

ANALYSIS OF HUMAN RESOURCE COMPETENCIES IN FACING THE ERA OF INDUSTRY 4.0

Fahmi Muhamad¹⁾, Adi Robith Setiana²⁾

^{1,2)}Management Study Program, Universitas Terbuka, Indonesia

²⁾Sekolah Tinggi Ilmu Ekonomi Latifah Mubarakiyah Tasikmalaya, Indonesia

Corresponding author: fahmi.muhamad210499@gmail.com

Abstract

In the current era of Industry 4.0, there are both new opportunities and challenges for the workforce. On one hand, technology simplifies tasks and increases efficiency. On the other hand, many jobs are at risk of disappearing, and there is a demand for new, more complex skills. The alignment between human resource competencies and job demands is a crucial issue that must be addressed promptly. This scientific paper will analyze existing competencies and strategies that can be implemented to overcome difficulties in this era. The data used in this study were obtained through the collection of various journals discussing the theme of human resource competencies in the era of Industry 4.0. This research integrates literature related to the topic to enrich the analysis. In addition to journals, references from several books were also used to support arguments with relevant expert views. One important citation comes from a scientific journal referring to the definition of competence by Stephen Robbin in 2017. Robbin explains that competence is an individual's ability or capacity to complete various tasks in their job. This assertion underscores that human resources are valuable assets for companies, with unique potential to create competitive advantages through their ability to face challenges and seize opportunities in the business world.

Keywords: Human Resources (HR), competency, analysis, obstacles, Industry 4.0

Introduction

Technological advancements have made our work easier in the era of Industry 4.0, where many changes are driven by technology. One such change is the use of smart machines. These machines can help us complete tasks more effectively and efficiently. The rapid development of modern technology has brought us to a new reality. However, behind the rapid technological advancements, there are significant challenges to be faced, namely how to prepare human resources to adapt to such a fast-paced revolution. This scientific paper will thoroughly explore the key competencies needed by human resources to remain competitive in the global arena.

In the current era of Industry 4.0, there are both new opportunities and challenges for the workforce. On one hand, technology simplifies tasks and increases efficiency. On the other hand, many jobs are at risk of disappearing, and there is a demand for new, more complex skills. The alignment between human resource competencies and job demands is a crucial issue that must be addressed promptly. This research aims to evaluate the available capabilities and identify strategic steps that can be used to overcome the challenges faced today.

Facing the era of the industrial revolution 4.0, characterized by the rapid development of modern digital technology, requires quick, precise, and efficient strategic steps to respond to the challenges of this era. Thorough preparation to build creative, innovative, and globally competitive human resources in line with technological advancements is the key, as explained by Tahar, Setiadi, and Rahayu (2022). The goal of this research is to identify, analyze, and provide recommendations for policies and strategies for the government, companies, and educational institutions in developing the key competencies needed in the era of the industrial revolution 4.0.

Methods

This research uses data collection methods involving the analysis of journals related to the theme of human resource competencies in the era of Industry 4.0. The journals reviewed were selected based on their relevance to the topic being studied and their discussion of the issues raised in this research. As part of an integrative approach, this research also refers to literature discussing aspects related to Industry 4.0. Additionally, to broaden perspectives and enrich the analysis, reviews from several books containing expert views in the fields of economics, business, human resources, and technology relevant to the research theme were added.

Results and Discussion

The long journey of humanity, from the time when tools were operated manually to the modern era, shows significant changes in technology. Today, various devices can work automatically with the help of robots controlled by a single program. The industrial revolution 4.0, which characterizes the 21st century, emphasizes the digitalization of information technology. Essentially, this revolution aims to build an increasingly sophisticated and efficient digital technology ecosystem.

According to Klaus Schwab (2016), Founder and Executive Chairman, the era of the industrial revolution 4.0 has brought significant changes in how humans live, work, and interact socially. This transformation occurs on a large scale, with deep reach and extraordinary complexity, creating dynamics never before experienced by humanity throughout history.

The rapid development of digital technology supports the process of digitalization, influenced by major changes in communication, information, and internet technology. This digital transformation plays a crucial role in realizing digital-based modernization. In the era of the Industrial Revolution 4.0, every company is required to have the skills to utilize digital technology, while the solutions produced also depend on the digitalization capabilities offered by technology companies. The era of digital technology in this modern revolution will create digitalization in the field of human resources (HR) capable of facing this modern revolution.

According to Irma Yuliani (2023), human resource management (HRM) involves the processes of planning, organizing, directing, and supervising in the development of activities. Human resources are considered a vital element in achieving organizational goals, even more important than other factors such as capital or technology, because it is humans who manage and control all these elements. Similarly, Setiana A.R (2019) emphasizes that human resources are the core of every organization. Organizations are formed with various visions aimed at human interests, and the missions of these organizations are carried out by humans. Therefore, humans become a strategic factor determining the course of organizational activities.

In providing compensation, integrating human resources to achieve individual, organizational, and societal goals is crucial. According to Fauzan Rusydi (2023), HR management has undergone a significant transformation from merely an administrative function to a strategic business partner on par with other functions, enhancing HRM to be more modern in the current era. An indirect quote from Derry, Firmansyah (2023) states that the development of human resources with strategic competencies must be more significant for companies than before to face the challenges of the modern industrial era 4.0.

Lyle M. Spencer, Jr. and Signe M. Spencer in Ahmad Ramdani Salim (2019) identify competence as a fundamental characteristic underlying individual performance. This competence directly affects the success of employees in a job or situation. In other words, competence is the factors that enable individuals to perform work tasks quickly, effectively, efficiently, and excellently.

According to a journal written by Adiawaty and Susi in 2019, Stephen Robbins in his 2017 explanation states that competence is a person's ability to perform various tasks in their job. This expertise is influenced by two main factors, namely mental and physical abilities. Meanwhile, according to Spencer and Spencer as written in their scientific journal (Adiawaty, Susi: 2019), competence is defined as "An underlying characteristic of an individual which is causally related to criterion-referenced effective and or superior performance in a job or situation." This means that competence is a characteristic that occupies a person and is related to the effectiveness of performance in a job.

The Ministry of Manpower and Transmigration (2014) emphasizes that the enactment of the Indonesian National Work Competency Standards (SKKNI) in the field of HRM provides clear guidelines for all practical competency development activities in Indonesian HR. SKKNI becomes the official reference that must be used in designing and implementing various competency development programs, ensuring the qualitative and relevance of HR practitioners' competencies.

According to Mislan Sihite (2018), referring to Usmara's (2007) opinion, human resources (HR) play an important role as valuable assets for every company. HR has unique potential to create competitive advantages through their ability to seize opportunities and overcome business challenges. Usmara emphasizes that the alignment between HR potential and organizational needs is a key factor in achieving company goals. Although technology and information continue to develop rapidly, in the era of Industry 4.0, where technology is advancing, many jobs are disappearing. Machines can now perform tasks automatically, and many things that were previously done by humans. This makes many people worried about their jobs being replaced by robots and computers. Technology is evolving to simplify and shorten time, which is good for efficiency. However, there are also negative effects, such as increased unemployment and environmental damage due to industrial waste and exposure. In the era of the industrial revolution 4.0, the use of digital technology in daily life is increasing rapidly (Tahar, Setiadi, &

Rahayu, 2022). Various daily activities now involve devices such as mobile phones, computers, digital watches, online games, and banking systems using electronic money like e-Money, e-Media, and digital films accessible through platforms like Netflix. The development of this digital phenomenon in major cities worldwide can be analyzed using the perspective of phenomenological philosophy.

Fanila Kasmita Kusuma (2021) in her research found that the development of digital technology has significantly changed the landscape of the working world. The ease of access to work devices through mobile technology and others has made the boundary between work and personal life increasingly thin. Data shows that many employees find it difficult to detach from work, even outside working hours. This indicates that although digital technology offers flexibility, it also brings new challenges related to work-life balance.

Companies now face different challenges compared to the past, requiring a deep understanding of human resources within the organization. One important aspect is analyzing the strengths, weaknesses, opportunities, and threats present in human resources in the modern era. As explained by Mondy and Martocchio in Aditya Wardhana (2023), job analysis is a systematic process to determine the skills, tasks, and knowledge required in a job. This analysis is crucial as it can help solve various problems. Additionally, Generation Y or millennials, known for their high digital literacy, have the ability to effectively utilize digital technology, which can drive company performance improvements. This generation, growing up amidst technological advancements, is highly skilled in using digital devices. Their ability to adapt to technology makes them valuable assets for companies in the digital era. Millennials are very aware of the importance of digitalization and are accustomed to using technology to simplify work, making it more efficient and productive, and capable of working with initiative, as revealed by CIPD in Kusuma (2021).

As Kusuma (2021) stated, "the utilization of technology in human resource management has enabled companies to automate routine tasks, allowing practitioners to focus more on value-added strategic decision-making." This shows that the role of HR has shifted from merely administrative to strategic. The strategic HR function can now significantly contribute to achieving the company's strategic goals. Companies emphasizing the strategic competencies of their human resources are becoming increasingly crucial to navigate and face the industrial revolution 4.0 era.

Issues related to human resources (HR) today are often caused by a lack of understanding by business owners and HR managers regarding the changes occurring in the modern era. Business owners and company leaders need to be aware of cultural, ethical, and dynamic differences developing in the work environment to ensure the company can grow and remain competitive. According to Gulliford and Dixon, cited in Kusuma (2021), employee competency development is a long-term investment that is very important for the success of companies in the Industry 4.0 era. By implementing the right strategies, companies can ensure that employees have the necessary skills to face future challenges and support business growth. This research provides several relevant implications for companies, governments, and individuals, as explained in the following table.

Table 1 Implementing the right strategies

COMPANIES	Companies need to invest in employee training and competency development, adopt new technologies, and redesign old business processes to be more modern to leverage the potential in this 4.0 revolution era.
GOVERNMENT	The government needs to continuously develop competency standards, provide relevant training, and create an ecosystem that supports innovation and digital economic growth
INDIVIDUALS	Individuals need to continuously learn and develop themselves to have competencies that match market demands
ACADEMICS	Academics need to continuously contribute new knowledge in the field of HR development needed in the 4.0 industrial era.

Conclusion

Based on the results of this research, it presents a comprehensive picture of how the technological revolution of the industrial era 4.0 has changed the landscape of the working world and demands significant transformation in human resources. Relevant competencies, adaptation to technology created with artificial intelligence, and the strategic role of human resources are key to facing this era.

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