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Studying the impact of using E-HRM on the effectiveness of HRM practices: An exploratory study for the internet service providers (ISP) in Egypt

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Abstract

Many historians suggest that technology is the driving force in history. Technological superiority is what allows certain groups to beat or subjugate others, and so expand their influence. For organizations, technology is considered as a strategic weapon which can help improving business processes and enhancing its competitive position in the market. Human resource management (HRM) has always played a major role in improving the performance of an organization. There exists a strong impact of the use of HR technology and HRM effectiveness. For the past two decades, many researchers have contributed to understand the growing impact of E-HRM on HRM effectiveness. Although being topic of interest for many researchers and academician, many core questions related to E-HRM role and its evidence of effectiveness on the HRM practices have remained unanswered. It has been a major challenge for HR professionals to prove the impact of E-HR on the HRM practices and what forms the basis of their relationship.

Keywords: Technology, Human Resource Management, E-HRM, HRM Effectiveness

Introduction

Over the last decade there was an incredible growth in technological capability. Technology has enabled companies to share real-time information across the globe, to improve the speed and quality of their processes, and to design products in innovative ways. For this reason technology has become a critical success factor for companies in achieving a competitive advantage.

The ways in which human resources are managed has also changed in recent years. HR activities can now be delivered, not only by specialized HR professionals, but also increasingly by

line managers, information technologies and through outsourcing. The core of this study is one of these methods of delivery, information technology, or more specifically, E-HRM.

According to (Tansley et al, 2014) as organizations face pressure to achieve both efficiency and effectiveness in their human resourcing (HR) operations, they have increasingly turned to HR technology in the form of electronic human resource management (E-HRM) as a potential solution. (Parry and Tyson, 2011) E-HRM enables HR departments to store and analyze data to increase workforce information flows, to devolve many routine administrative and compliance functions traditionally performed by corporate HR departments and to enable “the planning, supporting practitioners in their shared performance of HR activities” (Strohmeier, 2009, p. 20).

(Bondarouk and Ruel, 2014) found that there are essentially three goals related to the introduction of E-HRM (reducing costs, improving HR services “and improving HR strategic orientation”, but unfortunately “E-HRM is mostly directed at cost reductions and efficiency increases in HR services, rather than at improving the strategic orientation of HRM” (p. 391).

Although much attention has been given to the trend to move towards the effectiveness of the HRM practices, less attention has been given to how to achieve this. One area that has been covered is the requirement to transform the roles of human resourcing (HR) specialists and line managers. If people are indeed “the greatest asset”, then the knowledge that HR specialists have about the skills and competencies of employees needs to be used, and in order to do this they need to adopt more technological strategies and have the resources to enable them to have a greater involvement with broader organizational strategies. Furthermore, HR specialists alone cannot develop a climate of trust, enhance employee commitment or ensure that all employees are directed, trained and developed.

Problem Definition

E-HRM, the use of web-based technologies for human resource management practices and policies, is growing up within organizational life. From the literature, the researcher has found that much has been expressed about the advantages of E-HRM, but scientific proof of these advantages is still remained scarce. There is no clear evidence to answer the question as to whether E-HRM contributes to HRM effectiveness or not. Consultancy firms, rather than academics, have been behind the first trial to investigate whether the efforts put into E-HRM lead to the expected outcomes, but these assessments tend to have a non-objective air (Ruel et al, 2007).

In this paper, the researcher is going to present the results of a quantitative study on the question whether the extent use of E-HRM has an impact on HRM practices’ effectiveness or not. For this purpose, the researcher will measure the impact of using E-HRM applications, defined as the extent to which E-HRM applications are perceived as appropriate for their use, and the extent to which employees perceived the resulting HRM practices to be effective, using census studies. It draws on data from multiple sources. This was carried out in the internet service providers (ISPs) companies in Egypt.

Thus, the problem of this research can be identified in a key research question, which is: *What is the impact of using E-HRM on the effectiveness of HRM practices?*

Research Objectives

The objective of the present paper attempts to evaluate the transformation in the role of the HR practices in the internet service providers (ISPs) Egyptian firms, as a result of using technology on the effectiveness of the HRM practices, thus proposing a framework of analysis of E-HRM technology. More specifically it aims at:

- 1- Examining if the E-HRM processes have the desired impact on the HRM practices or not.
- 2- Investigating the contribution of using E-HRM applications to HRM effectiveness.

Research Importance

Technology advancements have changed the way of practicing different HR functions that in turn have brought a very large amount of changes in the organizational environment, employees and HRM in shape of "E-HRM".

E-HRM can be one of the most powerful driving forces towards improving HRM practices. E-HRM can be considered as a multilevel phenomenon to perform HR activities. It can help the organizations to upgrade the HR functions to web based technology and speed up the flow and implementation of business strategies and processes. It will take the HRM functions to one level up in contributing to organizational effectiveness (OE). E-HRM can be used for all HRM functions from traditional activities to transformational activities that add to OE as a whole. Therefore the importance of this study appears definitely on two levels:

a) On the Academic Level

The role of modern HR departments that has to focus on organizations' long-term objectives In addition to focusing on internal HR issues, should place emphasis on future-oriented plans and objectives and value adding initiatives. (Kapoor & Sherif, 2012, p.230) defines the roles of HRs based on the following functions: "strategic business partner and change agent, and employee advocate and administration expert".

On the other hand, discipline includes systems, policies and practices that raise accountability. When motivation and discipline sticky, employees are excited about, accountable for, and rewarded for their work according to (Kapoor & Sherif, 2012). Work place flexibility is expected to be on the rise in the future and thus most of the interaction between HR personnel and line managers or workers will be virtual without face-to-face meetings.

b) On the Empirical Level

The importance of technology that has changed the business world many times over in the information age, the advent of computers and the internet has increased that impact significantly. Many businesses cannot even function without the use of computer technology. This impact is seen in nearly all areas of business, including human resources, where technology continues to have a significant impact on HR practices.

Less attention has been paid to the relationships between using E-HRM and the HRM effectiveness. "It has become increasingly important to gain a greater understanding and investigating the impact of this extent use on HRM effectiveness" (Tseng et al, 2011, p.368). This study is an attempt to fill this gap in E-HRM literature.

Literature Review

Recently, E-HRM has been studied increasingly by many scholars. Most of the studies on E-HRM are undertaken in USA and Europe. There are fewer studies done in Egypt, a country that is environmentally, economically, and technologically different from other developed economies. Because of the huge difference in the market environment and management mechanisms between developed countries and Egypt, therefore it is expected to have considerable difference in research results on E-HRM.

In order to get an overview on the previously developed studies and researches that are related to the subject, the researcher classified these researches into two groups: First: researches that are related to the dependent variable. Second: researches that are related to the independent variable.

First: Researches that are Related to the Research Dependent Variable

1- Heikkilä (2017) explored E-HRM in MNC setting from various stakeholder's perspectives. The study aims to understand the motives behind the implementation of E-HRM in an MNC. It also studies the impacts E-HRM has on various stakeholders and finally aims to deliver understanding of the concept of strategic E-HRM in an MNC. Main findings suggest that the implementation was motivated by issues related to standardization and overall introduction of a strategic way of working. As an impact of E-HRM implementation, the control of subsidiaries became easier; external and internal transparency and HR image improved; HR operations gained efficiency; and the possibility for "fact based decision making" enabled strategic e-HRM realization for some stakeholders, with the exception of line managers who were considerably more skeptical about issues related to strategic e-HRM.

2- Naeini (2015) studied E-HRM initiation using concept maps to illustrate the relation between HRM and technology through time in Iran University of Science and Technology and the results showed that the concept map of the E-HRM domain provides a clear and holistic understanding by addressing all the relevant phenomena concerning E-HRM. It can also help predict and overcome the complications that might occur during institutionalization.

3- Alwis (2014) studied the impact of E-HRM on the role of HR managers to investigate to what extent HR departments have adopted e-HR to their functions and whether this adoption has influenced the change the role of a HR professional in all large companies which have more than 1000 employees in and around Colombo, the biggest commercial city in Sri Lanka. The results showed that the majority (93 %) agrees that after the adoption of e-HR, HRM plays the role of Strategic Partner, Change Agent, Employee Champion and Administrative Expert in order. Further, at present with the evolution of e-HR, the majority preference of the respondents of the role to be played by HRM, is Strategic Partner (50 %) and 30 % prefer that HR plays the role of Employee Champion and 20 % still prefer HR to play the role of Administrative Expert.

4- Ruël & Bondarouk (2014) studied that E-HRM research and practice to identify and describe the challenges that lie ahead for E-HRM research based on five earlier publications in the period 2009–2012. The results showed that E-HRM research is far from 'dead'; it is more alive than ever. Furthermore, the number of E-HRM researchers from the HRM field as well as from the IT field needs to grow in order to meet the research challenges that lie ahead.

5- Cañibano (2013) studied the trade-off effects on employee well-being (physical, psychological and social) in management decision of implementing innovative HRM in the Spanish division of a major international consultancy firm. The results showed that that innovative HRM practices can lead to both positive and negative well-being outcomes. Furthermore, they create trade-offs between the three dimensions of well-being. While they increase employee well-being on one dimension, they are detrimental to another.

6- Laumer, Eckhardt and Weitzel (2010) studied E-HRM in an E-Business environment among 144 HR managers from Germany's top 1,000 firms. Their survey results revealed that HR managers' most pressing challenges are staff retention and internal and external employer branding. They stressed the importance of devising an E-HRM that is both effective, i.e. adequately fills vacancies, and efficient, i.e. makes best use of scarce resources.

7- Strohmeier and Kabst (2009) examined the factors that influenced the cross-national organizational adoption of E-HRM in Europe. Major general and contextual influence factors were derived and tested by means of logistic regression in a large-scale survey with a sample of 2,336 organizations in 23 European countries. They revealed that E-HRM is a common practice throughout Europe since two thirds of all organizations have already adopted E-HRM. They also found that major determinants of E-HRM adoption are size, work organization, and configuration of HRM.

8- Voermans and van Veldhoven (2007) conducted a study on attitude towards E-HRM. They utilized an online questionnaire, in which 99 managers and 257 employees within Philips (Electronics) Netherlands participated. They found that differences in perceived usability of current IT systems, as well as the preferred HR roles of strategic partner (high preference) and employee champion (low preference), were related to a positive attitude towards E-HRM systems. For managers, user support was also found to be a predictor of a positive attitude towards E-HRM.

9- Olivas-Lujan, Raminez and Zapata-Cantu (2007) conducted a case-based study in order to investigate how four of the most competitive Mexican firms are implementing their E-HRM strategy. They discovered that to fully understand the way E-HRM is used in firms from emerging economies, it is important to take into consideration local idiosyncrasies.

Second: Researches that are related to the research independent variable

1- Ceric (2017) studied the challenges that Australian HR professionals face in using E-HRM and achieving e-HRM outputs. Findings revealed potential of e-HRM to bring efficiency, access to HR data, reporting, as well as contributions to the overall business strategy are thwarted by three groups of e-HRM challenges that HR professionals experience: e-HRM technical issues, HR issues, and e-HRM development issues.

2- Shatta (2016) studied the link between E-HRM use and HRM effectiveness in Telecommunication company in Jordan. The findings provide support for the positive contribution of the use of e-HRM on HRM effectiveness at both the policy and practice levels. It also confirms

mediating effects of user intention on the link between E-HRM determinants (both performance expectancy and social influence) and E-HRM use.

3- Reddington et al (2015) studied the link among HR Strategy, E-HR Goals, Architectures, and Outcomes to help academics and practitioners understand this increasingly important area of HR theory and practice with 24 line managers and 3 HR managers across three global organizations. Results display evidence of positive and negative outcomes in both transactional and transformational categories. In the areas of data quality, the assurance of HR audit, individuals accepting accountability for maintaining their own data, and having clarity of their people management roles, the evidence across all organizations showed positive outcomes.

4- Fındıklı and Bayarçelikb (2015) explored the outcomes of (E-HRM) for choosing the applications for the system in the leading companies in Turkey. The result showed that time management, easy acquiring and access to personal data, and reduce administration costs was the primary motivator for E-HR applications. E-HRM reduced organizational costs, improved better and faster communication between manger and employees reduced the processing time for E-HR usage in organizations. However, interviews showed that e-learning/ e-training is not very effective for organizations.

5- Georgios (2014) studies the impact of best HRM practices on performance identifying enabling factors to examine the relationships between best (HRM) practices, knowledge management (KM), organization learning and organizational capabilities (OC), as well as their impact on organizational performance with 138 Greek manufacturing firms employing at least 50 . Results indicate that manufacturing firms pursuing best HRM practices achieve higher performance through the interaction of these practices with KM and organizational learning capability and the creation of OC.

6- Ruël (2007) studies the contribution of E-HRM to HRM effectiveness to look at whether replacing face-to-face HRM activities with web-based HRM tools is of benefit to an organization or not in the Dutch Ministry of Interior Affairs. The results show that individual assessment of e-HRM applications influences HRM technical and strategic effectiveness. This is especially so in the perceived quality of the content and the structure of E-HRM applications which have a significant and positive effect on technical and strategic HRM effectiveness.

The above review presents the path of progress in E-HRM research over time. It is seen that it covers different aspects in its journey. Another important observation is that most of the research was restricted to developed economies and privately owned for-profit organizations. The direction of E-HRM research in developed countries confirms E-HRM as a strategic partner, whereas in developing economies, its nature and roles remain relatively unexplored. These gaps led the researcher to the present study.

On the other hand, the literature suggests that the various goals of E-HRM, and the different types of E-HRM, are expected to result in outcomes that include more efficient HRM processes, a higher level of service delivery and a better strategic contribution. Such expected outcomes can be “encapsulated” in one concept: HRM effectiveness. E-HRM, at the end of the day, is expected to contribute to the effectiveness of HRM, which in turn should contribute to achieving an organization’s goals.

The researcher reviewed the literature for 2007-2017, the last 10 years in which E-HRM research expanded widely, to assess the value creation each study focused on. The result of the review is summarized and presented in the previous studies in chronological order.

Research Structure

The study begins with a brief presentation of HRM, followed by a review of the notion of E-HR and its functions as they appear in the HRM literature, then the HRM effectiveness. Finally, the research finishes with the methodology and the results of the quantitative research are presented, and the recommendations as well.

HRM and Technology

Introduction

Technology represents the combination of human understanding of natural laws and phenomena accumulated since ancient times to make things that accomplish our needs and desires or that perform certain functions. (Aunger, 2010, p.231) defined technology as "a body of knowledge used to create tools, develop skills, and extract or collect materials".

Furthermore, technology can be defined "as the means by which we apply our understanding of the natural world's practical problems and its' solutions. It is a combination of "hardware" (buildings, plant and equipment), "software" (the way to operate the hardware) and "know-how" (skills, knowledge and experience together with suitable organizational and institutional arrangement)" (Li-Hua and Khalil, 2013, p.65).

Turning to E-HRM is expected to simplify a more efficient and strategic way of working for HR professionals. Automation of HR tasks and practices means transforming the traditional paper-and-pencil, labor-intensive HR tasks, into efficient, fast-response activities that will help companies to expect and profit from environmental shifts to create a competitive advantage. In addition to, E-HRM is a way of implementing HR strategies, policies, and practices in organizations with the full use of web-technology-based channels. Thus, E-HRM is the application of information technology for performing of HR activities. Utilizing information technology highlights two perspectives of E-HRM; first, technology integrates and connects people who can be in one room of the organization or in different countries, second, information technology supports HR managers by fulfill their activities (this task fulfillment can be both partially or completely according to organization's strategy and purpose).

Definitions and Evolution of E-HRM

The term E-HR was firstly used in the 1990's and refers to conducting Human Resource Management "transactions" using the internet or an intranet (Lengnick-Hall and Moritz, 2003). The term was inspired by the popular term of E-commerce, and wrongfully adopted the "E-" prefix, signifying "electronic", even if E-HR is very specific to the use of the Net, so that a more accurate term would be "online HRM".

Most of the studies on E-HRM were undertaken in USA and Europe (Yusliza and Ramayah, 2011, Rawash and Saydam, 2012). Several definitions of E-HRM exist in the academic literature. The two most cited definitions are provided by (Strohmeier and Ruël, 2009) and colleagues. (Fisher, et al, 2004, p.245) proposed an early popular definition in which E-HRM was defined as" a way of implementing HRM strategies, policies and practices in organizations through the

conscious and direct support of and the full use of channels based on web technology". (Ruël et al, 2014, p.10) claimed that "the terms like E-HRM, web based HRM, and information technology (IT)-based HRM are considered as developments of HRIS".

Notably, the rapid development of technology especially Internet not only leads to several impacts on human resource functions but also leads to the way people define the phenomenon. According to (Oswal et.al., 2014, p.10), "HRIS became known as E-HRM because organizations enabled human resource transactions through the Internet". They also briefly described the evolution of E-HRM in their article. Generally, 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 performance of HR activities. This concept highlights several crucial aspects of E-HRM (Strohmeier, 2007). Electronic Human Resource Management (E-HRM) is assumed to be a driving force behind HRM value creation (Ruël & Kaap, 2012).

In the mid of 1990s the World Wide Web (Web) emerged as a means of facilitating two-way communication and instant worldwide information over the internet.

Toward the end of the 1990s, the migration to web-enabled systems began, and companies started developing HR software that would be compatible with internet architecture.

In the early 2000s, this new software enabled the centralization of all HR and organizational data so that users could access it through Web browsers at any time or place. Organizations then began using web-based technology to interact with both internal and external stakeholders (e.g., job applicants, employees, managers, benefit and payroll providers, etc.). For instance, these systems enabled organizations to develop web-based recruiting systems that could be used to attract applicants anywhere in the world, and allow them to apply for jobs online.

It was at this time that these systems became known as electronic human resource management (E-HRM) because they enabled HR transactions through the Internet. "The new E-HRM systems facilitated and modified a number of HR processes including job analysis, recruitment, selection, training, compensation, performance management and HR planning". (Oswal et al, 2014, p.12).

So, there is no standardized definition of E-HRM yet. "Different perspectives (IT and HR) fall under a common label, despite there being no common terminology set in which to create and test ideas, constructs, or concepts" (Oswal et al, 2014, p.12).

In this study, the researcher will depend on the following definition

"An umbrella term covering all possible integration mechanisms & contents between HRM & Information Technologies aiming at creating value within & across organizations for targeted employees & management."

E-HR and the Role of HRM

The shift from traditional HRM to E-HR practices performs to several impacts on the role of HRM. E-HR, First, a major impact of the shift from traditional HRM to E-HR is that it enables HR employees to focus on more strategic, value-added activities. Less administrative and paperwork allows the HR professionals to develop other, more strategic functions of their profession. On the other hand, this may also mean that with the use of E-HR, fewer HR professionals are needed, because E-HR eliminates the "HR middleman" (Lengnick-Hall and Moritz, 2003). Therefore, the impact of E-HR on the HR profession may be seen as both a threat

and an opportunity. Second, E-HR, through self-service, should increase involvement of employees and managers in HR practices. The employees and general managers become savvier about HR practices and HR devolvement becomes a reality. "This distributed knowledge poses the challenge for HR professionals to consistently cope with new developments in their field, in order to maintain their advisory-consulting role " (Ulrich, 2000, p.14).

Another point that needs to be stressed is that, as E-HR is more than technology, it calls for competent HR professionals in order to fully benefit from E-HR development and implementation. "Technology itself may be value neutral, but how it is used greatly impact the role of HR" (Ensher et al, 2002, p.2430). This can be seen as a further opportunity for the HR profession, to take up the role of the developer of e-HR functions. It demands, however, that the HR professional also become knowledgeable in basic IT issues, so that communication using IT is more productive.

E-HR means have the potential to transform HR into a strategic partner, but this transition won't come without obstacles. In order to move to the third level of E-HR, i.e. HR Transformation, it is necessary to identify according to (Oswal et al, 2014, p.14) the opportunities for improvement in five areas:

- (1) processes used to deliver HR;
- (2) people in HR and their competencies;
- (3) culture of the HR organization;
- (4) its structure; and
- (5) the technology used.

However, in the long term, the adoption of E-HR demands significant adjustments overall in the way that the HR department operates. These include devolvement of some functions to the managers, reduce several administrative functions and increased expectations from the HR professional, who will be expected to take up a more strategic and knowledgeable role.

(Ensher et al, 2002) noted, through an analysis of the literature and interviews with HR professionals, five trends or impacts regarding the shift from HR to E-HR. These were:

1. Substantial reduction in cost and time for many HR activities.
2. Transition of administrative activities from the HR department to the employees themselves.
3. Increase in the information readily available to employees.
4. Need for integrating HR with other organizational systems, especially information systems.
5. Increased emphasis on HR as a strategic business partner.

The following table summarizes some outcomes of E-HRM. (Nivlouei, 2014)

Table 1. Outcomes of E-HRM

High commitment	By high commitment workforce is motivated and understanding, and that they are willing to interact with the management about changes in the organizational environment and the impact that this can have on the internal organization. For HR itself, this means that it should be able to play the role of change agent.
High competence	High competence points towards the capacities of employees to learn new tasks and roles if the circumstances require it.
Cost effectiveness	Cost effectiveness refers to the competitiveness of pay levels and employee turnover rate, and to the acceptability of costs resulting from employee resistance such as strikes.
Higher congruence	Finally, higher congruence refers to the internal organization, the reward system, and the 'input, throughput, and output' of personnel, which need to be structured in the interests of all stakeholders.

Source (Soltani & Mirnanejad, 2012)

Consequences of E-HRM for the HR Department

The literature seems to clear: E-HRM will not leave HR departments 'untouched'. Less administrative tasks for the HR department and therefore less administrative positions, more focus on the strategic goals of the organization and therefore an HRM staff consisting mainly of 'thinkers'; this is, in essence, what HR departments can expect or are already facing and experiencing. (Ruël et al, 2004) actually gave a good 'push' when they wrote about the consequences of HR information systems and E-HRM for HRM professionals: "Today and in the future, however, the successful HR professional must be part HR generalist, part HR functional specialist, part consultant, part business manager, and must understand and be comfortable using information systems" (Ruël et al, 2004, p. 325). More specifically, they state that HR departments will be more involved in strategic planning processes if they are able to provide suitable, accurate and fast information through the use of information technology. A change for HR departments, related to this, is that with an appropriate use of information technology they can improve their client focus. "...the HR group will focus on providing services to employees, line managers, and senior management, often by serving as an internal consultant. This will better enable the HR function to truly support the business" (Ruël et al, 2004, p. 323).

Though having limitations, E-HRM has been adopted and implied by number of organizations for moving towards a sustainable organization. The integration of information and communication technology organizations (ICT) with HR processes can be beneficial in following areas of HR:

1. E-recruitment

According to (Oswal, 2014, p.12) "the primary goal of recruitment process is to attract potential labor whose competencies match with the organization goals and objectives. With application of information and communication technology organizations (ICT) in recruitment process, organizations have started posting their job vacancies online and attract the talent not only from one region but all over the world. E-recruitment is helping the organization to recognize unique talent among across world applicants".

2. E-selection

According to (Nivlouei, 2014, p.149) "it's very difficult to decide where recruitment ends and selection begins". E-selection can be used to ask the prospective employee to complete the assessment and other formalities via interactive forms and submit to the organization. Assessment results could be generated automated at same time. Interactive online interviews could be arranged via web based technologies.

3. E-Training & Development

According to (Oswal, 2014, p.13) "training practices help the employees to improve and enhance their knowledge and skills for business growth and efficient customer service". It also helps the employees to get familiar with new technologies introduced in the organization. According to (Nivlouei, 2014, p.150) "online training provides training to workers at any time and at any place". It helps in reduction of cost by providing training via online classrooms. Employees can get and share the knowledge across other departments and companies. But the blended learning is considered as best learning which includes online learning, classrooms and on- job training programs.

4. E- performance management

According to (Nivlouei, 2014, p.151)"an effective e-performance management system can benefit organization, managers and its employees". It requires application of software's that can help in monitoring, recording, updating and retrieving of employee's information. Performance which was being managed on papers has shifted to memory databases of the company. E-performance management systems can help in automatic linking of performance with the compensation (Swaroop, 2012 and Zafar, 2012).It can help the employees in knowing their competency level as result of updating of performance evaluation on intranet system with security. It will provide more transparency, speed and reduction in cost of performance management system.

5. E- compensation

In recent years, compensation has become the competitive factor for attracting and motivating the crucial labor force in an organization. According to (Nivlouei, 2014, p.151) " E-compensation refers to using ICT in designing the compensation and benefit packages for the employee". It also helps in ensuring that the salaries are fairly distributed. It helps in tracking the records of an employee benefit package and crucial compensation information. (Oswal, 2014, p.15).

Critical Success Factors in E-HRM

There are several success factors that influence adopting and implementing E-HRM technology in organizations , some of them are organizational factors including Demographics(age, size, sector) organ knowledge and skills, Organizational policies and practices , Project management and Resources, technological factors and people factors (Bondarouk, 2012).

Organizational Factors

Organizational factors are those that represent organizational characteristics which influence adoption of E-HRM. (Yang et al, 2007, p.1258) stated that "adoption can be influenced in organizations that show high level of centralization since top management can make adoption decision irrespective of resistance from lower level managers or employees". Organization size, supporting organization settings including a skilled workforce are important factors in successful innovation adoption (Troshani et al, 2011).

Besides organization size, another factor which is top management support shows influencing action on adoption of E-HRM. However, according to (Teo et al, 2007, p.45) "beside top management support to adopt a system in the organizations, employee engagement is also needed which is also greatly influenced by the management commitment". Most studies showed that management commitment has a positive influence on E-HRM or IT adoption (Teo et al, 2007; Troshani et al, 2011; Yang et al, 2007).

Technological Factors

Technological factors focuses on the manner where technology characteristics can influence adoption (Yang et al, 2007). (Oliveira & Martins, 2015) referred to the benefits organizations expect to receive upon adoption and include increased levels of service quality, efficiency, and reliability. On the other hand, according to (Rogers, 2003) barriers include innovation complexity and its compatibility with organizational technology competency systems.

According to (Oliveira & Martins, 2015, p.56), "infrastructure and IT human resources based on IT expertise application; technology infrastructure makes an easier base on which internet technologies can be created". A number of researches have recognized technological readiness as a significant factor that influence IT adoption (Oliveira & Martins et al, 2015).

In addition to these factors, organization fit, adoption cost, complexity or user friendliness, efficiency were also found as significant influencing factors in Australian public sector organization (Troshani et al, 2011). Thus, it shows various numbers of technological factors contribute in influencing E-HRM adoption as it is a type of innovation adoption.

Collaboration of HRM and IT has also been identified as a critical success factor in E-HR adoption and use (Workforce, 2002). This collaboration can ensure successful integration of technology into HR process aiming at responding to the need for quality HRM services.

People Factors

Another success factor for E-HR is Employees' IT skills. It appears that IT skills and familiarization with them also facilitate E-HR adoption. This is the reason why HRM needs to invest in IT training and communicate the benefits of employee participation and involvement in E-HR services. Furthermore, "as IT is applied to HR departments in a slow rate it has resulted in lack of E-HRM knowledge and skills which also slowed the urgency of E-HRM adoption" (Teo et al, 2007, p.46). Therefore, successful adoption of E-HRM requires availability of skilled E-HRM professionals in the organization because if the users have lack of understanding features it can be a major obstacle in E-HRM adoption.(Troshani et al, 2011) for all user levels such as operational and strategic levels to increase their knowledge and skills in using the system effectively. In addition, the Communication qualities, employee demographics, employee and management attitudes(support and commitment),employee and management involvement,

employee and management skills versus training needs, Organizational culture and leadership and psychological factors (Bondarouk and Furtmueller, 2012).

Organizational culture appears to be a critical success factor for E-HR adoption. The effect of organizational culture on the adoption of e-HR has been discussed in the past, notably in relation to the emphasis that companies put on intense, face-to-face services (Lengnick-Hall and Moritz, 2003), as well as with the effect of culture on the change management that the transition to e-tools entails (Jackson and Harris, 2003). According to the latter, high-performance culture is more suggested to accept change, and consequently electronic tools adoption. In addition to the above factors, *Environmental factors* are also influencing implementing E-HRM. It describes the area where organizations conduct their business, and includes industry characteristics, government regulation, and supporting infrastructure (Oliveira & Martins, 2010; Troshani et al, 2011).

According to (Rogers, 2003, p.92) "in order to adopt innovation, information about them must be available to prospective adopters. Besides infrastructure and technical support, government also can play a vital role for encouraging technology adoption by raising awareness, training, and support, and funding" (Troshani et al, 2011, p.470).

HRM and Effectiveness

HRM effectiveness is addressed in a great number of studies that try to demonstrate the value of what HR professionals do for the rest of the organization, and how HRM practices are linked to desired organizational outcomes (Ruël et al, 2007). Following (Wright et al, 2001), that attempts to demonstrate HRM effectiveness have focused on a limited number of areas.

"HRM effectiveness is often mentioned as HRM's contribution to a firm's performance" (Wright et al, 2001, p.11). Especially within the last ten years, the HRM literature has tried to show that progressive HR practices result in enhanced firm performance. (Ruël et al, 2007) pioneering study revealed that a set of HR practices, labeled High Performance Work Systems, were positively related to turnover, accounting profits and a firm's market value. Since then, a growing number of studies have attempted to empirically test the relationships between HR practices and firm performance (Wright et al, 2005).

Organizational effectiveness (OE) can be measured in terms of internal stakeholders (whole staff in firm) and external stakeholders (owners/ investors, customers, external partner organizations and members of the society) .With inclusion of multiple stakeholders, HRM is recognizing wide range of challenges. Organizations are focusing on developing effective and flexible HRM systems which can easily adapt to dynamic changes occurring in external environment without going into state of mismanagement and confusion.

Today, HRM requires assimilating with different appearance of business to accomplish OE as a strategic partner.

In order to fully understand the relationship between e-HRM usage and HRM effectiveness, it is important to know how the effectiveness of the HR system can be measured. The effectiveness of the HRM system has been heavily researched since the mid-1990s in order to explain how it is linked to expected organizational outcomes (Ruël et al, 2007); Wright et al., 2001). As stated by (Ruël et al, 2007, p.283), "there is no general theory about performance, itself". However, there is a consensus among the HRM literature on the use of different performance measures, like financial measures (Ruël et al, 2007)employee satisfaction, turnover

and absence rates, and commitment (Macky and Boxall, 2007), which were used to indicate HRM effectiveness.

Applications of E-HRM

The applications of E-HRM provide a variety of automated HR activities that increase the HR function with flexibility and ease of use. According to (Strohmeier & Kabst, 2009, p.482) usefulness is defined as "a specific application system which increases personnel job performance in organization". As a result, users of E-HRM system perceive it useful only when they observe the positive impact of E-HRM applications on organizational performance.

The following table (Table 2) shows the various E-HRM applications used by HR managers in their routine activities. These software tools increase organizational outcomes by making it more committed to the goals defined in the mission statements of organization. This results in increased job satisfaction, organizational commitment, employees' cohesiveness, job security and reduced work stress levels, turn over, absenteeism and etc.; and finally, it leads to increased HRM effectiveness.

Table 2. Types of E-HR applications

E-HRM Applications	Descriptions
Interactive Voice Response (IVR) system	Ability to set up or change payroll, Edit addresses for benefits and payroll records and Check job opportunities.
Self-service applications(SSA)	Update and use employee-specific information, online via a browser.
HR extranet applications (HREA)	Personalized to an individual's role, experience, work content, language, and information needs.
HR portal applications(HRPA)	Promotion agents for training providers, Online services to identify suitable training, register, negotiate, process and confirm sales of training services.
Integrated HR suit applications (ISA)	Manage benefits plans triggered via a web-based interface.
HR intranet applications (HRIA)	Monitoring workforce demographics in line with recruitment and retention objectives.
HR functional apps(HRFA)	Monitoring workforce demographics in line with recruitment and retention objectives.

Source: (Florkowski and Olives-Lujan, 2006)

Impact of E-HRM applications on HRM

Technology is having a deep effect on human resource management (HRM) and is pushing them in some entirely new directions as follows;

a) Impact of E-HRM applications on the job of the HR professional

E-HRM not only has an impact on the performance indicators of the HR system, as the use of the E-HRM technology also drives a change in the HR architecture, and therefore changes the

time spent of HR professionals on specific HR activities, it is also expected that it has further consequences for the HR professional.

(Ruël et al, 2004, p.82) state that "adoption of E-HRM technologies require HR experience for the reestablish of instruments and prepare these instruments for easy web-based use". The HR professionals also have a role in the accompaniment of end users of the technology. The end-users must be trained and motivated to use the technology. The HR professionals are responsible for the guidance of the end-users of the technology and the recognition of the right technological skills and competences for end users to use the technology .There is also the expectation that the adoption of E-HRM technologies leads to HR professionals being functional specialists supporting employees and managers instead of being administrative experts.

b) Impact of E-HRM applications on HRM practices

E-HR can have an impact on every area of HRM, the effects of technology on six key HR processes: (Panayotopoulou et al, 2007)

- (1) HR planning;
- (2) Acquiring HR (recruitment and selection);
- (3) HR evaluation (performance appraisal);
- (4) Communication;
- (5) Rewarding HR (performance appraisal, compensation and benefits); and
- (6) Developing HR (training and development, career management).

"The reason for focusing only on the above services is that the researcher considers them as the major areas of E-HR use. Moreover, this classification has already been applied to E-HR use in previous publications " (e.g. Ensher et al, 2002, p.225).

c) Impact of E-HRM applications on the Quality of HR Service Delivery

Parry et al, (2014) discussed effects of E-HRM associated with service delivery such as the ability to provide managers and employees with remote access to HR information and therefore increase their ability to connect to other parts of the organization and to other organizations, enabling them to perform many HR activities themselves. (Emma Parry et al., 2014) call these "relational effects". This suggests an indirect positive impact on service delivery in empowering line managers and employees to perform HR tasks themselves. Indeed, (Bondarouk et al, 2009) suggested that, in organizations where HR practitioners have used e-HRM to delegate their administrative HR tasks to line managers and employees, we might expect that the main goal of the introduction of E-HRM would be to improve the perceived effectiveness of HR to a range of stakeholders. This idea is related to the more general discussion of strategic HRM that includes the devolution of HR activities to managers as an important characteristic. This might lead us to expect that a high level of E-HRM within an organization would be related to the devolution of HR tasks to line managers.

d) Impact of E-HRM on the Strategic Orientation of the HR Function

A number of authors, including (Ruel et al, 2004) have suggested that E-HRM has the potential to transform the HR function into one that is more strategic, whereby "strategic" refers to an involvement in the strategic management of the business. This "transformational" impact of E-HRM has been much discussed in the literature with considerable disagreement existing between

authors about whether the use of E-HRM can really facilitate the transition to an HR function playing the strategic role of “business partner”(Parry et al, 2014).

On the other hand, (Emma Parry et al., 2014) concluded that E-HRM had not yet realized its potential to facilitate a more strategic role for HR. (Burbach and Dundon, 2005) suggested that the focus of E-HRM was most commonly on administrative activities rather than on strategic decision making and suggested that the use of E-HRM simply meant that administrative tasks were replaced with technological rather than strategic activities. (Marler, 2015) also suggested that the impact of E-HRM on the role of the HR function was actually dependent on the nature of that function with administratively oriented HR departments being more likely to have efficiency related goals for E-HRM. Alternatively, HR departments that already function strategically were more likely to have strategic goals for the use of E-HRM.

Methodology

In order to extract true conclusions from a study, it is necessary to use a proper and scientific approach with respect to the subject, thereby with minimum cost and maximum accuracy results can be achieved. However, the researcher tries to explain the research methodology of the research in details.

Research Hypotheses

H1. The extent use of E-HRM has a strong positive and significant impact on the effectiveness of the HRM practices.

H1.a The employee’s involvement has a strong positive and significant impact on the effectiveness of the HRM practices.

H1.b The social support has a strong positive impact and significant on the effectiveness of the HRM practices.

H1.c The provision of information has a strong positive and significant impact on the effectiveness of the HRM practices.

H1.d The immediate help has a strong positive and significant impact on the effectiveness of the HRM practices.

H1.e Training has a strong positive and significant impact on the effectiveness of the HRM practices.

Research Variables Measures

In this study a Multi-item scales from Unified Theory of Technology Acceptance Model (TAM) and Stakeholder theory instruments were adapted to measure the variables on a five-point Likert-type scale where 1=strongly disagree and 5=strongly agree. Five items measuring Job relevance towards using E-HRM, In addition the instrument included: six questions for this part of the research which were modified and adapted from the questionnaire in (Ruel and Maatman, 2010) on the clarity of E-HRM technology; six items on quality of applications adapted from; four

items measuring perceived usefulness; twelve items for perceived ease of use adapted from (Davis, 1989); four items measuring social support and six items measuring effectiveness. Items measuring effectiveness were also rated on a Likert scale but ranged from 1 (= very little extent) to 5 (= very large extent).

Variables in the questionnaire are arranged to conform to the respondents' preference. All the scale items were modified for testing in the E-HRM context.

The Proposed Model

According to (Marler & Dulebohn, 2015, p.138) "predicting user acceptance of technology, systems, and service has been an important topic in both industry and academic studies for several decades". As new technologies are being consistently developed and introduced, numerous theoretical models have been proposed to predict user perceptions of these technologies.

(Marler and Fisher, 2010) summarized the most important contextual factors for E-HRM acceptance by stakeholders which depends on the degree of involvement in the design and implementation of E-HRM, the perceived usefulness of the E-HRM technology, the degree of managerial compulsion to use E-HRM, and the perception of privacy or data security related to the acceptance of E-HRM. Other contextual factors are the employees' ability to use computers and their Internet literacy.

In accordance with TAM literature, the present study proposes an acceptance model of E-HRM system that incorporates two of the four constructs featured in the original TAM, primarily perceived usefulness and the ease of use. The following suggested model in (fig.1) represents the research variables and hypotheses.

A-Independent variables: The extent use of E-HRM **B-Dependent variables:** The effectiveness of HRM practices

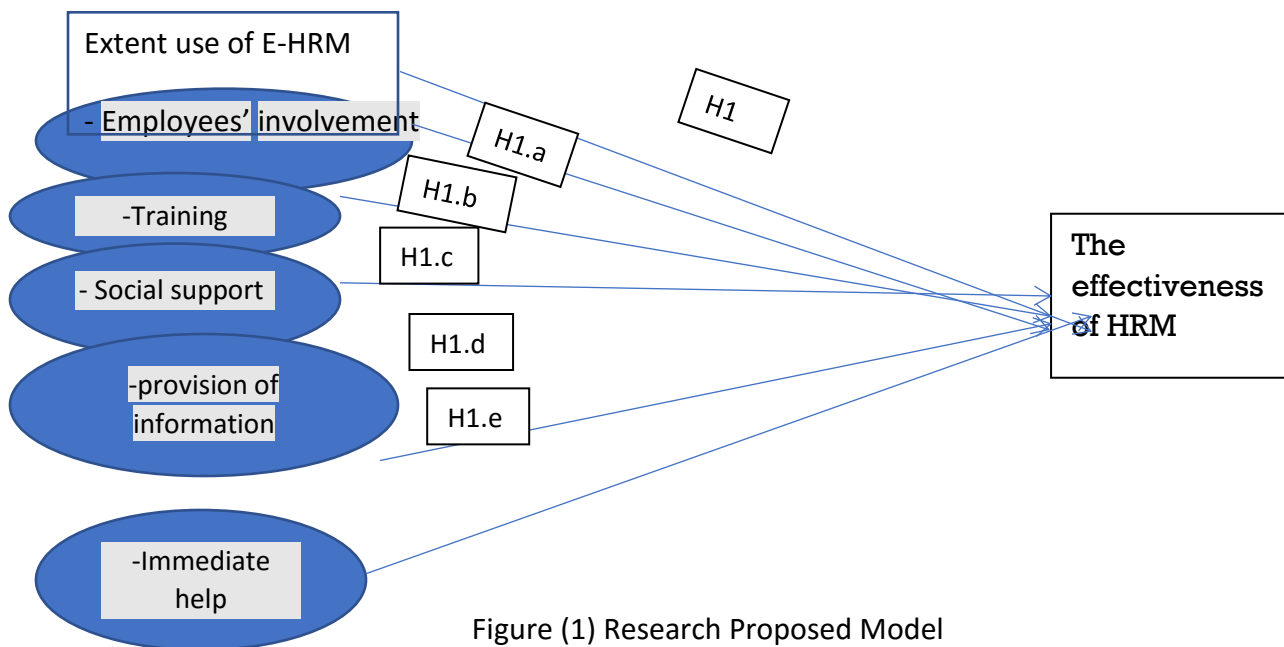


Figure (1) Research Proposed Model

Research Design

This study has been designed to include two stages. The first stage is the exploratory study; the second stage is the questionnaire survey for the internet service providers companies (ISPs) in Egypt.

Data Types and Sources

Secondary Data

The most important results of the previous studies that are related to the research variables from the books, dissertations, journals and internet websites.

Primary Data

In addition to the secondary data, the researcher depends on the collection of the primary data through questionnaire, this is in order to examine the research hypotheses and attain the pre-stated research objectives.

This questionnaire is divided into two sections. The first one aims at analyzing companies' E-HRM critical success factors and its extent use and exploring associated benefits and obstacles. The second one will be related to the perceived E-HRM impact on the effectiveness of the HRM's practices.

Specific steps were taken to reduce possible single informant bias. In particular, all survey items used to measure constructs of this study were drawn from published scales.

The population

Population refers to the entire group of people, events or things of interest that the researcher wishes to investigate (Sekaran, 2003). The population of interest for this study is all the employees in the HR department in the internet service providers companies (ISPs) in Egypt. Based on a preliminary investigation, a list of names, telephones & addresses of the companies obtained from the website of the Egypt business directory (www.egypt-business.com/). This screening criterion is established on the basis that companies' faces severe competition and Information technology plays a major role to keep them agile in turbulent environment. There are four Internet service providers (ISPs) in Egypt offering an ADSL service. Based on a preliminary investigation for the numbers of HR managers and employees in the (ISPs) in Egypt, the researcher found the population consisting only of 128 unit, so the researcher is proposing to use census studies to represent each unit working in HR department of the four (ISPs) companies.

Research Approach

According to (Saunders et al, 2003) the best research method to use for a study depends on the studies research problem and the accompanying research questions.

Since the research problem of this study is too complex to fulfill with a qualitative approach, the researcher adopted a quantitative approach to it.

Research Limitations

First, this study cannot be generalized to all other individuals as the respondents are confined to HR professional employees in the internet service providers' companies in Egypt. Therefore, the results cannot be generalized to individuals working in other sectors.

Second, the study is only a preliminary step that carried out using a particular type of technological innovation, which is the E-HRM system in this case. As such, the research needs to be replicated to examine the robustness of the findings across a wider range of technologies solution and samples.

Third, the suggested model discusses the impact of extent use of E- HRM on HRM practices' effectiveness in the internet service providers' companies in Egypt which differs from the same companies in other countries.

Due to the time and cost constraints, this study will depend on the exploratory study design focusing only on the extent use of E-HRM on HRM practices 'effectiveness.

Results and Conclusion

This section highlights the main findings of the study in a cohesive manner. It reviews the research background and findings, followed by recommendations for stakeholder and managers, and concludes with future research ideas.

The researcher presents the results of data analysis and the findings of the study. Collected data were analyzed using statistical package for social science (SPSS 20.0).It provides the description of the sample characteristics which then was followed by data screening and preparation.

The data analysis takes place in three steps after the sample results and descriptive statistics in addition to testing the Hypotheses of the Model Structure have been presented. Step 1: Checking the assumptions, Step 2: Evaluating the model and Step 3: Evaluating each of the independent variables.

Population Results and Descriptive Statistics

Profile of the respondents

This section describes the background information of the respondents who had participated in the current study. The demographic profile characteristics include gender, age, education and working experience. Table (3) below summarizes the demographic profile of the respondents.

Table 3. Profile of the respondents

Demographic variable	Demographic characteristics	Frequency	Percentage
Gender	Male	89	69.5%
	Female	39	30.5%
Age	Less than 25	12	9.4%
	25up to 35	62	48.4%
	36up to 45	53	41.4%
Education	Diploma	19	14.8%
	Bachelor	74	57.8%
	Master	18	14.1%
	Others	17	13.3%
Working experience	Less than 3 years	14	10.9%
	3up to 6	59	46.1%
	7upto 10	38	29.7%
	Greater than 10 years	13	10.2%

Table (3) above showed a vast majority of the respondents were male as they represent (69.5%) of the sample. The rest were female who only represent (30.5%) of the sample. Majority of the respondents were middle age between (25 up to 35) years old (48.4%) followed by those (36 up to 45) years old (53%). About only (9.4%) were found from younger age less than 25 years old. The majority of the respondents possessed Bachelor degree as they represent (57.8%) while (14.8%) of the respondents had Diploma and only (14.1%) had a master degree and (13.3%) had others. With reference to the experience only (10.2%) of the respondents have more than 10 years of work experience followed by (29.7%) 7 upto 10 years' experience and about (46.1%) 3 up to 6 years of work experience and (10.9%) less than 3 years' experience.

Data Preparation and Screening

Data was screened before data analysis was conducted to ensure the accuracy of the data collected was achieved. This is done by comparing the original data collected against the computerized data file. Data screening is also important to enhance the statistical methods in the data analysis (Pallant, 2011). Data screening in this study contained dealing with missing values, detecting and dealing with outliers, normality test and multicollinearity.

Detection of Missing Data

According to (Hair et al., 2010) missing data is information which is not available for a subject (or case) about which other information is available. Missing data could distort practical sample size available for analysis. To ensure that data was cleaned, missing value analysis for each variable was conducted. There was no missing data reported.

Normality Test

Normal is used to describe a symmetrical, bell-shaped curve, which has the greatest frequency of scores in the middle with smaller frequencies towards the extremes (Sekaran, 2003). Normality can be assessed to some extent by obtaining skewness and kurtosis values.

Table 4. Skewness and Kurtosis for the study variables

Variables	Mean	Std.	Skewness	S.E(S)	Kurtosis	S.E(K)
Effectiveness of HRM practices	33.242188	0.296125	-1.963879	0.214026	2.496136	0.424925

Validity and Test of the Scale

Reliability: This refers to the degree to which the items that make up the scale 'hang together'. Are they all measuring the same underlying construct? One of the most commonly used indicators of internal consistency is Cronbach's alpha coefficient. Cronbach alpha values are, however, quite sensitive to the number of items in the scale.

In this study, it may be more appropriate to report the mean inter-item correlation for the items. (Pallant, 2011) recommends an optimal range for the inter-item correlation of .2 to .4.

According to (Pallant, 2011) the Cronbach's Alpha value shown in the Reliability Statistics table. In this study, results are suggesting very good internal consistency reliability for the scale with

this population. Values above .7 are considered acceptable; however, values above .8 are preferable.

Table 5. Reliability of the Scale

Scale	Cronbach 's alpha	No.of items
Employees involvement	.908	2
Job relevance	.912	11
Quality of E-HRM application	.896	6
Training	.908	2
Social support	.914	4
Provision of information	.911	2
Immediate help	.903	4
Ease of use	.916	12
Usefulness of E-HRM	.919	5
stakeholders	.895	6

Validity: The validity of a scale refers to the degree to which it measures what it is supposed to measure. Unfortunately, there is no one clear-cut indicator of a scale's validity. The validation of a scale involves the collection of empirical evidence concerning its use.

Test the Hypotheses of the Model Structure

Presenting the Results from Correlation

For H.1 The extent use of E-HRM has a strong positive and significant impact on the effectiveness of the HRM practices. The results showed that:

- The relationship between the **extent use of E-HRM** and **effectiveness of HRM practices** was investigated using Pearson product-moment correlation coefficient.
- Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a strong, positive correlation between the two variables, $r = .89$ in Orange, $n = 30$, $p < .0005$, 1.00 in Vodafone indicates a perfect positive correlation $n = 35$, $p < .0005$, $.97$ in Etisalat, $n = 35$, $p < .0005$ and $.95$ in TEdata, $n = 28$, $p < .0005$, with high levels of extent use associated with high levels of the Effectiveness of HRM practices.
- **For H.1.a Employee's involvement has a strong positive and significant impact on the effectiveness of the HRM practices.** The results showed that:
 - The relationship between the **Employees' involvement** on the **Effectiveness of HRM practices** was investigated using Pearson product-moment correlation coefficient.
 - Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a strong, positive correlation between the two variables, $r = .92$ in Orange, $n = 30$, $p < .0005$. $r = 1.00$ in Vodafone, $n = 35$, $p < .0005$. $r = .93$, $n = 35$, $p < .0005$ in Etisalat, $n = 35$, $p < .0005$ and $.92$ in TEdata, $n =$

28, $p < .0005$, with high levels of **Employees' involvement** associated with high levels of the **Effectiveness of HRM practices**.

Pearson correlation is .927 in Orange, which when squared indicates 85.93 percent shared variance. Employees' involvement helps to explain nearly 86 percent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is 1.000 in Vodafone, which when squared indicates 100 per cent shared variance. Employees' involvement helps to explain nearly 100 per cent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is .954 in Etisalat, which when squared indicates 91.01 percent shared variance. Employees' involvement helps to explain nearly 91 percent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is .920 in TEdata, which when squared indicates 84.64 percent shared variance. Employees' involvement helps to explain nearly 85 percent of the variance in respondents' scores on the **Effectiveness of HRM practices**. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

For H.1.b Social support has a strong positive and significant impact on the effectiveness of the HRM practices. The results showed that:

- The relationship between **social support** and **Effectiveness of HRM practices** was investigated using Pearson product-moment correlation coefficient.
- Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a strong, positive correlation between the two variables, $r = .64$ in Orange, $n = 30$, $p < .0005$, $r=1.00$ in Vodafone because at least one of the variables is constant $n = 35$, $p < .0005$, $.80$ in Etisalat, $n = 35$, $p < .0005$ and $.76$ in TEdata, $n = 28$, $p < .0005$, with high levels of **social support** associated with high levels of the **Effectiveness of HRM practices**.

Pearson correlation is .611 in Orange, which when squared indicates 37.33 percent shared variance. **social support** helps to explain nearly 37 percent of the variance in respondents' scores on the **Effectiveness of HRM practices**. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is 1.000 in Vodafone, which when squared indicates 100 per cent shared variance. **social support** helps to explain nearly 100 per cent of the variance in respondents' scores on the **Effectiveness of HRM practices**. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is .802 in Etisalat, which when squared indicates 64.32 percent shared variance. **social support** helps to explain nearly 64 percent of the variance in respondents' scores on the **Effectiveness of HRM practices**. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is .765 in TEdata, which when squared indicates 58.52 percent shared variance. **Social support** helps to explain nearly 40 percent of the variance in respondents' scores on the **Effectiveness of HRM practices**. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

For H.1.c Provision of information has a strong positive and significant impact on the effectiveness of the HRM practices. The results showed that:

- The relationship between **provision of information** and **Effectiveness of HRM practices** was investigated using Pearson product-moment correlation coefficient.
- Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a strong, positive correlation between the two variables, $r = .72$ in Orange, $n = 30$, $p < .0005$, $r=1.00$ in Vodafone because at least one of the variables is constant $n = 35$, $p < .0005$, $.85$ in Etisalat, $n = 35$, $p < .0005$ and $.85$ in TEdata, $n = 28$, $p < .0005$, with high levels of provision of information associated with high levels of the Effectiveness of HRM practices.

Pearson correlation is .724 in Orange, which when squared indicates 52.41 percent shared variance. Provision of information helps to explain nearly 52 percent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is 1.000 in Vodafone, which when squared indicates 100 per cent shared variance. Provision of information helps to explain nearly 100 per cent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is .853 in Etisalat, which when squared indicates 72.76 percent shared variance. Provision of information helps to explain nearly 73 percent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is .850 in TEdata, which when squared indicates 72.76 percent shared variance. Provision of information helps to explain nearly 73 percent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

For H.1.d Immediate help has a strong positive and significant impact on the effectiveness of the HRM practices. The results showed that:

- The relationship between immediate help and Effectiveness of HRM practices was investigated using Pearson product-moment correlation coefficient.
- Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a strong, positive correlation between the two variables, $r = .64$ in Orange, $n = 30$, $p < .0005$, $r=1.00$ in Vodafone because at least one of the variables is constant $n = 35$, $p < .0005$, $.90$ in Etisalat, $n = 35$, $p < .0005$ and $.86$ in TEdata, $n = 28$, $p < .0005$, with high levels of immediate help associated with high levels of the Effectiveness of HRM practices.

Pearson correlation is .646 in Orange, which when squared indicates 41.73 percent shared variance. Immediate help helps to explain nearly 41% percent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is 1.000 in Vodafone, which when squared indicates 100 per cent shared variance. Immediate help helps to explain nearly 100 per cent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is .902 in Etisalat, which when squared indicate 81.36 percent shared variance. Immediate help helps to explain nearly 81 percent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is .868 in TEdata, which when squared indicates 75.34 percent shared variance. Immediate help helps to explain nearly 75 percent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

For H.1.e Training has a strong positive and significant impact on the effectiveness of the HRM practices. The results showed that:

- The relationship between **Training** and **Effectiveness of HRM practices** was investigated using Pearson product-moment correlation coefficient.
- Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a strong, positive correlation between the two variables, $r = .91$ in Orange, $n = 30$, $p < .0005$, $r = 1.00$ in Vodafone because at least one of the variables is constant $n = 35$, $p < .0005$, $.92$ in Etisalat, $n = 35$, $p < .0005$ and $.92$ in TEdata, $n = 28$, $p < .0005$, with high levels of **Training** associated with high levels of **Effectiveness of HRM practices**.

Pearson correlation is .918 in Orange, which when squared indicates 84.27 percent shared variance. Training helps to explain nearly 84 percent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is 1.000 in Vodafone, which when squared indicates 100 per cent shared variance. Training helps to explain nearly 100 per cent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is .929 in Etisalat, which when squared indicates 86.30 percent shared variance. Training helps to explain nearly 86 percent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Pearson correlation is .929 in TEdata, which when squared indicates 86.30 percent shared variance. Training helps to explain nearly 86 percent of the variance in respondents' scores on the Effectiveness of HRM practices. This is quite a respectable amount of variance explained when compared with a lot of the research conducted in the social sciences.

Regression

Step 1: Checking the Assumptions Multicollinearity

According to (Pallant, 2011), this refers to the relationship among the independent variables. Multicollinearity exists when the independent variables are highly correlated ($r=.9$ and above).

The correlations between the variables in the model are provided in the table labeled Correlations. The independent variables show strong positive relationship with the dependent variable as presented before for each company.

The results are presented in the table labeled Coefficients. Two values are given: Tolerance and VIF. Tolerance is an indicator of how much of the variability of the specified independent is not explained by the other independent variables in the model and is calculated using the formula $1-R^2$ squared for each variable. In this study, all variables are performed with the multicollinearity test and the results demonstrate the low inter-correlation between independent variables with all the VIF values less than 10.

Step 2: Evaluating the model

According to (Pallant, 2011), from the Model Summary box the value given under the heading R Square that tells how much of the variance in the dependent variable. The Effectiveness of HRM practices is explained by the model. In this case, the value is .807 in Orange, .100 in Vodafone, .943 in Etisalat and .920 in Tedata. Expressed as a percentage this means that our model explains 80 percent in Orange, 100% in Vodafone, 94% in Etisalat and 92% in Tedata of the variance in Effectiveness of HRM practices. This is quite a respectable result (particularly when we compare it to some of the results that are reported in the journals!).

To assess the statistical significance of the result, it is necessary to look in the table labeled ANOVA. This tests the null hypothesis that multiple R in the population equals 0. The model in this research reaches statistical significance (Sig. = .000; this really means $p<.0005$).

The Sig. value of the independent sub-variable Immediate help 000 which is less than 0.05, the variable is making a significant unique contribution to the prediction of the dependent variable in Orange, Etisalat and Tedata.

The Sig. value of the independent sub-variable Social support 000 which is less than .0.05, the variable is making a significant unique contribution to the prediction of the dependent variable in Orange, Etisalat and Tedata. For models with dependent variable evaluation of EHRM, the following variables are constants or have missing correlations in the company=Vodafone: Social support. They will be deleted from the analysis; therefore, Statistics cannot be computed.

The Sig. value of the independent sub-variable Training 000 which is less than .0.05, the variable is making a significant unique contribution to the prediction of the dependent variable in Orange, Etisalat and Tedata. For models with dependent variable evaluation of EHRM, the following variables are constants or have missing correlations in the company=Vodafone: Training. They will be deleted from the analysis; therefore, Statistics cannot be computed.

The Sig. value of the independent sub-variable information provision 000 which is less than .0.05, the variable is making a significant unique contribution to the prediction of the dependent variable in Orange, Etisalat and Tedata. For models with dependent variable evaluation of EHRM, the following variables are constants or have missing correlations in the

company=Vodafone: provision of information. They will be deleted from the analysis; therefore, Statistics cannot be computed.

The Sig. value of the independent sub-variable Employees involvement 000 which is less than .05, the variable is making a significant unique contribution to the prediction of the dependent variable in Orange, Etisalat and Tedata. For models with dependent variable evaluation of EHRM, the following variables are constants or have missing correlations in the company=Vodafone: Employees involvement. They will be deleted from the analysis; therefore, Statistics cannot be computed.

Step 3: Evaluating Each of the Independent Variables

To know the contribution of each independent variable; the researcher used the beta values in the comparison. By looking down the Beta column to find which beta value is the largest (ignoring any negative signs out the front).

In this study the largest beta coefficient is .933, which is for Employees involvement. This means that this variable makes the strongest unique contribution to explaining the dependent variable, when the variance explained by all other variables in the model is controlled for. The Beta value for Social support was slightly lower .524, indicating that it made less of a unique contribution.

In this case the largest beta coefficient is .933, which is for Employees involvement in Etisalat. This means that this variable makes the strongest unique contribution to explaining the dependent variable, when the variance explained by all other variables in the model is controlled for. The Beta value for Social support was slightly lower .524, indicating that it made less of a unique contribution.

To know the contribution of each independent variable the researcher used the Beta values in the comparison. This can be summarized in the next table as follows: Table (6).

Independent variables	Orange	Etisalat	Tedata
Extent use of E-HRM	.898	.971	.959
Employees involvement	.927	.933	.929
Training	.911	.929	.929
Social support	.611	.524	.635
Provision of information	.724	.802	.765
Immediate help	.646	.902	.886

Beta value 1.000 of The extent use for Vodafone company.

Therefore, these variables can be arranged according to their impact on the effectiveness of the HRM practices as (employees involvement, training, immediate help, provision of information, and social support respectively).

Recommendation

As the results of the study showed that the Employees' involvement has the most impact on the effectiveness of the HRM practices so, HR managers should enable all stakeholders of the organization to be involved in implementing and using the E-HRM applications. According to stakeholder theory, managers need to accommodate the interests of stakeholders, so that the organization may help each stakeholder achieve its goals while pursuing its own goals.

In above mentioned critical areas, E-HRM is still a new topic for the academic interest and HR professionals. To achieve sustainable E-HRM, HRM departments need to continuously work on its virtual HRM with respect to computer hardware, software and networking services. E-HRM should be taken as implementation support system for HRM. Firms need to design their E-HRM model keeping in mind following three areas of HRM:

1. Operational HRM related to administrative jobs through online facilities which can lead to reduction in cost in terms of paper, retrieving of data and IT infrastructure.
2. Relational HRM towards maintaining the relationship between organization and the employee through web based intranet and forming online communities. Giving a new looks to nature of relationship between HRM, line managers and employees.
3. Transformational HRM towards alignment of employees and organizational strategies by e-recruitment, e-training and development and online learning programs. Bringing new, flexible and responsive methods of HR functions to provide excellent services as employee and customer focused experts.

Ideas for Future Research

- The model of the study can be altered by removing the Employees' involvement variable –that make this a more media-oriented model – and adding different determinants of effectiveness to the model for more testing. Similarly, perceived risks could be presented as determinants on a risk-by-risk basis, rather than a combined approach.
- The model of the study may be used to understand the impact of the extent use of E-HRM in other developing countries.

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