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Concept, Theory, and Classification of Electronic-HRM: A Conceptual Study

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Abstract
E-HRM has a broad and rich theoretical base that has an exceptional impact on the work environment. Numerous recent studies suggest that due to the rapid advancement of information and communication technology, the use of E-HRM technology has grown significantly in recent years across a variety of businesses and public services. The current study follows the qualitative research methodology by analyzing the content of previous studies related to the subject of the study. This study aims to increase in-depth knowledge and deliberates on the importance of E-HRM technology as an effective method in all areas that convert human resources from merely administrative partners to strategic partners in the work environment, via shedding light on the operational relational and transformational classification of E-HRM and how these classifications covering the business targets in the administrative relational and strategic aspects. Furthermore, this paper focuses on the theoretical part of E-HRM by elaborating on the Adaptive Structuration Theory as one of the best group communication theories and studies the interaction of groups and organizations with information technology. The study concluded that E-HRM is a critical technology that can meet the new workplace needs and handle the advanced work environment issues due to the emergence of globalization in the markets and the strong competition. This study contributes to the body of knowledge by providing a thorough grasp of the benefits of adopting the E-HRM technology to improve workplace workflow. Moreover, this study clarifies the idea of E-HRM and demonstrates how important it is for practitioners and researchers to continue to explore and pay attention to it.
Keywords: E-HRM, Operational E-HRM, Relational E-HRM, Transformational E-HRM, Adaptive Structuration Theory (AST).

Introduction

Implementing a human resource management (HRM) plan based on information and communication technology has become a necessity in today's workplace, and it is becoming increasingly widespread. Integration of information and communication technology with HRM strategies has a favorable impact on the organization's and employees' levels of performance (Askenazy et al., 2006; Bloom et al., 2012). The ability of a company to adapt and operate efficiently is enhanced by the relationship between HRM techniques and information technology. However, the digital revolution has caused significant changes in the world of work and has impacted the function of HRM with the advancement of technology related to HRM, which is now referred to as electronic human resource management (E-HRM) (Giri et al., 2019). The rapid development of the Internet over the last decade has also aided the implementation and use of E-HRM (Zureikat, 2017).

Traditional methods were transformed and developed in all industries as a consequence of globalization and technological progress. In the business world, information technology drives the majority of functions to enhance and develop their implementation (Erdomu & Esen, 2011). Traditional HR practices are being replaced with automated HR practices, which implies that paperwork and labor-intensive HR tasks are being replaced with valuable and repeatable activities to gain a competitive advantage inside the firm (Marler & Fisher, 2013). The initial expectation is that E-HRM will free HR departments from administrative burdens, allowing them to focus more on developing social and intellectual capital to construct a company (Lengnick-Hall & Moritz, 2003). Under the influence of technology and globalization, E-HRM will provide a universal competitive advantage. The HRM function has been heavily involved in dealing with the digital age as a result of the revolutionary technology advancements that have impacted the world of work and management practices at various levels (Strohmeier and Parry, 2014).

Problem statement

Businesses are under pressure to adopt more innovative business methods because of how quickly global trends like globalization, technological advances, and the knowledge-based economy are altering the globe. In other words, the emergence of globalization in the markets and strong competition in light of the change in market conditions made companies face many new challenges (Isabelle et al., 2020). This quick change has also had an effect on how human resources departments operate. In this process, experts in information technologies and human resources management collaborated to develop software and systems that move HR information and decision-making systems from personnel files to computers (Hall & Moritz, 2003). HRM processes were restructured, which was a key step in the implementation of E-HRM applications. However, there is a lack of E-HRM studies, and the fact that it is still in its early phases (Noerman et al., 2021; Nurlina et al., 2020).

Thereby, this study seeks to investigate the traditional approach to the conceptualization of the administrative function, particularly the management of human resources, which needs to be reviewed and developed in a way that is compatible with the challenges and activities of the new world of work (Janssens and Steyaert, 2009; Manuti and de Palma, 2017). Thus, to face the new challenges in digital work, E-HRM is a more developed concept in the field of HRM. Considering the aforementioned, the current study aims at meeting three key objectives

- Exploring the concept of E-HRM to reflect the administrative, relational, and strategic aspects.

- Exploring the classifications of E-HRM to reflect the administrative, relational, and strategic aspects.
- Exploring the theoretical perspective of E-HRM.

Literature Review

The changes in human resources management functions and applications with the effect of technology during this time have been explained. In addition, the electronic human resources management process and its applications, which have been more important as a result of developed human resources technology, are examined and presented in this section. By following the coming parts, the paper proceeds as follows. Begin with E-HRM definitions, classifications of E-HRM technology, and lastly the theoretical perspective of E-HRM.

E-HRM

This section includes mentioning and evaluating some of the essential definitions of E-HRM, which in turn helped in reaching the three types of E-HRM, namely operational, relational, and transformational definition, and the application of the operational definition that serves the research methods to attain the research purpose. Because having the appropriate conceptualization of E-HRM will lead to a clear methodological approach to researching it. Linked to this, Rahman & Hosain (2021) mentioned that E-HRM is a phrase that was coined in the 1990s to describe the usage of the internet to conduct HRM transactions. The application of technology in HRM is described by researchers using a variety of words (Shobaki et al., 2017). Some researchers now claim that E-HRM has been interchangeably connected with Human Resource Information systems (HRIS), virtual HRM, web-based HRM, and Intranet-based HRM (Rahman & Hosain, 2021; AKM et al., 2015). Several academics and researchers have provided various definitions of E-HRM which support the concept of E-HRM being defined as any form of technology that facilitates the delivery of HR services (as illustrated in Table 1) and support the idea that E-HRM is integration mechanisms and contents shared between HRM and Information Technologies (IT) (Bondarouk & Ruël, 2009).

Table (1)
E-HRM definitions

Authors	Definition
(Hopkins and Markham, 2003)	E-HRM is, "the strategic application of web-based technologies to HR-related systems that along with other organisational changes which will lead to a more broadly based access to HR information and wider opportunities for managing that information" (p.7)
(Kettley & Reilly, 2003)	The application of conventional, web and voice technologies to improve HR administration, transactions and process performance" (p.3)
(Ruël et al., 2004)	E-HRM is, "a way of implementing HRM strategies, policies, and practices in organizations through the conscious and direct support of and/or with the full use of channels based on web-technologies" (p. 16)
(Bondarouk and Ruël, 2005)	E-HRM is, "the directed and IT-networked communications from the employer to employees about HRM content" (p.4)
	E-HRM is, "the application of any technology that enables managers and employees to have direct access to HR and other

(Olivas-Lujan et al., 2007)	workplace services for communication, performance appraisal, reporting, team management, knowledge management, and learning of administrative applications" (p.419)
(Strohmeier, 2007)	E-HRM is, "the planning, implementation and] application of information technology for both networking and supporting at least two individual or collective actors in their shared performing of HR activities" (p. 20)
(Voermans & Van Veldhoven, 2007)	E-HRM is, "the composite of databases, computer applications and hardware and software used to collect, store, manage, deliver, present and manipulate data for Human Resources" p.887
(Parry and Tyson, 2011)	E-HRM refer to, "how, using technology, organisations implement HRM strategies, policies and practices to help them achieve their objectives" (p.355)
(Bondarouk and Ruël, 2013)	E-HRM is "the integrative mechanism between HRM and IT that aims to create value within and across organisations for targeted employees and management" (p.391)

Multiple definitions of E-HRM are shown in table (1), demonstrating what was covered in the previous literature as well as the authors differing perspectives on the nature and goals of E-HRM. Depending on E-HRM potential goals and practices, E-HRM is classified into three types operational, relational, and transformational (Lepak and Snell, 1998; Strohmeier and Kabst, 2014; Parry & Tyson, 2011).

Operational E-HRM aims to focus on the administrative field in HRM to improve efficiency or automate the administrative tasks of the human resources department to reduce the costs (Galanaki et al., 2019), relational E-HRM aims at empowering employees at work through managing their relationships with the managers and through training, recruitment, and performance management ensure that work is supported (Ruel et al., 2004), Lastly, transformational E-HRM aims at improving the strategic aspects of human resource management by transforming human resource functions to become more effective (Al-saidi & Alaa, 2020).

Table (1) content; reveals that some authors suggest that E-HRM is an administrative tool that aids in the administration of human resources responsibilities (e.g. Kettley & Reilly, 2003; Voermans & Van Veldhoven, 2007; Parry and Tyson, 2011). Others say it is a relational tool that manages the organization's connections with its employees and facilitates access to HR information (e.g. Bondarouk and Ruël, 2005; Olivas-Lujan et al,. 2007; Strohmeier, 2007; Hopkins and Markham, 2003), while such authors consider it as a transformational/strategic tool that focuses on improving the organization's strategy and aligning the attitudes and behavior of employees with this strategy (e.g. Bondarouk and Ruël, 2013; Ruël et al., 2004).

Some definitions of the term E-HRM, according to theoretical grounds, were insufficient to characterize it in all three aspects: administrative, relational, and strategic. Some definitions, as shown in Table (1), treated electronic HRM just as an administrative instrument, ignoring the relational and strategic goals of the electronic HRM. E-HRM is a method for more effectively connecting the various HRM functions within the company (Al-Harazneh & Sila, 2021; Bondarouk & Ruël, 2009). Furthermore, it is a means of facilitating end-user integration into HR functions at all levels of the organization, as well as the effective role of E-HRM in adding value to the organization by directing and transforming employee behavior to align with the organization's strategy.

The need for a comprehensive description of E-HRM in terms of its functions and the value it brings to human resources in particular and the company as a whole resulted from the inadequacies of describing the term. For this, the definition "an umbrella term covering all possible integration mechanisms and contents between HRM and information technologies, aiming at creating value within and across organizations for employees and management" was agreed upon after the conclusion of many conferences and the exploration of the literature that it is comprehensive and does not focus only on the administrative aspects, but rather includes the strategic behavior of organizations and the creation of value for the organization and users (Bondarouk and Ruel, 2009).

E-HRM Classification
Electronic HRM is considered an integrated system that does not play a specific role in the development of HRM, but rather follows a set of mechanisms in the way it manages human resources. HRM, in general, refers to a collection of practices for efficiently managing human resources within a company. The E-HRM system uses technology as an effective means of dealing with these undertaken practices to reach three main goals: sustaining the HR department's effectiveness, improving services for internal clients, and improving HRM strategic orientation (Iqbal et al., 2019). Thus, E-HRM practices can be classified as operational, relational, or transformational (Bissola & Imperatori, 2013). They are expanded upon in the next sections.

Operational E-HRM
Operational E-HRM, also known as transactional E-HRM or administrative E-HRM, is a type of e-HRM that is built on the use of information technology to automate HRM operations and reflects the efficiency of its practices by producing more value at lower costs (Broderick and Bodreau, 1998; (Ball, 2001). Where the additional value to HRM administrative processes resides in making them easier to use and accept by employees, which validates the success of their execution with more accurate outcomes and the use of fewer resources (Altaf et al., 2019).
The practices of this sort of technology are referred to as zero-level practices since they are regarded as obligatory and tied to the existence of the human resources function in any firm (Maatman et al., 2010). And Lengnick & Mortiz (2003) defined that "operational practices are linked with the basic obligatory HR practices which are used to publish certain information related to day to day operations". A number of authors have promoted the idea of adding value through operational E-HRM practices in improving productivity and reducing costs of HR activities by reducing the number of employees as well as the administrative workload by doing HR tasks and electronically storing HR data such as payroll operations and any routine daily work such as attendance records (Ruel et al., 2004; Marler, 2009).
Studies stated that "operational practices are the practices which provide information or make information available which is used for decision support" (Ishrata et al., 2020; Snell et al., 1995). As a result, operational E-HRM technology provides human resources services via an internal network and provides the necessary information to assist employees and managers at all levels of the organization in performing electronic human resources activities quickly and efficiently. The authors Strohmeier and Kabst (2014) concluded that the key to realizing the benefits of computerizing human resource management tasks is to make the human resource system an integrated channel that provides information that drives the

organization to make decisions that enable it to achieve and maintain its competitive advantage.

Relational E-HRM

Relational E-HRM technology is a set of electronic practices that enable human resources management to manage communication and cooperation between the organization and its employees to ensure that work between the human resources department, administration, and employees runs smoothly (Myllymäki, 2021).

Some relational E-HRM practices focus on improving human resource services quality, while others focus on empowering managers and employees in their jobs (Parry & Tyson, 2011). To clarify, using the E-HRM system as a tool to improve cooperation inside the HR department and link their operations to boost data accuracy, the convenience of information sharing, and the smooth application of human resources functions is how to improve HR services (Panos & Bellou, 2016; Iqbal et al., 2019). As a result, when personal information has been processed by human resources specialists, managers and employees will be able to access and view it on their own. In this instance, the organization's management earns the trust of its employees by ensuring procedural and organizational fairness, and the manager can monitor his employees' performance more efficiently and effectively.

E-HRM is an enabling and vital technology (Iqbal et al., 2019). It was stated that this technology-assisted boosts employee awareness and improves their involvement with human resources programs. Other studies have stressed the relevance of Relational E-HRM practices in achieving higher employee satisfaction with Human Resources Department services, and therefore firms can overcome any challenge in retaining their talented employees (Shahreki, 2019; Ziebell et al., 2019).

Transformational E-HRM

Informational E-HRM is another name for transformational E-HRM (Strohmeier and Kabst, 2014). According to the E-HRM transformational system, employee behavioral patterns are maintained and aligned with the company's strategy, and the human resources department is transformed through the development of its management to its strategic orientations (Démeijer, 2017).

E-HRM transformational approaches promote learning and the development of effective plans to complete human resources tasks. These methods allow employees in all areas a voice, converting human resources from merely administrative partners to strategic partners in the firm (Martin and Reddington, 2010). Therapy, HR professionals will be able to contribute to the creation of the company's long-term strategy and will be able to participate in strategic policies and decision-making processes (L'Écuyer & Raymond, 2020). As a result, improving company performance, which is today the most essential concern of companies trying to achieve their objectives and the well-being of stakeholders (Khashman & Al-Ryalat, 2015).

To sum up, the organization's adoption of an E-HRM system allows it to meet its objectives on three levels (operational, relational, and transformational). So that at the E-HRM operational level, it can simplify HRM processes and thus reduce implementation costs, and at the E-HRM relational level, it can improve efficiency by improving HR services and enabling the organization's relationship with its employees, and at the E-HRM transformational level, it can improve its strategic direction. However, effective use of the information and communication technology system is required to reap the full benefits of E-HRM practices.

That is, effective information technology management is a necessity for the effectiveness of all parts of the electronic human resource management system (Altaf et al., 2019).

Adaptive Structuration Theory

Adaptive Structuration Theory (AST) is one of the best theories of group communication and studies the interaction of groups and organizations with information technology (Turner et al. 2019). It was propelled by Anthony Gidden's concept of structuration, and created by M. Scott Poole (1994) based on the work of Giddens (1979), and Orlikowski (1992). AST is a theory that determines the organized and supportive structure of social communication between groups in an ad hoc manner to enhance the production of these social systems and the essence of the work (Tavella et al., 2020).

AST is a way of studying the advanced technological system and its role in organizational change. To elaborate, theory explains the process of change from two perspectives: the structures that generate new technologies and the structures for the actors who deploy and use new technologies (Tavella et al., 2020). The need for this theory derives from technical advancements, and numerous Internet-related systems have appeared where smart work that relies on the usage of the Internet for its implementation rather than conventional techniques has been given priority. One of these systems that emerged as a result of technological advancement and can be explained by AST is E-HRM (Ahmed & Ogalo, 2019; Siam & Alhaderi, 2019).

AST represents a very useful perspective for understanding the integration of technology into existing social structures and processes. The theory's strength is that it describes the processes of social structures interacting with modern information technology, as well as the effects of these activities (Tavella et al., 2020). As a result, we can better comprehend the nature and complexity of the relationship between technology and the organization, improving our understanding of how to implement and use technologies to promote productive adaptation (DeSanctis & Poole, 1994). AST utilizes a theoretical perspective of study to consider social realism, as having technology gives people bunches with "capabilities and opportunities to do things they could not have done before" (Leonardi, 2013).

AST looks to address the conundrum that indistinguishable technology can encourage comparable flow but result in exceptionally diverse basic outcomes. To explore, under information technology and organizational change, there are three schools of thought: the decision-making school, the institutional school, and the School of Social Technology.

Firstly, the decision-making school which is takes a positive approach by relying on knowledge to make a rational decision. The companies look forward to the correct selection of the used technology and its proper implementation to achieve the required change of improving the productivity, efficiency, and satisfaction of individuals and organizations. Any failure to achieve the desired goals reflects the failure of the technology adopted and implemented (Turner et al., 2019). Secondly, the institutional school is a descriptive approach to investigating those centers of social structure and human interaction. Thinking about innovation is seen as an opportunity for change rather than as an operator of change. This school reinforces the conviction that individuals make social undertakings to innovate using the assets, illustration plans, and measures included in the larger organization setting. Lastly, the school of Social Technology is an integrated approach to positivism and interpretation. She says "technology has structures in its own right, but social practices mitigate its impact on behavior. This school is the basis of AST" (Turner et al., 2019; DeSanctis & Poole, 1994).

AST used by several studies to attain their study objectives. For example, Kabanda, Salah, and Brown (2017) used AST to explain the relationship between the adoption of advanced technology and its effect on organizational outcomes. Fındıklı and Bayarçelik (2015) shed the light on exploring the perspectives about the E-HRM system and its consequences on organizational outcomes. In addition, Shahreki (2019) examined the connections between electronic human resource management (E-HRM) and representative employees' productivity, with impersonal trust being the mediating variable based on adaption structuration theory (AST). Therefore, based on the aforementioned, the key advantage of considering this theory for E-HRM investigation is that it "expounds on the nature of social structures within advanced information technologies and the key interaction processes that figure in their use" (Turner et al., 2019). Structuration theory sets that people are both portions of a structure and are specialists that create and alter the structure producing a duality of structure (Giddens and Miller, 2012).

Findings Discussion
In order to achieve its objectives, the study elaborates on the theoretical, conceptual, and classification components of E-HRM by examining how these features correspond to the administrative, relational, and strategic sides. According to the findings of this study, E-HRM technology is an operational tool that focuses on the administrative field of HRM to improve administrative tasks, a relational tool that focuses on empowering employees at work by managing their relationships with the managers and supporting them by providing the appropriate HR practices, and a transformational tool that aims at improving the strategic aspects of human resource management by implementing E-HRM technology. Exploring the concept of E-HRM to reflect the administrative, relational, and strategic aspects.

Implications
This study contributes to the existing literature by considering the essential role of E-HRM to face the new workplace challenges due to the emergence of globalization in the markets and strong competition in light of the change in market conditions and customer needs (Isabelle et al., 2020). This study aims to contribute to knowledge by focusing on how it might enhance workflow in the workplace. Moreover, this study clarifies the idea of E-HRM and shows how worthy it is of further study and attention by practitioners and researchers.

Conclusion
As a result of rapid changes and new trends in the business environment, the business world has been facing challenges and demands at a fast pace. Thus, new management approaches and new ways to manage the employees, as well as how these factors contribute to the growth and preservation of competitiveness, are required to be investigated (Gonçalves & Neves, 2012). Traditional competitive advantage sources are necessary but insufficient (Savaneviciene & Stankeviciute, 2012). Thereby, revising the traditional approach in the administrative function, specifically human resources management, is crucial. Accordingly, this study, in particular, validated the idea that E-HRM is a more developed concept in the field of human resource management for addressing the issues brought on by digital work.

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