use of computer vision and AI.

The use of AI in HR functions has shown various benefits, as highlighted in the reports:

- HR intelligent assistants can increase productivity, reduce administrative activities, decrease calls to the HR department, and resolve workplace cases faster.
- AI applications in HR functions are being adopted by 40% of international companies, with 50% investing in data analytics for talent development and employee loyalty.

The **L'Oreal Group** implemented AI-based software for recruitment, resulting in a 10 times faster recruitment process, 25% boost in retention, and increased job offer ratios for interviewed candidates.

EY's AI-based HR service offerings focus on automation, industry insight, accelerators, agile delivery, and a global team, providing efficiency and improved HR service delivery.



KPMG emphasizes the use of technology to enhance HR effectiveness and the employee experience, including creating a digital headquarters, two-way engagement apps, and "Hybrid Personas" for remote work.

Microsoft utilizes advanced analytics and employee listening systems to enhance the employee experience and provide valuable insights.

Workforce analytics can be employed to make data-driven decisions in HR, with data from various HR aspects being used for decision-making, such as recruitment, employee engagement, diversity and inclusion, performance management, and more.

Overall, the use of AI and technology in HR functions has shown positive impacts, including increased efficiency, productivity, employee engagement, and improved HR service delivery.

V. CONCLUSION

Technology has significantly impacted HR practices through automation, data analytics, and digital tools. The use of technology in HR has evolved from applicant tracking systems to encompass various platforms like employee engagement, learning management, and HR analytics. AI and ML are increasingly utilized for complex HR processes. Integration of chatbots, remote working, and HR analytics has improved efficiency and employee experience. Staying updated with technology trends is crucial for competitiveness. While technology enhances HR operations, maintaining a human connection is essential. HR professionals must strike a balance between technology and human touch.

5.1. FINDINGS

The impact of technology on HR practices can be summarized as follows:

- Predictive analytics in recruitment has led to improved hiring decisions and shorter hiring processes.
- AI has enhanced emotional intelligence in call centers, resulting in higher customer satisfaction and employee engagement.
- AI monitoring of employee performance has led to increased engagement and recognition.
- Machine learning is used for identifying innovators and assessing acquisition prospects.
- Technology has reduced cycle time, assembly errors, and administrative activities.
- HR intelligent assistants have increased productivity and reduced HR department calls.
- Investment in data analytics has transformed HR, improving talent development and employee loyalty.
- Overall, technology improves efficiency and process times in HR practices.

5.2. SUGGESTIONS

Suggestions for leveraging technology in HR practices:

- Embrace AI and automation for streamlined and error-free processes.
- Implement data analytics to make informed decisions and improve performance.
- Utilize social media for recruitment and employee engagement.
- Leverage virtual reality for immersive training and remote interviews.
- Emphasize cybersecurity to protect employee data and organizational information.

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