Research Paper

Analyzing The Role of Information Technology in Improving Human Resource Quality

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Abstract

Technology has affected various human resources (HR) aspects in organizations and companies. This study aims to identify and analyze the role of information technology in improving the quality of human resources in the context of an organization or company. This study used a qualitative descriptive analysis method. Data collection techniques used keywords, information technology, and HR performance. The data were then analyzed through data reduction, presentation, and conclusion drawing. The results showed that IT plays a role in information technology in improving the quality of human resources as a medium for learning, collaboration, skills training, performance measurement, and competency management. Thus, information technology plays an essential role in improving the quality of human resources in organizations.

Keywords *Information Technology, Quality, Human Resources*

INTRODUCTION

Planned and sustainable HR development is an absolute necessity, especially for the future of the organization (Dahlan et al., 2017), because one of the key success factors of an organization in achieving its vision and mission is the quality of good human resources (Hadorai et al., 2022). Human resources (HR) are the most important asset for organizations because they are the primary driver of organizational activities as operators, maintainers, producers, and designers of every system (Haldorai et al., 2022). The quality of human resources needs to be improved so that the organization becomes more competitive and able to respond to external challenges for the existence and sustainability of the company (Saeidi et al. l, 2022). The quality and capabilities of human resources (HR) play a major role in an organization's progress. Human Resource Management (HRM) is how utilizes individuals in an organization to achieve the goals set by the organization (Werbel & DeMarie, 2005).

Development and civilization in the Indonesian region provide challenges and changes in a very short period. Such changes are influenced by the involvement of technology in the business world in the era of globalization (Newman et al, 2023). In Industry 4.0, an organization is required to be able to do many things with its human resources with a regulator. In this case, HR competencies play a decisive role in efforts to change and improve organizational performance (Naveed et all, 2022). Competency-based HR management is conducted to provide results in accordance with the goals and objectives of the organization with predetermined performance standards. Competency-based HR management is a human resource management approach that emphasizes managing employees based on their abilities and competencies. This concept replaces the traditional approach, which focuses only on employees' educational background or work experience. One of the competencies that HR needs to possess is its ability in information technology.

Information technology is an inseparable part of the business world, especially in the face of

increasingly competitive business competition. The need for information technology is a basic requirement for companies to survive in a competitive business world. Information technology has driven advances in product and process technology, as well as the formation of an information society (Indrayani, 2012).

Previous research conducted by Ch'ng et al. (2021) states that information technology moderates the structure of the equation in improving HR performance. Obeng and Boachie (2017) states that to achieve a company's desired goals, every organization is formed from three main pillars: processes, human resources, and technology. These three elements must be combined in designing a series of processes according to market (customer) needs. It is necessary to pay attention to the human resources that operate the process, and technology, especially information technology, is also used to support the process. Technology plays a major role along with processes and human resources.

In contrast to previous research, the novelty of this study is the in-depth analysis of the role of information technology in improving HR quality by describing the benefits of information technology in the company.

Based on the background above, it is shown that the existence of HR in the company plays an important role in the need for HR management that improves the quality of HR itself so that HR can perform optimally in supporting the achievement of organizational goals. Thus, this study aimed to analyze the role of information technology in improving HR quality.

Problem Formulation
1. What is the role of information technology in improving the quality of human resources in organizations?
2. What are the benefits of information technology for organizations?

LITERATURE REVIEW
Information Technology

Information technology is a type of technology in the form of technical equipment and functions to process and convey information. Information technology includes equipment that functions as a tool for processing data or information, tools, manipulation tools, and information management tools (Beijer et al., 2019). Information technology plays an important role in the activities of an organization or company, and the development of computer-based information technology can make it easier for every organization to access information anywhere and make it easier to carry out activities that occur in the organization, especially activities that aim to produce highly competitive products and services to create strong competitiveness (Burgess et al., 2020).

Human Resource Development Quality

Human resource development can be defined as an activity carried out by a company or an organization within a certain time to improve the skills and expertise of its human resources in the organizational entity, ultimately increasing the productivity of the organizational entity and the productivity of the organization (Sima et al., 2020). According to Piwowar-Sulej (2021), the principle of HR development is to improve the quality and ability of employees. A development program should first be established to achieve good results at a relatively low cost. Development programs must outline goals, policies, procedures, curricula, and implementation time. The development program must be principled to increase the effectiveness and efficiency of each employee's work. The development program of an organization should be openly informed to all employees or members so they can prepare themselves. Development is an employee's personal effort to achieve a career plan. The following are indicators of the development of Human

Resources, according to Davidescu et al. (2020):

1. Motivation

Encouragement or encouragement to someone so that the person can strive to do what he wants to achieve well. Motivation can be obtained from superiors and within; some things encourage someone to do something, such as motivation towards power (the impulse to influence people's behaviour of others and to control and manipulate the environment, as well as control and manipulate the environment) and from within, such as motivation for achievement (the impulse to influence the behaviour of others and to control and manipulate the environment), such as the motivation for achievement (the impulse to contribute to every activity).

2. Personality

Personality includes the habits, attitudes, and traits that develop when a person relates to others. Personality is closely related to values, norms, and behaviour and is concerned with maintaining integrity, including attitude, behaviour, ethics, and morality.

3. Skills

Skills are the ability to complete tasks—or required skills. With training, employees' skills improve. Good skills can be obtained during training.

Quality human resources in accordance with job needs can increase employees' work effectiveness. The quality of HR is not only determined by aspects of skill or physical strength but also by education or levels of knowledge, experience, maturity, and attitude (Izvercian et al., 2014). Improving the quality of HR must always be done to find, develop, and maintain HR that suits needs (Vedhathiri, 2020). Improving the quality of HR needs to be done so that the organization becomes more competitive and is able to respond to external challenges for the existence and sustainability of the company. The strategic role of HR management can be realized through competency-based recruitment, placement, payroll/compensation, and career development policies (Saeidi et al., 2022).

RESEARCH METHOD

The method used was descriptive analysis. This method analyses, describes, and summarises various conditions and situations of data collected from observations regarding the problem under study at the time of research (Siedlecki et al., 2020). A qualitative approach is used. According to Komputer and Jikem (2022), a qualitative approach based on the post-positivism philosophy is used to research natural object conditions (as opposed to experiments), in which the researcher is the key instrument. Collection techniques using triangulation and data analysis are inductive/qualitative, and qualitative research results emphasize meaning rather than generalization.

During data collection, journals were collected using the keywords information technology and HR performance. Then, data reduction is carried out after several relevant journals are obtained, classifying and discarding unnecessary data and organizing them. Next, we present the data. The presentation of this data began to be carried out by presenting data from the analysis of various journals regarding the role of information technology in improving HR performance. Finally, conclusions are drawn. This conclusion is made after all the data have been analyzed and presented.

FINDINGS AND DISCUSSION

Human resources are essential and inseparable from an organization, both in the form of institutions and industrial companies (Patma et al., 2020). HR is a vital resource for the continuity

of an organization. HR is the determinant of the organization's running and the decision-maker regarding the sustainability and success of the organization (Alkaraann et al., 2023). HR development is an effort to increase the competence of technical, theoretical, conceptual, and ethical personnel according to the position's needs to encourage better employee performance and the ability to compete (Udin, 2020). Human resource development has high credibility in creating training programs that include design, management, and evaluation and are implemented with learning and development opportunities. Developing highly reliable human resources capable of creating training programs that include design, management, and evaluation delivered with learning and development opportunities (Pedro et al., 2019). The benefits of human resource development, according to Anwar and Abdullah (2021), are increased organizational work productivity, the realization of harmonious relationships between superiors and subordinates, increasing the morale of the entire workforce, encouraging an open attitude of management through the application of a participatory managerial style, facilitating effective communication, and functional conflict resolution.

Human resource development is a tactical approach to investing in human business resources (Lee, 2021). The readiness of adaptive human resources and anticipation of impacts in various sectors are certain things that must be responded to and anticipated wisely and humanely. Companies and their HR divisions must demonstrate capacity and creativity as flexible human managers in every company's work activities towards common goals. The ability to manage HR in accordance with time is absolutely owned by a visionary company in the digital era (Mikalef & Gupta, 2021).

Human Resource Development (HRD) is an essential process in improving the quality of an organization's human resources. Through various training, education, and career development programs, individuals in the organization can improve their skills, knowledge, and competencies. By improving the quality of HR, employees become more productive, creative, and better able to face job challenges. In addition, HR development can also increase employee motivation, help reduce turnover, and increase job satisfaction. Organizations with qualified HR can also compete better in the market, provide better services and products, and build a better reputation in the eyes of customers and business partners. Thus, HR development not only supports individual growth but also becomes a key factor in the overall success and sustainability of the organization (Sheet et al., 2021).

Technology can be a very effective way to develop human resources in an organization. Technology allows employees to access skill training materials anywhere and at any time. With technology-based training, employees can learn independently and schedule their learning according to their needs without being tied to a specific time and location. Technology media allows organizations to provide various learning content, including video tutorials, interactive modules, quizzes, and simulations. This variety of content can help employees learn in a way that suits their individual learning styles (Balsmeier & Woerter, 2019).

Technology plays an important role as a performance measurement medium in human resource development. One example of measuring performance using technology is a digital-based performance management system. In this system, employees and superiors can use special applications or platforms to measure their performance in a structured and measurable manner. In a technology-based performance management system, employees and supervisors can set specific and measurable Key Performance Indicators (KPIs) for each position or department. These KPIs are regularly measured to evaluate employee performance (Henrdry et al., 2015). Technology can also serve as a medium for talent management. Companies can use integrated talent management software to manage employee data, identify potential talents, and plan career development. This

system allows HR managers to track employee performance, map skills, and understand individual developmental needs (Pokhrell et al., 2023).

Technology plays an important role in improving the efficiency and effectiveness of human resource development. Technology enables easy and rapid access to various information sources and online platforms. Adopting the right technology can make the HR development process more efficient and effective, resulting in more competent and high-performing employees (Fenech et al., 2019).

Information technology plays an important role in improving the quality of human resources (HR) in various aspects. Here are some ways in which information technology contributes to improving the quality of human resources:

1. Online-based Education and Training: Information technology allows for online-based education and training that can be accessed anytime and anywhere. This allows individuals to continue learning and developing skills without being in a specific physical place. Employees can take courses, training modules, or other educational resources through online learning platforms to improve their knowledge and skills (Norz et al., 2023).
2. Learning Management System (LMS): LMS is a platform that can be used to manage and deliver training materials, courses, and learning modules. It allows organizations to design, organize, and track employee training programs more efficiently. Employees can easily track their progress and access learning resources through the LMS (Lonn & Teasley, 2009).
3. IT-based Performance Evaluation and Feedback: Information technology systems can collect data on employee performance through automated performance measurement tools or online surveys. This allows managers to provide more targeted and in-depth feedback to employees, helping them to identify areas where they can improve performance (Renjith et al., 2020).
4. Data Analytics and Data-Driven Decisions: IT enables organizations to collect and analyze data on employee performance, learning preferences, and development needs. With careful data analysis, organizations can more accurately identify employee development trends and needs, allowing them to design more targeted development programs (Awan et al., 2021).
5. Technical and Digital Skills Development: In the digital age, technical and digital skills are becoming increasingly important. IT can be used to provide specialized training in areas such as data analysis, cybersecurity, programming and more. Employees can develop these skills through online courses, tutorials, and computer-based simulations (Cattaneo et al., 2022).
6. Communication and Collaboration: Information technology facilitates communication and collaboration between employees in various geographical locations. Communication platforms such as email, chat, and online collaboration tools allow teams to work together efficiently, share information, and complete projects effectively (Lee et al, 2021).
7. Career Development and Mobility Opportunities: IT systems can be used to manage employees' career development paths, allowing them to explore career opportunities within the organization. This can help employees plan their career progression and feel encouraged to achieve their goals (Cirocki & Farrell et al., 2019).

Overall, information technology plays a significant role in improving the quality of human capital by providing access to learning resources, helping to manage employee development, encouraging technical and digital skills, and facilitating effective communication and collaboration.

1. The role of information technology in companies, both large, medium and small companies, requires information systems that can integrate information so that it can support company productivity. Information Technology (IT) has a very important and diverse role for

companies in various sectors and sizes. Here are some of the main roles of IT for companies: Increased Operational Efficiency: IT can help companies automate business processes, reduce dependence on manual work, and improve operational efficiency (Kraus et al., 2022).

2. Increased Employee Productivity: IT-based collaboration software and tools facilitate communication and cooperation among employees, regardless of geographical location. This helps improve teams' productivity and allows them to share information and work together on projects (Samnani & Singh, 2014).

3. Product Innovation and Development: IT enables companies to conduct research and development faster to create new products and services. Companies can use technology to design prototypes, test new ideas, and bring new products to market more efficiently (Wang et al., 2021).

4. Improved Customer Service: Information technology allows companies to provide better customer service through various channels such as websites, mobile applications, or online support. Customers can easily access information, ask questions, and address issues through digital platforms.

5. Marketing and Sales Strategy Development: Data and analysis generated by IT can help companies understand their customers better, identify market trends, and develop more effective marketing strategies. This allows companies to target markets more precisely and optimize marketing campaigns.

6. Market Expansion and Globalization: Through the Internet and e-commerce platforms, companies can easily tap into the global market and sell their products and services in different regions. This allows companies to reach a wider range of customers and increase revenue.

Information technology has a very important role in helping companies optimize operations, increase productivity, drive innovation, and face modern business challenges. The wise integration of information technology can provide a competitive advantage and help companies achieve their business goals.

CONCLUSIONS

Based on the research results, the role of information technology (IT) in improving the quality of human resources (HR) in the organization has many sides and impacts. HR, as an indispensable component of the organization, drives decision-making and maintains the company's continuity. HR development is essential in improving competencies, which include technical, theoretical, conceptual, and ethical dimensions, thereby improving employee performance and competitiveness. Specifically, the benefits of HR development include increased productivity, harmonious relationships, improved morale, participative management, effective communication and conflict resolution.

Technology catalyzes effective HR development. Online education and training platforms enable flexible learning, while IT-based performance management systems facilitate structured evaluation. Data analytics and talent management software help identify trends and hone skills, improving efficiency and effectiveness. Technology further aids in communication, collaboration and talent development, optimizing HR practices for the digital age. By integrating technology, organizations can leverage its potential to provide access to learning resources, manage employee development, develop technical skills, and facilitate communication and collaboration. So, the convergence of information technology and human resource development forms a synergistic relationship that improves the quality of HR and drives organizations towards sustainable growth and competitiveness in the modern business landscape.

For future research, it is recommended to involve more in-depth case studies in different

types of organizations and industries to analyze in detail the impact of information technology implementation on HR development, as well as identify barriers and successful strategies in overcoming challenges that may arise. In addition, research can delve further into the development of technical and digital skills required in the digital age, as well as explore the role of technology in shaping a work culture that supports HR growth and innovation. External factors such as regulations and newer technological developments could also be a focus of research to understand how companies can continue to adapt to a changing environment.

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