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The Power of Robots: A Dedication of Computer Science for Human Capitals Management

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Abstract: Robotics technology is becoming an increasingly challenging necessity for the next time zone. Humans have even become one with the technology, in various increasingly concrete applications. This study aims to describe and investigate the roles of organizational robots to redesign concepts and theories of human resources management into the new designation of human resources management. This research is a literature review with a qualitative approach that has a descriptive character. Data is taken from various sources that are compatible with this study. The data taken from different books on the related topics, public websites and other statistics, various journals, newspapers and which are collected from them. Considerable information has been gathered and collected from these sources thus allowing for accurate analysis, comparing, accumulation, explanation. The main finding is the organizational robotics have an effect on the most important concepts of theories of the human resources management especially human resources planning, employment, training and performance appraisal system for organizational regulations, finally they have ability to effect of costs, productivity, profitability of company and organizational performance.

Keywords: Computer Science; Human Capitals; Robots

Introduction

A Robots are the essential self-operated tools as well as they are not human beings (Jost et al., 2020; Khadr Sr et al., 2021). However, they are programmable and movable manipulators which can move and mobile parts or tools through a specified sequence of motions and programmability means that the robots' activities can be modified and commanded by changing control settings devoid of altering the hardware (Omer, 2018). Collaborative robots (Cobots) are designed to work alongside human workers on assembly lines, assisting humans with a variety of assembly and manufacturing tasks (Gjeldum et al., 2022; Matheson et al., 2019; Sherwani et al., 2020). The automotive industry has been investigating and increasingly implementing Cobots on assembly lines. Cobots are increasingly being used as collaborators to humans in various contexts and industries, and researchers have investigated actions to promote higher team cohesiveness (Calitz et al., 2017; El Makrini et al., 2018).

Industrial robots were caged to keep humans safe and out of harm's way. Service robots (Cobots) are meant to safely leave the cage whilst doing tasks for humans (Cherubini et al., 2016; Grobbelaar et al., 2021). Cobots come in all shapes and sizes and have integrated sensors and soft and rounded surfaces for safety purposes to reduce the risk of impact, pinching and crushing. The biggest safety feature of Cobots is their force-limited joints, which are designed to sense forces due to impact and quickly react thereto. Businesses increasingly use industrial robots in their manufacturing operations to reduce labour costs and increase competitiveness (Calitz et al., 2017).

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Before HR can lead the change to create a more human workplace, HR has to change itself by embracing these new technologies. With well-documented use cases and RPA deployments in this domain, HR professionals can automate processes that other organizations have successfully demonstrated automation potential and gained a rapid return on investment. HR teams should start with the processes that are repeatable and based upon structured data. Then as they learn, they can add AI to the mix to expand to processes that have less repeatability and more unstructured data (Scheppler & Weber, 2020).

Robotics development in some companies is so big that in the present-future such robots already possess levels of intelligence that no longer render them just a part of the production chain, but also a part of the work team.

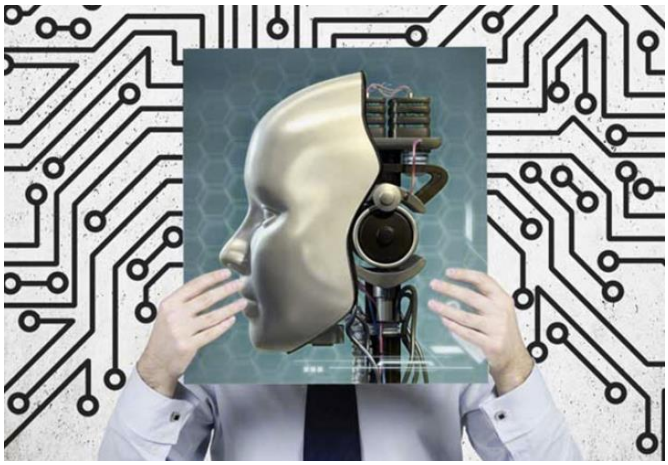

Figure 1. Ilustration Robot in HRM
Source: (glocalthinking.com)

That's why they are already defining robot workforce management models, profiling situations such as those mentioned by the HR technology expert, Naomi Bloom: what robots are on which team and what are their functions, productivity and learning developments and more. The expert adds that for this task, HR must work together with other departments communication, purchasing, accounting and others to develop new models of work.

More and more we will be working closely with robots able to develop many of the tasks previously reserved for people. This is why, as we said earlier in this article, many are concerned by what jobs will remain for humans to perform (glocalthinking.com).

Method

A qualitative research method followed by a demonstration of its application in project studies through one concrete example, combining diaries and interviews, to investigate organisational justice in the project context (Unterhitzenberger & Lawrence, 2022). But in this text it will be realized by literature review in order to got the figure of problem and can be create a systematic explanation about this thema absolutely.

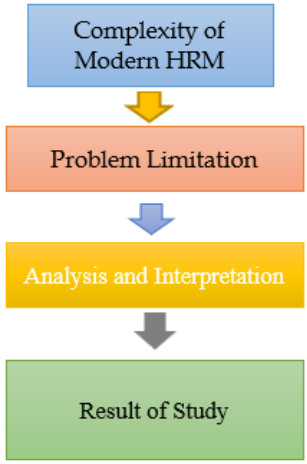

Figure 2. Research Method Flow

This paper was conducted comparison and analyzing several studies and theories conclusions which are demonstrated and there are related with robotics and fundamentals of human resources management that is based on the available shared and published articles, journals, books, network, magazines, seminar papers on robotics and human resources management practices in various companies all over the world (Omer, 2018).

This research uses qualitative methods by reading previous research, by exploring journals that conduct similar research and reading many books that discuss research like this, qualitative methods by also conducting discussions with various parties who understand this research (Cresswell, 2012). Another sort of contextual consideration concerns the state of research on a given topic within a field. Social scientists are accustomed to the idea that research occurs within the context of an ongoing tradition. All work is dependent for the identification of topic, argument, and evidence on this research tradition (Cresswell, 2012).

Result and Discussion

Robots: Types and Automation

According to Sincak&Virčíkova (2012) robot is mechanical design, computer science and engineering, electrical engineering, intellectual sensibility perception and neuroscience. However, Webster's dictionary defines it as an automatic instrument that achieves tasks normally and ascribed to mankind. Then conferring to robotics institute of American the industrial robot is a

programmable, multifunctional, manipulator planned to carry materials, parts, tools or specialized devices through variable arranged motions for the performance variety of activities (Omer, 2018).

The multidisciplinary approach of science, including engineering and computer science, produces machines termed robots. The purpose of creating these machine is to substitute or, in simple words, replace human activities. A robot is directed to perform all the functions on the principles of artificial intelligence. Most scientists argues that robots will entirely replace humans in the coming decades. They claim that robots are time savers. For instance, if a person completes a task in one hour, the robots will be directed to complete the same task within thirty minutes. Many scholars argue that human nature is quite distractive. Small things can distract them from completing a task, and it mainly consumes a lot of time. While on the other hand, robots are the amalgamation of intelligence and automation (Azah, 2021).

There are five types of robots which will be discussed as under, Pre-programmed robots: These types of robots work in a controlled environment. They are designed to perform simple and monotonous tasks. For instance, a programmed robot is designed to perform a task to assemble automobiles in the automobile industry. They tend to perform the task easier and faster than humans. This type of robot is used in heavy industries. They are designed to overcome the workload of humans; Humanoid robots: The name of the robots shows that they may have characteristics of humans, or they may look like humans. They are designed to perform human-like activities like running and carrying objects from one point to another. They are built like humans. One prominent example is the robot Sophia, which is only designed to carry out household tasks. These types of robots are used in hotels and shopping malls etc.; Autonomous robots: They are independent and operate without human intervention. They are the most advanced form of robotics, which work on their own. They are unique in their composition. They have sensors that perceive the situation around the world. They have decision-making capabilities; Tele operated bots Humans control these types of robots from a wireless system from even a distance. These robots are designed for strategic purposes. They work under extreme weather conditions, in unreachable geographical areas, etc. For example, these robots are designed to fic a submarine which is present underwater where the human approach is almost impossible; and Augmenting robots: This type of robot is to be introduced in the future, and its main purpose will be to support humans in carrying out their activities even faster and easier. It assists human organs to carry out daily activities even within a short span of time (Azah, 2021).

Robot in HRM: A Design

Robot in HRM is about digital work. Digital Work is referring to the content as to the organisation of work (Strohmeier & Stefan, 2014). Relating to work content the ongoing digitalization implies an increasing automation of manual and routine work and a slow but steady change of remaining tasks towards brain and information work. Information of employees is more and more dependent on digital tools and media. HRM may be best illustrated based on e-lancing (Prakash et al., 2019).

The advent of digital media has drastically altered the world of human resource management (HRM). Today, digital networking platforms and applications are used to develop employer branding as well as to recruit and retain employees (Mičík & Mičudová, 2018). Employer branding is the association of favourable perceptions to any firm by both potential and current workers and it strengthens the organisation's position by developing a value proposition (Najam et al., 2022). Fundamental condition for the digital transformation of HRM is the identification of key players within the organization. Among these we can underline in particular the role played by HR managers. Digital tools should not be seen as substitutes for traditional HR processes but rather as tools that allow them to be facilitated (Mosca, 2020).

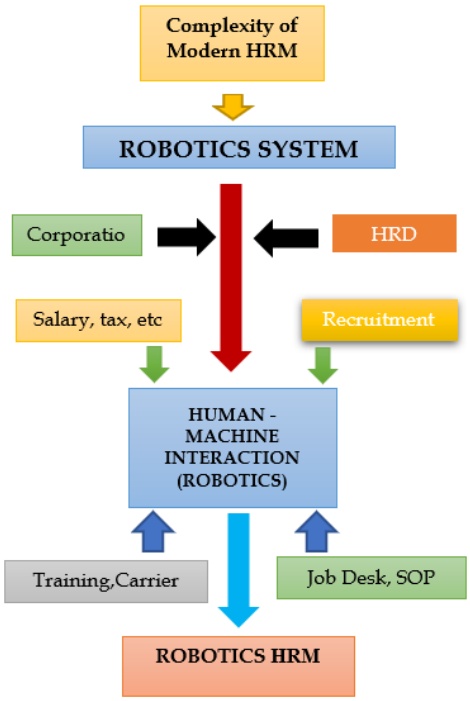

Figure 3. Design of HRM by Robotical Approach

Digital HRM effectiveness is a qualitative characteristic of digitalization measuring the integration of digital practices into the company's core activities (Wang et al., 2022; Zhou et al., 2021), their application to perform routine tasks, and the "strength" of digital tools. For example, a company may digitize a single aspect of personnel management and still receive significant "rent" from the adoption of the relevant technology (Zavyalova et al., 2022). It is obvious that HRM should change and align its strategies and activities to this new labor market cohort such "digital employees". The generation of younger employees grown up in a digital environment is both considerably more complex and considerably more heterogeneous (Chytiri, 2019). Among the areas of HRM practice where AI has yielded the strongest outcomes are: performance management, workforce planning, people analytics, virtual assistants for self-service/HR service delivery, career patching, leadership, and coaching (Sakka & El Hadi El Maknouzi, 2022).

Mobility and remote working as significant consequences of the introduction of the digital transformation process have proven to be very successful (Peppard & Ward, 2016; Radwan, 2019; Vial, 2021), so organizations will build hybrid work models based on the intensive application of digital tools that support remote working and thus achieve increased productivity and efficiency. The role of the HRM function in this context will relate to the transformation of jobs and organizational structures and their adaptation to new standards and the need to increase operational efficiency. Digital transformation will enable the creation of a very flexible organizational structure and, accordingly, open space for the effective transfer (Barišić et al., 2021; Imran et al., 2021). These would serve to improve semi-structured and unstructured decision making process to provide accurate, consistent, and reliable decision for HRM. The HR functions such as strategic HR planning, new employee selection, planning for employee training and career paths, forecasting future employee needs, predicting employee performance and others could be solved using this framework (Masum et al., 2018).

Conclusion

It is clear that robots are opposed with some of the related concepts and fundamentals of human resources management which are confirmed in the previous, therefore robots impacted on employment through increasing. Moreover, there are effected on economic growth by ever changing the human resources planning. However according to organizational regulations robots aren't have any regulation code to organize and monitoring robot activities.In addition through the training only minimal training to be able to teach tasks to the robot, in the same way the robot icon will integrate and save information from sensors and expression coordinated actions which realize a high level of communication with a human without any special training. So that they do not necessary to make performance appraisal system as human evaluation. The main finding is the organizational robotics have an effect on the most important concepts of theories of the human resources management especially human resources planning, employment, training and performance appraisal system for organizational regulations, finally they have ability to effect of costs, productivity, profitability of company and organizational performance.

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Conflicts of Interest

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