

Electronic human resource management: Enhancing or entrancing?



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Orientation: This article provides an investigation into the current level of development of the body of knowledge related to electronic human resource management (e-HRM) by means of a qualitative content analysis. Several aspects of e-HRM, namely definitions of e-HRM, the theoretical perspectives around e-HRM, the role of e-HRM, the various types of e-HRM and the requirements for successful e-HRM, are examined.

Research purpose: The purpose of the article was to determine the status of e-HRM and examine the studies that report on the link between e-HRM and organisational productivity.

Motivation for the study: e-HRM has the capacity to improve organisational efficiency and leverage the role of human resources (HR) as a strategic business partner.

Main findings: The notion that the implementation of e-HRM will lead to improved organisational productivity is commonly assumed; however, empirical evidence in this regard was found to be limited.

Practical/managerial implications: From the results of this investigation it is evident that more research is required to gain a greater understanding of the influence of e-HRM on organisational productivity, as well as to develop measures for assessing this influence.

Contribution: This article proposes additional areas to research and measure when investigating the effectiveness of e-HRM. It provides a different lens from which to view e-HRM assessment whilst keeping it within recognised HR measurement parameters (the HR value chain). In addition, it not only provides areas for measuring e-HRM's influence but also provides important clues as to how the measurements may be approached.

Introduction

In recent years, the use of technology in facilitating the human resource management (HRM) function has increased significantly. A number of business objectives have been raised in support of the introduction of electronic human resource management (e-HRM) in the 21st century. These have included cost savings and increased efficiency, the facilitation of strategic aims, and improvements in client services, all of which are clearly beneficial from an organisational perspective (Marler, 2009; Ruël, Bondarouk & Looise, 2004). However, before organisations expend resources on e-HRM systems, it is important to determine whether e-HRM is indeed supporting the attainment of business objectives. In this regard, it is important to consider the role played by e-HRM, the factors that influence the successful implementation of e-HRM systems, and the link between e-HRM and organisational productivity. This article aims to explore these considerations as well as provide an overview of the current body of knowledge related to e-HRM.

In this study, 100 articles, journals and other research products were examined of which 67 were included in the final analysis. These research products were chosen based on their relevance in exploring the following areas: definitions of e-HRM, various types of e-HRM, theoretical perspectives on e-HRM, e-HRM's effect on productivity and other key issues surrounding e-HRM.

Purpose of the study

The objective of this qualitative content analysis is, firstly, to provide a theoretical overview of the current understanding of the nature and relevance of e-HRM, secondly, to identify the major contemporary areas of e-HRM research and, thirdly, to examine the link between e-HRM and organisational productivity. The findings of this analysis are offered in an attempt to stimulate the thinking of e-HRM researchers in terms of applying their efforts to exploring the influence of e-HRM from a more strategic perspective, in particular in researching the influence of e-HRM on organisational

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productivity and developing reliable measures in this regard. In the following section, a definition of e-HRM is provided.

Current theoretical perspectives

Defining electronic human resource management

Bondarouk and Ruël (2009, p. 506) argued that e-HRM definitions have 'flourished, with little consistency or agreement in sight'. The authors further argue the importance of understanding how researchers define e-HRM. They assert that minor differences in terminology may result in consequent studies assuming multiple directions, or in a range of user 'subsets' within the e-HRM target population. Since early works on the intersection between web-based technologies and HRM, a number of definitions have been proposed regarding this phenomenon. e-HRM has been referred to as HR Information System (HRIS), virtual HR(M), web-based HRM and intranet-based HRM, although the literature strikes a distinction between these various electronic and web-based phenomena.

To gain a clear understanding of what comprises HRIS is important. HRIS was initially defined as comprising a 'specialised information system within the traditional functional areas of the organisation, designed to support the planning, administration, decision-making, and control activities of human resource management' (DeSanctis, 1986, p. 16). In later years, HRIS was described as a system used to acquire, store, manipulate, analyse, retrieve and distribute pertinent information about the human resources of an organisation (Haines & Petit, 1997). Despite the term HRIS still being in use today, there is an assumed difference between the early information systems for HRM (HRIS) and the information technologies required for current e-HRM applications.

Magnitude and reach appears to be a prominent difference between an HRIS and e-HRM. Some definitions of e-HRM in existing literature focus on a network structure as a central defining feature. For example, Strohmeier (2007, p. 20) defined e-HRM as the 'planning, implementation and application of information technology for both networking and supporting of at least two individual or collective actors in their shared performing of HR activities'. Lepak and Snell (1998, p. 216) used the term 'virtual HR' to encompass a 'network-based structure built on partnerships and mediated by information technologies to help the organisation acquire, develop, and deploy intellectual capital'.

E-HRM is thus regarded as a way of implementing HR strategies, policies and practices in organisations through a conscious and directed support of and/or with the full use of web technology-based channels (Ruël et al.'s, 2004). e-HRM provides multiple functions to its users including managing employee information for various purposes and supporting many HR activities such as recruitment and selection, performance management, compensation and benefits, training and development, health and safety, employee

relations, retention, and policies on work-life balance (Ensher, Nielson & Grant-Vallone, 2002; Olivas-Lujan, Ramirez & Zapata-Cantu, 2007). Thite and Kavanagh (2009) divided HRM activities into three categories: (1) transactional activities, involving day-to-day transactions and recordkeeping, (2) traditional HRM activities, such as recruitment, selection, planning, training, compensation and performance management and (3) transformational activities which add value to the organisation, such as organisational development, talent management and learning. As technology has become increasingly incorporated into HR systems large proportions of transactional activities are now delivered electronically. In the following section the differences between computerised human resource information system/human resource information systems (CHRIS/HRIS) and e-HRM are explored in an attempt to ascertain the pertinence of a technology driven and web-based interface aimed at multiple users in driving HRM effectiveness and efficiency.

The difference between computerised human resource information system/human resource information systems and electronic human resource management

Kettley and Reilly (2003) identified a CHRIS as comprising a fully integrated, organisation-wide network of HR-related data, information, services, databases, tools and transactions. This system forms an integral part of e-HRM and relates to the application of conventional, web and voice technologies to improve HR administration, transactions and process performance. Existing literature fails to provide a consistent definition of e-HRM and the term is often interchangeably used with HRIS, human resource management systems (HRMSs), HR software, web-based HR, HR Self-Service, business to employee (B2E) and other terms.

Walker (2001) defined HRIS as involving a systematic procedure for collecting, storing, maintaining, retrieving, and validating data about an organisation's human resources, personnel activities, and organisational unit characteristics. In understanding what constitutes e-HRM it is important to consider the following. An integrated HRIS, as well as appropriate technology, is required in order for e-HRM to be effectively implemented and thus allow for the acquisition, storage, analysis and flow of human resource information throughout the organisation (Van Heerden, Poisat & Mey, 2012). HRIS must, through an effective e-HRM platform, assist both human resource and line managers in decision-making that is linked to the achievement of strategic business objectives through systematically generating accurate, timely and relevant information (Van Heerden et al., 2012).

There are several fundamental differences between HRIS and e-HRM. In essence, HRIS are directed towards the HR department itself as users of these systems are mainly HR staff (Ruël et al., 2004). These systems increase HR departmental efficiency which then purportedly extends to the achievement of business objective (Ruël et al., 2004). e-HRM is not the sole domain of HR staff. It extends to

employees and managers within the broader organisational context through HR services which are offered via an intranet and/or the Internet (Ruël et al., 2004). The switch from the automation of HR services per se, towards broader technological support and the provision of information on HR data and services to multiple users is regarded as the major difference between HRIS and e-HRM (Ruël et al., 2004). In other words, e-HRM is a way of implementing HR strategies, policies, and practices in organisations through a conscious and directed support of and/or with the full use of web-technology-based channels (Ruël et al., 2004). In determining the position and relevance of e-HRM from an organisational perspective it is important to consider e-HRM in the context of business appropriate theoretical perspectives. This contextualisation is provided in the following section.

Theoretical perspectives related to electronic human resource management

Four major theoretical frameworks or perspectives on e-HRM are identifiable in the literature: contingency theory, resource-based view theory, transaction cost theory and new institutional theory. Firstly, according to Lawrence and Lorsch's (1967) *contingency theory*, organisations are largely influenced by the environment in which they operate and thus organisational success is dependent on the extent to which the organisation adapts internal structuring to account for the limitations imposed by the environment (Lawrence & Lorsch, 1967). There must be a fit between micro and macro environmental factors and suitable organisational structures in place to achieve desired outcomes (Ruël & Van Der Kaap, 2012). Secondly, the *resource-based theory* states that the most valuable element of organisational competitive advantage is the human resources of the firm which, in terms of this theory, is regarded as valuable, unique, inimitable, and not easily substitutable (Barney, 1991). e-HRM functions such as e-recruiting and e-learning can be viewed as tools which enable organisations to ensure this competitive advantage. Thirdly, *transaction cost theory* identifies cost effectiveness as the best explanation for institutional arrangements. Saving costs becomes the driving force behind organisations' complex, partially outsourced, partially decentralised and partially delegated e-HRM systems (Lepak & Snell, 1998). Fourthly, *institutional theory* has been used to clarify HRM practices and influence in the e-HRM field (Heikkilä, 2013). Institutionalism promotes a critical view on the factual consequences of organisational actions as well as offering explanations of the relation between institutional context and configurations of e-HRM (Strohmeier, 2007).

In further exploring the position and relevance of e-HRM in enhancing organisational efficiencies and effectiveness the following section explores the role of e-HRM as determined through the literature review.

The role of electronic human resource management

E-HRM is regarded as having three over-arching goals, namely (1) reducing cost, (2) improving HR services and

(3) improving strategic orientation (Bondarouk, Ruël & Van der Heijden, 2009; Brockbank, 1997; Lepak & Snell, 1998; Stanton & Coover, 2004). These goals are subject to external factors, such as the impact of globalisation, and lack a clear definition in the practice of e-HRM. From the literature review, it seems apparent that e-HRM is regarded as being mostly concerned with cost reduction and efficiency increases in the provision of HR services, rather than on improving the strategic orientation of HRM (Gardner, Lepak & Bartol, 2003; Parry & Tyson, 2011; Ruël et al., 2004; Ruta, 2005). It is argued that increasing the use of e-HRM allows HR professionals to improve their performance through participating more as internal consultants and focusing less on transactional and administrative duties, thereby providing value to the organisation and improving the standing of HRM in the organisation (Hussain, Wallace & Cornelius, 2007; Lawler & Mohrman, 2003). To this end, e-HRM is regarded as a medium which provides executive reports and summaries to help HR professionals and management in making strategic decisions (Broderick & Boudreau, 1992).

In understanding the contribution afforded to organisations in adopting a true e-HRM system, in other words one which is distinguishable from an HRIS and supported by the necessary technology and web-enabled platform, the following section explores the differing forms of and related HRM functions associated with e-HRM. These considerations are deemed important in determining the benefits of associating HRM functions with e-HRM from a broad-based HRM value chain perspective.

Types of electronic human resource management

Lepak and Snell (1998) identified three types of e-HRM: operational e-HRM, relational e-HRM and transformational e-HRM.

Firstly, *operational e-HRM* consists of the basic administrative activities of the HR department such as payroll, personnel data management, departmental record maintenance and others which make up the bulk of the workload of the HR Department. A number of authors have supported the cost-reducing benefits and increase in efficiency created by e-HRM in this regard (Marler, 2009; Ruël et al., 2004). This is achieved through minimising HR staff bonded to these activities, increasing processing speed and reducing the amount of administrative work, thus freeing time for other activities (Ruël et al., 2004; Ruta, 2005; Strohmeier, 2007).

Secondly, *relational e-HRM* comprises those HR activities that support a mutual relationship between the HR department and other departments, both within the organisation and externally. These types of e-HRM activities include functions such as e-recruitment, e-learning and e-performance management. Relational e-HRM may provide employees and managers with remote access to HR information, thus increasing their ability to connect with other internal and external stakeholders, as well as providing individuals with

the tools to perform HR activities themselves. This again lessens the involvement of HR staff, allowing them to refocus their priorities.

Thirdly, *transformational e-HRM* focuses on the strategic activities of HRM, such organisational change processes, strategic re-orientation, strategic competence management and strategic knowledge management. By improving the strategic orientation of HRM, e-HRM has the capacity to transform the HR function (Ruël et al., 2004). A strategic HR function links HRM activities to the strategic management process and strategic objectives of the business. This leads to an integrated set of policies and practices developed to execute the company's implicit or explicit business strategy through the management of the firm's human capital (Martin-Alcazar, Romero-Fernandez & Sanchez-Gardey, 2005; Wright & McMahan, 1992). A pivotal goal of e-HRM is thus to contribute to the strategic alignment of the HRM function. In this regard, e-HRM systems provide managers with accurate and reliable data about their employees which may prove crucial in business decisions (Ghazzawi, Al-khoury & Saman, 2014). This is perhaps the least considered and explored role of e-HRM, as may be evidenced by subsequent considerations in this review.

The success of e-HRM in enhancing the HRM value chain for the HRM department, line managers and other users or stakeholders of e-HRM is dependent on a number of requirements. These are outlined in the following section.

Key requirements for electronic human resource management success

The literature investigated revealed that a number of key issues need to be addressed in order to successfully implement e-HRM. These are discussed below.

Human resources skills

Changes to service delivery, and hence the HR role, cannot be achieved without the development of new skills within an organisation's HR team. Practitioners must possess consultancy, strategic thinking, analytical, advanced communication, negotiation, process engineering, project management and business writing skills (Parry & Tyson, 2011). If these skills do not already exist within the HR function then organisations will be unable to meet the required improvements in service delivery needed to take on the challenges associated with e-HRM and even consider moving the mode of HRM service delivery to a more strategic role (Parry & Tyson, 2011; Wright & Snell, 1998).

Training in electronic human resource management use

Providing sufficient training for users of the e-HRM system has a great influence on the outcomes of e-HRM use. Organisations that fail to do so report that systems do not provide the desired efficiency savings as users frequently have to contact HR to obtain support (Parry & Tyson, 2011).

A recommendation provided in this regard is to allow HRM staff more time to practise on the system so that they require less support once the system is live (Panayotopoulou, Vakola, & Galanaki, 2007; Parry & Tyson, 2011). In some cases, employees are not aware of the full functionality of the system and are therefore not able to take full advantage of this (Parry & Tyson, 2011).

Engagement with electronic human resource management

It is important for both managers and employees to engage with a new e-HRM system for it to be accepted and used within the organisation. Difficulties in encouraging managers and employees to make use of e-HRM systems have been experienced as managers have complained that using e-HRM is not a good use of their time and some still resort to using traditional offline systems (Parry & Tyson, 2011). This example emphasises the importance of encouraging people to change their mindset in regard to the value of adopting e-HRM to avoid delays and reaping the associated benefits (Parry & Tyson, 2011). The role of skills development, training and a relatable e-HRM system are highlighted as important in this regard.

The adoption of e-HRM may also be influenced by cultural factors, as the national culture in which a company is situated may in turn impact the culture of the organisation (Bondarouk, Schilling & Ruël, 2016). For example, a culture that relies on face-to-face relationships and personal connections may find e-HRM practices less personal and thus more difficult to adopt and engage with (Bondarouk et al., 2016).

Engagement with e-HRM is also influenced by the web of delivery channels which have evolved over time. This has influenced perceptions of a more advanced e-HRM. HR-shared service centres serve as one example hereof (Farndale, Paauwe & Hoeksema, 2009). Face-to-face HRM services are seen as becoming obsolete, with organisations preferring modern, well-designed and technically well-functioning IT-based e-HRM platforms. The inflexibility, rigidity, innovative incapacity, and inferior efficiency and effectiveness of traditional two-level HRM functions developed around the HR department and middle managers are becoming obsolete.

Design of the electronic human resource management system

The design of the e-HRM system may affect the outcomes of the introduction of that system (and therefore the realisation of goals). A system that is not user-friendly or intuitive increases the amount of administration necessary for managers rather than reducing it (Parry & Tyson, 2011). A further important consideration in terms of design is that of imitation. e-HRM is not exempt from the impact of imitation through the diffusion of technological innovations across economies, sectors and organisations (Ciborra, 2002). Adopting the same or a similar e-HRM application without considering organisational uniqueness may destroy the competitive advantage which may be associated therewith.

Familiarity with technology

Organisational culture which readily accepts the use of technology will find it easier to introduce e-HRM systems and to realise the benefits of said systems. User acceptance is of great importance in determining the success or failure of e-HRM systems. The technology acceptance model (TAM) is the most widely applied model of user acceptance and subsequent usage of information systems (Huang & Martin-Taylor, 2013). This model emphasises two main constructs: perceived usefulness and perceived ease of use (Huang & Martin-Taylor, 2013). Perceived usefulness is the belief that using a system will enhance job performance and perceived ease of use is the belief that using a system will require minimum effort (Huang & Martin-Taylor, 2013).

Conceptualising relationships between electronic human resource management and human capital development

At a strategic level, the relationship between e-HRM and human capital development needs to be clear for all users of e-HRM platforms. Global talent search and retention is believed to be facilitated by e-HRM. HR portals, explored by Shilakes and Tylman (1998) and Bondarouk and Ruël (2009), are considered a method of insuring informed business decisions, which are made based on personalised information from organisations, as well as the practice of monitoring, collecting and developing organisation-wide knowledge resources. This is particularly important in the alignment between HR portal configuration and HR strategy on the creation of intellectual capital (Bondarouk & Ruël, 2009). Frequently and easily accessed HR portals lead to the alignment of the HR portal configuration, with the HR strategy which allows for the ability to leverage intellectual capital creation and development. HR professionals become accountable for e-HRM (HR portal) design and choices regarding its applications (Bondarouk & Ruël, 2009).

Measurement of value creation for diverse groups of users

A core concern in the development and implementation of e-HRM is on how value creation is measured for diverse groups of users (Bondarouk & Ruël, 2009). E-HRM users have become increasingly comfortable with the use of e-sources in finding reliable and high-quality information and learning how to work with applications and software that they are not traditionally familiar with (Bondarouk & Ruël, 2009; Martin, Reddington & Alexander, 2008). Therefore, for current and new e-HRM applications to be constructive, their use and value must be acknowledged by their users. Different user groups will have different views on the relevance of e-HRM (Bondarouk & Ruël, 2009). Limited value exists in the simple division of users into management, employees and HR professional groupings as multiple subgroupings can be identified within these groups. All of these groups and subgroupings have unique needs that must be met.

Following the above exposition of the nature, role and importance of e-HRM, including information on the drivers

for the successful implementation of e-HRM, it becomes important to consider the influence of e-HRM on productivity (Parry, 2011).

Electronic human resource management and productivity

Watson (2002) identified four factors which provide evidence of the value of e-HR: productivity improvements, cost reductions, return on investment and better employee communications. Several pieces of existing literature and case studies hint at increased productivity as a result of e-HRM. This is seen as being achieved through a reduction in HR staff, cost savings and less administrative burden due to automation (Hawking, Stein & Foster, 2004; Ruël et al., 2004 as cited in Strohmeier, 2007). However, it is not possible to directly translate the time saved by e-HRM into financial benefits (Dias, 2001). E-HRM can help achieve relational goals, namely, the provision of high-quality services to the internal customers of the organisation, through increasing the timeliness and improving the client-service orientation of HR professionals (Snell, Pedigo & Krawiec, 1995 as cited in Lepak & Snell, 1998).

According to Walker (2001), improving the level of service, reducing costs and allowing more time for higher value tasks are of great importance for the success of technology in the HR domain. It is expected that the HR function provides strategic direction to human capital management in an organisation and becomes a strategic partner in the achievement of organisational objectives (Hawking et al., 2004; Lepak, Bartol & Erhardt, 2005). Thus investments in technology are aimed at bringing about efficiency in operational tasks (Bell, Lee & Yeung, 2006; Lawler & Mohrman, 2003). It is believed that e-HRM can promote the quality of HR functions as well as help managers to supervise employees efficiently and effectively (Yusoff, Ramayah & Haslindar, 2010). In relation to the role of e-HRM and organisational productivity, it is argued that e-HRM helps to achieve the aim of globalisation of organisations, which has led to the development of terms like global HRIS, global information system (GIS) and international human resource management (IHRM; Akmanligil & Palvia, 2004; Ruël et al., 2004). Many unknown and complex challenges are created by globalisation. E-HRM provides considerable benefits in alleviating these challenges (Akmanligil & Palvia, 2004). Employees are able to work remotely, thanks to technological advancement, with HR staff able to carry out tasks from any location (Van Heerden, 2011). This increases flexibility and produces better results amongst staff.

Problem statement and research objectives

The purpose of this study was to investigate the current level of development of the body of knowledge related to e-HRM, specifically in relation to the influence of e-HRM on organisational productivity, more particularly in South Africa. The research methodology associated with this study is provided in the following section.

Research design

As stated, the purpose of this review was to determine the status of e-HRM and examine the studies that report on the link between e-HRM and organisational productivity. The study aimed to determine the existence of South African research in this regard. Because of the extremely limited research encountered in South Africa, it was decided to expand this study to a search for relevant international studies. Although this study focuses mainly on research produced after 2000, some earlier seminal works, such as that of Lepak and Snell (1998), were used.

Research approach

A qualitative content analysis, taking the form of a systematic review of existing literature, was conducted. A content analysis followed by a thematic analysis of key themes that emanated from the literature. To this end, 100 articles, journals and research products were sourced using

EBSCOhost, JSTOR and Google Scholar, and examined for relevance. Keywords and phrases used in the search included HRM, e-HRM and productivity, e-HRM in South Africa, and CHRIS/HRIS. Of the articles examined, only 67 were found to be relevant and included in the final review. These studies were categorised into research areas, some of the findings of which are presented in the literature discussed above and further highlighted in the following section.

Results

For the purposes of this study, a review of current literature on the nature and extent of e-HRM was conducted. It was initially envisaged that this study would be limited to a South African context. However, a paucity of studies in this regard led to a more general analysis of these considerations. In an attempt to stimulate both local and international research, Table 1 outlines the major e-HRM research areas explored through the survey of existing literature. The table

TABLE 1: Research areas to date.

Research area	Authors
Value creation <ul style="list-style-type: none"> • HR service delivery • People efficiency or effectiveness • Training, recruitment and benefits • Redeployment into strategic roles • Supporting strategic tasks • Extra time available 	Ruël and Van Der Kaap (2012); Bissola and Imperatori (2013); Ruta (2005); Burbach and Dundon (2005); Hussain et al. (2007); Lawler and Mohrman (2003)
Cost reduction <ul style="list-style-type: none"> • Outsourcing or automating • Reduced administrative workload • Reduced turnover or reduced staffing • Performance improvement • Streamline processes • Online HR activities • Effectiveness 	Marler (2009); Strohmeier (2007); Lepak and Snell (1998); Marchington and Wilkinson (2005); Findikli and Bayarcelick (2015); Heikkilä (2013); Dias (2001); Akmanligil and Palvia (2004); Brockbank (1997); Stanton and Coovet (2004); Bondarouk et al. (2009)
e-HRM tools <ul style="list-style-type: none"> • Administrative structures • Intranet, extranet, HR portals • Simple management reporting • HRIS/CHRIS • Diagnostic tools • Employee and managerial self-services • IT/ICT 	Sanayei and Mirzaei (2008); Burbach and Dundon (2005); Kettley and Reilly (2003); Findikli and Bayarcelick (2015); DeSanctis (1986); Haines and Petit (1997); Strohmeier (2007); Lepak and Snell (1998); Walker (2001); Hopkins and Markham (2003); Andersen (2008); Broderick and Boudreau (1992); Parry and Tyson (2011); Farndale et al. (2009)
e-HRM issues <ul style="list-style-type: none"> • Changed role of HRM • Acceptance issues • Employee readiness issues • Reduced headcount • Telecommunication issues or illiteracy 	Hooi (2006); Parry and Tyson (2011); Ruël et al. (2004); Martin-Alcazar et al. (2005); Wright and McMahan (1992); Findikli and Bayarcelick (2015); Hawking et al. (2004); Gardner et al. (2003); Ruta (2005); Broderick and Boudreau (1992); Hendrickson (2003)
Organisational success <ul style="list-style-type: none"> • Rapid development of electronic HR systems • Skills • Expertise • Strategic learning • Openness to innovation • Casual mapping 	Yusliza and Ramayah (2011); Lepak and Snell (1998); Van Heerden, Poisat and Mey (2012); Ruël et al. (2004); Lawrence and Lorsch's (1967); Parry and Tyson, (2011); Bowman and Ambrosini (2000)
HR and organisational effectiveness <ul style="list-style-type: none"> • User involvement • Training and education • Employee self-services • Increased performance • Effective use of human capital • Becoming a strategic business partner • Evaluation of effectiveness • Supportive learning • Facilitating organisational development and change • Enhanced job performance 	Zafar (2010); Bondarouk et al. (2009); Ruël et al. (2004); Shrivastava and Shaw (2003); Ball (2001); Bowman and Ambrosini (2000); Marler (2009); Strohmeier (2007); Van Heerden, Poisat and Mey (2012); Ruta (2005); Martin-Alcazar et al. (2005); Wright and McMahan (1992); Marchington and Wilkinson (2005); Benson, Johnson and Kuchinke (2002); Heikkilä (2013); Lawler and Mohrman (2003); Bell, Lee and Yeung (2006); Bowman and Ambrosini (2000)
Positive effect on HR department or organisation <ul style="list-style-type: none"> • Operational performance • Shared services for HR domain • Create competitive advantage • Align the function with business strategy 	Ruël and Van Der Kaap (2012); Findikli and Bayarcelick (2015); Heikkilä (2013); Ensher, Nielson and Grant-Vallone (2002); Olivas-Lujan Ramirez and Zapata-Cantu (2007); Hopkins and Markham (2003); Ruta (2005); Akmanligil and Palvia (2004); Van Heerden (2011); Strohmeier (2007); Parry and Tyson (2011)
Productivity	Watson (2002); Walker (2001)

Note: Please see the full reference list of the article, Poisat, P., & Mey, M.R. (2017). Electronic human resource management: Enhancing or entrancing? *SA Journal of Human Resource Management/SA Tydskrif vir Menslikehulpbronbestuur*, 15(0), a858. <https://doi.org/10.4102/sajhrm.v15i0.858>, for more information.

CHRIS, computerised human resource information system; e-HRM, electronic human resource management; HR, human resource; HRIS, human resource information system; IT/ICT, Information Technology/Information and Communications Technology.

also indicates the corresponding authors considered for each area. This approach is deemed appropriate in light of the fact that e-HRM is not a country or continent 'bound' phenomenon, and supports the notion of globalised HRM practices.

Table 1 reflects that the majority of e-HRM research has focused on the tools and effectiveness of e-HRM. However, most of the studies in question have been of a theoretical nature and empirical evidence in this regard is limited. In particular, no studies were found that empirically linked an increase in organisational productivity to the implementation of e-HRM. Authors such as Watson (2002) and Walker (2001) hint at this improvement in productivity but do not provide empirical proof.

Lee, as cited in Boninelli and Meyer (2011), asserts that the core mandate of HRM is to have a positive impact on organisational outcomes. To this end, he described the linkages between HR and desired outcomes in terms of the HR value chain. The value chain is broadly constituted of the following elements:

- What HR believes and understands (philosophy, values, culture and strategy).
- What HR does (programmes, operating procedures and interactions).
- What happens with people (KSAs, attitudes, and motivation and health).
- HR-related resources (HRISs, facilities, communication and other systems).
- What the people achieve in the organisation (productivity, customer and external stakeholder reactions).
- What the company achieves in the market or society (financial, environmental and societal).
- The moderating effect of environmental context (political, economic, sociocultural and technological).

Utilising the HR value chain typology as proposed by Lee (2011) to view the content of the e-HRM research areas as indicated in Table 1 reflects that much of the research focuses on 'what HR does'; 'what happens with (HR) people'; 'HR related resources' and 'what (HR) people achieve in the company'. These focus areas suggest that e-HRM is evaluated and researched largely in terms of the benefits and value addition that it creates for the HR department and supports the contention of Gardner et al. (2003), amongst others, that e-HRM is mostly concerned with cost reduction and efficiency as opposed to improving the strategic orientation of HRM. Dias (2001) asserts that it is not possible to directly translate the time saved by e-HRM into financial benefits.

Discussion

From the analysis conducted, it would thus appear that a direct line of sight has not been drawn between the implementation of e-HRM and organisational success based on empirical evidence, more particularly when it comes to determining the influence thereof on productivity. The diversity of organisations and their contexts and the

multitude of e-HRM platforms and applications should be considered in this regard (Shenet al. 2009). What seems apparent is that the influence of e-HRM on organisational productivity needs to be determined through qualitative and quantitative research.

In this study, an attempt was made to determine the current status of e-HRM and the body of knowledge which exists in this regard. To this end, a quantitative content analysis was undertaken which formed the backdrop to this study. It further allowed for a delineation of current research areas. It was initially planned that this study be conducted within the South African context. However, because of limited research encountered, it was deemed appropriate to extend the study to include international studies.

It is argued that e-HRM can increase the efficiency of HR activities, improve HR service delivery and transform the role of the HR function into one that is more strategic (Hendrickson, 2003; Martin et al., 2008; Ruël et al., 2004). This implies that the use of e-HRM may allow the HR function to increase its value and contribute to the competitive advantage of the firm. The increasing deployment of HR technology and systems could be an additional source of organisational value as these assets have lower barriers to imitability than factors such as know-how (Dierickx & Cool, 1989; Rumelt, 1982).

The suggestion that e-HRM can improve the efficiency of HR activities through reducing costs and increasing the speed of HRM processes can be found in many pieces of existing literature. Lepak and Snell (1998) and Hendrickson (2003) both suggested that e-HRM leads to the streamlining of HR transactional processes and thus increases efficiency. One of the main goals of e-HRM is to produce efficiency gains or cost reductions by reducing headcount in HR departments and removing administration (Ensher et al. 2002; Lengnick-Hall & Moritz, 2003; Martin et al., 2008; Ruël et al., 2004). E-HRM can thus be used as an alternative to having people perform administrative or transactional tasks manually and also deliver these tasks more efficiently. Sophisticated e-HRM systems may be used to offer manager and employee self-service options to further reduce administrative tasks.

Conclusion

It is clear that some aspects of e-HRM are more commonly researched than others. The findings of this analysis appeared to suggest that much of the research focused on the relevance and value of e-HRM for the HR department and personnel. More research is required to gain a greater understanding of this field and prove the assumption that the implementation of e-HRM will lead to strategic advantages, including improved productivity. This implies a focus in terms of Lee's HRM value chain on 'what the company achieves in the market/society'. This would entail empirical studies focused on establishing reliable and valid measures to demonstrate the link between e-HRM and reduced costs, increased revenue or profit, return on investment, economic value addition, shared earnings, reduction in pollution levels,

poverty alleviation, amongst others. In addition, it is further proposed that future research should focus on assessing the relevance of, and value creation associated with, e-HRM for diverse groups of users, including operational employees and line management. This would imply that an HRM value chain focuses on 'what happens with the people' and 'what the people achieve in the company'. Research in these areas would also necessitate independent research by organisations as to the appropriateness of the assessment criteria (metrics) which are used to determine success in these areas (Lee as cited in Boninelli & Meyer, 2011).

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Competing interests

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Authors' contributions

M.R.M. and P.P. were jointly responsible for collecting the data. Both the authors were responsible for the writing and editing of the article.

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