

# Human resource planning strategy to improve employee performance in facing the industrial revolution 4.0

Satria Agung Prabowo<sup>1</sup>, Arditiya Bayu Prasetyo<sup>2</sup>, Arief Budi Prasetya<sup>3</sup>, Hadi Supratikta<sup>4</sup>  
<sup>1,2,3,4</sup> Master Program of Management, Pamulang University

## ARTICLE INFO

### Article history:

Received Des 01, 2023

Revised Des 15, 2023

Accepted Des 22, 2023

### Keywords:

Planning  
Human resources  
Industrial revolution

## ABSTRACT

This study was prompted by a change in business policy that substituted human labor with machine labor, as a result of increasingly advanced technology breakthroughs. One option is to develop a Human Resources planning strategy for the period of Industrial Revolution 4.0, so that employees are not defeated by machines in the future. The problem formulation in this study is, "What is the Human Resources planning strategy in the Industrial Era 4.0?" The purpose of this study is to examine Human Resources planning methodologies in the Industrial Revolution 4.0. This research approach is literature, in which data is gathered through the use of references such as books, scientific journals, newspapers, periodicals, and documents. According to the findings of this study, HR planning tactics for improving employee performance include recruitment, career planning, and evaluation. The study's conclusion is that in order to improve employee performance, firms must understand their employees' personalities and place them in jobs that match their areas of expertise.

*This is an open access article under the [CC BY-NC](https://creativecommons.org/licenses/by-nc/4.0/) license.*



### Corresponding Author:

Satria Agung Prabowo,  
Master Program of Management,  
Pamulang University,  
Kampus Unpam Viktor, Jl. Puspitek Raya, Pamulang, Banten.  
Email: [prabowosatriaagung@gmail.com](mailto:prabowosatriaagung@gmail.com)

## 1. INTRODUCTION

A revolution is a sudden and dramatic shift. The momentous developments that are taking place right now are accompanied by technical advancements. Where technology improvements can have an impact on all aspects of life, including the industrial sector. The present revolution is referred to as the Industrial Revolution 4.0. Tahar et al. (2022) define the fourth industrial revolution as "a period of creation of all-sophisticated digital technology that continues to develop and is constantly updated." Alternatively, the industrial revolution can be defined as a shift in technology from conventional to more modern (Ekanem, 2013).

The industrial revolution 4.0 event began with industrial generations 1.0, 2.0, and 3.0 and progressed to industry 4.0. Each phase has its own personality. Industry 4.0 has arrived to take the position of Industry 3.0, which is distinguished by cyber-physical and manufacturing coordination (Hendriyadi & Mailindra, 2019). Many people currently believe that the fourth industrial revolution will result in the replacement of human labor by machines. This is due to the fact that many jobs that were formerly performed by humans are now being performed by machines.

Human labor being substituted by machines is currently commonly used in manufacturing and industrial organizations. With this circumstance, each employee must have additional abilities or skills so that their energy is not replaced by machines. Education and training are the best ways to increase any individual's abilities or capabilities. Each individual can expand their insight into the

world of work through education and training; also, training can increase an individual's capacity to accomplish a job (Badrianto & Ekhsan, 2020; Habib & Shaukat, 2017; Hamid et al., 2017).

Education and training are critical for both those looking for work and those who are currently employed. This is because many organizations will undoubtedly accept people with high quality and competence to accomplish a task. A comprehensive HR plan is required for a company to secure great resources. Hartati and Arfin (2020) argue that proper HR planning can also help improve employee performance in the period of the Fourth Industrial Revolution.

Human resource planning is an essential component of human resource management. According to Hendriyaldi and Mailindra (2019), whether a company has a group or a single employee who can fulfill the company's demands and goals depends on whether or not the planning has been carefully carried out to be able to compete in the era of industrial revolution 4.0.

Human resources have become a key aspect in a company's success in the era of the Fourth Industrial Revolution. Companies that can turn obstacles into opportunities will be more productive, innovative, and adaptable in each generation. As a result, enhancing human resource performance is critical in preparing for the Fourth Industrial Revolution. Aside from other resources, human resources are one of the most important resources in a company's operations (Krisnahadi & Septika, 2021).

In its current form, there are still many Indonesians with a low level of education and little ability to work. This is due to a continuing lack of understanding among individuals regarding the need of education and developing skills in defending themselves against more powerful technologies (Hermawan et al., 2020).

Several corporations are currently laying off a large number of their staff to be replaced by machines. Even though purchasing a machine is more expensive than paying employee salaries, the Company believes that the only expensive thing is purchasing a machine at first, and then it is only maintenance costs, whereas paying employee salaries is indeed less expensive, but the Company must always pay employee salaries in the future. As a result, numerous businesses believe that using machine power is more cost effective than using human labor.

Even if businesses believe this, it is impossible to deny that not all employment can be replaced by computers; there are still jobs that can only be done by humans. As a result, the company's technique for ensuring that workers work efficiently must include suitable planning to boost employee performance.

Human resources should be able to respond more quickly to changes in information technology so that they can serve as a differentiating element for the organization while competing. As a result, a proper human resource development strategy is required to boost staff productivity (Carlson & Kavanagh, 2012; Idrus, 2023).

The company will be able to maintain a competitive position in the long run by implementing proper human resource planning techniques and orienting toward the use of information technology in accordance with company objectives. Based on the description above, it is apparent that a company's competitive edge is largely decided by its human resource planning approach (Kamaruddin et al., 2022).

Companies should use strategic management that is appropriate to the company's goals when selecting a human resource planning strategy that is capable of answering challenges in the era of the industrial revolution 4.0, because choosing the right human resource development strategy allows the company to determine the direction and goals of the organization in the long term. Method selection, strategy design, and methodical planned implementation in accordance with organizational goals.

## 2. RESEARCH METHOD

This research uses a type of library research, where data collection activities are carried out using references such as books, scientific journals, newspapers, magazines and documents (Tahar et al., 2022). The approach used in this research is descriptive analysis. Descriptive research is research that explains in detail related to an event or problem that occurred.

The data collection techniques used are library and documentation techniques. The library technique is data collection carried out using journal and book references. Meanwhile,

documentation techniques are data collection by extracting data from literature related to the research being conducted.

The data analysis technique used is the content analysis method. Where the technique of making conclusions is by systematically identifying the characteristics of certain messages, which includes firstly formulating research questions and hypotheses, secondly carrying out sampling of selected data sources, thirdly creating categories used in the analysis, fourthly collecting data on a sample of documents that have been selected and carrying out coding, fifth, creation of scales and items based on certain criteria for data collection, sixth, interpretation/data obtained.

### 3. RESULTS AND DISCUSSIONS

#### Human Resources in the Industrial Era 4.0

Industry 4.0 is currently posing a problem for HR as a result of the social change process (Schaar et al., 2019). Demographically, changes begin with a loss in human resources with permanent job expertise and threaten the existence of workers with little abilities and technological mastery. As a result, the millennial generation of workers is now entering the labor market.

The reality is that persons aged 40-60 make up the majority of workers today. If the era of workers in this range comes to an end, the number of workers with qualifying work abilities would fall dramatically.

Workers born between the 1980s and 1990s will take over the labor market after this era. In this context, Schaar et al. (2019) report that many organizations are attempting to recruit and maintain a staff with high future potential.

The millennial generation is unquestionably distinct from prior generations. Typical millennial traits are as follows (Schaar et al., 2019):

Millennials always look to be self-assured. Where they always believe that their abilities are highly rewarding and that the consequences of their labor are quite good.

- a. Millennials desire a work atmosphere in which they can trust and be free from their bosses. Aside from that, people prefer to work in a setting that makes them feel at ease.
- b. Because millennials enjoy new experiences, they are unlikely to prefer employment with the same level of difficulty.
- c. Flexibility in working hours and workplace is a millennial's dream. They are skilled in utilizing communication technology to facilitate job flexibility.
- d. Millennials value the family component of their community or workplace.
- e. Millennials are adamant about the concept of work loyalty. If the company gives a promising offer that fulfills their needs, they are less likely to shift employment; conversely, if the offer is not adequate, they will choose to cease working and hunt for a new career.
- f. Millennials have no specific problems with salary payments. A solid wage is important, but millennials expect more self-development.

#### Human Capital Theory

According to Ong and Mahazan (2020), based on human capital theory, namely knowledge and work abilities earned via education and training. According to this notion, an organization's production is determined by the capabilities of its human resources.

This idea emphasizes the significance of human resource investment in terms of the requirement for knowledge and work qualities. This has consequences for the organization's capacity to attract, engage, reward, and develop human resources. According to this philosophy, outstanding human resources will make the organization superior. HR planning is more than just competency development. Because there are variances in HR perceptions and motivation in the workplace, developing organizational culture and environment is also vital to promote HR performance. A company's culture is made up of common conventions, beliefs, principles, and assumptions. Organizational culture is a researchable object that includes things like behavior, symbols, rituals, stories, and beliefs about values or principles. Organizational culture is the same as the residents' daily activities, which have been recognized both formally and informally in social processes.

For the past three decades, organizational culture has been a fascinating research issue in managerial literature. Many studies have sought to establish a link between corporate culture and long-term competitive advantage.

There is a large body of empirical research demonstrating that organizational culture has a major impact on organizational performance. As part of organizational culture, HR work attitudes and organizational effectiveness contribute more to organizational performance than organizational strategy and structure.

Beyond formal control systems such as processes and authority, organizational culture has a significant impact on HR behavior.

As a result, it is critical for HR directors to establish a strong organizational culture that is consistent with the organizational strategy that will be implemented. HR will become more familiar with the corporate culture, which will enhance morale, excitement, teamwork, information sharing, and acceptance of new ideas.

#### **Human Resource Planning Strategy to improve employee performance in facing the Industrial Revolution 4.0**

Human resource planning is a systematic examination of the state of human resources to ensure that the appropriate number and quality of talents are available when needed.

Implementation of HR Planning, technical selection is the beginning point for carrying out numerous actions connected to the managerial style, values, and overall culture of the institution. According to Rachmawati (2020), there are several HR planning strategies to increase employee performance.

##### **a. Recruitment**

Previously, traditional manpower planning was justified by identifying potential mismatches between skills and job descriptions and making modifications through recruitment. As a result, a new method is required that takes into account the combination of competency in the field of expertise and employee talents as demonstrated by knowledge, attitudes, and experience.

Human resource planning can serve as a guide and provide future insight for employees who are required to deliver new products or quality services that are focused on company strategies in the recruitment process.

##### **b. Career planning**

Understanding the processes that are integrated into individual characteristics and preferences has implications for institutional culture, values and style, business strategy and guidelines, organizational structure and change, reward systems, R&D systems, assessment fibers, and promotion systems.

Today, many organizations emphasize individual accountability for each other's professional development. To aid with career growth, official and informal mentoring mechanisms are implemented. Government policy, both fiscal and market for teaching and educational staff, determines the amount to which organizational flexibility and efficiency are determined.

##### **c. Evaluation of HR Planning**

Human resource planning can be used as an indicator of the suitability of supply and demand for a number of employees with appropriate skills in the institution: employee planning can also be used as a "early warning" for the institution regarding the implications of business strategy for employee development.

The following are the goals of human resource planning:

- To determine the quality and quantity of employees who will fill positions within the company.
- To ensure the availability of labor in each period, so that there is always someone to carry out the tasks in that position.
- To avoid overlap in the implementation of tasks.
- To facilitate coordination, integration and synchronization (KIS) so that work productivity increases.
- To avoid a shortage or excess of employees.

#### 4. CONCLUSION

Conclusions can be derived from the research and discussion results: Human Resources in the Industrial Era 4.0, specifically workers born between the 1980s and 1990s, will take over the labor market, with varying features. Human capital, according to human resource theory, is knowledge and work abilities acquired via education and training. Recruitment, career planning, and evaluation are three HR planning tactics for improving employee performance.

Based on the findings of the research and discussion, the author makes the following recommendations: Company a. Oversee optimal employee performance b. Determine more optimal Human Resources planning in order to improve performance and increase the company's success. Employees a. Raise awareness about the value of education and training. b. Improve technological mastery and knowledge of the work performed. The hope for future researchers is that they will be able to conduct more in-depth research on human resource management strategies to improve employee performance in the face of the Industrial Revolution 4.0, due to time constraints and a lack of satisfaction with the results of interviews due to obstacles related to the complexity of being conducted online. As a result, future researchers should carry it out immediately..

#### REFERENCES

- Badrianto, Y., & Ekhsan, M. (2020). Effect of Work Environment and Job Satisfaction on Employee Performance in PT. Nesinak Industries. *Journal of Business Management and Accounting*, 2(1), 85–91.
- Carlson, K., & Kavanagh, M. (2012). HR metrics and workforce analytics. In E. Kavanagh & M. Thite (Ed.), *Human Resource Information Systems: Basics applications and future directions*. Sage Publishing.
- Ekanem, S. A. (2013). Technology and Humanity: A Humanist Approach. *International Journal of Science and Research*, 2(1), 2319–7064.
- Habib, R. M., & Shaukat, M. M. (2017). Impact of human resource (HR) practices on organizational performance: Moderating role of Islamic principles. *International Journal of Islamic and Middle Eastern Finance and Management*, 10(2), 186–207. <https://doi.org/10.1108/IMEFM-04-2016-0060>
- Hamid, M., Maheen, S., Cheem, A., & Yaseen, R. (2017). Impact of human resource management on organizational performance. *Journal of Accounting & Marketing*, 6(1), 1–7. <https://doi.org/10.4172/2168-9601.1000213>
- Hartati, I., & Arfin. (2020). Strategi Pembangunan SDM Kementerian Keuangan Republik Indonesia dalam Menghadapi Tantangan Era Disrupsi 4.0. *Jurnal BPPK : Badan Pendidikan dan Pelatihan Keuangan*, 13(1), 109–129. <https://doi.org/10.48108/jurnalbppk.v13i1.493>
- Hendriyadi, & Mailindra, W. (2019). Industrial revolution 4.0: Challenges and opportunities of human resources management to improve productivity Grand Hotel Jambi. *Procuratio: Jurnal Ilmiah Manajemen*, 7(3), 344–351.
- Hermawan, S., Lastiko, R. R., Rachmawati, H., Silmi, F. A., & Luki Mayasari. (2020). *Analisis dan Aplikasi Perencanaan Sumber Daya Manusia di Era Evolusi 4.0*.
- Idrus, M. (2023). Keunggulan dan Kelemahan Perencanaan SDM di Era 4.0. *Jurnal SIPATOKKONG BPSDM SULSEL*, 4(1), 115–125. [https://doi.org/10.1007/978-94-015-0768-4\\_47](https://doi.org/10.1007/978-94-015-0768-4_47)
- Kamaruddin, H., Alam, S., & Mustafa, L. O. (2022). Penerapan manajemen sumber daya manusia strategis pada unit pelaksana teknis dinas balai latihan kerja dalam menghadapi era industri 4.0 di Kabupaten Kolaka. *Jurnal Administrasi Pembangunan dan Kebijakan Publik*, 13(2), 202–210.
- Krisnahadi, T., & Septika, B. H. (2021). Implementasi Strategi Pengembangan Sumber Daya Manusia dalam Peningkatan Produktivitas Karyawan pada Era Revolusi Industri 4.0. *JISIP (Jurnal Ilmu Sosial dan Pendidikan)*, 5(2), 554–562. <https://doi.org/10.36312/jisip.v5i2.2001>
- Ong, J. O., & Mahazan, M. (2020). Strategi Pengelolaan SDM dalam Peningkatan Kinerja Perusahaan Berkelanjutan di Era Industri 4.0. *Business Economic, Communication, and Social Sciences (BECOSS) Journal*, 2(1), 159–168. <https://doi.org/10.21512/becossjournal.v2i1.6252>
- Rachmawati, D. (2020). Perencanaan Sdm Stie Koperasi Malang dalam Mencapai Keunggulan Bersaing di Era 4.0. *Jurnal Komastie*, 1(1), 1–14.
- Schaar, A., Valdez, A., Hamman, T., & Zieffle, M. (2019). Industry 4. 0 and its future staff: Matching millennials perceptions of a perfect job with the requirements of digitalization. *International Conference on Competitive Manufacturing*.
- Tahar, A., Setiadi, P. B., & Rahayu, S. (2022). Strategi Pengembangan Sumber Daya Manusia dalam Menghadapi Era Revolusi Industri 4.0 Menuju Era Society 5.0. *Jurnal Pendidikan Tambusai*, 6(2), 12380–12381.