Future Visions and Directions of Human Resource Management from the Perspective of Classical and Modern Approaches (An Analytical Study of Human Resource Management in Light of the Resource-Based Approach, the Knowledge-Based Approach, and the Technological Approach)

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Abstract:
This study aims to develop a conceptual understanding of various approaches, including classical approaches (the resource-based approach) and modern approaches (the knowledge-based approach and the information technology-based approach).
It also emphasizes the use of computer technology, which can undoubtedly be a significant aid in daily activities, reducing the impact and pressures resulting from routine tasks. additionally, it focuses on leveraging available knowledge accumulation and utilizing and sharing knowledge with other employees in the organization to activate and enhance knowledge sharing within the institution.

Keywords: Human Resources; Human Resource Management (HRM); Knowledge; Information Technology (IT).
Jel Classification Codes:O15**,** D8**,** IT Management

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INTRODUCTION

From the perspective (Nulhusna & al., 2017, p. 01) ICT has been widely acknowledged across various fields, particularly in essential public services where it has helped transform the public sector, making it more efficient and transparent. Furthermore(Mitić & al. , 2017, p. 02) noted that ICT plays a vital role in economic globalisation and is increasingly important for developing countries.

Improving information technology within companies requires **three key factors** that influence the success of developing ICT in countries. **The first factor** is the extent to which the government promotes ICT; **the second** is the level of research and development; and **the third factor** is the presence of an education system that produces high-quality IT specialists. Additionally, ICT has a significant impact on communication within organisations, as this communication plays an essential role across all organisations (Mitić & al. , 2017, p. 03)

Employees now regularly use laptops and phones for both formal and informal communication, whether it's with a few colleagues or a larger group.

(Becker & Barry , 1996, p. 780)emphasised the growing recognition of human resources as a strategic lever that can have significant economic impacts on a company's bottom line. According to (Lehtonen, 2015, p. 131) human resource management is a distinctive approach to managing a workforce, aiming to achieve competitive advantage by strategically aligning a committed workforce with the organisation's goals. This is accomplished through the use of integrated practices involving culture, structure, and personnel techniques. Regarding the impact of information technology on individuals in general and on human resources in particular,(Mitić & al. , 2017, p. 02)argued that ICT affects both our professional and personal lives, becoming an essential part of daily routines. ICT facilitates knowledge sharing, speeds up information flow, and improves communication. Moreover, the continuous evolution of ICT presents new challenges, fostering learning and adaptability. Large organisations have significantly altered their operational models. (Micic & Veselin , 2018, p. 271)emphasise that the success of modern companies largely depends on the quality of their workforce. Modern human resource management is not merely about using technology as a tool for recruiting new employees, but also as a means to modify the work environment, motivate employees, foster collaboration, and ultimately create a more comfortable and effective workplace. The authors also add that **human resource management must become increasingly digital, aligning itself with modern achievements driven by digital transformation.**

1.1 Research Problem:

According to(Kesen, 2012, p. 369)**,** in the 21st century, humanity is swiftly transitioning into an information society, where computer science is becoming a pivotal element in shaping the future of project management. With the increasing significance of human resources and technological advancement, managers are now recognising that human resources are valuable, rare, unique, and irreplaceable assets that can create a sustained competitive advantage. Electronic human resource management has thus emerged as a core aspect of organisational

management and competitiveness. A significant investment in electronic HRM has the potential to reduce organisational costs while enhancing efficiency.

From the perspective of (Pillania, 2002, p. 167), three fundamental changes have arisen due to the digital revolution: breakthroughs in electronic component capabilities, the convergence of computing and telecommunications technologies, and the growth of the audio-visual industries. As a result, human resource management has shifted from traditional practices to technology-driven, electronic operations.

Therefore, this study seeks to explore the following central research question:

How can information technology impact human resource management?

To address this primary question, the following sub-questions are also considered:

- What is the era of digital transformation?
- What is the technology-based approach?
- What is digital human resource management?

1.2 Research Importance:

The importance of this study lies in demonstrating the aspects of human resource management that are impacted by the integration of information technology.

It highlights the specific areas within HRM that are influenced when ICT is introduced, offering a clearer understanding of the relationship between technology and human resource management.

1.3Study Objectives:

This study aims to achieve the following objectives:

1. To review the different approaches to the era of digital transformation.
2. To assess the status and condition of human resource management in the era of digital transformation.

2. Review of Human Resource Management Literature from the Resource-Based Perspective

2.1 Resource-Based View (RBV)

Scholars such as Lockett, Thompson, and Morgenstern (2009), Barney and Clark (2007), and Lavie (2006) raised the question: **Why are some companies more successful than others?** This question has drawn significant attention from academics for decades. One of the dominant theories addressing this question is the **Resource-Based View (RBV)**. According to this view, the superior performance of companies is based on the resources they own and utilise in their operations (Turulja & Nijaz , 2018, p. 02). From a dynamic perspective of the

RBV, the **Dynamic Capability View (DCV)** has been proposed, suggesting that a company's success depends on its ability to renew its competencies to remain aligned with a changing business environment. Dynamic capabilities are defined as the firm's ability to integrate, build, and reconfigure internal and external competencies and resources to address rapidly changing environments(Turulja & Nijaz , 2018, pp. 02-03)

Barney is considered one of the first scholars to discuss the **Resource-Based View (RBV)**. In 1986, he authored an article on organisational culture and how it can serve as a source of sustainable competitive advantage. Barney gained prominence after his 1991 article, where he established the foundational principles of the Resource-Based View, formulating a set of characteristics that define resources as potential sources of competitive advantage(Barney & al.,, 2011, p. 1301). According to (Wang, 2012, p. 287), an organisation's resources include all assets, capabilities, organisational processes, firm attributes, information, and knowledge that can be used to correct performance and improve efficiency and effectiveness in strategy formation and execution. Resources also represent the inputs that organisations use in production processes, such as capital, equipment, individual employee skills, knowledge, patents, physical resources, and finances. On a broader scale, these resources encompass individuals, communities, and organisational aspects.

Researchers and scholars generally agree that organisations possess two main types of resources: **tangible resources** and **intangible resources**. Hitt (2001) pointed out that **tangible resources** are those that can be seen and measured, such as production equipment and manufacturing buildings, and their value can be assessed through financial statements. **Intangible resources**, on the other hand, are deeply embedded in the history of the organisation, accumulate over time, and exist in unique forms that are difficult for competitors to understand and replicate(Al-Enezi & Hameed , 2013, p. 132)

The Resource-Based View (RBV) theory, according to scholars Barney (1991) and Wernerfelt (1984), introduced a new perspective in strategic thinking by directing the attention of researchers and practitioners toward the internal dimensions of organisations. Competitive advantage, according to this theory, is tied to the heterogeneity of resources controlled by competing organisations(Bouty & Léandre , 2010, p. 150)

arney (1991) identified that the resources which can generate a competitive advantage are those characterised by **value**, **rarity**, **inimitability**, and **non-substitutability**(Bouty & Léandre , 2010, p. 151)**.** From the perspective of (Saá-Pérez & Juan Manuel , 2002, pp. 124-125), human resources can be viewed as a source of competitive advantage rather than merely a cost. In the context of the **Resource-Based Approach**, human resources or human capital, in which an organisation invests, have the potential to produce superior performance. These scholars further argue that, according to the Resource-Based Approach, human resources are indeed a source of competitive advantage. They add value to the organisation because individuals (human resources) differ in their qualifications and abilities, contributing uniquely to the firm. Moreover, human resources are considered rare because it is difficult to find individuals who can ensure high levels of performance within an organisation. This is due to the heterogeneity in the labour market, as not everyone has the same capacity to adapt to

different environments.

Finally, according to (Foster, 2014, p. 253), it can be said that **human resource management (HRM)** is the most important aspect of general management in any organisation, as the most vital resource in any organisation is its human capital.

2.2 Human Resource Management (HRM)

(Preeti & Mahindra , 2014, p. 03)revealed that the function of human resource management can be involved in organisational development and change management.(Piabuo & al., 2017, p. 02)argue that there is no debate over the idea that "people" are one of the key assets in determining the success or failure of an organisation. Therefore, the knowledge, skills, attitudes, and behaviours of these individuals are essential to improving the organisation. Human resources are the primary assets capable of driving growth and development within an organisation.

2.2.1 Human Resources

(Ismail, 2008, p. 114)pointed out that Human Resources (HR) stands as a key concept in assessing the assets of competitive organisations.(Wenyuan & Du , 2013, p. 436)noted that management expert Peter Drucker introduced the term "human resources" in 1954. According to Drucker, human resources differ from other types of resources as they refer specifically to individuals. Human resources encompass all people who contribute to building society and advancing social progress. These individuals are practically managed through a set of administrative policies and regulations that may influence their overall behaviour and attitudes. The human resource represents all individuals working within the organisation, from executives to subordinates, employed to perform functions and tasks to achieve the organisation’s future goals. Human resources contribute through academic qualifications, experience, skills, and effort. In return, they receive financial and moral compensation, such as care and various services(Ghida, 2012, p. 02).

Similarly, (Cleveland & al., 2015, p. 01) pointed out that psychologists consider the individual as the starting point. In the same context, (BORDEIANU & Simona , 2015, p. 169)argued that the current economy indicates the presence of a new approach to human resource management, one that is capable of addressing various types of challenges. The most relevant resources in the knowledge economy are knowledge and intellectual capital, as they are the only sources capable of generating new ideas and executing them. Individuals hold a central position within organisations and are considered the true and sole source of sustainable competitive advantage. Since knowledge resides within employees, any activity involving employees will impact knowledge management. Human resource management can work to develop knowledge management strategies that add value. Moreover, human resource management faces new challenges, including recruiting and retaining the best talent and embracing new skills to add further value. Knowledge-based HRM differs from classical HRM.

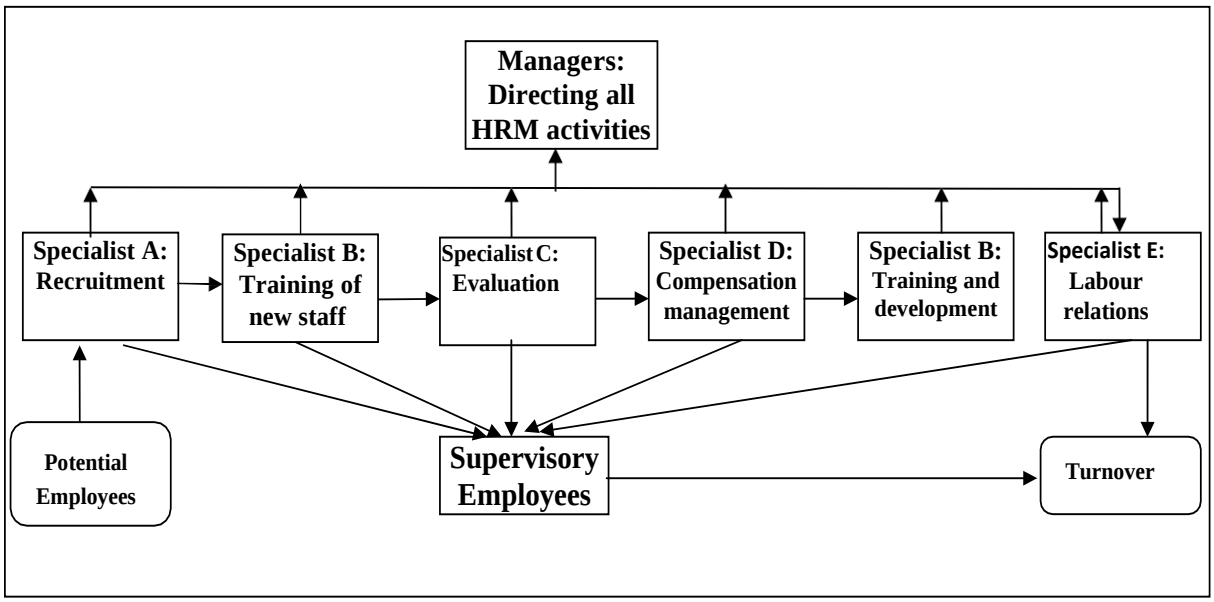
2.2.2Human Resource Management (HRM)

(Werner, 2014, p. 127128)Noted that the **Human Resource Certification Institute (HRCI)** offers some of the largest and most widely recognised certifications, including the

Professional in Human Resources (PHR). This certification categorises human resource management into six key areas: business management and strategy, workforce planning and employment, human resource development, compensation and benefits, labour relations, and risk management.

(Delobbe & al., 20214, p. 28)defined human resource management as the comprehensive process of identifying, recruiting, and developing human resources to meet organisational goals, while also recognising employee competencies. Similarly, (Bamber & al., 2017, p. 1219)revealed that human resource management can contribute to improving employee satisfaction, commitment, productivity, and performance, by fostering autonomy, empowerment, and involvement in decision-making. In line with this, (RETOUR, 2008, p. 07)described the role of HR management as ensuring the timely availability of the right human competencies to support the organisation's strategic goals.

Fig1: TraditionalHumanresourcemanagementmodel



Source: Hong Kesen, (2012), **How E-HR Optimizes the Human Resource Management Process**, 2012 3rd International Conference on System Science, Engineering Design and Manufacturing Informatization, Chengdu, China, 20-21 Oct. 2012, p 379.

According to (Ferratt & al. , 2005, p. 238), as discussed in the general literature on human resource management, HR practices typically involve activities related to recruiting individuals with the required competencies, providing training and development opportunities, designing job roles, conducting performance evaluations, and developing compensation systems, among other things.(Turulja & Nijaz , 2018, p. 04)pointed out that gaining valuable and unique knowledge is not possible without human resource management and knowledge-based practices, which enable the internal development of human resources. This highlights the importance of **human capital**, which results from the valuable and unique characteristics

of employees that allow companies to acquire distinctive and valuable knowledge. Therefore, companies must apply appropriate human resource management practices to manage individuals effectively, in order to exploit their potential and benefit from human capital. These practices are one of the key features of HR management, aimed at managing employees to achieve better performance.

(Turulja & Nijaz , 2018, pp. 04-05)also added that specific HR practices, such as selection, training and development, evaluation, and compensation, can be defined **as an integrated and systematic approach to the planned development and effective utilisation of human resources to achieve the company's goals.** In this context**, the ability to manage human resources is viewed as the company's capability to implement HR strategies, plans, and policies, and to develop its human resources.** Human resource management practices are the primary means by which a company can influence and shape the skills and behaviour of individuals, guiding them to work in a way that contributes to achieving the company's objectives. The following is an explanation of some functions of human resource management:

Selection and Recruitment: Selection and recruitment refer to the criteria used in hiring processes. Specifically, it is essential for companies to develop appropriate selection criteria for new employees, taking into account individuals' abilities to create and share knowledge. The aim of the selection process is to hire individuals who excel in their capacity for learning and development.

Training: Training refers to the level of education provided by the company to its employees. This training can focus on the development of technical skills or other abilities, such as teamwork, leadership, or presentation skills.

Participation of Employees in Decision-Making: Employee participation in decision-making refers to human resource management practices that encourage employees to be involved in decision-making processes. This enables employees to better perform all business operations within the organisation. Furthermore, such practices foster a sense of belonging between the employees and the organisation.

Compensation and Rewarding:Compensation and rewarding refer to the system of remuneration designed to promote fairness among employees. This includes incentive programs whose main objective is to support the company's goals. In defining these measures, it is crucial to ensure they promote flexibility, teamwork, and the creation of new knowledge among employees.

2.3 Human Resource Management from the Perspective of the Resource-Based Approach

(Hartog & al., 2013, p. 04)Explained that the current study is based on the notion that human resource management practices can positively influence performance by building a motivated and knowledgeable workforce. This is achieved by creating opportunities for the workforce to contribute towards achieving strategic objectives. In this context, the advantage of human resource management, or the value of human capital, stems from the recruitment and retention of individuals possessing values, knowledge, skills, and capabilities. Consequently, human resources become difficult to imitate and develop into a highly valuable asset within the organisation. These processes include creating conducive work environments and

opportunities that motivate employees, enabling them to develop and demonstrate behaviours aligned with the organisation's strategic goals. Utilising human resource management practices and talent further enhances organisational performance.

(Saá-Pérez & Juan Manuel , 2002, pp. 124-125)also emphasised that human resources constitute a source of competitive advantage from the perspective of the **Resource-Based Approach** because they are **valuable**, **rare**, **inimitable**, and **non-substitutable**. This approach suggests that companies which are able to create an effective human resource system, encompassing HR policies and practices that foster and sustain strategic human capital, can achieve a sustainable competitive advantage. The same scholars argued that, in line with the **Resource-Based Approach**, human resources serve as a source of competitive advantage by adding value to the organisation. This results from the varying qualifications and abilities of individuals (human resources), which contribute uniquely to the organisation's success. Furthermore, human resources are considered rare because it is challenging to find individuals capable of ensuring high performance within the organisation, owing to the heterogeneity of the labour market. Not all individuals possess the same capacity to adapt to varying environments and technologies.

3. Characteristics of Future Human Resources Management

(Figurska, 2009, p. 04)revealed that human resources can be considered from both quantitative (the number of employees in an organisation) and qualitative aspects. These resources are characterised by various attributes that enable them to fulfil different roles within the organisation. The key elements of human resources include knowledge, competence, health, attitude, and values. The characteristics of human resources vary from one organisation to another depending on the development of their knowledge, competencies, capabilities, and the availability of these elements among individuals. (Razak & al., 2015, p. 355)pointed out that intangible resources, such as human capital and expertise, allow organisations to increase the value associated with production factors, thereby creating a competitive advantage for the company.

(Micic & Veselin , 2018, p. 271) identified several characteristics of future human resources, including:

- HR will be social, meaning human resources will become more interconnected.

- HR will be mobile, as the workforce will increasingly rely on mobility.

- HR will be about Big Data, focusing on handling and utilising large data sets.

- HR will be integrated, combining different functions and technologies.

(Micic & Veselin , 2018, p. 271)further explained that the primary goal of HR technology will be to enhance cooperation and communication within companies, making it crucial for the future success of organisations. These technologies will be used to improve internal

performance and motivate employees to act as brand ambassadors and promoters of the company through media channels. The role of human resources will gain increasing importance in the future. Additionally, they emphasise that HR tools need to be mobile in the future to achieve full effectiveness, as human resources will require access to applications and tools at any time and from any place to interact with their teams, handle tasks, and recruit new employees, and so on and so forth.

Moreover, **Big Data** will play a crucial role in the future of human resources. This technology will enable HR managers to gain valuable insights, such as hiring new employees, improving employee satisfaction, and communicating more effectively. Big Data will help make the best possible decisions accordingly. Regarding integration, human resource management will not only consist of traditional HR functions but also include technology, data scientists, experts, connectors, and brand editors. Therefore, the future of HR operations will be based on integration, and it will require a diversity of skills with professionals from various backgrounds.

3.1 Human Resource Management within the Knowledge-Based Approach

(Chaves & al., 2018, p. 36), along with scholars such as Nonaka, Huber, and Alavi and Leidner, highlight that knowledge is essential because it enhances an entity's ability to operate effectively. Knowledge is divided into two types: **explicit** and **tacit**. **Explicit knowledge** refers to documents, records, and formal analyses, while **tacit knowledge** includes ideas, intuitions, and assumptions that are often difficult to articulate or document.

3.1.1 The Knowledge-Based View (KBV)

(Gonzalez & al., 2017, p. 01)point out that, although organisational knowledge is intangible, it is now considered one of the key assets that generate competitive advantage for organisations.Similarly, (Shahibi & al., 2016, p. 01) reveal that the world is moving towards a "knowledge-based economy," emphasising that knowledge is extremely important, as it is one of the core organisational assets that all companies should be concerned with. In today's global economy, knowledge is recognised as a strategic and competitive resource by organisations. From the perspective of (Blackler, 1995, p. 1021) knowledge has become one of the key features of post-industrial societies.(Szuster & Maciej , 2016, p. 28)highlight a strong relationship between innovation and knowledge absorption, noting that the **Knowledge-Based View (KBV)** links knowledge to superior organisational performance, viewing it as the most important strategic resource and the essential foundation for innovation and competitive advantage.(Curado, 2006, p. 05)adds that the Knowledge-Based View complements the Resource-Based View, where intangible assets hold significant value. The Knowledge-Based View sees organisations as heterogeneous entities loaded with knowledge, which serves as a distinctive characteristic that ensures sustainable competitive advantage. Furthermore, knowledge is difficult to imitate, making it the foundation for sustainable differentiation.(Ali & al., 2018, p. 01)assert that successful organisations are those that consistently invest in learning and acquiring new knowledge as a means of improving business performance and maintaining competitive advantage.

3.1.2 Human Resource Management from the Perspective of the Knowledge-Based Approach:

(Turulja & Nijaz , 2018, p. 06)assert that knowledge management processes involve the sharing and application of knowledge within a company to gain a competitive advantage. These processes rely on individuals and human resource management practices such as recruitment and selection, education and development, employee participation, and compensation and rewards. Consequently, several authors have proposed that there is a strong relationship between human resource management and knowledge management, suggesting that the ability to manage human resources positively affects knowledge management capabilities.(Turulja & Nijaz , 2018, p. 02)further reveal that there is significant debate among scholars regarding human capital. One group of thinkers argues that managing knowledge does not necessarily require human resource involvement, while another group believes that human resource management and knowledge management are closely linked, as knowledge heavily depends on individuals and HR management practices. Some have attempted to explain the role of human resource management in creating and managing knowledge, which has led to even more divergent views.

(Donate & Fátima , 2015, p. 136)explain that the knowledge-based theory of the organisation assumes that the primary reason for an organisation's existence is the creation, integration, and utilisation of knowledge. From this perspective, knowledge can be considered the most important strategic resource for ensuring the organisation’s long-term survival and success. Human resource management is thus related to the policies, practices, and systems that organisations can use to influence the behaviour, attitudes, and performance of their employees. It becomes clear that human resource management and knowledge management are interdependent, as knowledge is inherently embedded in employees' minds and can be applied to productive tasks. Generally, accessing knowledge requires generating and addressing challenges that necessitate the development of HR practices and the motivation of employees to participate in knowledge management initiatives.

3.2. Human Resource Management in the Context of the Technological Approach

3.2.1 The Digital Transformation Era

(Betchoo, 2016, p. 02)describes digital transformation as the transformation of business activities, processes, competencies, and models to fully leverage the profound and accelerating changes and opportunities presented by digital technologies and their impact on society in a strategic and prioritized manner. The development of new competencies revolves around more agile, innovation-driven capabilities that align with both current and future transformations. Digital transformation, often referred to as “restructuring” or new investments in technological and business models, also involves greater engagement with digital customers. Moreover, companies need to consider digital transformation by making formal efforts to renew their business vision and models, as well as their investments, to adapt to the new digital economy.

3.2.2 The Technological Approach Based on the Resource-Based View (RBV)

(Chi & Ling , 2015, p. 405)state that information technology can bring competitive advantage to organisations by enhancing their ability to exploit available opportunities, defend themselves against threats, and shift their market position.(AL-SHBIEl & Nofan Hamed , 2016, p. 203)explain that the continuous changes in the work environment, including the information technology revolution and advancements in science and technology, are the main factors driving organisations to focus on gaining competitive advantage and reconsider their competitive positioning. Information technology has become a crucial tool for achieving and enhancing competitive advantage for many organisations.(Sheng & al., 2003, p. 137)suggest that investment in information technology (IT) can provide the best competitive advantages by reducing costs or improving differentiation. Furthermore, the structure of industries and the rules of competition have drastically changed since the adoption of IT. Organisations have surpassed their competitors by using information technology, and in addition, IT helps create new business opportunities. Some argue that the greatest benefits of IT are realised when IT investment is combined with other complementary investments, such as business process re-engineering.

(Johansson, 2008, p. 03)asserts that information technology has become a fundamental element of an organisation's capabilities and a source of sustainable competitive advantage. As a result of environmental changes, several theories have emerged, including the **Resource-Based View (RBV)** by Barney (1991 et al.), which emphasises that resources capable of achieving competitive advantage must possess **value, rarity, inimitability**, and non-substitutability.(Chi & Ling , 2015, p. 406)also mention that some scholars have proposed that **IT resources are heterogeneous within organisations, which allows them to gain competitive advantage**. Furthermore, **IT resources are difficult to replicate or copy, and they conclude that IT management skills are the only ones capable of providing sustainable competitive advantages from an RBV perspective**. From the perspective of (Abdelkader & BENKADDOUR , 2016, p. 02), some scholars argue that information technology can be a source of competitive advantage, and its impact can be direct or indirect. (SINGHAL, 2015, p. 39)adds that IT can help foster effective relationships between employees and customers, enabling organisations to use IT capabilities to identify and create new products or services. IT also aids in developing niche markets that support growth strategies while reducing time to market. Additionally, IT lowers costs through innovative product and service designs. Furthermore, IT facilitates online business processes, surpassing traditional models, which has provided competitive advantages in this context.

(Islam, 2016, p. 03)states that the IT revolution led to the discovery of the internet, transforming most manual work into computerised systems, making processes more transparent, scalable, and efficient. Based on a comprehensive review of the views of academics and researchers on this topic, it is evident that IT is a genuine source of competitive advantage and a driver for the growth and development of organisations.(Ricciardi & al., 2018, p. 100)found that scholars quickly recognised that high-quality, effective relationship networks are difficult to replicate, such as knowledge-generation networks and capabilities that are impossible to replicate even by those who attempt to imitate them. IT plays an active role in establishing shared relationships between organisations, particularly with key suppliers and customers, as well as IT customers. From an RBV perspective, (Ricciardi & al., 2018, p. 105)reveal that IT managers with a broad range of effective social networks can bridge knowledge gaps, positively impacting innovation capabilities and competitive advantage.

3.2.3 Information and Communication Technologies (ICTs)

(Turulja & Nijaz , 2018, p. 03)point out that the global economy has undergone a fundamental structural change driven by the globalisation of business and the revolution in information and communication technologies (ICTs). The new economy is a superior economic structure resulting from these two trends. This economy has established new rules and methods for conducting business, with its key characteristic being the widespread use of information technology. Information technology completes business processes and reduces costs. Companies must adapt to the evolution of electronic communication technologies both within and between businesses. In other words, information technology has become an integral part of all business functions.

(Kottemann & Kathleen , 2009, p. 32)emphasise the importance of using ICTs, recognising them as key to modernising information systems. In fact, modern ICT trends in various fields such as e-commerce and e-government have created wealth and economic growth. The scholars further add that the use of ICTs is essential for modernising economies (Kottemann & Kathleen , 2009, p. 34).

Regarding the infrastructure of information technology,(Chakravarty & al., 2013, p. 977)define IT infrastructure as encompassing not only physical assets such as hardware systems, software, applications, data warehouses, and other networking technologies but also the quality of IT upgrades. In contrast, IT capabilities provide companies with a range of technical and managerial skills and IT practices. IT also includes the knowledge and technical proficiency that reveal the best ways to leverage IT systems.

3.2.4 Human Resource Management from the Perspective of the Technological Approach

(Shukla & Kanna, , 2017, p. 268)point out that the use of information technology in human resource management (HRM) has grown significantly in recent years.(Hilla Peretz, 2013, p. 214)observes that, in the era of striving for excellence, HRM has become a critical source of competitive advantage. Enhancing and improving the effectiveness of human resources within organisations necessitates the integration of IT systems for the purposes of collecting, organising, and disseminating relevant human resource information to users and decision-makers.(Meyer & Steve , 2016, p. 1224)suggest that HRM strategies need to be addressed on a broader scale, as they are an integral part of other organisational strategies, such as technology and innovation strategies. **They add that the Knowledge-Based View of Competitive Advantage emphasises the relationship between human resources and technological capabilities**. In fact, an increasing number of authors and researchers have presented **successful knowledge management as deriving from the integration between individuals (human resources) and technologies, which is seen as a critical factor for operational performance.**

In the same context, (Turulja & Nijaz , 2018, p. 06)argue that information technology has had a profound impact on almost all business functions within companies. It is widely

acknowledged that the HRM function has been influenced by the development and use of information technology. From this standpoint, the use of IT in HR processes, and the fact that IT has transformed the way information about employees is collected, stored, disseminated, and used within a company, indicates that IT increases both the quantity and quality of information within organisations. According to the scholars, there is empirical evidence that the impact of IT on HR practices is positive, demonstrating that IT capabilities positively affect HRM capabilities.

(Turulja & Nijaz , 2018, p. 06)also note that the relationship between IT and knowledge management is based on the premise that IT enhances knowledge management by facilitating the exchange of information and knowledge among human resources. Additionally, IT supports knowledge management through various technologies such as **intranets, databases, document management systems, search engines, decision support systems, and data warehouses**. IT's support for knowledge management allows the organisation to create, store, share, and use knowledge more effectively and efficiently. IT also positively impacts knowledge management by enhancing the company's ability to manage its knowledge in response to the changing business environment.

Furthermore, (Bada & Shirin , 2006, pp. 179-180)emphasise that the effective exploitation of ICT capabilities lies not only in the availability of internet connections and terminal technologies but also in the acquisition, dissemination, and utilisation of relevant knowledge and information. This line of reasoning suggests that active participation in current globalisation trends must be grounded in learning and adaptation to foster innovative use of information to meet local needs and priorities. Therefore, the challenge facing governments and policymakers in developing countries is how to provide incentives and build capacities to use this information effectively.

3.2.5 Human Resource Management Practices from the Perspective of the Technological Approach

(Turulja & Nijaz , 2018, p. 03)reveal that information technology, knowledge, and human resources are among the most valuable resources in companies due to the dynamic nature of these resources.(PRICE, 2007, p. 37)also highlights that human resource managers interact with internet technologies in three ways: as information seekers searching for legal and practical knowledge, as service providers conducting recruitment, employer branding communications, and sharing knowledge; and as key participants in combating internet misuse in the workplace.(Ferratt & al. , 2005, p. 237)further explain that in today's IT-intensive economy, information technology plays a pivotal role not only in enabling organisations to achieve operational excellence but also in facilitating strategic competitive advantage, with **human resources being a key element in the foundation of IT assets.**

3.2.5.1 Digital Human Resources Management

(Li Ma, 2015, p. 71)argue that significant changes have been introduced to the economy, society, and culture with the rapid development of science and technology, especially through the use of computers and the internet over the past few years. With the emergence of these technologies, a new wave of human resource (HR) technology has surfaced, known as

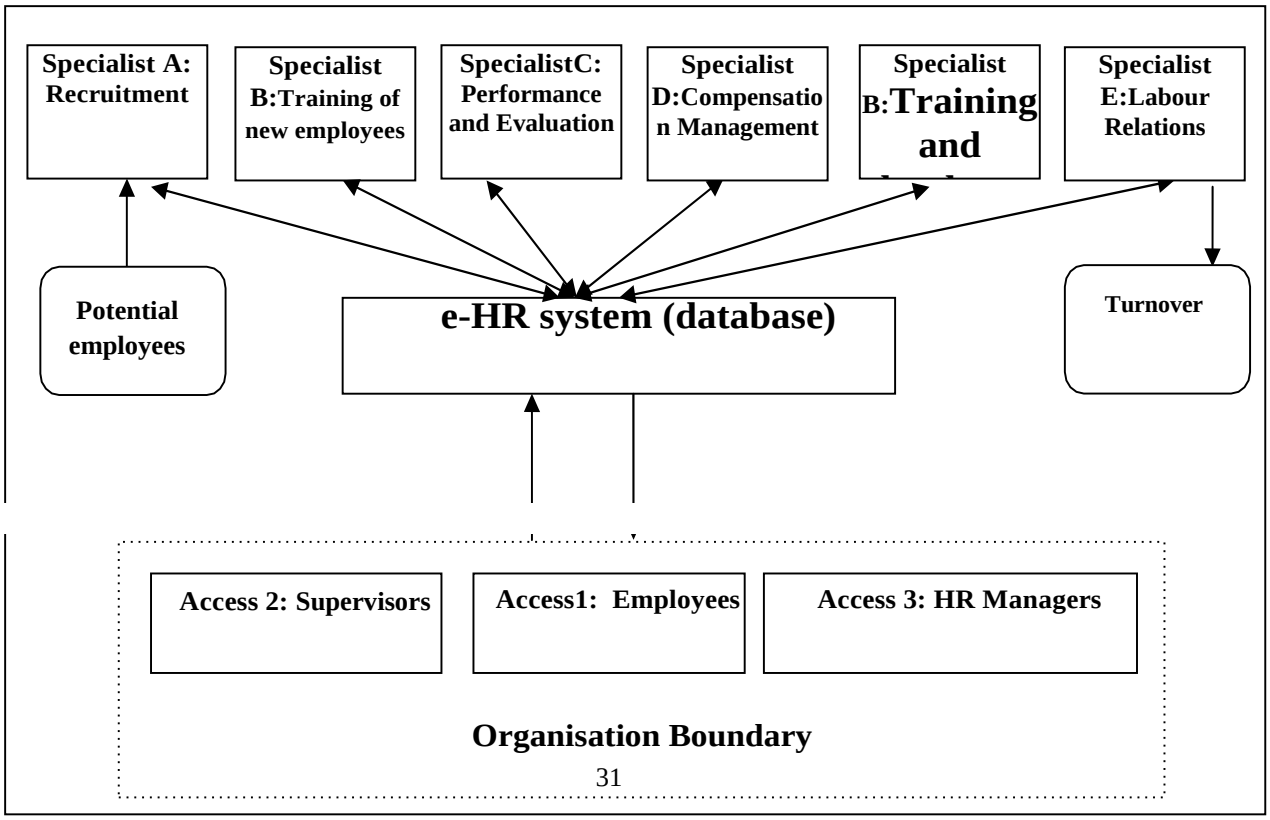
Electronic Human Resource Management (E-HRM), which can also be referred to as Digital Human Resource Management. This raises the following question: What is E-HRM?

(Lazazzara & Eleanna , 2018, p. 125)define (**E-HRM)** as "a broad term that encompasses all possible integration mechanisms and content between human resource management **(HRM)** and IT, aiming to create added value for target users and managers."(Strohmeier, 2007, p. 21)also defines E-HRM as the planning, implementation, and application of information technology for all networks, supporting at least two individuals or groups in jointly performing HR activities.

3.2.5.2 E-HRM Model Practices

(Lengnick-Hall & Steve, 2003, p. 365)suggest that recent technological advancements have made it possible to create a real-time, information-based, self-service, and interactive work environment—something that was not feasible for most of the 20th century. With **Electronic Human Resource Management (E-HRM)**, managers can access relevant data and information, conduct analyses, make decisions, and communicate with others. They can do all of this without consulting HR specialists unless they choose to do so. **(E-HRM)** also allows employees to manage their own personal information, update records as situations change, and make numerous decisions independently. The following diagram illustrates the **(E-HRM)** model.

Fig 2: E-HR Management Model



Source: Hong Kesen, (2012), **How E-HR Optimises the Human Resource Management Process**, 2012 3rd International Conference on System Science, Engineering Design and Manufacturing Informatization, Chengdu, China, 20-21 Oct. 2012, p. 379.

(Bengtsson & Moa, 2017, p. 07), the accelerated technological evolution has revolutionised society, communication, and the way organisations operate. Technological advancement has placed pressure on organisations and their staff to adapt to a rapidly changing world, along with the increasing number of digital innovations. Digitalisation has become a buzzword in organisational discourse, seen as something organisations must embrace to survive. Thus, transformation is required at all levels to create a modern organisation capable of continuous change.(Bondarouk & Chris , 2016, p. 07)argue that electronic human resource management (E-HRM) serves as a way to implement HR strategies, policies, and practices in organisations, directly supported by the full use of internet-based technologies.
(Kesen, 2012, p. 380), citing Chambers & Johnston (2007), indicates that electronic human resource management (E-HRM) enhances traditional human resource management in several key aspects, including:

- **Quality**: Well-designed processes always ensure that products and services meet high standards with minimal wasted effort.
- **Speed**: Efficient processes typically reduce waiting times and increase responsiveness.
- **Reliability**: A well-designed process ensures the timely delivery of products and services while minimising disruptions and confusion.
- **Flexibility**: A well-structured process enhances the ability to handle a wide range of products and services, allowing for cost-effective, rapid production and service changes. It can also increase the capacity to deal with unexpected events, such as supply failures or processing errors.
- **Cost**: Well-designed processes are usually low-cost, both in terms of operational and capital resources.

E-HRM improves the quality of HR management by reducing subjective biases, as the system helps HR professionals perform numerous high-quality tasks. It also speeds up traditional HR processes, with the use of computers and the internet enabling specialists to accelerate their work and reduce waiting times. E-HRM increases the reliability of HR functions. As we know, tasks in traditional HR management are separated—if Specialist A delays their task, Specialist B will be delayed as well. In the E-HRM system, tasks are independent, and all specialists can perform their duties separately. Their work is sorted into the HR database, so even if Specialist A is delayed, Specialist B can still complete their tasks. Additionally, all HRM functions are visible and evaluated on the HR **Database**(Kesen, 2012, p. 380)**.**

Information technology also supports Human Resource Development (HRD), which(Betchoo, 2016, p. 02)defines as the framework necessary to help employees develop personal and organisational skills, knowledge, and abilities. HRD includes opportunities such as employee training, career development, performance and development, mentoring, and succession planning. The advancement of technology in the global workplace has profoundly impacted the roles of HRD professionals. In the past, technology in HRD was mainly limited to media

supporting training. However, new digital technologies enable greater integration and flexibility, allowing employees more voice, experience, and the ability to create their own work.

According to (Al-Dmour & Zu'bi M. F. , 2014, pp. 140-141), HR Information Systems (HRIS) are used at three different levels: information dissemination, transaction automation, and transforming the way HR is managed in organisations, making HR a strategic partner. It also enables the creation of information efficiencies and reduces costs. HRIS allows HR departments to improve their focus on analysing current data, which can be used for strategic decision-making. The functions of HRIS interact with most HR management systems, including planning, recruitment, training and career development, performance management, and compensation management. They describe HRIS as a continuum consisting of three levels: electronic data processing, management information systems, and decision support systems.

(Becker & Barry , 1996, p. 781) argue that HR systems can be a unique source of sustainable competitive advantage, particularly when their components are highly integrated both internally and externally. Recent theoretical work in business strategy has emphasised the importance of human resources in achieving sustainable competitive advantage. According to the resource-based theory of the organisation, developed by Barney (1986, 1991, 1995), sustainable competitive advantage can only be achieved by creating added value in a way that is rare and difficult for competitors to imitate.

4. Integration of Human Resource Management, Knowledge, and Information Technology

(Bada & Shirin , 2006, pp. 179-180)highlight that the importance of human capital as a critical element in any development initiative is widely recognised. The primary goal of human resource development is to increase the knowledge, skills, and abilities of all individuals in society, while also promoting their well-being through economic growth and development. This can be achieved through several means, including the development and provision of appropriate, practical education and training, on-the-job learning, and self-development. These efforts enable human resources to access information and knowledge and make improvements. Furthermore, changes in information and communication technology (ICT) and its applications place new demands on the human capital needed to function effectively in the changing global technological and business environment. At the same time, knowledge and skills related to local issues are crucial for preparing developing countries (DCs).

(Turulja & Nijaz , 2018, p. 02) reveal that the rapidly changing business environment, characterised by globalisation, requires companies to continuously improve their performance to meet increasing customer demands and compete with other firms. In such an environment, improvements are possible through product and process innovation, enhanced quality and productivity, and speed to market. Moreover, it is acknowledged that physical assets are no longer as significant for a company's business performance and competitiveness as they once

were. Today, information technology (IT), alongside individuals and their knowledge, is considered the most valuable asset of a company. (Turulja & Nijaz , 2018, p. 03) also emphasise that IT is a driving force that reshapes all aspects of business practices in the digital age. Meanwhile, knowledge and human resources have become the two main pillars of competitive advantage in today's dynamic and complex global business environment. Therefore, in the digital age, IT, knowledge, and human resources are the most valuable resources for companies.

This study has shown how ICT impacts human resource management, offering insights for future research and practical advice for organisations aiming to use technology more effectively in HR.

Traditional human resource management was often characterised by numerous inefficiencies, including complex, slow, and administratively burdensome processes. It was also costly and time-consuming. However, with the advent of information technology, HR has undoubtedly changed the way it operates. Tools such as the internet, intranets, databases, document management systems, search engines, decision support systems, data warehouses, smartphones, tablets, and various other technologies have transformed human resource management into a critical strategic function within companies. Human Resources (HR) has increasingly become driven by technology, focusing more on predictive analytics and strategic decisions based on behaviour analysis and data collection.

In light of the literature reviewed by scholars and researchers, several recommendations can be made, mainly focusing on the need to adopt information technology and raise awareness of the importance of creating a digital culture within organisations to disseminate knowledge and promote teamwork. The recommendations are as follows:

- Raise awareness about the importance of information technology.
- Foster a digital culture across all departments and divisions within the organisation.
- Mandate the use of information technology within the organisation and encourage employees to adopt it.
- Managers and employees must understand the benefits of applying electronic HR management.
- Promote knowledge sharing and electronic teamwork.

5. CONCLUSION

Traditional human resource management has been characterized by numerous errors, including complexity, slow processes, and heavy administrative burdens. It is also costly and time-consuming. With the emergence of information technology, there is no doubt that it is changing how human resources operate. Human resource management now employs tools such as the internet, intranets, databases, document management systems, search engines, decision support systems, data warehouses, and technologies like smartphones and tablets. These various technologies have made the HR function a crucial strategic role in companies. Furthermore, human resources have become a

driving force behind technological changes increasingly oriented towards predictive analytics and strategic decisions based on behavior analysis and data collection. In light of the literature from thinkers and researchers, **recommendations can be proposed, most of which**:

- emphasize the necessity of adopting information technology and increasing awareness and interest in creating a digital culture within the organization to disseminate knowledge and support team spirit in the workplace.

-Introducing the importance of information technology. –

Creating a digital culture across all departments and sections of the organization.

- The necessity of widespread use of information technology within the organization and encouraging employees to utilize it.

- It is essential for managers and employees to recognize the benefits resulting from the implementation of e-management for human resources

- Activating knowledge sharing processes and electronic teamwork

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