

INNOVATIVE HR PRACTICES IN THE PHARMACEUTICAL INDUSTRY: CULTIVATING TALENT FOR MEDICAL ADVANCEMENTS

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ABSTRACT

This paper explores innovative Human Resources (HR) practices within the pharmaceutical industry, aiming to cultivate and retain talent crucial for driving medical advancements. The industry's dynamic nature demands a strategic approach to HR that goes beyond traditional methods. Critical practices include comprehensive talent development programs, cross-functional collaboration, flexible work arrangements, and innovative recruitment strategies. Additionally, a focus on continuous learning, employee well-being programs, diversity and inclusion initiatives, and technology integration is pivotal in fostering a culture of innovation. Recognition of employee performance and robust succession planning strategies are essential for ensuring the seamless progression of medical breakthroughs. By implementing these innovative HR practices, pharmaceutical companies can strategically position themselves to attract, develop, and retain skilled professionals, ultimately contributing to the industry's ongoing success in advancing medical science.

Keywords: *Pharmaceutical Industry, HR Practices, Talent Development, Medical Advancements*

I. INTRODUCTION

Businesses in the pharmaceutical industry research, design, manufacture, and sell medicinal products to treat, prevent, or lessen the effects of disease. These products may be name-brand or generic, and they work with other medical devices to help patients get well. Drug testing, marketing, safety, and patenting are all governed by a patchwork of laws and regulations. India dominates the pharmaceutical sector with a market share of over 20% worldwide.

Proper Human Resource Management (HRM) procedures are fundamental to every organization's success because they unite diverse individuals to achieve common goals. Managing social skills to accomplish the organization's shared purpose is one of the HRM roles [1, 2, 3]. Human resources must be present for every business to carry out its essential functions. For instance, HRM operates the program for employee planning and development according to the organization's success requirements and predicts future human assets. Organizational management that does not adhere to corporate planning directly results from a lack of effective HRM practices. Thus, a successful and expanding organization must use the finest human resources strategies to get high performance and create the intended output [4].

Incorporating developments in human resource management, which shifted focus to talent management, the phrase "Talent Management" first surfaced in the 1990s. The word was first used in a paper published in

1998 by David Watkins of Soft Cape. Organizational effectiveness and human resource development go hand in hand, as has been known since the 1970s. There is a problem with talent management in that many organizations place a premium on recruiting new workers but invest very little in training and maintaining their current staff. The organization must incorporate the talent management system into its everyday operations and business plan. Success in the new and future corporate world will depend on talent rather than money or technology. In today's business world, when competition is fierce, every company must prioritize the development of its most valuable asset: its people. Since there is no shortage of funding and technology can be moved easily between countries thanks to new trade agreements, human resources would be the primary source of competitive advantage in today's globalized society. However, a talented workforce is relatively easy to come by. The difficulty of talent management is growing due to the fast evolution of both skill sets and employment criteria. In order to achieve both present and future goals, businesses engage in talent management, which is a continuous process that involves finding, attracting, developing, and retaining talent. A well-executed talent management plan may enhance organizational future readiness and the presence of the appropriate people at the correct times. An organization's procedures about its employees should be seamlessly linked with talent management as it is a business strategy.

Everyone in the company, particularly managers with direct reports, is responsible for attracting and retaining talent within a talent management framework. A solution to the issue of high-talent professional unemployment has been made possible by globalization, which has provided young people with options to work for companies of their choosing. India has the second-highest population in the world, and its youthful talent has shown itself capable of competing successfully in the global market. Businesses and nonprofits have ramped up their operations both domestically and internationally. The challenge of retaining talent has arisen due to the widespread specialization of knowledge and the ease with which people may adapt to different roles. After gaining experience at a well-known company, young professionals may pick between offering jobs at other, more lucrative companies; they decide based on their expectations for future advancement within their current employer or the opportunities presented to them. Labor market dynamics have changed due to liberalization, progressive deregulation, the opening up of many industries to a multiplayer regime, and massive technology inputs. As a result of new employment options, the employee has set a new, ever-high standard for themselves as an internal customer. Despite providing comparable compensation across the board; sectors have been inundated with an ever-growing list of people left out.

II. LITERATURE REVIEW

A company's long-term success depends on its talent management practices [5], which also serve as a significant differentiator across the board [6]. Thus, TM is a game-changer that gives businesses an edge over their competitors; it has evolved into a potent tool for capitalizing on possibilities in the market created by brilliant minds [7]. Multiple parts work together to accomplish the company's objectives in a TM system [8]. It is a system of checks and balances designed to achieve operational and application programs that align with the company's vision and goal [9]. It helps ensure there is always enough talent to go around [10], which means that you may keep or bring in someone new quickly or in a prearranged way. A talent management culture fosters future leaders' development by following guidelines and practices that aim to achieve just that [11]. Some researchers have attempted to define TM more precisely; for instance, Schreuder and Noorman [12] conceptualize it as a two-dimensional model consisting of TMM and TMS; their work adds something new to the TM literature. "According to Tamunomiebi and Worgu [13], there are three aspects of TM: talent acquisition, talent development, and talent retention, The following TM aspects were significantly advanced by Van Zyl [14]: attraction, sourcing and recruiting, deployment and transitioning, growth and development." Human capital theory [15] posits that we should worry about

people's abilities and knowledge instead of only their financial worth. HC views people's knowledge and talents as capital that can be invested in. For TM, we use the two-dimensional framework Mahfoozi et al. [16] proposed, mentality and strategy (TMM and TMS), as it provides a more thorough analysis.

Extant research has investigated TM in several settings, such as the gas industry [17] and hotel industries [18]. Strategy possibilities, competitive advantage, [19] effects of TM on industry 4.0, [20] and strategy renewal are some of the areas that have received much attention [21, 22]. Early research on talent management focused on knowledge-intensive nations like the United Kingdom, Canada, Germany, and Italy [23]. However, recent years have seen a shift in focus to countries like Brazil [24], South Africa [25], China and India [26], South Korea [27], and Egypt [28]. Research that has focused on the connection between TM and performance has shown that it significantly affects performance [29], and research that has explicitly looked at the link between TM and innovation performance at businesses has also shown a strong association [30]. “Aguinis and BurgiTian [31] discovered a strong relationship between TM and performance even amid the COVID-19 pandemic and other business difficulties.” Human resource management provides talent management strategies to help the company's various divisions and units reach its strategic goals. However, numerous experts and researchers have pointed out that many factors contribute to effective talent management [32].

Even more so in this technological era, successful organizations have seen the need to care for their employees as a critical differentiator [33]. For organizations to thrive in today's cutthroat business climate, [34] human capital—defined as “talented individuals with unique competencies, intelligence, and skills that fit current requirements” [35]—is essential. While physical assets like machinery and equipment are becoming more irrelevant in a market where unique human capabilities are the differentiating factor, human capital remains an intangible asset [36]. The distinction between tangible and intangible human capital is that companies will become uncompetitive if they lose their competent employees. People capital (HC) literature has always strongly correlated with improved performance [37]. However, how organizations aspire to create value for their people capital determines whether they focus on innovation or high-quality goods. How well a company turns its people resources into money or competitive advantage is an indicator of this. In the service industry, in particular, a company's reputation and customer loyalty are manifestations of the value that human capital may provide [38]. “In addition to its offensive function—such as accumulating product revenues, assets, and intellectual property—and defensive function—such as safeguarding products and services that have been developed through human capital innovations and the freedom to circulate those products—human capital may also play a defensive role [39].” According to Fiano et al. [40] and Mandal [41], healthcare workers must consistently acquire and apply new knowledge to excel in their jobs. This is because errors in this field can have far-reaching effects. Patients' value estimations are heavily influenced by the interplay between human capital, the efficiency and innovation of primary care, and the outcomes they experience. Consistent with the findings of other authors [42], who show that HC plays a critical role in improving performance, this further supports the idea that HC significantly impacts performance. “In the service industry, particularly in the healthcare industry, Pirozzi and Ferulano [43] find a favourable correlation between HC and performance.” The results of Odhon'g and Omolo [44] corroborate those of Yang and Lin [45] by demonstrating a substantial correlation between HC and firm success in Kenya's pharmaceutical marketplace. Investigating a similar link in the American healthcare system, Cheng et al. [46] found a strong association between HC and efficiency.

III. TALENT MANAGEMENT IN THE PHARMACEUTICAL INDUSTRY

Techniques for managing talent Talent retention is more challenging. We know many things might make an employee want to leave their job, but with our knowledge of human resources, we were able to find ways to reduce employee turnover that was not required. Incorporating the easy actions shown below has reduced staff turnover and shifted their attention to achieving long-term success inside their present company, proving that employee retention does not have to cost a fortune:

- Guiding Mentors ensure employees can access ongoing support and guidance from experienced colleagues.
- Exchanging ideas: Make sure to meet regularly. From the beginning, it is crucial to have an open line of communication with workers to learn about their goals and areas for improvement.
- Development within the organization Providing workers with chances inside the organization is a critical component of a successful cross-functional strategy. Your company will benefit from the transfer of in-depth expertise in the industry.
- Interaction with Managers Managers, not organizations, are the ones that workers quit, regardless of your industry. Engaging and reinforcing top performers via respect, a challenging environment, and support requires management as high-quality as the achievers themselves.
- Training Instead of shelling out a tonne of money for workers to attend classes outside the company, managers can look to their internal training teams for advice on fostering employee growth. This frees up funds that businesses may put into certifications and courses with a more technical emphasis.

IV. INFORMATION TECHNOLOGY AND HUMAN RESOURCE MANAGEMENT

In addition to its uses in sustainable development, current information technology has many uses in HRM nowadays [47]. The administration and upkeep of resource allocation have been aided by several current technological developments, such as information and artificial intelligence systems [48]. Modern information technology has influenced human resource management, which the author explored. With sample data gathered from various Chinese organizations, we can see how contemporary technology has altered the course of human history [48]. Humans' level of living has been raised as a result. Its beneficial effects on trash management, tourism, schools, and businesses are substantial [49]. The study also found that many companies with business experience have seen the benefit of using ICT and IoT strategies to achieve their goals. Optimizing business processes is one more way it helps the organization reach its goals [50]. Additional studies have shown that human resource management (HRM) encompasses many practices, such as identifying and hiring top talent, providing them with the necessary skills and knowledge, and recognizing and rewarding those who excel in their roles. A key component of good human resource management is providing employees opportunities to further their education and grow as individuals and professionals. "Aside from this, the author provided a detailed analysis of the factors impacting HRM and asserted that ICT (information and communication technology), which encompasses new media, mobile communication, the Internet, social networking sites, and similar tools, can greatly aid in the execution of a company's personnel policy."

Furthermore, technological advancements might significantly affect organizations' resource management departments. Organizational systems, key competencies, structure, and target markets may all be improved upon using this opportunity. In addition, the author stresses the many ways HRM implements IT to promote sustainability. Contemporary technology may significantly impact organizations functioning in dynamic

settings by examining different uses of artificial intelligence (AI), information and communication technology (ICT), and new developing technologies. Due to this, human resources will become more productive and efficient. Consequently, data management IT systems and state-of-the-art recruiting methods would make businesses more productive [51].

V. HUMAN RESOURCE TECHNOLOGIES AND MANAGEMENT IMPLICATIONS

A. *A massive shift from "automation" to "productivity."*

Automating hitherto paper-based operations was one of the original goals of HRIS. However, these days, more is needed to automate particular processes; instead, the focus is on improving productivity across the board by assisting people and teams in their work [52]. Gross domestic product divided by total working hours is a standard measure of productivity. Productivity gains have traditionally come from larger-scale investments in better machinery or economies of scale. However, it also makes workers more efficient with their time and effort. New ways of working, such as bright-, tele-, remote-, or agile-working (words that are sometimes used interchangeably), are being made possible by recent technological advancements. This is now commonplace in a lot of different sectors. The idea of people working from home in the health industry may initially seem paradoxical. However, some healthcare workers are already doing it temporarily or permanently. This includes medical record transcribers and IT specialists. One reason is the need for cybersecurity measures to safeguard patient data. American health organizations like Mayo Clinic and Texas Health provide this kind of work arrangement to their employees as a perk. They say it has helped them boost morale, which has helped them retain more of their current staff and recruit top talent [53]. Although it may have been a mere coincidence, Texas Health was recognized as the top firm to work for in 2013 by the Dallas Morning News and the Dallas Business Journal [54].

Workers nowadays, particularly the younger generation just entering the industry, are using various gadgets and apps, not just email, to facilitate effective communication and teamwork. Slack and Workplace by Facebook are two examples. Currently, the former is spending 6.6 million British pounds on 130,000 pagers, making the National Health Service (NHS) the biggest user of pagers globally [55]. They have previously promised to "kill pagers" in the NHS. The second one is already in use by a few individual health organizations, and it was introduced not long ago with Facebook's entry into the business world [56]. The first healthcare organization in the world to test Facebook Workplace was Tan Tock Seng Hospital in Singapore. They say it has made their daily jobs more accessible, like sending pictures of broken air conditioners to request repairs, publicly thanking employees, keeping in touch between course instructors and participants, and surveying employees. All of these contribute to the hospital's ability to better serve and treat patients. "At the same time, following just four months of a pilot programme, Australian Catholic University announced that 76% of employees felt that Workplace enhanced their sense of participation, 63% said that Workplace provided more chances for collaboration, and 33% said that the university's communication channels made it easier to share project updates." Among all the technologies examined, a Sierra-Cedar HR technologies research [57] focused on the health sector found that healthcare organizations' use of social media tools grew the most remarkable (24%).

B. *Innovation in the recruitment market*

The time it takes to find qualified medical personnel might range from 18 months to 24 months. With the health workforce employment rate rising (19% as of 2015) and staff shortages on the horizon, healthcare organizations are reevaluating their recruitment strategies to swiftly discover and hire competent individuals. It has been shown that even little adjustments to the hiring process, such as automating applicant emails or

collecting reference information, may provide substantial benefits. “In just six months after implementing a recruitment checklist outlining the necessary documents for interviewees, the Newcastle upon Tyne NHS Hospital Foundation Trust (UK) was able to cut their recruitment time in half, saving 25,000 working days [6].” Health Source Staff’s evaluation tool helped the Central Maine Medical Family (US) cut first-year employee turnover from 22% to 15% and nurse turnover from 20% to 11%.

Digital giants like LinkedIn (TalentInsights) and Google (Cloud et al.) have just developed a new generation of recruiting tools. Using complex classifications and relational models, the former matches applicants’ interests with appropriate job postings. The second group fully commits to using social media networking as a recruiting tool. Traditional psychometric assessments utilized in recruitment are on the brink of a paradigm shift due to recent strategic mergers such as the one between Workday, an HRIS vendor used by around 16% of health organizations [57], and Pymetrics, a New York-based company focused on developing assessment solutions based on neuroscience and artificial intelligence.

C. The maturation and growth of the “people analytics” market

Because it may provide descriptive, predictive, or actionable insights that enhance organizational efficiency, employee data has risen to the same importance as consumer data in this age of big (and little) data. Workforce, HR, or, more lately, People Analytics are terms that describe this method of analyzing employee data [40]. For others, it heralds the introduction of “geeks” and evidence-based approaches based on quantitative or qualitative data into HR management practices [59]. “Rather of relying on conventional HR reports, metrics, dashboards, or scorecards that detail staff turnover, absenteeism rates, or training budget spent per employee, many organisations increasingly take a more strategic approach to HR-related decision-making, including hiring, training, and promotion.” Integrating employee data with data from other internal or external sources has been particularly beneficial for other sectors, with IT corporations at the forefront. Data from social media, production, sales, and finances are examples. Such supplementary information may have a clinical or administrative source in healthcare organizations.

The healthcare industry is not alone in experiencing difficulties with staff retention. It is also prevalent among pharmaceutical, technology, and consultancy firms. Critical users are using People Analytics in several areas to tackle this problem. The pilot findings they shared are encouraging. E&Y, one of the Big Four consulting firms, determined that a 1% increase in turnover might result in a 111 million dollar profit increase [60]. Based on scientific research identifying thirteen indicators indicating workers with a high turnover risk are about to quit, Pfizer takes preventative measures to identify which employees are most likely to leave [61]. Similarly, the MultiCare Health System of the Pacific Northwest (US) demonstrated a 33% improvement in retention rates using a commercial program that analyzed data on current and prospective workers. This project deserves the attention of health authorities to assure consistency of patient treatment and to produce savings that can be re-invested in other essential areas, considering that healthcare organizations’ costs to replace every nurse may range from \$37,700 to \$58,400 [62].

Selection and performance evaluation, two mainstays of traditional personnel management, emphasize the individual worker. However, in today’s workplaces, collaboration is essential. However, the inner workings of health organizations’ teams remain primarily unknown. Identifying teams (as opposed to departments) and evaluating their performance still need to be explored in health organizations. “Organisational Network Analysis (ONA) has emerged as a result of this. With Oorganizations can better understand the dynamics of complex interconnectivity in workflow exchanges at three levels: team (e.g., how a single nurse interacts with other nurses), organisation (e.g., how a nursing team operates within a health organisation), and enterprise (e.g., how a health organisation operates within a larger health system).” This is in contrast to

traditional organizational charts that have been used for over 70 years and only show the hierarchical vertical roles of employees. Several health-related fields are already using this innovation to better understand and enhance professional relationships inside and between fields, as well as work processes and organizational structure. Technology advancements have even enabled the production of a 3D ONA tool, and training opportunities on using ONA in health are rising. However, published information on the effects of these efforts still needs to be more sparse [63].

D. The spread of intelligent self-service tools

A thorough literature evaluation on HRIS in health was carried out by Tursunbayeva and colleagues [64]. After reviewing over 7,000 articles, 42 research were identified as having the most impact. The creation, deployment, or use of HR self-service technologies by health organizations was only addressed by six of them. However, this research showed they were used in various countries, including the UK, Saudi Arabia, the Netherlands, Turkey, and the USA.

However, many of these HR Portals need to be updated, as noted by 59% of healthcare providers in Tower Watson's survey [65]. Their lack of usability and customization options is another common complaint. Companies in the healthcare industry who have revamped their HR portals have admitted that social media impacted the redesign process by bringing in elements seen on platforms like Facebook, Google, LinkedIn, and the overall mobile OS environment.

E. Innovation within HR itself

Globally, healthcare organizations are transitioning from a fee-for-service to a fee-for-outcome operating model focused on value. Efficient treatment, positive patient experience, and positive health outcomes must be prioritized. Human resources play a crucial part in this company model. Nevertheless, human resources departments must augment their administrative HR tasks with strategic techniques advocated by the World Health Organisation over twenty years ago to back this innovation. However, they must be supported by HR technology and meaningful data and be in line with the organization's larger plan. The healthcare business is only now beginning to see the effects of this HR revolution, which has already been widespread in many multinational corporations over the last several decades. "In 2014, for instance, 52% of healthcare provider organisations had already transitioned to a system-wide HR role, and 22% were in the process of developing new system-wide HR strategies, according to Towers Watson's HR Service Delivery and Technology Survey [65]."

Another important HR strategy in health organizations is strategic workforce planning. Insights into staffing levels are only the beginning; they may also provide the optimal distribution of abilities for a high-performing team or those that businesses may need in the future. Health organizations hitherto undervalued complex data analysis, computer literacy, and project management abilities. "In a pilot project involving some 330,000 workers from various departments throughout the globe, who self-assessed their knowledge against a pre-defined taxonomy, IBM aggressively advocated the use of such skill inventories."

Lastly, healthcare workforce migration is increasing [66], and intelligent and gig workers are becoming more common. As a result, HR departments must reevaluate their organizational development and HR policies to ensure they are inclusive and designed to manage a diverse and dynamic talent pool.

VI. CONCLUSION

It may not happen today or tomorrow, but your most valuable workers will eventually seek opportunities elsewhere—no big deal. So far as employers are concerned, meeting employee expectations now is their best bet. Companies can only afford to retain their best employees if they want to stay in business. This

complicated domain of human resources requires more research, even though this study sought to include all HR functions in the pharmaceutical business. Consequently, the organization should concentrate on and execute these retention elements by offering a more favorable work environment, competitive compensation, and possibilities for advancement to its most skilled workers. We have identified the primary jobs that contribute to employee motivation in the pharmaceutical industry and shown that several responsibilities impact retention in this sector based on our study. Based on our study, we have identified the different challenges that HR professionals encounter. Our group believes that these challenges are among the most critical issues among all the others.

VII. REFERENCES

- [1]. Sriviboon, C. & Jermstittiparsert, K. (2019). Influence of Human Resource Practices on Thai Pharmaceutical Firm Performance with Moderating Role of Job Involvement. *Systematic Reviews in Pharmacy*, 10(2), 234-243.
- [2]. Kerdpitak, C. & Jermstittiparsert, K. (2020a). The Impact of Human Resource Management Practices on Competitive Advantage: Mediating Role of Employee Engagement in Thailand. *Systematic Reviews in Pharmacy*, 11(1), 443-452.
- [3]. Kerdpitak, C. & Jermstittiparsert, K. (2020b). The Influence of Organizational Culture, Employee Commitment and Organization Citizen Behaviour on the HRM Practices: Mediating Role of Perceived Organization Support. *Systematic Reviews in Pharmacy*, 11(1), 407-415
- [4]. Aladwan, K., Bhanugopan, R., & D'Netto, B. (2015). The effects of human resource management practices on employees organizational commitment, *International Journal of Organizational Analysis*, 23(3), 472-492
- [5]. Tamunomiebi, M.D. and Worgu, V.O. (2020), "Talent management and organizational effectiveness", *Journal of Contemporary Research in Social Sciences*, Vol. 2 No. 2, pp. 35-45.
- [6]. Ewerlin, D. and Sub, S. (2016), "Dissemination of talent management in Germany: myth, I or economic necessity?", *Personnel Review*, Vol. 45 No. 1.
- [7]. Scullion, H. and Collings, D.G. (2011), *Global Talent Management: Introduction*, Routledge, pp. 19-32.
- [8]. Son, J., Park, O., Bae, J. and Ok, C. (2020), "Double-edged effect of talent management on organizational performance: the moderating role of HRM investments", *The International Journal of Human Resource Management*, Vol. 31 No. 17, pp. 2188-2216.
- [9]. Deters, J. (2017), *Global Leadership Talent Management: Successful Selection of Global Leadership Talents as an Integrated Process*, Emerald Group Publishing.
- [10]. Turner, P. (2017), *Talent Management in Healthcare: Exploring How the World's Health Service Organizations Attract, Manage and Develop Talent*, Springer
- [11]. Talpos, M.F., Pop, I.G., V aduva, S. and Kovacs, L.A. (2017), "Talent management and the quest for effective succession management in the knowledge-based economy", in *Business Ethics and Leadership from an Eastern European, Transdisciplinary Context*, Springer, Cham, pp. 65-73.
- [12]. Schreuder, R. and Noorman, S. (2019), "Strategic talent management: creating strategic value by placing top talents in key positions", *Development and Learning in Organizations: An International Journal*, Vol. 33 No. 1.
- [13]. Tamunomiebi, M.D. and Worgu, V.O. (2020), "Talent management and organizational effectiveness", *Journal of Contemporary Research in Social Sciences*, Vol. 2 No. 2, pp. 35-45.
- [14]. Van Zyl, E.S., Mathafena, R.B. and Ras, J. (2017), "The development of a talent management framework for the private sector", *SA Journal of Human Resource Management*, Vol. 15, pp. 1-19.
- [15]. Schultz, T.W. (1961), "Investment in human capital", *The American Economic Review*, Vol. 51 No. 1, pp. 1-17.
- [16]. Mahfoozi, A., Salajegheh, S., Ghorbani, M. and Sheikhi, A. (2018), "Developing a talent management model using government evidence from a large-sized city", *Iran. Cogent Business and Management*, Vol. 5 No. 1, pp. 14-29.
- [17]. Gardas, B.B., Mangla, S.K., Raut, R.D., Narkhede, B. and Luthra, S. (2019), "Green talent management to unlock sustainability in the oil and gas sector", *Journal of Cleaner Production*, Vol. 229 No. 229, pp. 850-862.
- [18]. Chung, K.L. and D'Annunzio-Green, N. (2018), "Talent management practices in small-and mediumsized enterprises in the hospitality sector", *Worldwide Hospitality and Tourism Themes*, Vol. 10 No. 1
- [19]. Schuler, R.S., Jackson, S.E. and Tarique, I. (2011), "Global talent management and global talent challenges: Strategic opportunities for IHRM", *Journal of World Business*, Vol. 46 No. 4, pp. 506-516
- [20]. Whysall, Z., Owtram, M. and Brittain, S. (2019), "The new talent management challenges of industry 4.0", *Journal of Management Development*, Vol. 38 No. 2.

- [21]. Abu-Darwish, N.J., Al-Kasasbeh, M.M. and Al-Khasawneh, M.M. (2021), "The mediating role of cloud computing in the relationship between talent management and competitive advantages", *Competitiveness Review: An International Business Journal*
- [22]. Järvi, K. and Khoreva, V. (2020), "The role of talent management in strategic renewal", *Employee Relations: The International Journal*, Vol. 42 No. 1.
- [23]. Kim, C.H. and Scullion, H. (2011), "Exploring the links between corporate social responsibility and global talent management: a comparative study of the UK and Korea", *European Journal of International Management*, Vol. 5 No. 5, pp. 501-523
- [24]. Reis, R.S. and Quental, C. (2014), "Global talent management in Brazil: Jeitinho as a managerial talent", In *Global Talent Management*, Springer, Cham, pp. 123-140.
- [25]. Barkhuizen, N. (2014), "How relevant is talent management in South African local government institutions?", *Mediterranean Journal of Social Sciences*, Vol. 5 No. 20, pp. 22-23
- [26]. Cooke, F.L., Saini, D.S. and Wang, J. (2014), "Talent management in China and India: a comparison of management perceptions and human resource practices", *Journal of World Business*, Vol. 49 No. 2, pp. 225-235.
- [27]. Park, H.M. (2020), "Talent management dilemma and distance between South Korea and the USA", *International Journal of Export Marketing*, Vol. 3 No. 4, pp. 335-355.
- [28]. Mousa, M. and Ayoubi, R.M. (2019), "Talent management practices: perceptions of academics in Egyptian public business schools", *Journal of Management Development*, Vol. 38 No. 10.
- [29]. Latukha, M. and Veselova, A. (2019), "Talent management, absorptive capacity, and firm performance: does it work in China and Russia?", *Human Resource Management*, Vol. 58 No. 5, pp. 503-519
- [30]. Salau, O., Osibanjo, A., Adeniji, A., Oludayo, O., Falola, H., Igbino, E. and Ogueyungbo, O. (2018), "Data regarding talent management practices and innovation performance of academic staff in a technology-driven private university", *Data in Brief*, Vol. 19, pp. 1040-1045.
- [31]. Aguinis, H. and Burgi-Tian, J. (2021), "Talent management challenges during COVID-19 and beyond: performance management to the rescue", *BRQ Business Research Quarterly*, Vol. 24 No. 3.
- [32]. Harsch, K. and Festing, M. (2020), "Dynamic talent management capabilities and organizational agility – a qualitative exploration", *Human Resource Management*, Vol. 59 No. 1, pp. 43-61.
- [33]. Pereira, V., Temouri, Y. and Patel, C. (2020), "Exploring the role and importance of human capital in resilient high performing organisations: evidence from business clusters", *Applied Psychology*, Vol. 69 No. 3, pp. 769-804.
- [34]. Khan, Z., Hussain, M., Shahbaz, M., Yang, S. and Jiao, Z. (2020), "Natural resource abundance, technological innovation, and human capital nexus with financial development: a case study of China", *Resources Policy*, Vol. 65 No. 10, pp. 15-25.
- [35]. Cao, X. and Im, J. (2018), "Founder human capital and new technology venture R&D search intensity: the moderating role of an environmental jolt", *Small Business Economics*, Vol. 50 No. 3, pp. 625-642.
- [36]. Schneider, M. (2018), "Digitalization of production, human capital, and organizational capital", In *The Impact of Digitalization in the Workplace*, Springer, Cham, pp. 39-52.
- [37]. Adesina, K.S. (2021), "How diversification affects bank performance: the role of human capital", *Economic Modelling*, Vol. 94, pp. 303-319.
- [38]. Liu, C.H. and Jiang, J.F. (2020), "Assessing the moderating roles of Brand equity, intellectual capital and social capital in Chinese luxury hotels", *Journal of Hospitality and Tourism Management*, Vol. 43, pp. 139-148.
- [39]. Boudreau, J.W. and Ramstad, P.M. (2007), *Beyond HR: The New Science of Human Capital*, Harvard Business Press.
- [40]. Fiano, F., Sorrentino, M., Caputo, F. and Smarra, M. (2020), "Intellectual capital for recovering patient centrality and ensuring patient satisfaction in healthcare sector", *Journal of Intellectual Capital*.
- [41]. Mandal, S. (2018), "Influence of human capital on healthcare agility and healthcare supply chain performance", *Journal of Business and Industrial Marketing*, Vol. 33 No. 7.
- [42]. Yarovaya, L., Mirza, N., Abaidi, J. and Hasnaoui, A. (2021), "Human capital efficiency and equity funds' performance during the COVID-19 pandemic", *International Review of Economics and Finance*, Vol. 71, pp. 584-591.
- [43]. Pirozzi, M.G. and Ferulano, G.P. (2016), "Intellectual capital and performance measurement in healthcare organizations: an integrated new model", *Journal of Intellectual Capital*, Vol. 17 No. 2.
- [44]. Odhongo, E.A. and Omolo, J. (2015), "Effect of human capital investment on organizational performance of pharmaceutical companies in Kenya", *Global Journal of Human Resource Management*, Vol. 3 No. 6, pp. 1-29
- [45]. Yang, C.C. and Lin, C.Y.Y. (2009), "Does intellectual capital mediate the relationship between HRM and organizational performance? Perspective of a healthcare industry in Taiwan", *The International Journal of Human Resource Management*, Vol. 20 No. 9, pp. 1965-1984.

- [46]. Cheng, M.Y., Lin, J.Y., Hsiao, T.Y. and Lin, T.W. (2010), “Invested resource, competitive intellectual capital, and corporate performance”, *Journal of Intellectual Capital*.
- [47]. Mensah, J., (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. *Cogent social sciences*, 5(1): p. 1653531.
- [48]. Nambisan, S., M. Wright, and M. Feldman, (2019). The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. *Research Policy*, 48(8): p. 103773.
- [49]. Olawumi, T.O. and D.W. Chan, A. (2018). scientometric review of global research on sustainability and sustainable development. *Journal of cleaner production*, 183: p. 231-250.
- [50]. Polasky, S., et al., (2019). Role of economics in analyzing the environment and sustainable development. *Proceedings of the National Academy of Sciences*, 116(12): p. 5233-5238.
- [51]. Vinuesa, R., et al., (2020). The role of artificial intelligence in achieving the Sustainable Development Goals. *Nature communications*, 11(1): p. 1-10.
- [52]. Bersin, J. (2017). HR technology disruptions for 2018. Productivity, design, and intelligence reign. Deloitte.
- [53]. It's tough to telecommute in health care. Here's how Mayo Clinic does it. Advisory Board. 2017.
- [54]. Weldon, D. (2013). Telework as a competitive edge. *Healthcare Finance*.
- [55]. Smith, O. 2018. Could 'slack for surgeons' finally kill pagers in the NHS?
- [56]. Workplace by Facebook. Facebook; 2018.
- [57]. 2014–2015 HR systems survey. HR technologies, deployment approaches, integration, metrics, and value. Healthcare edition. Sierra-Cedar; 2015.
- [58]. Occupational outlook handbook [Internet]. Bureau of Labor Statistics; 2018.
- [59]. Bersin, J. (2015). The geeks arrive in HR: people analytics is here. *Forbes* [internet].
- [60]. Securing executive support with retention analytics. *People analytics world*. 2017.
- [61]. Voorhees, B. (2017). Chidambaram A. The analytics eatery. *People analytics world*.
- [62]. Arndt, R.Z. (2017). Software aids in employee retention. *Mod Healthc*.
- [63]. Barozzi, G. (2017). From hierarchies to networks of teams. A new analytics era. *People analytics Forum*.
- [64]. Tursunbayeva A, Bunduchi R, Franco M, Pagliari C. (2017). Human resource information systems in health care: a systematic evidence review. *J Am Med Inform Assoc*. 24(3):633–654.
- [65]. 2014 HR service delivery and technology survey. Advance highlights report for participants — key global findings. Tower Watson; 2014
- [66]. Health workforce – Migration. World Health Organization. 2018