


Chapter 14

Impact of Industry 4.0 on Human Resources Systems: The Emergence of Work 4.0

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ABSTRACT

Industry 4.0 implies a reconfiguration of work organization and new approaches to human resources management (HRM). This research aims to delve deeper into the impacts of Industry 4.0 on the human resources system (HRS). A literature review identifies the potential links between these two core concepts. Finally, secondary data analysis in the form of a literature review on topical scientific researches will explore the following research question: How does Industry 4.0 impact conventional human resources systems (HRS)?

INTRODUCTION

The technological breakthrough of industry 4.0 implies not only a reconfiguration of the organization of work but also new approaches to human resource management. The Fourth Industrial Revolution affects HRM activities on three levels (Bissola & Imperatori, 2020). Firstly, HRM must assume the role of change agent in order to help the organization benefit from the advantages of the Human-Machine interface by developing the digital culture of employees to better collaborate with machines, colleagues, employees, and supervisors (Bissola & Imperatori, 2020). Second, the digital transformation requires an update of HR practices because working methods have changed: remote working, flexible schedules, a collaboration that crosses organizational boundaries, to name but a few (Bissola & Imperatori, 2020).

DOI: 10.4018/978-1-7998-9715-6.ch014

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Third, HRM should take a people-centered approach that aims to solve organizational problems by cultivating a deep understanding of human factors and the context around them (Bissola & Imperatori, 2020).

The reflection around the interconnection between the emergence of Industry 4.0 technologies and its impact on HR functions is relatively recent. However, HR functions realize HRM philosophy, processes, policies, processes, programmes (Armstrong, 2020). Based on this principle, this chapter aims to explore the form of HR functions under the influence of Industry 4.0 technologies. More specifically, the chapter seeks to answer the following question: How does Industry 4.0 and its related technological shifts impact conventional human resources systems (HRS)?

To this end, the chapter is structured as follows: The following two sections (i.e., sections 2 and 3) establish a conceptual framework of the fundamental concepts of our study. Based on Armstrong's (2020) framework of reference, we define the first concept of HRM with an overview of the HR system and its constituent functions. Next, we look at the second key concept of Industry 4.0 with a definition of its four main components: Internet of Things, Internet of Services, Cyber-physical systems, and finally, the Smart Factory. In order to orient our research approach, section 4 proposes a general framework linking the two aforementioned concepts. Section 5 discusses the research methodology, whereas section 6 summarizes the literature review results. Finally, a conclusion is presented, wrapping up the findings pertaining to the components of Industry 4.0 on HRM in general and on its specific functions in particular.

THEORETICAL BACKGROUND

The Human Resource (HR) System for Human Resource Management (HRM)

HRM is concerned with the way people are managed and employed in organizations (O'Riordan, 2017). The term HRM first appeared in 1980 against economic recession, globalization, and accelerating technological developments. This pressure has prompted organizations to consider new ways to gain a competitive advantage. Michael Porter's Resource Theory and Organizational Behavior Theory are behind the emergence of the concept of HRM. The first states that the human factor is a fundamental differentiating power of a company from its competitors. The second studies human behavior in an organizational environment and its impact on organizational performance. These two theories have influenced the thinking around personnel management in organizations. Human resource management can be defined as "a strategic, integrated and coherent approach to the employment, development, and wellbeing of the people working in organizations" (Armstrong et al., 2014, p.5). HRM is achieved through the HR system, which is a set of interrelated and interdependent activities and practices, allowing the achievement of HR objectives (Armstrong, 2020).

The HRM System

As Armstrong (2020) points out, the components of an HR system can be subdivided into two broad categories: transactional and transformational activities. First, transactional activities are part of day-to-day administrative functions, such as managing the hiring process, implementing workplace policies and regulations, guidelines for employee benefits, and other functions. On the other hand, transformational activities have a more strategic role in ensuring the alignment of HR management with the organization's strategic objectives. In fact, "transformational HR activities are those actions of an organization that 'add

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